Biological Technical Report

J Street Drain Project
Ventura County, California

July 2008
Revised September 2011

Prepared for

Ventura County Watershed Protection District
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1.0 INTRODUCTION

At the request of the Ventura County Watershed Protection District (District), HDR Engineering, Inc. (HDR) conducted a general biological survey and vegetation mapping for the J Street Drain Project (Figure 1). The biological survey work completed for this report includes a baseline site survey, an inventory of the plants and animals observed onsite, and an assessment of the vegetation communities(s) associated with the project. The purpose of this study was to: (1) assemble a vascular plant and vertebrate animal inventory of the site, and (2) determine whether any sensitive species or vegetation communities could be impacted by development of the proposed project.

2.0 PROJECT DESCRIPTION AND LOCATION

2.1 PROJECT LOCATION

The project site is located along J Street, which is on the border of the City of Oxnard and City of Port Hueneme in Ventura County (Figure 1). The project site continues into the Ormond Beach Lagoon, which is located south of the J Street Drain (Drain). The predominant surrounding land uses consist of residential development on each side of J Street, some commercial uses near Hueneme Road, and the Oxnard Wastewater Treatment Plant (OWTP) near the lagoon. General site photos are located in Appendix A.

2.2 PROJECT DESCRIPTION

The existing Drain is a trapezoidal concrete-lined channel located along the centerline of J Street, and begins upstream at the Redwood Street crossing and terminates downstream at the west boundary of the Ormond Beach Lagoon (Figure 2). The facility also includes culverts under the street crossings at the following locations:

- Redwood Street
- Teakwood Street
- Yucca Street
- Bard Road
- Pleasant Valley Road
- Clara Street
- Hueneme Road
- Railroad crossing – Ventura County Railroad (VCRR)

The existing concrete lining ends approximately 50 feet south of the Hueneme Drain Pump Station and the remaining earthen portion continues downstream before turning east at the sand berm.

The Ventura County Watershed Protection District (then known as the Ventura County Flood Control District) was formed on September 12, 1944, when the California State Legislature approved the Ventura County Flood Control Act. The District was formed, in part, to provide for the control and conservation of flood and stormwaters and for the protection of watercourses, watersheds, public highways, life and property in the District from damage or destruction from these waters. On January 1, 2003, the name was changed to the Ventura County Watershed Protection District (District) to reflect changes in community values, regulatory requirements, and funding opportunities. The District's mission is to protect life, property, watercourses, watersheds, and public infrastructure from the dangers and damages associated with flood and stormwaters. Goals of the District include:

- Comprehensive, long range watershed planning
- Collaboration with watershed stakeholders
- Administration of adopted regulations, policies, and resolutions
- Responsible and accountable use of public resources
- Excellence in public service

The District possesses jurisdictional authority over any channel containing runoff with a peak flow rate of more than 500 cubic feet per second (cfs) during a 100-year storm. Laterals and side drains contributing runoff to the jurisdictional channels (referred to as "redline" channels) are under the jurisdiction of the state and or appropriate local agency (City of Oxnard for this project). However, lateral and side drain connections to jurisdictional channels must obtain an encroachment permit from the District and provide sufficient information and engineering studies to show that the connection does not negatively impact the conveyance capacity of the jurisdictional channel.

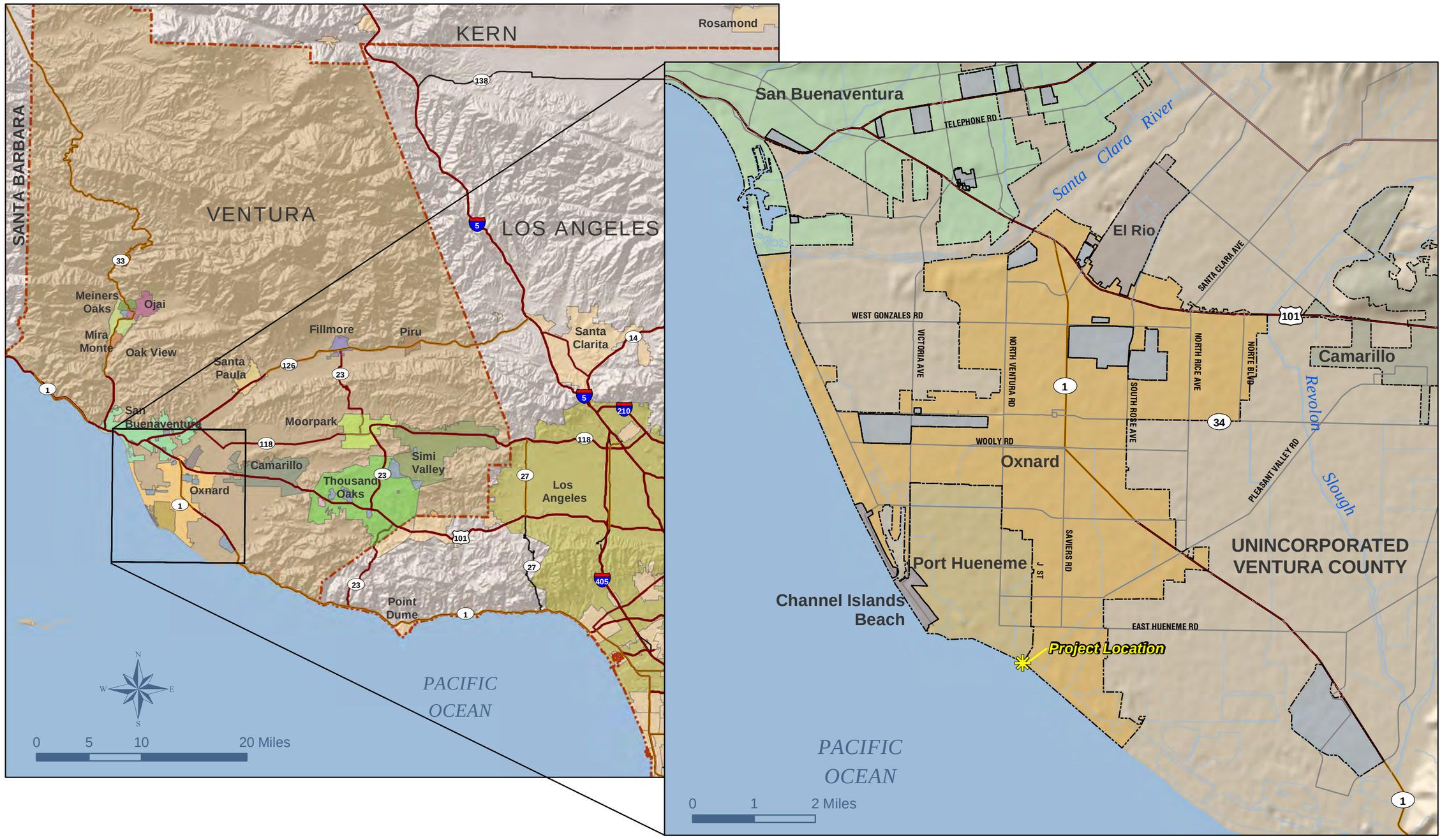
In order to identify and focus long range priorities within the District an Integrated Watershed Protection Plan (IWPP) was prepared. The objectives of the IWPP include:

- To provide a systematic process for the inclusion of projects into the District's Capital Improvement Plan over its five-year planning period; and
- To improve the long-range District planning process for the 20-year period subsequent to the Capital Improvement Plan by allocating projected revenues to identified projects. The IWPP also provides Level-of-Service evaluation that identifies the need for additional project funding to achieve desired flood mitigation goals.

According to studies sponsored by the District, the area surrounding the J Street Drain is anticipated to flood during a severe rain event. The J Street Drain Channel Improvement Study and Preliminary Design (URS 2005) estimates that the capacity of the J Street Drain to be 500-600 cfs, which could be exceeded during a ten-year flood event. Flood damages were estimated using the depth of flooding in the residential and commercial areas along J Street, the structural value data obtained from the District, and the 1975 revised depth-damage curves for residential and small business structures calculated by the Federal Insurance Administration (FIA). The benefit cost analysis (BCA) was conducted using estimated pre-project flood damages and losses to calculate benefits. Based on calculations a total of $55.7 million was estimated as the damage that would result from a 100-year flood in the J Street Drain Channel.

In addition to the Drain capacity, the outlet of the Drain is sometimes constrained by a sand berm that can reach over 7 feet in height surrounding the Ormond Beach Lagoon. The sand berm hinders the direct flow path of the J Street Drain channel to the Pacific Ocean. The berm currently directs the water to the east. If there is no opening to the ocean then water ponds in the Lagoon and can reach up the Drain to Hueneme Road.

The sand berm at the Ormond Beach Lagoon was periodically manually breached prior to 1992 by the District to create a discharge path directly to the ocean and prevent water and silt buildup in the channel. However, this practice was stopped in 1992 due to environmental concerns and restrictions. Natural breaching also occurs under existing conditions when the water surface reaches an elevation of 7.5 to 8 feet mean sea level (msl). Therefore, the sand berm at the Ormond Beach Lagoon breaches naturally under existing conditions.



Source: G:\Projects\75217_J Street\map_docs\mxd\BTR\BTR_Regional_Vicinity_Jst.mxd | Last Updated: 05-25-2011

Project Regional & Vicinity Map

FIGURE 1

Source: ESRI; 2006 | G:\Projects\75217 J Street\map docs\mxd\BTR\SiteMap J StBTR.mxd| Last Updated : 08-15-2011

Project Survey Area

FIGURE 2

2.3 PURPOSE, NEED, AND PROJECT OBJECTIVES

Purpose and Need

The purpose of the proposed project is to provide flood protection to the 100-year flood level for the area surrounding J Street Drain. The need is evidenced by the studies that show the Drain has a current capacity to handle a ten-year flood event without overtopping the channel. Without the increase in flood protection the local area would continue to be susceptible to flooding, as well as federal requirements to purchase flood insurance for properties within the 100-year flood zone after Federal Emergency Management Agency (FEMA) remaps the project area in the future.

Along with the proposed increase in drain capacity, the proposed project also includes a Beach Elevation Maintenance Plan (BEMP). The BEMP identifies a set of environmental conditions that might cause flooding during a storm event. Once these conditions are observed, a predetermined list of actions would be implemented to ensure the opening of the lagoon outlet when the water surface reaches a target safe elevation. The Ormond Beach Lagoon inlet normally remains in a semi-closed condition due to sand accretion on Ormond Beach, but during most winters it breaches naturally to allow free outflow during storms and some high tides. The BEMP is a guideline to assist the District in responding to the potential flood threat caused by persistence of the sand berm during potentially damaging storm events of varying magnitudes. The BEMP defines a maximum safe beach height, and provides for a coordinated response to groom the sand berm at a pre-specified location immediately prior to a predicted storm event.

Project Objectives

The District's primary objectives of the project include:

- Flood control protection – increase drain capacity for 100-year flood flow;
- Maintain the existing functional characteristics of the Ormond Lagoon;
- Ensure project compatibility with future Ormond Beach Lagoon restoration plans;
- Minimize the disturbance to tidewater goby habitat downstream of the J Street lined channel, as well as snowy plover and California least tern nesting areas on Ormond Beach;
- Minimize operation and maintenance requirements, especially during storms; and
- Minimize effects on water quality of the lagoon.

2.4 PROJECT CHARACTERISTICS

The proposed project would involve increasing the capacity of the existing channel to reduce flooding in residential and commercial areas of Oxnard and Port Hueneme. The existing trapezoidal concrete-lined channel has a variable depth averaging 4 feet deep with a bottom width varying from 20 to 30 feet with 1:1 side slopes.

Channel Portion

Upstream

The proposed J Street Drain would involve converting the existing trapezoidal concrete channel into an open rectangular channel with an invert 2.5 to 4 feet below the existing channel bottom. The existing

trapezoidal channel would be widened and deepened to increase the capacity; the channel walls would be vertical and top of the channel open. The existing culverts under the street crossings (listed above) would also be replaced by larger structures to improve flow conveyance. The existing concrete lining ends approximately 50 feet south of the Hueneme Drain Pump Station and the remaining earthen portion continues downstream before turning east at the beach.

Downstream

The existing J Street Drain Channel concrete lining terminates approximately 50 feet south of the Hueneme Drain Pump Station, near the Hueneme Drain confluence. Because the concrete lined portion of the channel invert would be lowered 2.5 to 4 feet to create the required capacity, excavation would continue downstream towards the sand berm. The finished invert would be daylighted via an earthen ramp to the lagoon at a 10:1 slope over a distance of up to 40 feet. A 10-foot thick layer of four-ton rock riprap would be placed horizontally at the end of the concrete drain and below the earthen ramp to dissipate energy flow. It is anticipated that the movement of water (tidal and drain flow) would ultimately result in an equilibrium elevation within the channel transition area.

Beach Outlet Portion

No alterations are proposed to the Ormond Beach Lagoon. The lagoon would continue to function as it does now with periodic natural breaching.

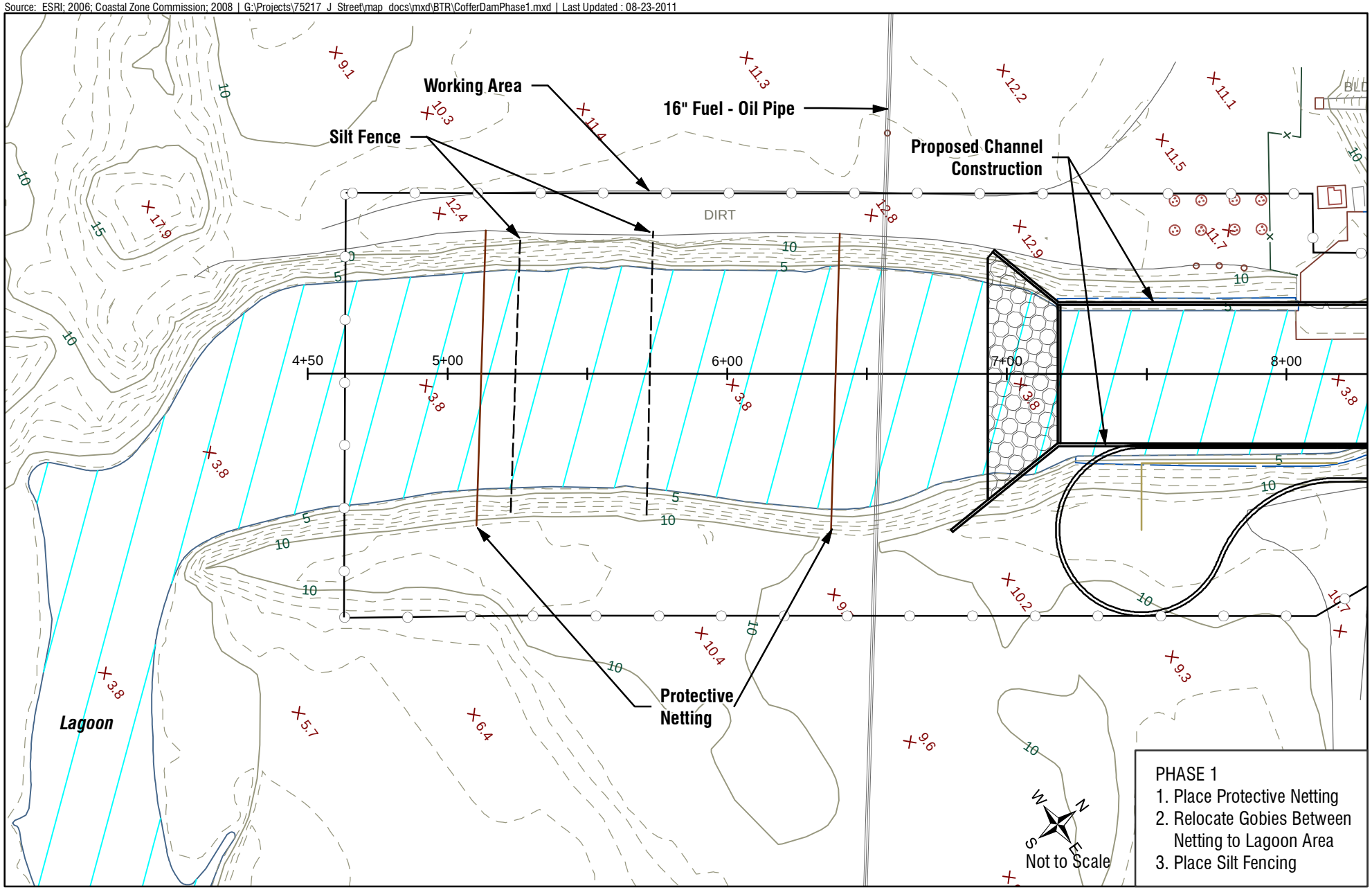
2.5 CONSTRUCTION

The demolition of the existing drain and construction of the new, higher capacity drain, will take place in phases. At this stage of the engineering design it is anticipated that the demolition and construction would start at the southern end of the Drain, south of Hueneme Road and move northward in phases. The initial construction activities include installation of groundwater dewatering wells, a coffer dam, and channel flow bypass. The groundwater dewatering wells will be approximately 15 to 20 feet deep, and placed along the work area of the J Street Drain. These wells will be installed and removed as construction moves upstream. Once installed, these wells will be attached to temporary pumps to extract groundwater for discharge into the Perkins Drain. The groundwater will be tested in accordance with the requirements of the Regional Water Quality Control Board (RWQCB) prior to placement into Perkins Drain. If the pumped groundwater is determined to be acceptable, it would then be allowed to be discharged. This will ensure that no surface water contamination would result from dewatering.

The electric power to run these pumps will be supplied from the existing Hueneme Drain Pump Station. The rate of groundwater pumping would be at the discretion of the project contractor, though it is recommended that the groundwater level should be 2 feet below the construction work area.

A coffer dam will be placed across the channel at the south end of the construction area. The coffer dam will block tidal flow into the work area. Figures 3a through 3d illustrate the proposed coffer dam. Block nets would be installed immediately upstream and downstream of the proposed coffer dam site to isolate it, and all native fish between the nets, including the endangered tidewater goby, will be relocated beyond the downstream net before coffer dam installation begins. The coffer dam and block net will be removed after project completion. This work will be conducted by approved, qualified biologists who will verify that all fish have been removed from the work area prior to the start of further construction.

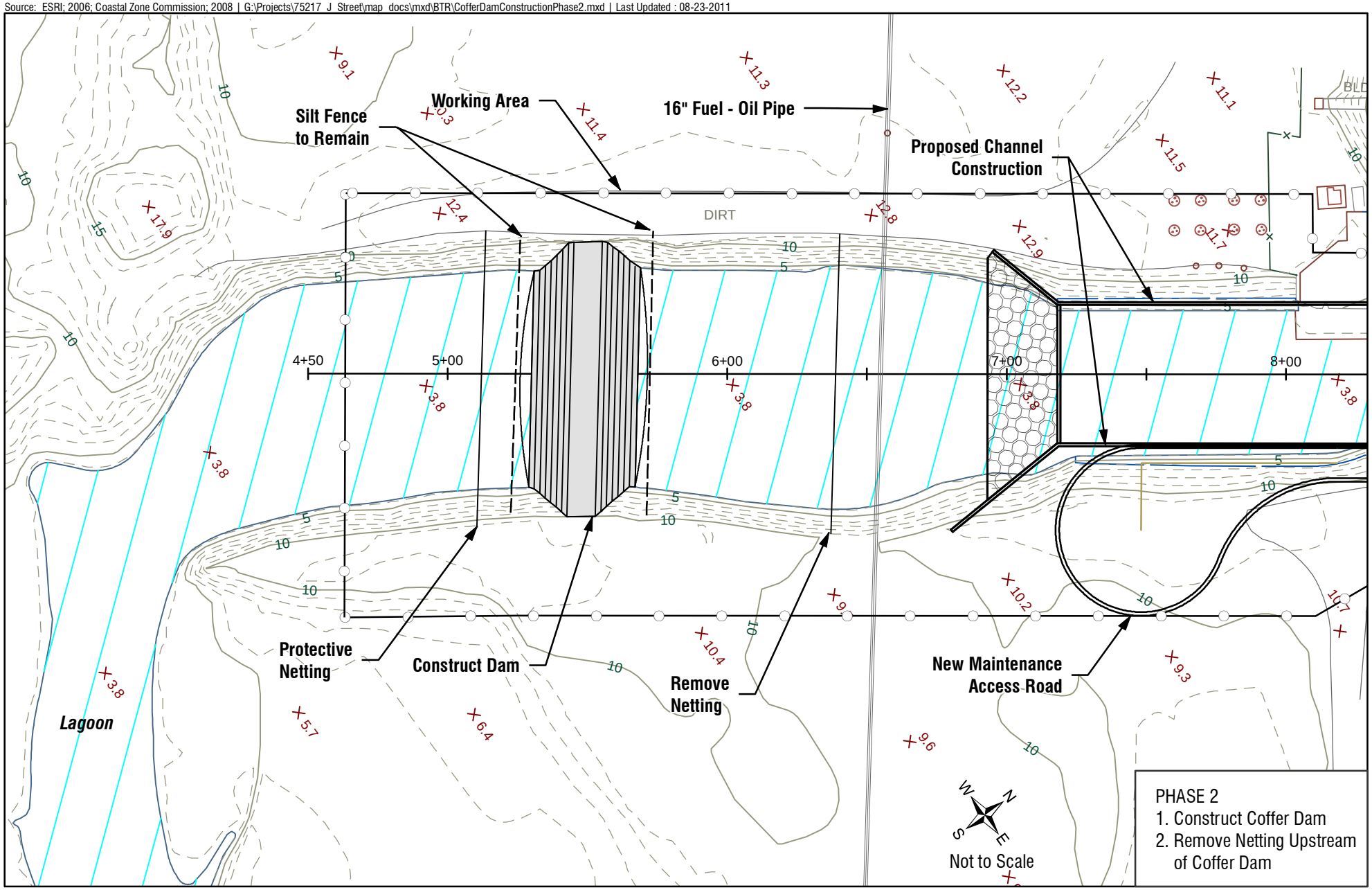
Source: ESRI; 2006; Coastal Zone Commission; 2008 | G:\Projects\75217 J Street\map docs\mxd\BTR\CofferDamPhase1.mxd | Last Updated : 08-23-2011



Coffer Dam Construction - Phase 1

FIGURE 3a

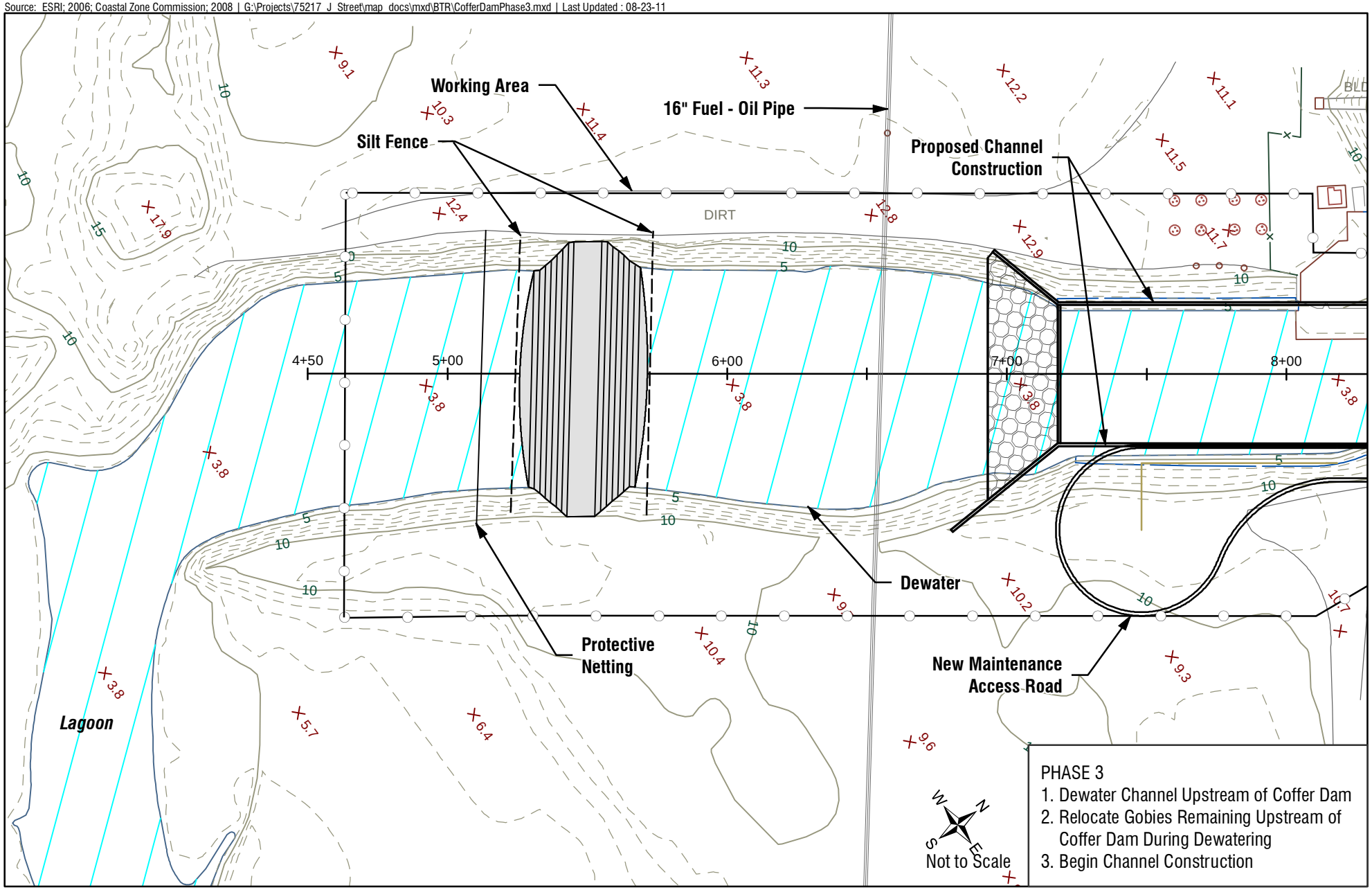
Source: ESRI; 2006; Coastal Zone Commission; 2008 | G:\Projects\75217 J Street\map docs\mxd\BTR\CofferDamConstructionPhase2.mxd | Last Updated : 08-23-2011



Coffer Dam Construction - Phase 2

FIGURE 3b

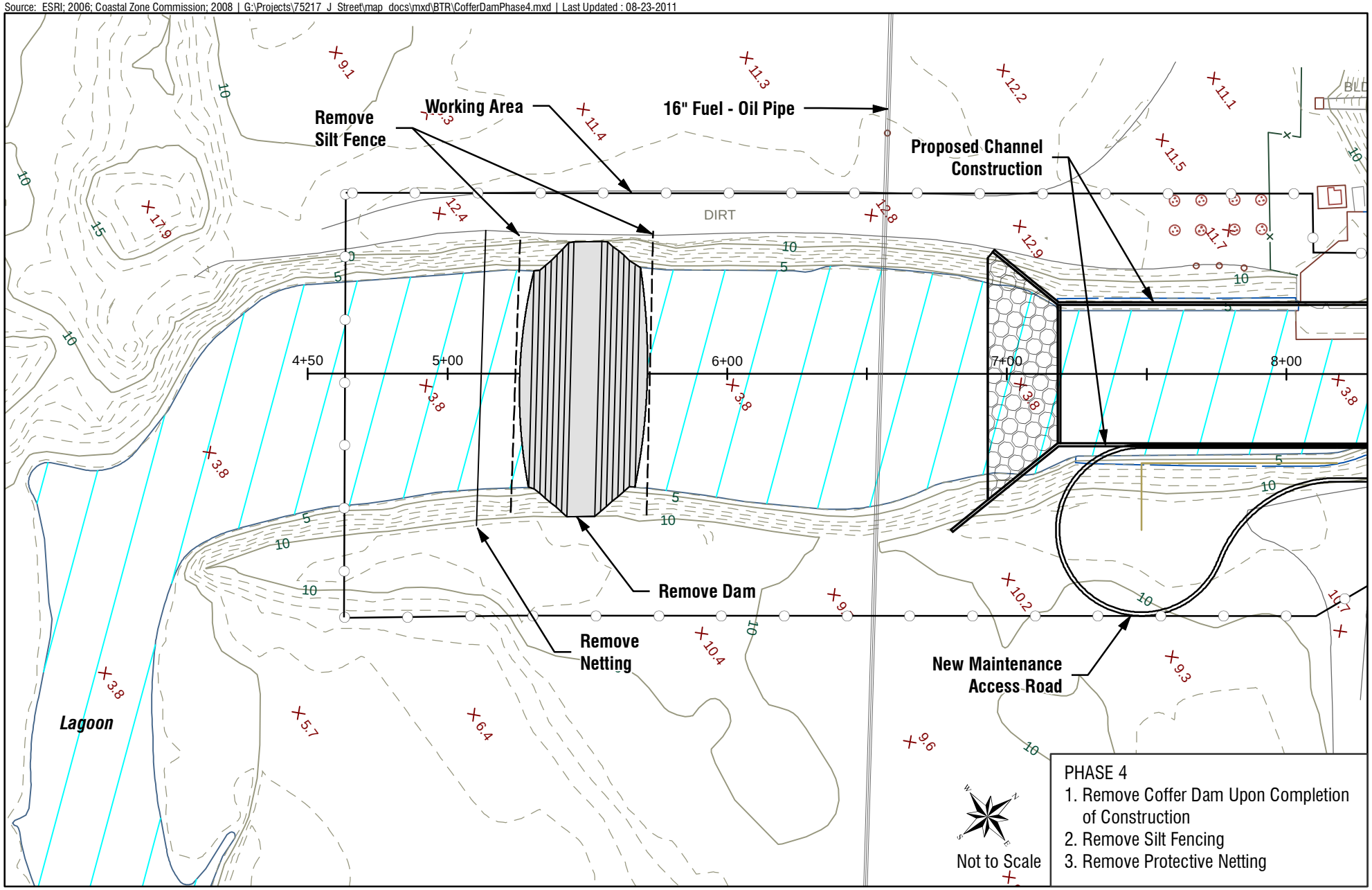
Source: ESRI; 2006; Coastal Zone Commission; 2008 | G:\Projects\75217 J Street\map docs\mxd\BTR\CofferDamPhase3.mxd | Last Updated : 08-23-11



Coffer Dam Construction - Phase 3

FIGURE 3c

Source: ESRI; 2006; Coastal Zone Commission; 2008 | G:\Projects\75217 J Street\map docs\mxd\BTR\CofferDamPhase4.mxd | Last Updated : 08-23-2011



Coffer Dam Construction - Phase 4

FIGURE 3d

The channel flow bypass will be a diversion installed to allow for any channel flow to bypass the construction area and enter the Perkins Drain. In addition, the Hueneme Drain Pump Station will pump water from the Hueneme Drain across the J Street Drain to the Perkins Drain during construction at the south end of Phase I. Once the initial construction activities of installation of groundwater wells, coffer dam, and channel bypass are completed, fish remaining within the channel section upstream of the coffer dam can be relocated and demolition can begin.

Demolition will initially start with adjacent fencing removal and landscape removal if necessary. After the permanent fencing is removed, temporary fencing will be installed along adjacent properties to limit access to the work area and ensure public safety. Demolition will consist of utilizing heavy equipment to break up and remove the concrete from the existing drain. Access to the area south of Hueneme Road will be from Hueneme Road via the District maintenance road on the east side of the drain. The contractor may decide to use the drain itself as an access way after entering the District right-of-way at Hueneme Road. The concrete will be broken on site for transport but the contractor will be required to find an appropriate location to grind the concrete further for appropriate recycling (as required by Ventura County ordinances).

After the concrete is removed, existing soil will be excavated to the appropriate dimensions for safe shoring (if necessary) and proper installation of subdrains and forms for the new drain. The excavated material will be removed by the contractor and hauled away from the site via a City-approved haul route (which is dependant on the ultimate location secured by the contractor). Some soils may remain on site for backfilling once the new drain is installed. Materials, including subdrain materials, reinforcing bar, and the concrete for the new drain will be delivered to the site via the approved access route from Hueneme Road. The work will only occur during hours approved by the City of Oxnard, which are anticipated to be from 7 am to 7 pm on weekdays.

Once each phase of the new drain is complete, the permanent perimeter fencing will be reinstalled. Any landscaping damaged outside of District easement on private property, will be replaced. Where the adjacent property is owned by the City, the landscaping will be replaced by the City under agreement with the District. Maintenance of the adjacent landscaping is the responsibility of the local jurisdiction once the materials are installed.

2.6 OPERATIONAL – BEACH ELEVATION MANAGEMENT PLAN

The Ormond Beach Lagoon inlet normally remains in a semi-closed condition due to sand accretion on Ormond Beach, but during most winters it breaches naturally to allow free outflow during storms and some high tides. These events do not drain the lagoon entirely, as urban runoff and high tides contribute fresh and salt water flows. To date, there has been one instance of the inlet remaining closed during a minor storm event and causing upstream flooding, this took place on January 18, 2010. This event flooded the OWWTP, which was at risk of releasing untreated sewage effluent into the surrounding waterways, roads, and residential properties due to electrical failure of inundated equipment. To prepare for the reoccurrence of the combination of the outlet being closed, the lagoon water surface being above a high threshold level, and a storm being forecast, a Beach Elevation Management Plan (BEMP) has been developed as part of the proposed J Street Drain project. The BEMP defines a maximum safe beach height, and provides for a coordinated response to groom the sand berm at a pre-specified location immediately prior to a predicted storm event. Implementation of the BEMP will generally occur outside of the breeding bird season between September 16 and March 14. On rare occasions, the BEMP may be implemented after March 14 with mitigation measures in place to protect breeding birds.

The purpose of the BEMP is to protect the lives and well-being of the communities and industrial facilities along J Street Drain and Ormond Beach Lagoon by maintaining downstream water levels below a predetermined safe elevation.

The BEMP is a guideline to assist the District in responding to the potential flood threat caused by persistence of the sand berm during potentially damaging storm events of varying magnitudes. It should be noted that the BEMP would be implemented when conditions warrant, which may be more than once annually, to avoid an emergency. Therefore, implementation of the BEMP would constitute a new maintenance activity associated with operation of the proposed project.

Management Procedure

The grooming would be performed by a tracked dozer designated by the O&M Deputy Director in coordination with the District Director or his/her designee. Once the O&M Deputy Director determines that the BEMP threshold criteria have been met, the dozer shall be pre-positioned at the south side parking lot of Port Hueneme Beach Park. As soon as the BEMP is enacted, the dozer operator accompanied by District environmental staff would move the dozer to the designated beach grooming location, and shave the sand berm down to the maximum safe beach elevation. The dozer access path to the groom location would be the same as the one currently used by lifeguards from Port Hueneme Beach Park. Access to the beach from this point would avoid the nesting sites used by California least terns and western snowy plovers in 2008 (Davenport 2008, Hartley 2009 and 2010, Smith 2009 and 2010). The grooming width would measure approximately100 feet parallel to the coastline. The removed sands would be placed on the beach adjacent to the groomed area. The grooming procedure would be completed within several hours, including removal of equipment from the beach. The designated grooming area would be permanently marked with rods driven deep into the sand. Elevation markings would be depicted on the rods. The grooming location would be coordinated with USFWS to limit potential impact to habitat areas.

During the grooming operation, the work site would be secured by the District to prevent interruption by or injury of the general public. Members of the Ventura County Sheriff Department or lifeguards, as well as their designees, may assume responsibility for the protective duty.

2.7 PROJECT TOPOGRAPHY

The general topographic character of the project survey area is flat with an approximately 21-foot elevation change from north to south. This area ranges in elevation from approximately 24 feet AMSL at the northern end of the project boundary to 3 feet AMSL at the southern end within the Ormond Beach Lagoon (Figure 4). The lagoon is approximately 8 feet AMSL with a depth of surrounding water from 4 to 6 feet. Beach elevation ranges from approximately 8 feet AMSL along the north to sea level at the south.

2.8 PROJECT SOILS

Historically, the project survey area was used generally for agricultural practices. Agricultural fields intruded into area wetlands in the 1920s including the Ormond Beach Lagoon and extensive drainage canals were constructed in the 1930s. In the 1950s and 60s, heavy industrial facilities were sited within wetlands associated with the Ormond Beach Lagoon, as well. Currently the project alignments traverse various types of land uses including residential and commercial. The project alignment contains eight different soil types that are mapped and listed in Figure 4. The map shows soils within 500 feet of the project boundary.

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Second | G:\Projects\75217_J_Street\map_docs\mxd\BTR\SoilMap_J_St_BTR.mxd | Last Updated : 05-25-2011

Topography and Soils

FIGURE 4

3.0 SURVEY METHODOLOGY AND LIMITATIONS

A baseline biological field survey of the project site and a portion of the surrounding area including the Ormond Lagoon (project survey area) were surveyed by HDR Senior Biologist Shannon Allen and HDR Assistant Biologist Allegra Simmons on April 28, 2008 between the hours of 0830 to 1700 and on April 29, 2008 between the hours of 0830 to 1750. Weather conditions were conducive for surveying on both days with clear skies, temperatures ranging from 65 to the low 70s, and winds between 7-9 mph. All accessible areas of the project survey area were directly examined in the field.

The purpose of the survey was to identify and delineate existing and adjacent vegetation communities, potential wildlife habitats, and locate and map (if detected), any sensitive biological resources. All vascular plants and vertebrate animals encountered during this field effort were documented and are listed in Appendices B and C. Specific on-site vegetation communities were mapped in situ using an aerial photograph (Figure 4). Due to the size and shape of the project survey area, it was necessary to divide the project into northern and southern survey areas. The northern survey area consists primarily of the existing J Street Drain, which is a concrete-lined channel, beginning at Redwood Street and continuing south to Hueneme Road (Figure 5a, Photographs 1 and 2 in Appendix A). The full length of the drain is fenced off and is bound to the east and west by residential development. The southern survey area includes an approximately 2,600-foot portion of J Street Drain that continues south of Hueneme Road and flows into the Ormond Beach Lagoon (Figure 5b, Photographs 3 through 5 in Appendix A).

3.1 LITERATURE SEARCH

A California Natural Diversity Database (CNDDB) search was conducted as part of the background research for the parcels that intersect the proposed alignment. Several sensitive wildlife species are known to occur within the project survey area such as, the California least tern (*Sterna antillarum browni*), snowy plover (*Charadrius alexandrinus nivosus*), and tidewater goby (*Eucyclogobius newberryi*). The CNDDB search did not identify any sensitive botanical species as occurring within the project survey area; however, several are known to occur within the general vicinity of the site. These include Ventura marsh milkvetch (*Astragalus pycnostachyus var. lanosissimus)*, and salt marsh bird's-beak (*Cordylanthus maritimus ssp. maritimus*). The CDFG California Wildlife Action Plan Report was reviewed for regional species status and information (UC Davis 2007). More specifically, Chapter 9, South Coast Region was reviewed as it covers the southern half of Ventura County.

Nomenclature used in this report follows Hickman (1993) and Holland (1986) for flora and vegetation. Sensitive plant status follows Skinner and Pavlik (1994), CDFG (2002), and USFWS (2008). Animal nomenclature is taken from Stebbins (2003) for reptiles and amphibians, American Ornithologist's Union (1983, as updated) for birds, and Jameson et al. (1988) for mammals.

4.0 BIOLOGICAL RESOURCES

4.1 VEGETATION COMMUNITIES

Vegetation types or plant communities are assemblages of plant species that usually coexist in the same area. The classification of vegetation communities is based upon the life form of the dominant species within that community and the associated flora. Specifically, vegetation classification systems used in this report follow those of Holland (1986). Species names follow Hickman (1993) and Roberts et al. (2004). Currently, the project survey area supports 53 plant species within the following seven vegetation communities: coastal brackish marsh, southern coastal salt marsh, open water, southern foredunes,

eucalyptus woodland, disturbed habitat, and urban developed (Figures 5a and 5b). These vegetation communities are described in Sections 4.1.1 through 4.1.7. Each vegetation community has been evaluated for its quality based on the community structure and species diversity. Habitat qualities range from low to high quality. Table 1 summarizes vegetation community acreages.

Table 1. Summary of Vegetation Communities within the Project Survey Area

Habitat Type	Existing Acreage
Coastal Brackish Marsh	2.98
Disturbed Habitat	6.76
Urban/Developed	32.44
Eucalyptus Woodland	1.18
Open Water	2.27
Southern Coastal Salt Marsh	8.26
Southern Foredune	2.6
Total	56.49

4.1.1 Coastal Brackish Marsh (Holland Code #52200)

Coastal brackish marsh (CBM) is generally located at the interior edges of coastal bays, estuaries, lagoons, and adjacent to salt marshes. CBM areas are dominated by dense coverage of perennial, emergent, herbaceous monocots up to 6 feet tall. Within the project survey area, CBM is restricted to the Ormond Beach Lagoon (Figure 5b, Photograph 6 in Appendix A). The dominant indicators in this area include cattails (*Typha angustifolia*), saltgrass (*Distichlis spicata*), and American tule (*Scirpus acutus var. occidentalis*). The marsh supports large stands of cattails and tules with pockets of open water. The habitat is considered medium to high quality; however, the area is frequently used by pedestrians, dogs, and homeless individuals.

4.1.2 Southern Coastal Salt Marsh (Holland Code #52120)

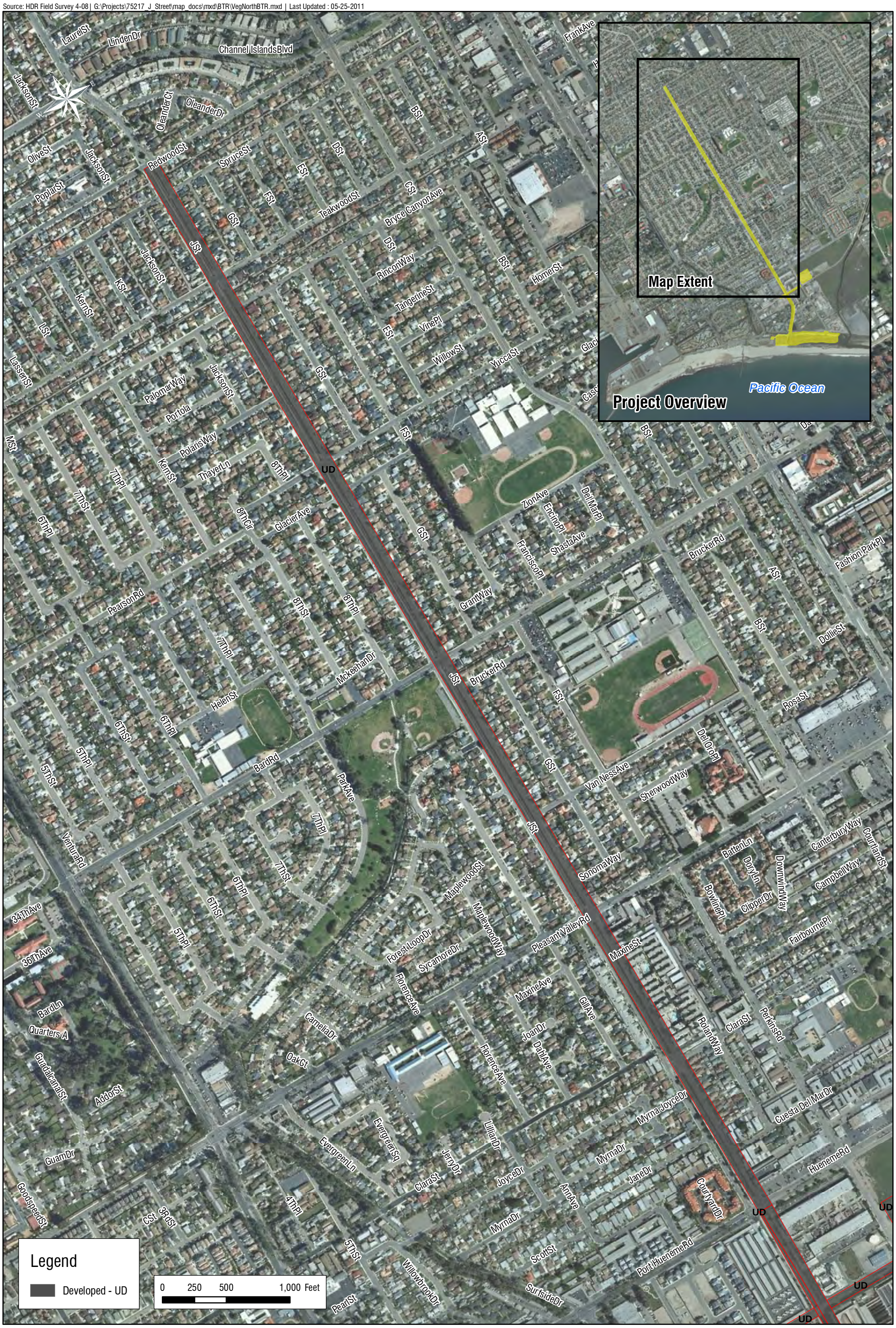
Southern coastal salt marsh (SCSM) is a highly productive, salt-tolerant vegetation community that forms a low dense herbaceous cover. A majority of the species in the community are active in the summer and dormant in the winter. This vegetation community is found along sheltered inland margins of bays, lagoons, and estuaries, which are subject to regular tidal inundation by salt water.

The northern survey area is developed and has no SCSM. The southern survey area is predominantly SCSM with indicators that include saltgrass, alkali heath (*Frankenia salina),* and beach bur (*Ambrosia bipinnatifida*) (Figure 5b, Photograph 7 in Appendix A). The vegetation community is considered medium to high quality.

4.1.3 Open Water (Holland Code #13100)

Open water (OW) is usually associated with areas such as bays, lagoons, salt marsh, freshwater marsh and areas that receive high amounts of moisture. These areas generally lack emergent vegetation.

Source: HDR Field Survey 4-08 | G:\Projects\75217_J_Street\map_docs\mxd\BTR\VegNorthBTR.mxd | Last Updated : 05-25-2011



Northern Survey Area - Vegetation

FIGURE 5a

Source: HDR Field Survey 4-08; Google Earth 2008 | G:\Projects\75217_J_Street\map_docs\mxd\BTR\VegSouthBTR.mxd | Last Updated : 08-15-2011

Southern Survey Area - Vegetation

FIGURE 5b

The northern survey area has no OW. The southern survey area has several large areas of OW. These are generally located within the southern portion of the J Street channel and Ormond Beach Lagoon (Figure 5b, Photographs 5, 6, and 9 in Appendix A). OW is also associated with a manmade canal located along the northern and northwestern boundary of the lagoon. As previously mentioned in Section 4.1.1, OW occurs within the central portion of the CBM. The OW is medium quality habitat.

4.1.4 Southern Foredune (Holland Code #21230)

Similar to active coastal dunes, southern foredunes (SFD) have relatively favorable conditions that allow for the establishment of plants, which reduce the amount of blow sand and partially stabilize the dunes. Groundwater is generally more available for SFD than for active coastal dunes, which supports vegetative cover.

The northern survey area has no SFD. In the southern survey area, several patches of vegetation qualify as SFD (Figure 5b). These are specifically located along the northern and northwestern boundaries of the Ormond Beach Lagoon (Photograph 8 in Appendix A). Indicators in this community include beach bur, beach suncup (*Camissonia cheiranthifolia*) and in some areas, salt grass and Indian sweet clover (*Melilotus indicus*). The northwestern SFD is high quality while the northern patches are of a more disturbed nature (i.e., foot traffic) and would be considered medium quality.

4.1.5 Eucalyptus Woodland (Holland Code #11100)

EW is usually associated with landscaped areas around homes or roadways. The primary indicator in EW is eucalyptus (*Eucalyptus* spp.), which is a non-native tree species from Australia. The understory is sparse and mostly dominated by leaf litter and weedy species including brome grasses (*Bromus spp.*) and tocalote (*Centaurea melitensis*).

The northern survey area has several large eucalyptus trees which line the concrete channel. However, these single individuals do not qualify as woodland and are not mapped as such. Instead, these are identified on the tree map (Figure 6). Located within the southern survey area, two relatively small patches of eucalyptus woodland (EW) line the existing J Street channel (Figure 5b). These EW patches occur on the east and west sides of the drain located south of Hueneme Road (Photograph 9 in Appendix A). EW is considered medium quality vegetation as it provides potential roosting and nesting habitat for raptors.

4.1.6 Disturbed Habitat (Holland Code #11300)

Disturbed Habitat (DH) is defined as areas of native vegetation that have been impacted by grading, dumping, or any other human related impact that disturbs the vegetation. DH occurs primarily along the eastern border and in the northwestern portion of the southern survey area (Figures 5a and 5b, Photograph 10 in Appendix A). This area has been disturbed primarily by the use of motor vehicles, which has promoted the growth of invasive weedy species such as brome grasses, hottentot fig (*Carpobrotus edulis*), and Mediterranean mustard (*Hirschfeldia incana*). Disturbance in portions of these areas has compacted the soils. Past dredging efforts within the canal in the Ormond Lagoon have resulted in the disposal of fill dirt in the northwestern portion of the lagoon. This accumulation of fill dirt has raised the elevation of the site, thereby changing the access to ground water for native marsh plant species. Consequently, this area has been replaced by weedy species such as Mediterranean mustard, and Indian sweet clover. This vegetation is considered low quality.

4.1.7 Urban/Developed (Holland Code #12000)

The entire northern survey area is located amongst urban/developed (UD) land uses, including streets, residences, and businesses (Figure 5a). The project alignment located within the northern survey area consists of a concrete lined channel, this area is considered UD. Within the southern survey area, UD occurs as the continuation of J Street channel (Figure 4). This habitat generally consists of weedy and ornamental plant species, such as bromes and oleander (*Nerium oleander)*. UD does not occur within the lagoon portion of the survey area. These UD areas have no biological resource value.

4.2 BOTANICAL SPECIES

Fifty-three vascular plant species were observed during the survey (Appendix B). The plants detected are representative of CBM, SCSM, SFD, and DH, and are relatively common in this area. Sensitive plant species were not observed during the general biological survey conducted in April 2008. This is discussed in detail in Section 6.0, Sensitive Biological Resources, of this report.

4.3 WILDLIFE SPECIES

Twenty-six wildlife species were observed during the survey, either directly or as a result of signs of occupancy (tracks, scats, etc.) (Appendix C). The fauna observed on-site are representative of CBM, SCSM, SFD, and DH. Sensitive species detected on or adjacent to the site are discussed in detail in Section 6.0, Sensitive Biological Resources. Additional protocol surveys were conducted for California least tern, western snowy plover, and light-footed clapper rail (Appendix D).

4.3.1 Potential and Known Fish Species

The Project Completion Report (2007) prepared for the Hueneme Pump Station Reconstruction Project identified several fish species known to inhabit the Ormond Beach Lagoon and J Street Drain. These species include tidewater goby (*Eucyclogobius newberryi*), topsmelt (*Antherinops affinis*), sailfin molly (*Poecilia latipinna*), California killifish (*Fundulus* parvipinnis), staghorn sculpin (*Leptocottus* armatus), striped mullet (*Mugil cephalus*), common carp (*Cyprinus carpio*), western mosquitofish (*Gambusia affinis*), goldfish (*Carassius auratus*), green sunfish (*Lepomis* cyanellus), long-jawed mudsucker (*Gillichthys mirabilis*), rainwater killifish (*Lucania parva*), and crayfish (*Procambarus clarki*). The tidewater goby is the only sensitive fish species known to occur within or in the vicinity of J Street Drain. This species is discussed further in Section 6.3, Sensitive Wildlife Species. During the HDR general biological survey, no fish species were identified.

4.4 RAPTOR HABITAT, NESTING, AND FORAGING

Several species of migratory birds were observed during the general biological survey (Appendix C), specifically within the southern survey area. However, during the general biological survey, nesting and foraging raptors were not observed. Within the lagoon portion of the project area, open space provides foraging habitat for raptors. Along the project alignment, larger individual trees would provide nesting habitat for raptors.

5.0 U.S. ARMY CORPS OF ENGINEERS AND CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTIONAL AREAS

The project survey area contains three vegetation communities including CBM, SCSM, and OW which are generally considered U.S. Army Corps of Engineers (USACE) and/or CDFG jurisdictional areas. In addition, the project survey area contains portions of UD habitat that is considered waters of the United States and waters of the State associated with the Drain. In order to delineate state and federal jurisdictional areas within the project alignment, a jurisdictional delineation was conducted by HDR Engineering, Inc. (Appendix E). Jurisdictional areas that occur within the project survey area are summarized in Table 2.

Table 2. Summary of USACE, CDFG, and CCC Jurisdictional Areas

Federal/State Jurisdictional Areas	Existing Acres (Project Survey Area)
Federal Waters of the U.S. and Waters of the State - Concrete Channel	7.9
Federal Waters of the U.S. and Waters of the State - Natural Substrate	2.73
Federal Wetlands	6.83
CDFG Wetlands	10.92
CCC Jurisdictional Areas[1]	15.73
Total	N/A

[1] Within the project survey area, a portion of USACE and CDFG jurisdictional areas occur within the Coastal Zone. As identified in Section 5.1 below, the CCC wetland definition requires at least *one* of the parameters required by the USACE and CDFG. Approximately 15.73 USACE and CDFG jurisdictional areas located within the Coastal Zone are considered CCC jurisdictional areas.

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Beach elevation maintenance would occur within the high tide line (HTL) which is used to delineate the upper boundary of USACE jurisdiction. The HTL is identified on Figure 11. The BEMP would not occur within CDFG jurisdictional areas.

5.1 Coastal Commission Jurisdictional Areas

In addition, all wetlands located within the project survey area are within the jurisdictional boundaries of the California Coastal Commission (CCC) (Table 2). The CCC relies on the definition of "wetland" as set forth in Section 30121 of the Coastal Act which states:

> *"Wetland" pertains to 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.*

The CCC Administrative Regulations (Sections 13577 (b)) provides a more explicit definition:

> *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 Coastal Zone extends from south of Hueneme Road to the Pacific Ocean. Thus, the portion of the proposed project located south of Hueneme Road is within CCC jurisdiction. The project survey area includes USACE and CDFG jurisdictional areas within the Coastal Zone. As identified above, the CCC wetland definition requires at least *one* of the parameters required by the USACE and CDFG. Therefore, USACE and CDFG jurisdictional areas located within the Coastal Zone are considered CCC jurisdictional areas.

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Beach elevation maintenance will occur within CCC jurisdiction.

6.0 SENSITIVE BIOLOGICAL RESOURCES

The following sections summarize the sensitive vegetation communities, and botanical and wildlife species that occur or have the potential to occur within the survey areas.

6.1 SENSITIVE VEGETATION COMMUNITIES

Vegetation communities (habitats) are generally considered "sensitive" if: (a) they are considered rare within the region by various agencies including USFWS, CDFG, and other local agencies; (b) if they are known to support sensitive animal or plant species; and/or (c) they are known to serve as important wildlife corridors. Sensitive habitats are typically depleted throughout their known ranges, or are highly localized, and/or fragmented. The project survey area contains four sensitive vegetation communities: CBM, SCSM, OW, and SFD as defined under definitions (a) through (c) discussed above.

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP Access Area does not support sensitive vegetation communities.

6.2 SENSITIVE BOTANICAL SPECIES

Sensitive plants include any and all those listed by USFWS and CDFG, candidates for listing by the USFWS and CDFG, and/or are considered sensitive by the CDFG, and/or the California Native Plant Society (CNPS). Sensitive plants also include the categories of rare and narrow endemic. The general biological survey was conducted in early spring (April). A summary of the potential species that could occur in the survey areas are provided in Appendix F. The table includes the plant species, suitable habitat, and the potential for the species to occur on site. During the general biological survey no sensitive plant species were identified; however, potential habitat occurs on-site for the Ventura marsh milk vetch

and salt marsh bird's beak. These two plant species are found in coastal dunes, marshes, and swamps and require well drained soils in areas with high water tables. The well drained sandy soils of the lagoon area and adjacent sand dunes combined with the high water table provides potential habitat for the species.

Within Ventura County, several tree species are considered sensitive and are protected by the Ventura County Tree Ordinance. Although the City of Oxnard does not have a specific tree protection ordinance, a general tree survey was conducted to identify and map individual trees occurring within/adjacent to the project area (Figure 6). Four tree species were identified within/adjacent to the project area and include ash (*Fraxinus sp.*), Brazilian peppertree (*Schinus terebinthifolius*), various eucalyptus (*eucalyptus spp*), and Mexican fan palm (*Washingtonia robusta*) (Appendix B).

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP Access Area does not support sensitive plant species.

6.3 SENSITIVE WILDLIFE SPECIES

Sensitive animals are species or subspecies listed as threatened, endangered, or being evaluated (proposed) for listing by the USFWS and by the CDFG, and/or are considered sensitive by the CDFG. A sensitive designation includes those listed as rare or of "Special Concern," and includes a number of migratory bird species as protected under the Migratory Bird Treaty Act (MBTA). A CNDDB search identified the following sensitive wildlife species with the potential to occur within the J Street Drain area: California least tern, snowy plover, light-footed clapper rail, and tidewater goby. In addition, over 60 brown pelicans were observed using the lagoon during the general biological survey for the project. These species are also discussed in Appendix F.

Belding's Savannah Sparrow

Federal Status: Candidate
State Status: Endangered

Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) was designated in 1974 by the state of California as a state-listed endangered species and by the USFWS as a category two candidate for classification as an endangered or threatened species under the Federal Endangered Species Act. Endemic to salt marshes, this species resides year round in the SCSM of Southern California from Goleta in Santa Barbara County south to El Rosario, Baja California Mexico (American Ornithologist Union 2000).

SCSM dominated by pickleweed (*Salicornia* sp.) characterize Belding's savannah sparrow nesting habitat. Belding's savannah sparrow forage on the succulent buds of pickleweed, females use the twigs for nest building, and males use the plant as song perches (Massey 1979). Tidal influence is required to maintain salt marsh vegetation and hydrology in order to keep upland plants and birds from replacing Belding's savannah sparrow and its habitat (Zembal and Hoffman 2002). Breeding territories can be very small and nesting birds may be clumped together in a near colonial fashion. The semi-colonial manner in which Belding's savannah sparrow nest is a result of their specific habitat requirement for monotypic stands of pickleweed. Belding's savannah sparrow nest only within pickleweed patches; however, foraging often occurs relatively far from established breeding territories. Due to limited availability of suitable pickleweed stands, nests are generally clustered in proximity to each other.

No Belding's savannah sparrows were identified within the project area during any of the biological field surveys conducted for the proposed project. Given the number and timing of survey activities, Belding's savannah sparrow should have been detected if it was breeding within the survey area. Therefore, since no Belding's savannah sparrows were identified at the time of survey, it is not anticipated that this species would occur within the project area.

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. It is not anticipated that Belding's savannah sparrow would occur within the BEMP access area.

California Brown Pelican

Federal Status: Formerly Endangered, delisted December 17, 2009
State Status: Formerly Endangered, delisted June 3, 2009

California brown pelicans are large birds with adults weighing about 4.5 to 11 pounds and having a wingspan of over 2 meters. California brown pelicans are smaller than white ones, but California brown pelicans are larger than other browns. Adults are large, grayish-brown birds with long, pouched bills. They have a white or yellowish head and dark body. Immature birds are dark with a white belly (USFWS 2008).

The California brown pelican is a warm weather species that thrives near coasts and on islands. They generally use the rocky islands along the California coast for their group, or "colonial," nest sites. These islands typically feature steep, rocky slopes with little vegetation, and they must be without terrestrial predators or human disturbances. Nearby high quality marine habitat is also essential. Pelicans generally rely in part on the actions of marine predators such as sharks, salmon, and dolphins to force schools of fish to the surface where the pelicans can catch them. Pelicans will breed only in areas with enough food to support the breeding colony. Roosting and resting, or "loafing," sites where brown pelicans can dry their feathers and rest without disturbance are also important (USFWS 1983).

Brown pelicans build large, bulky nests on the ground or in bushes and lay an average of three eggs, which the parents take turns tending during the incubation process. Pelicans are known to live for approximately 30 years, but the average may be much less than that due to predation, disease, starvation, etc. Brown pelicans received severe exposure to DDT and other contaminants through consumption of contaminated fish. As was the case with many birds, this exposure resulted in the production of eggs with thin eggshells that were unable to withstand the weight of the parent during incubation, resulting in crushed eggs instead of healthy chicks. As a consequence, the number of chicks produced each year declined dramatically, and the population was severely reduced (USFWS 1983).

Other factors, including local food shortages and human disturbance, also contributed to the decline of the species. Pelicans require undisturbed habitat and abundant supplies of fish, particularly during the breeding season. If nesting pelicans are startled while on the nest, their abrupt departure often crushes their eggs. If sufficient food supplies are not readily available, pelicans will abandon breeding colonies. Factors contributing to decreased food availability include commercial fishing and naturally-occurring increases in ocean water temperature (USFWS 1983). California brown pelicans were observed within the project survey area and are discussed further in Section 9.1.3, Sensitive Wildlife Species.

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Although brown pelican are known to bask approximately 900 feet to the south of the beach elevation maintenance area, they do not nest in the vicinity.

California Least Tern

Federal Status: Endangered
State Status: Endangered

The California least tern is our smallest tern and measures approximately 9 inches long. Adult birds have a light gray back and a black cap and nape; their forehead is white. Adult birds have an orange-yellow bill with a dark tip. In contrast, first summer birds have dark feet and bill.

Between San Francisco Bay and San Diego Bay, the California least tern is anticipated to occur throughout the coastal zone of California. California least terns commonly forage in coastal wetlands, bays, and near the surf zone. Additionally, the species has been observed foraging in fresh water along Southern California rivers such as the Santa Margarita and San Luis Rey Rivers (Davenport 2007). This species nests on coastal sandy bare areas; e.g., beaches, sand bars, and salt flats.

Based on the annual breeding season survey of California least terns, four general sites were monitored in Ventura County during the 2007 nesting season (Marschalek 2008). The monitored sites include McGrath State Beach, Ormond Beach, Hollywood Beach, and Point Mugu. At Ormond Beach, a maximum of 50 pairs of California least terns were documented in 2007. Based on the 1993 annual breeding season survey (Caffrey 1994), the Ormond Beach site was divided into three sites; Perkins, Middle, and Edison. During the 1993 nesting season, 14 pairs of California least terns were observed at the Edison site and three pairs observed at the Perkins site. The Ormond Beach site of 2007 appears to coincide with what was called the Edison site during the 1993 survey. Based on Marschalek (2008), the Perkins Site does not appear to have been monitored in 2007. However, during the 2007 nesting season, two nests were observed on the beach, seaward of the J Street Estuary (Smith 2008). In 2009, surveys documented 44 nests. Thirty-five nests hatched young and 24 fledglings were recorded. All of these nests were west of the Reliant power plant with three located on the narrow strip of beach between the J street estuary and the outer beach (Smith 2009). In 2010, surveys documented 48 nests. Thirty-five nests hatched young and 14 fledglings were recorded. All but one of these nests were well east of the project area, in the vicinity of the Reliant power plant (Smith 2010). Although the species is federally listed, critical habitat has not been designated by the USFWS.

A focused California least tern survey was conducted in the southern survey area (Appendix D). During the survey, California least terns were not observed nesting within the project survey area. Due to the heavy disturbance occurring within the project survey area (i.e., pedestrian traffic, domestic animals), it is unlikely that California least terns would attempt to nest there. However, California least terns were identified using the dune habitat located south of the project survey area and across the lagoon (Figure 7).

Nests with un-hatched eggs were observed within the dune habitat adjacent to the project survey area. The entire lagoon, including the project survey area, is heavily used by foraging California least terns that are feeding nestlings and fledglings. According to the Programmatic Biological Opinion prepared for the Hueneme and J Street Drain Reconstruction, California least terns that nest at Ormond Beach arrive in early to mid-May, and all summer residents and migrating terns leave the area by late August to mid-

September. California least terns forage over Ormond Beach Lagoon and the ocean immediately offshore during their seasonal migrations and during breeding (USFWS 2004).

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP access and maintenance area occurs within known foraging habitat for the California least tern and adjacent to known nesting habitat for the California least tern.

Western Snowy Plover

Federal Status: Threatened
State Status: None

In Southern California, the western snowy plover is our smallest plover and is approximately 6 inches long. The snowy plover is very pale in coloration and has a partial breast band and a dark ear patch. This species is active during the day (Davenport 2007).

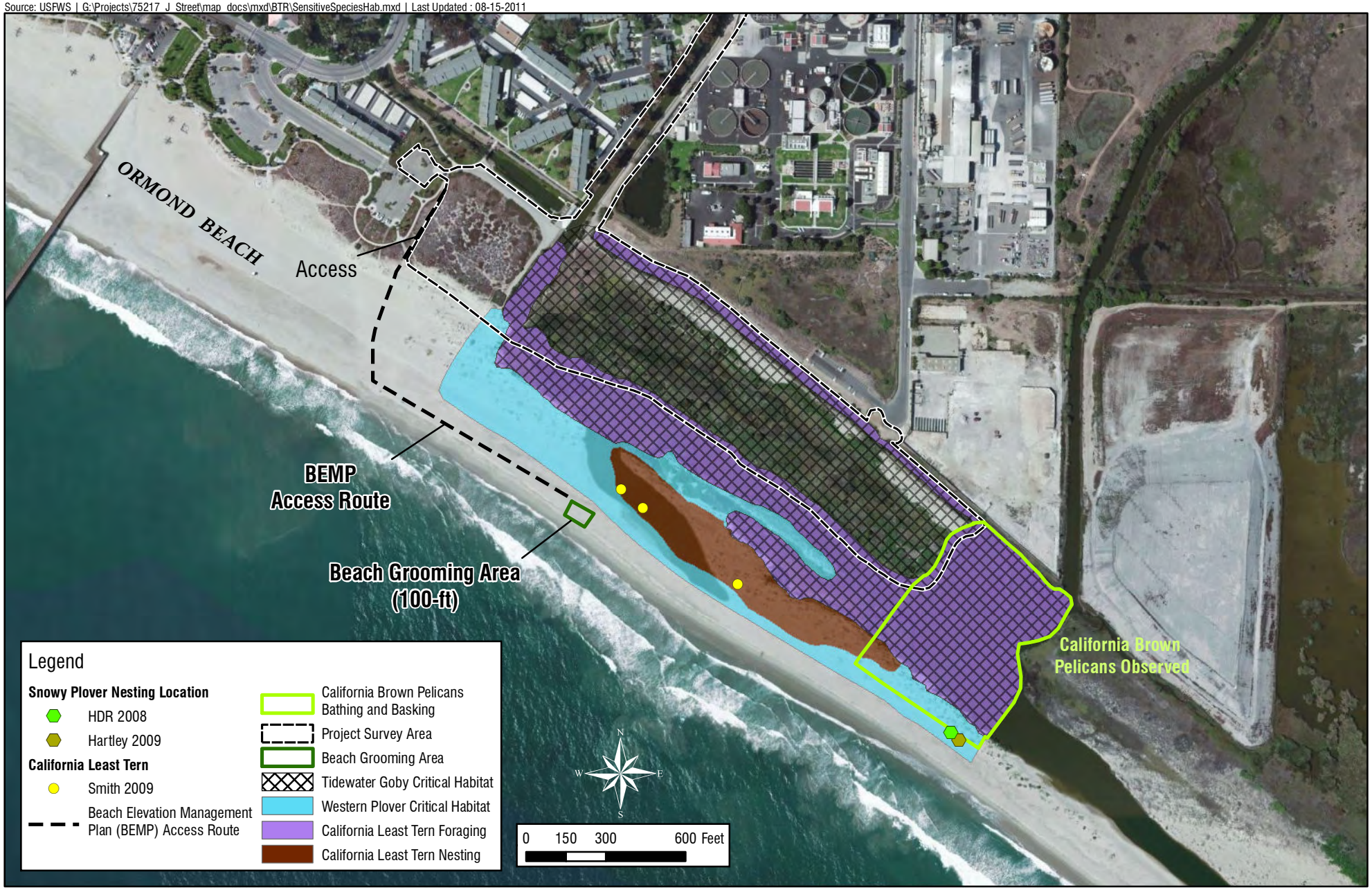
Based on museum records in the United States, the western snowy plover breeds along the west coast from Washington to California, and includes some inland localities. The distribution of western snowy plovers continues along the west coast into Baja California, Mexico (USFWS 2007). Western snowy plovers inhabit sandy beaches, mud flats, and saltpans. They nest in the upper reaches of beaches, flats, and pans above the ordinary high water mark. During the early 1980s, within Southern California, the snowy plover was considered fairly common, but somewhat local and declining (Garrett and Dunn 1981). Based on information compiled by the Point Reyes Bird Observatory (PRBO), 117 western snowy plovers were documented at Ormond Beach during the 2004-2005 winter season (PRBO, unpublished winter survey data, 2006). Unfortunately, the data was not separated into specific locations. Thus, it cannot be determined where at Ormond Beach the birds were observed.

Based on breeding season data, an average of 20 western snowy plovers were observed at Ormond Beach during the 2007 breeding season. In addition, 19 nests were observed during the 2007 breeding season (Gocal 2008). None of the 19 nests observed in 2007, were located within the project area.

Based on information held in the California Natural Diversity Data Base, nesting western snowy plovers have been documented adjacent to Ormond Lagoon (CDFG 2007). One of the records (Occurrence No. 39) indicated that a general nesting area of western snowy plovers is located approximately 1.5 miles southwest of Port Hueneme. At this general location, numerous nests have been documented. Other nesting western snowy plovers have been documented just north of the inlet to the Channel Island Harbor, four miles southwest of Oxnard (Occurrence No. 123). Breeding season surveys of Ormond Beach were conducted in 2009 and 2010 (Appendix H). In 2009, 33 nests were recorded of which 18 successfully hatched. All but one are east of the lagoon (Hartley 2009). In 2010, 27 nests were recorded of which 19 successfully hatched. All are east of the lagoon in the vicinity of the Reliant power plant. Ten nests were located northwest of the plant, 12 nests were on the southeast side, and 5 nests were found in the salt panne east of the plant (Hartley 2010).

Suitable habitat for western snowy plover occurs within and adjacent to the southern survey area. In 2005, the USFWS designated critical habitat for the plover at Ormond Beach (CA-19B subunit) (USFWS 2005). Ormond Beach is located west and adjacent to the project survey area. However, in 2005, USFWS removed a portion of Ormond Beach from the critical habitat designation for the plover.

Source: USFWS | G:\Projects\75217 J Street\map docs\mxd\BTR\SensitiveSpeciesHab.mxd | Last Updated : 08-15-2011



Critical Habitat and Observed Sensitive Wildlife Species

FIGURE 7

Specifically, the area extending from the J Street drainage north to the southern jetty of Port Hueneme due to the heavily disturbed nature of the area (Figure 6). According to the Programmatic Biological Opinion prepared for the Hueneme and J Street Drain Reconstruction, western snowy plovers are known to use Ormond Beach to breed and forage from Arnold Road to the Perkins Road estuary, which is adjacent to the eastern project survey boundary (USFWS 2004). A focused survey was conducted for this species and none were identified within the project survey area. The absence of nesting plover within the project survey area is likely due to heavy disturbance occurring within the lagoon area (i.e., pedestrian traffic, domestic animals). Nesting plovers were observed adjacent to the project survey area on the west side of the Ormond Beach Lagoon (Figure 7). The survey is discussed in further detail in Appendix D.

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP access route and maintenance area occurs within designated critical habitat for the western snowy plover and provides potential breeding and foraging habitat but is located approximately 1,200 feet north of the two most recent nest observations.

Light-footed Clapper Rail

Federal Status: Endangered
State Status: Endangered

The light-footed clapper rail (*Rallus longirostris levipes*) is large compared to other rails in coastal, Southern California (approximately 14 inches long). The plumage of this species is variable. However, the brown feathers on the back typically have grayish edges. The cheeks of the light-footed clapper rail are brownish gray. The light-footed clapper rail vocalizes mainly at dusk and dawn; but may be heard at any time during the day or night.

Suitable habitat for the rail occurs within most of the coastal fresh and saltwater marshes of central to Southern California. Although most records of this species occur within chord grass (*Spartina* sp.*)* and, pickleweed (*Salicornia* sp.*)* dominated marshes, this species also uses cattail (*Typha latifolia)* and bulrush (*Scirpus* sp.) dominated freshwater and brackish marshes.

The migratory behavior of clapper rails is poorly known. Most populations of clapper rails are considered non-migratory (Eddleman and Conway 1998). However, populations located in the northeast are largely migratory (Stewart 1954, Meanley 1985, and Sibley 1993 as in Eddleman and Conway 1998). The light-footed clapper rail is apparently a non-migratory resident of coastal salt and freshwater marshes (USFWS 1985). However, dispersal movements of up to 21 kilometers have been documented (Zembal et al. 1985). Therefore, some flexibility in mobility should be anticipated for the light-footed clapper rail. Flexibility in movement between suitable sites is also supported by the presence of just one subspecies of clapper rail from Santa Barbara County, California to San Quintine Bay, Baja California, Mexico (USFWS 1985).

Based on the annual breeding season survey of the light-footed clapper rail, Ormond Beach lagoon has not been monitored for this species (Zembal et al. 2007). Based on this report, the closest monitored population of light-footed clapper rails occurs at Point Mugu. From 2000 to 2007, the population of rails at Point Mugu has ranged between 7 and 17 individuals. Pair status remains unknown at Point Mugu.

A protocol survey for the light-footed clapper rail was conducted within the southern survey area between April 2008 and June 2008. Although suitable nesting and foraging habitat for the species occurs within the project survey area (Figure 8 and Appendix D), none were observed during the protocol survey.

BEMP Access Area

The BEMP access route and maintenance area does not occur within suitable habitat for the light-footed clapper rail.

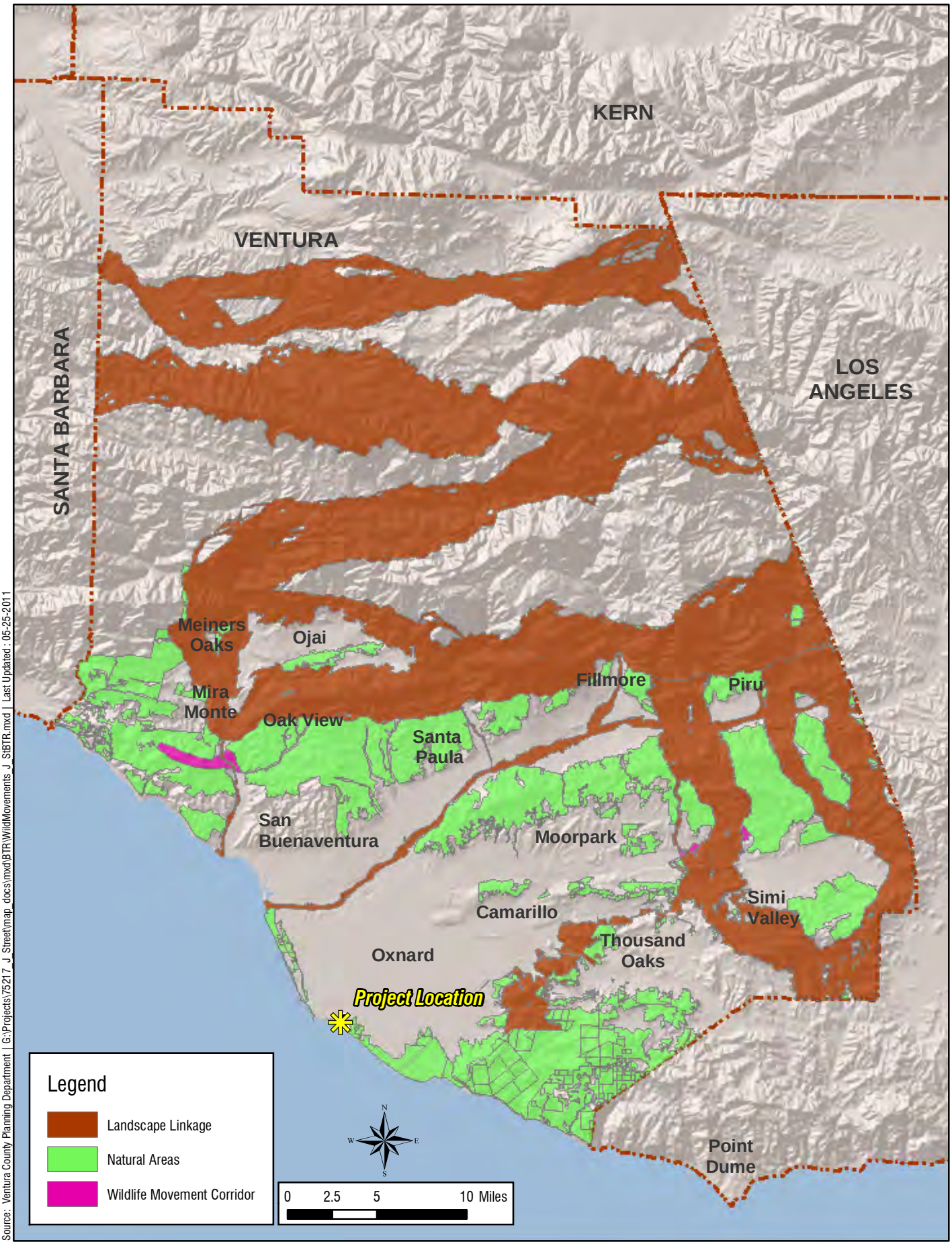
Tidewater Goby

Federal Status: Endangered
State Status: Species of Special Concern

The tidewater goby (*Eucyclogobius newberryi*) is a small, elongate, grey-brown fish with dusky fins not exceeding 50 millimeters standard length (mm SL). The species, which is endemic to California, is typically found in coastal lagoons, estuaries, and marshes with relatively low salinities (approximately ten parts per thousand [ppt]). Its habitat is characterized by brackish shallow lagoons (1 to 2 meters) and lower stream reaches where the water is fairly still but not stagnant. Tidewater gobies enter marine environments if sandbars are breached during storm events. The species' tolerance of high salinities (up to 60 ppt for shorter time-periods) likely enables it to withstand the marine environment, allowing it to colonize or reestablish in lagoons and estuaries following flood events (USFWS 2007).

The tidewater goby is primarily an annual species in central and Southern California. Reproduction peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and rainfall. Male gobies create burrows where one female enters for 1-3 days. Fertilized eggs are attached to a burrow wall and left by the females. Male gobies guard and tend to the embryos for 9-11 days. Once the embryos hatch they take on a planktonic form and the male goby abandons the young. Young gobies become benthic again when they reach a standard length of 16-18 mm (Regents 2003).

Historically, the tidewater goby occurred in at least 110 California coastal lagoons from Tillas Slough near the Oregon border to Agua Hedionda Lagoon in northern San Diego County. The southern extent of its distribution has been reduced by approximately eight miles. The species is currently known to occur in about 85 locations, although the number of sites fluctuates with climatic conditions. Today, the most stable populations are in lagoons and estuaries of intermediate sizes (2 to 50 hectares) that have remained relatively unaffected by human activities. The decline of the tidewater goby can be attributed primarily to urban, agricultural, and industrial development in and surrounding the coastal wetlands and alteration of habitats from seasonally closed lagoons to tidal bays and harbors. Some extirpations are believed to be related to pollution, upstream water diversions, and the introduction of exotic fish species (most notably sunfishes and black basses [*Centrarchidae*]). These threats continue to affect some of the remaining populations of tidewater gobies. Tidewater gobies have recently been observed in Mugu Lagoon, Ventura County, from which this species was previously presumed extirpated due to degraded water quality. Stable tidewater goby populations have persisted over time, in other waterbodies (e.g., Santa Clara River, Ventura County) (Personal communication with USFWS 2011).



Wildlife Movement Areas

FIGURE 8

The Ormond Beach Lagoon is designated as critical habitat for the tidewater goby (USFWS 2008). The recovery plan for tidewater goby identified that the species has occupied this area as recently as 2004 (USFWS 2005). This species was observed in J Street Drain, adjacent to the Hueneme Drain Pump Station, during reconstruction of the pump station in 2005 and 2006. The southernmost portion of the project, located at the outlet of J Street Drain to the lagoon, occurs within the critical habitat (Figure 6).

BEMP Access Area

The access route to and on the beach for the beach elevation management activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP access route and maintenance area does not occur within suitable habitat for tidewater goby.

7.0 WILDLIFE DISPERSAL CORRIDOR OR LINKAGES

Wildlife movement corridors, also called dispersal corridors or landscape linkages, are linear features whose primary wildlife function is to connect at least two significant habitat areas (Beier and Loe 1992). Other definitions of corridors and linkages are as follows:

1. A corridor is a specific route that is used for movement and migration of species. A corridor may be different from a linkage because it represents a smaller or narrower avenue for movement. "Linkage" shall mean an area of land that supports or contributes to the long-term movement of wildlife and genetic material.
2. A linkage is a habitat area that provides connectivity between habitat patches as well as year-round foraging, reproduction, and dispersal habitat for resident plants and animals.

Wildlife corridors and linkages are important features in the landscape, and the viability and quality of a corridor or linkage are dependent upon site-specific factors. Topography and vegetative cover are important factors for corridors and linkages. These factors should provide cover for both predator and prey species. They should direct animals to areas of contiguous open space or resources and away from humans and development. The corridor or linkage should be buffered from human encroachment and other disturbances (e.g., light, loud noises, domestic animals) associated with developed areas that have caused habitat fragmentation (Schweiger et al. 2000). Wildlife corridors and linkages may function at various levels depending upon these factors and, as such, the most successful of wildlife corridors and linkages would accommodate all or most of the necessary life requirements of predator and prey species.

Width and connectivity are assumed to be the primary factors of a good corridor (Forman 1987). With that connectivity should also be included the concept of stepping stone reserves for pollinators, seed dispersers, and other flying species such as birds, bats, and insects (Soulé 2003). The level of connectivity needed to maintain a population of a particular species would vary with the demography of the population, including population size, survival and birth rates, and genetic factors such as the level of inbreeding and genetic variance (Rosenberg et al. 1997). Areas not considered as functional wildlife dispersal corridors or linkages are typically obstructed or isolated by concentrated development and heavily traveled roads, known as chokepoints. One of the worst scenarios for dispersing wildlife occurs when a large block of habitat leads animals into cul-de-sacs of habitat surrounded by development. These habitat cul-de-sacs frequently result in adverse human/animal interface.

No regional biological corridors or linkages were identified within the project alignment (Figure 8). Therefore, no identified corridors or linkages would be impacted by project implementation. However, the lagoon portion of the project area is considered a natural area by the Ventura County General Plan.

This natural area, consisting of coastal wetlands and lagoons, provides shelter, forage, and nesting areas for birds, fish, mollusks, crabs, seals, and other marine organisms and plants (Ventura County General Plan Section 1.5). The Ormond Beach Lagoon, and adjacent dune/beach area, is staging area for migratory birds, such as the California least tern, killdeer (*Charadrius vociferus*), and black-necked stilt (*Himantopus mexicanus*). In addition, the Lagoon could provide a potential local corridor for tidewater goby as they are known to disperse to other lagoons during major storm events if their current lagoon is breached. Due to project implementation, a small area of natural areas could be impacted.

8.0 OTHER REGULATORY REQUIREMENTS

8.1 RAPTOR HABITAT, NESTING, AND FORAGING (MBTA)

The Migratory Bird Treaty Act (MBTA) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (C.F.R.) Part 10, including feathers, or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3505, 3503.5, and 3800 of the CDFG Code also prohibit the take, possession, or destruction of birds, their nests, or eggs. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take and is potentially punishable by fines or imprisonment (CDFG 1995).

8.2 CITY OF OXNARD GENERAL PLAN

The Open Space Element was first required to be a part of city and county general plans in 1973. With the exception of the Land Use Element, the Open Space Element is broadest in scope. The Open Space Element overlaps the issues of agriculture, natural resources, recreation, and enjoyment of scenic beauty discussed in the Land Use Element; the concern for preservation of natural resources and managed production of resources discussed in the Conservation Element; and the question of open space for public health and safety discussed in the Safety Element.

The Conservation Element has also been required since 1973 for the purpose of establishing a management plan for natural resources to prevent waste, destruction and neglect. It provides for the "conservation, development and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals and other natural resources."

Local Coastal Program

The City has an adopted Local Coastal Program consisting of a Coastal Land Use Plan and Coastal Zoning Regulations and Maps. The Coastal Zone boundary extends generally 1,000 yards inland from the sea. The Coastal Zone has been divided into four planning areas: McGrath/Mandalay Beach, Oxnard Shores, Channel Islands and Ormond Beach. Recreational uses are predominant in the McGrath/ Mandalay area; urban residential uses are concentrated in the Oxnard Shores area. The Channel Islands area contains the Channel Islands Harbor. The Ormond Beach area is separated from the rest of the City's Coastal Zone by the City of Port Hueneme, and is currently an industrial area. Further details and existing land use designations and policies are contained in the Coastal Land Use Plan.

8.3 CITY OF PORT HUENEME GENERAL PLAN/CONSERVATION/OPEN SPACE/ ENVIRONMENTAL RESOURCES ELEMENT

The City's open space element emphasizes the preservation of open space land specifically utilized for the preservation of natural resources, managed production of natural resources, outdoor recreation, and the public health and safety. According to the City's General Plan, the purpose of conserving open space is to provide visual relief from urban congestion, to protect wildlife, to provide opportunities for recreation and to conserve resources.

Local Coastal Plan

The California Coastal Act is intended to protect the natural and scenic qualities of the California coastal zone. The coastal zone includes both Coastal Program land and water area. Approximately one-half of Port Hueneme's land area lies within the California coastal zone. Over half of the City area within the zone is part of the U.S. Naval Construction Battalion Center (USNCBC). Except for USNCBC property, the area within the coastal zone is subject to the California Coastal Act.

Port Hueneme's current Local Coastal Plan (LCP) was certified by the California Coastal Commission in 1998. The LCP exists as an amendment to the existing General Plan and discusses the allowable land uses and applicable coastal resource issues for the planning areas within the City's coastal zone. The LCP continues to be implemented as the primary planning document for the coastal zone. Consistent with the coastal act's basic goal to "protect, maintain, and, where feasible, enhance and restore" the coastal zone, the Port Hueneme LCP identifies attainable goals and objectives specifically related to local conditions. The current LCP acts as the baseline for the revised program included as part of this General Plan Update.

9.0 DIRECT AND INDIRECT IMPACTS

Impacts assessed to biological resources from the project include direct and indirect impacts. Direct impacts are those that affect the biological resources such that those resources are not expected to recover to their pre-impacted state (e.g., permanent development of a site through grading and building of structures). Direct impacts may be considered temporary or permanent (e.g., the installation of a pipeline is considered a direct and temporary impact, whereas the construction of a building is considered a direct and permanent impact). Indirect impacts occur secondary to the project's direct impacts, such as changes in general plant composition due to loss of substrate or other factors that may affect resources such as noise, dust, and lighting. Indirect impacts may be considered temporary or permanent depending upon the situation; for example, the dust or noise levels associated with the construction of the new building is considered an indirect and temporary impact, whereas the support functions of a structure (such as the parking lot), would have indirect and permanent impacts such as lighting and storm water runoff.

9.1 DIRECT IMPACTS

9.1.1 Vegetation Communities/Habitats

The majority of the proposed J Street Drain project consists of UD. Within the northern survey area, the Drain is a concrete lined ditch with surrounding residential and commercial development. Project implementation within the northern survey area would occur entirely within the concrete-lined channel, which is developed (Figure 9a). Therefore, no impacts to sensitive vegetation communities within the northern survey area would occur. However, the southern survey area supports four sensitive vegetation communities: CBM, SCSM, OW, and SFD. One sensitive vegetation community, OW, would be impacted by project implementation (Table 3 and Figure 9b). EW located on the west side of the Drain

and within the southern survey area would be impacted by construction activities. EW located on the eastern side of the Drain would not be impacted by the proposed project. The impacted area of EW is located within the City of Port Hueneme. Construction activities located within the lagoon portion of the project area would result in an impact to OW. Impacts to OW habitat would be considered significant and require mitigation. Disturbed habitat areas are not considered sensitive; therefore, impacts to this vegetation community would be less than significant.

Table 3. Project Impacts to Vegetation Communities

Habitat Type	Existing Acreage Within the Survey Area	Project Impacts (acres)
Coastal Brackish Marsh (CBM)	2.98	0.0
Disturbed Habitat (DH)	6.76	0.54
Urban/Developed (UD)	32.44	6.73
Eucalyptus Woodland (EW)	1.18	0.13
Open Water (OW)	2.27	1.80
Southern Coastal Salt Marsh (SCSM)	8.26	0.0
Southern Foredune (SFD)	2.6	0.0
Total	56.49	9.20

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP Access Area does not support sensitive vegetation communities. Therefore, no significant impacts to sensitive habitat are anticipated.

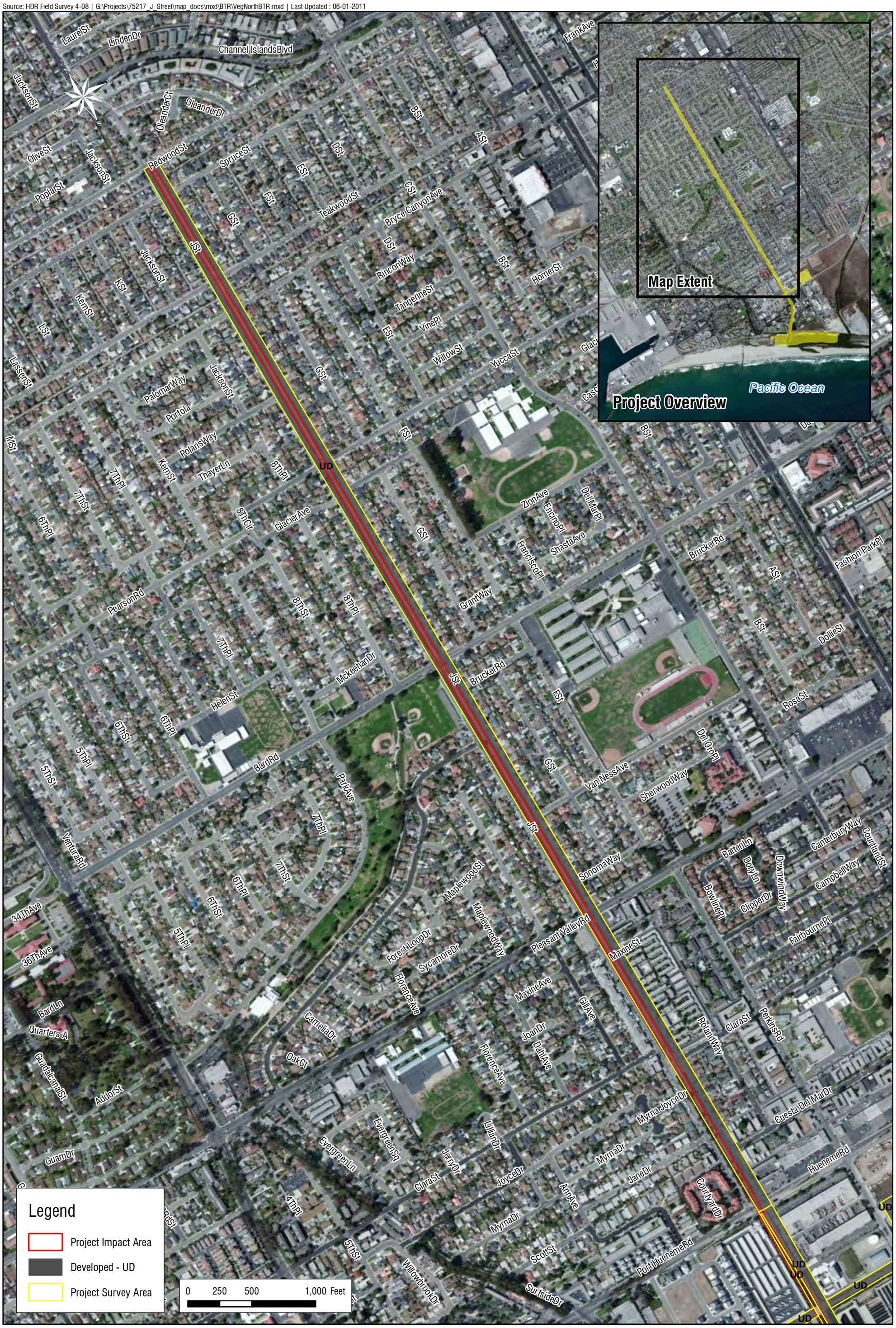
9.1.2 Sensitive Botanical Species

Potential for two sensitive botanical species to occur on-site include Ventura milkvetch and saltmarsh bird's beak. Appropriate habitat occurs within the southern survey area of the project site within the southern foredunes located along the northeastern boundary of the lagoon and in the northwestern corner of the project survey area. Implementation of the proposed project would not impact SFD within the project survey area. In addition, during the general biology survey (conducted during the growing season) these species were not observed on-site. The milkvetch is a perennial species and would have been detected at the time of the survey. There were no species of bird's beak observed during the survey. Therefore, impacts to sensitive plant species would be considered less than significant.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The BEMP Access Area does not support sensitive plant species. Therefore, no significant impacts to sensitive plant species are anticipated.

Source: HDR Field Survey 4-08 | G:\Projects\75217_J_Street\map_docs\mxd\BTR\VegNorthBTR.mxd | Last Updated : 06-01-2011



Project Impacts - Northern Vegetation Communities

FIGURE 9a

Source: HDR Field Survey 4-08; Google Earth Aerial 2008; | G:\Projects\75217 J Street\map docs\mxd\BTR\veg impacts.mxd | Last Updated : 08-15-2011

Project Impacts - Southern Vegetation Communities

FIGURE 9b

9.1.3 Sensitive Wildlife Species

Belding's Savannah Sparrow

Despite the presence of SCSM, no Belding's savannah sparrows were observed within the project area during any of the biological field surveys conducted for the proposed project. Given the number and timing of survey activities, Belding's savannah sparrow should have been detected if it was breeding within the survey area. Since no Belding's savannah sparrows were identified during survey, the proposed project is not anticipated to substantially affect the species. Impacts would be less than significant.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. No Belding's savannah sparrows were observed on-site. Therefore, no impacts to Belding's savannah sparrow are anticipated.

California Brown Pelican

During the general biological survey and the focused California least tern and western snowy plover survey (Appendix D), the formerly endangered California brown pelican was observed foraging within the general vicinity of the southern survey area. California brown pelicans were commonly observed bathing in the lagoon and basking on the sand spit that separates Ormond Lagoon from the Pacific Ocean. The pelicans were observed along the southeastern boundary and outside of the survey area. In May, three to five California brown pelicans were observed in this area. By mid June, the number of California brown pelicans had grown to more than 60 birds. Given the proximity of this site to Anacapa Island (a major nesting area for the species), the number of California brown pelicans using this area should be anticipated to increase (Appendix D). However, suitable nesting habitat for the species does not occur within the project survey area. Therefore, impacts to nesting brown pelicans would not occur and impacts to this species would be considered less than significant.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Basking California brown pelicans may be temporarily disturbed by manual beach grooming, however no potential nesting habitat would be impacted. Therefore, no significant impacts to California brown pelican are anticipated.

California Least Tern

A focused California least tern and western snowy plover survey was conducted within the southern survey areas of the project site. Potential nesting and foraging habitat for the California least tern occurs on-site. However, the proposed project would not impact potential tern nesting habitat due to the distance between the potential nesting habitat and the project impact area. Additionally, although suitable habitat for this species occurs within the southern survey area, the species was not observed nesting on-site during the protocol survey. The absence of nesting California least terns, including the area of impacted SFD, may be attributed to the frequency of human disturbance. Therefore, direct impacts to potential tern habitat would be less than significant.

Approximately 0.31 acres of foraging habitat for the California least tern occurs within the project area. Should construction occur within the breeding season, indirect impacts (i.e., construction noise, lighting, etc.) to the species may occur. In addition, sediment eroded as a result of construction activities may enter the lagoon and potentially increase the turbidity of the water. This would significantly impact the ability of California least terns to forage in the lagoon. Therefore, impacts to the California least tern foraging habitat would be considered significant and require mitigation.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Although the proposed route and beach grooming location occurs within and adjacent to nesting and foraging habitat for the California least tern, access to the beach from this point will avoid all nesting sites used by California least terns in 2008 (Davenport 2008), 2009 (Smith 2009) and 2010 (Smith 2010). The BEMP will generally be implemented outside of the nesting season between September 16 and March 14 greatly reducing the potential for direct impact to CLT. In the event that implementation is required after March 14, there is a slight potential for impacting nesting tern if present within the BEMP maintenance area. Potential impacts to nesting California least tern would be considered significant and require mitigation.

Western Snowy Plover

Suitable habitat for the western snowy plover occurs within the southern survey area. The proposed project would not impact SFD located on-site, which is considered potential plover nesting habitat. In addition, a focused survey was conducted for the species and none were observed on-site or within the project survey area. The absence of plover within the project survey area, and specifically within onsite SFD, may be attributed to the frequency of human disturbance. Therefore, direct impacts to potential plover habitat would be less than significant. However, nesting plovers were observed adjacent to the site and project implementation could result in temporary indirect impacts to the species. Direct impacts to western snowy plover would not occur due to project implementation.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. The proposed route and beach grooming location occurs within designated critical habitat for the western snowy plover. However, this route and beach grooming location will avoid all nesting sites used by western snowy plovers in 2008 (Davenport 2008), 2009 (Hartley 2009) and 2010 (Hartley 2010). Temporary impacts to open sandy beach critical habitat resulting from beach elevation maintenance are anticipated to recover naturally. The BEMP will generally be implemented outside of the nesting season between September 16 and March 14 greatly reducing the potential for direct impact to WSP. In the event that implementation is required after March 14, there is a slight potential for impacting nesting plover if present within the BEMP maintenance area. Potential impacts to nesting snowy plover would be considered significant and require mitigation.

Light-footed Clapper Rail

Suitable habitat for the light-footed clapper rail occurs within the southern survey area (Figure 4 in Appendix D). However, the species was not observed within or adjacent to the project survey area during protocol surveys. Impacts to the light-footed clapper rail would not occur due to project implementation.

In addition, a large population of California ground squirrels (*Spermophilus beecheyi*) inhabits the southern survey area (peninsula) of the project site. California ground squirrels may prey on the eggs and chicks of ground nesting birds such as light-footed clapper rails. The suitable nesting area is also degraded due to the presence of exotic invasive plants (e.g., sweet clover, crab grass (*Cynodon dactylon*), and ice-plant (*Carpobrotus* sp.). These influences have reduced the size of suitable habitat within the project survey area.

BEMP Access Area

The access route and beach grooming location would occur within beach habitat. These areas are not located within potential nesting and foraging habitat for the light-footed clapper rail. Therefore, no impacts to the light-footed clapper rail would occur as a result of BEMP implementation.

Tidewater Goby

Suitable tidewater goby habitat occurs within the southern survey area at the outlet of J Street Drain to the lagoon. The Ormond Beach Lagoon has been designated as critical habitat for the federally endangered tidewater goby. The northern survey area consists of a concrete channel and does not qualify as suitable goby habitat. In the southern survey area, the project proposes to install a cofferdam within the lagoon. This area would be drained and used in the construction of the southern portion of the drain, the riprap energy dissipater, the 40-foot sand ramp, and for the construction work area. The ramp would begin at the terminus of the concrete drain and would serve as a transition between the newly constructed drain and the natural substrate of the lagoon. Riprap would be buried with native soils during construction. Natural sand substrates are used by gobies for burrowing during breeding. The drained portion of the lagoon, including the 40-foot ramp, would occur within potential burrowing habitat for the tidewater goby and, therefore, would directly impact designated critical habitat for the species (Table 4 and Figure 10).

Table 4. Project Impacts to Tidewater Goby Critical Habitat

Tidewater Goby Critical Habitat	Existing Acres in Survey Area	Project Impacts
On-site	18.1	0.571

[1] Impacts to tidewater goby habitat would be temporary.

It should be noted that the deepening of the channel (approximately 4 feet) would change the existing water levels in the Lagoon. However, the Lagoon is a dynamic system where the water levels fluctuate and with consideration of the proposed depth and extent of the Drain improvements would not result in a significant impact to Lagoon water levels or to the tidewater goby.

Impacts to goby habitat would be temporary within the confines of the cofferdam (including the sand ramp) and would eventually return to a more natural state as influenced by tidal movement and other lagoon conditions. Erosion of soils or other materials into the lagoon during construction may also temporarily increase water turbidity which would result in an impact to goby foraging. Any impacts to tidewater goby habitat, including critical habitat, are considered significant. Therefore, project implementation would result in significant impacts and mitigation is required.

BEMP Access Area

The BEMP access route and maintenance area occur within beach habitat, which is not considered potential habitat for tidewater goby. Therefore, no impacts to tidewater goby are anticipated.

9.1.3.1 Raptor Habitat, Nesting, and Foraging

Although nesting or foraging raptors were not observed during the general biological survey, potential nesting and foraging habitat occur within the project area (e.g., eucalyptus woodland). A portion of EW is located along the west side of the existing Drain in the southern survey area. This area would be impacted during construction. Should migratory birds, including raptors, occupy or nest in the EW during construction, a significant impact would result. In addition, several species of migratory birds were observed nesting and foraging within the lagoon portion of the project survey area. Impacts to migratory birds, including raptors, would be considered significant.

BEMP Access Area

The BEMP access route and maintenance area occur within beach habitat. This area has little to no vegetation or trees that would support migratory birds, including raptors. The access route is anticipated to use the established lifeguard patrol route, which is used daily by lifeguard patrol vehicles. Therefore, less than significant impacts to migratory birds, including raptors, would result from BEMP implementation.

9.1.4 USACE and CDFG Jurisdictional Areas

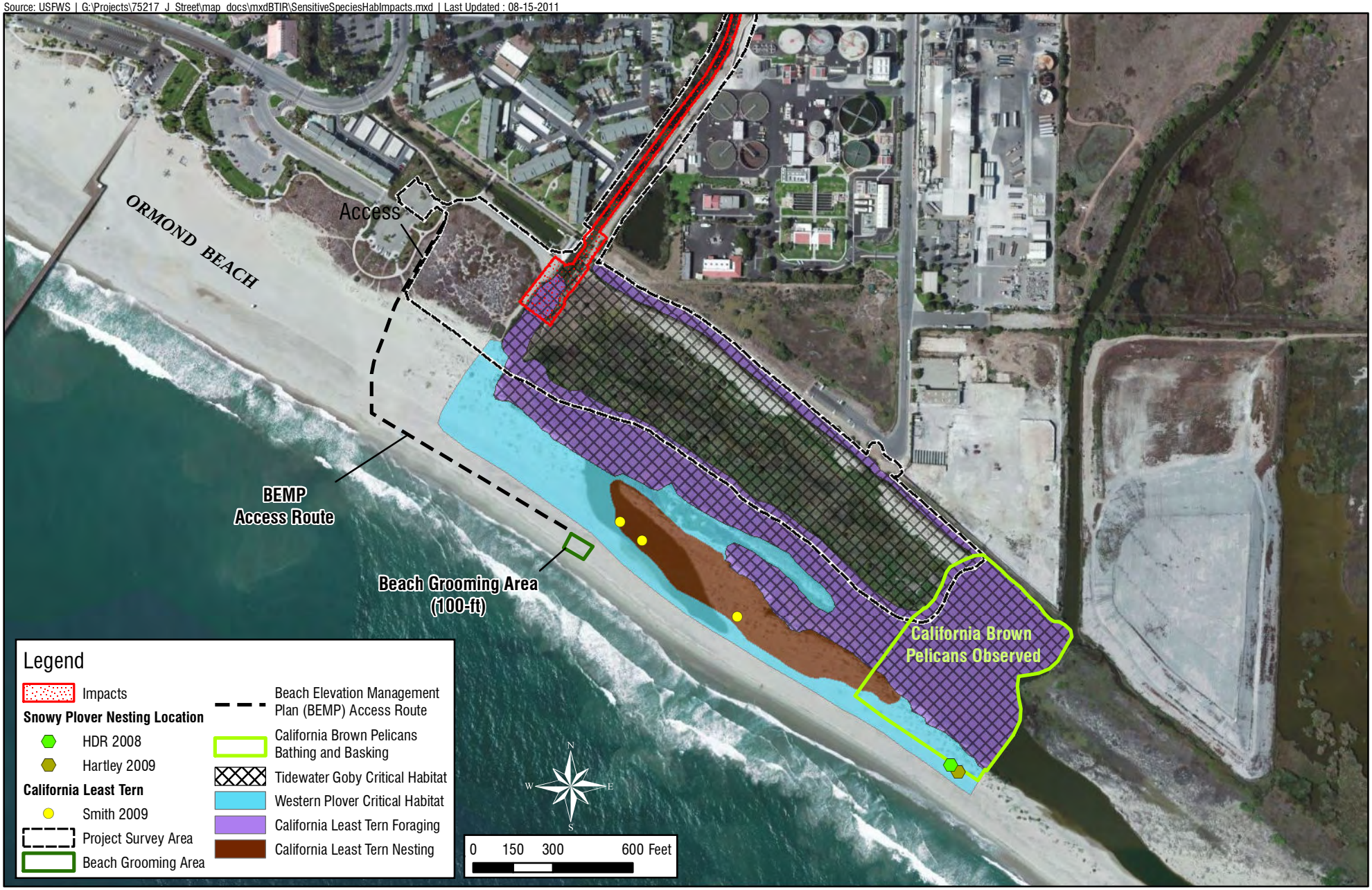
Any measurable modifications to the drainage or dredge to the watercourse could result in impacts, necessitating permitting for temporary or permanent impacts. The proposed improvements to the drain would temporarily impact federal/state jurisdictional areas (Table 5 and Figure 11). It should be noted that impacts to federal/state jurisdictional areas would occur primarily within the existing concrete-lined channel. As the channel is concrete-lined, federal and state agencies may decline to take jurisdiction over this portion of the project. However, the southern portion of the project occurs within the natural soil substrate of the lagoon. It is anticipated that federal and state agencies will take jurisdiction over this area. Improvements to the drain would include removal of the existing concrete channel, replacement of existing rock riprap, lowering the elevation of the drain, and modifying the contour of the channel to a rectangular configuration. Additional impacts would include the installation of a cofferdam within the Lagoon and the subsequent pumping/draining of ground and lagoon water within the construction/work area. Construction activities would impact the natural substrate of the Lagoon (Figure 11). As a result of these improvements, temporary impacts would occur to federal waters of the U.S and state.

Table 5. Project Impacts to Federal/State Jurisdictional Areas

Federal/State Jurisdictional Areas	Existing Acres (Project Survey Area)	Project Impacts[1]
Federal Waters of the U.S. and Waters of the State - Concrete Channel	7.9	7.90
Federal Waters of the U.S. and Waters of the State - Natural Substrate	2.73	0.29
Federal Wetlands	6.83	0.00
CDFG Wetlands[2]	10.92	0.00
CCC Jurisdictional Areas	15.73	4.811
Total	N/A	8.193

[1] Project impacts to state and federal jurisdictional areas would be temporary.
[2] CDFG and CCC jurisdictional area totals include USACE wetland and waters of the U.S. acreages.
[3] Mitigation for project impacts to jurisdictional areas would be satisfied through restoration of temporary impacts.

Source: USFWS | G:\Projects\75217 J Street\map docs\mxdBTIR\SensitiveSpeciesHabImpacts.mxd | Last Updated : 08-15-2011



Project Impacts to Critical Habitat and Observed Sensitive Wildlife Species

FIGURE 10

Source: HDR Wetland Delineation; Google Earth 2008 | G:\Projects\75217_J_Street\map_docs\mxd\BTR\WetlandSouthImpacts_v2.mxd| Last Updated : 08-15-2011

Project Impacts - Federal/State Jurisdictional Areas

FIGURE 11

As previously stated, the majority of project impacts would occur to an existing concrete-lined channel. By replacing the existing channel with a higher capacity channel, impacts to water conveyance would be mitigated. However, during construction impacts to water quality would potentially occur and require mitigation. The natural substrate located southwest of the concrete-lined channel would be impacted by the proposed project and mitigation is required.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. No impacts to CDFG jurisdiction will occur from implementation of the BEMP. As previously discussed, the BEMP would occur within the HTL which is used to delineate the upper boundary of USACE jurisdiction (Figure 11). Implementation of the BEMP would temporarily impact 0.57 acre of USACE non-wetland waters. Temporarily impacted areas of beach are subject to tidal changes and wave action that will rapidly restore the beach to a natural state. Therefore, no significant impacts are anticipated and no mitigation is proposed.

9.1.4.1 CCC Jurisdictional Areas

As previously identified, USACE and CDFG jurisdictional areas located south of Hueneme Road qualify for CCC jurisdiction as they are located within the Coastal Zone. Temporary impacts to CCC jurisdictional areas would occur upon project implementation (Table 5). Impacts to CCC jurisdictional areas would be considered a significant impact and would require a Coastal Zone Development Permit from the CCC.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Implementation of the BEMP would result in 0.57 acre of temporary impacts to CCC jurisdiction. Temporarily impacted areas of beach are subject to tidal changes and wave action that will rapidly restore the beach to a natural state. No mitigation is proposed.

9.2 INDIRECT IMPACTS

9.2.1 Sensitive Vegetation Communities

Construction of the proposed project would occur within and adjacent to sensitive vegetation communities (OW, CBM, SFD, SCSM). Construction activities would result in potentially significant indirect impacts to these habitats (erosion, intrusion of workers/equipment, etc.) and mitigation is required.

9.2.2 Sensitive Wildlife Species

Over 60 California brown pelicans were observed using the eastern boundary of the southern project survey area for basking and bathing. However, the project survey area does not support potential breeding habitat for the pelican therefore not breeding habitat for the California brown pelican would be impacted. The California least tern uses the site heavily for foraging (Figure 9). Breeding pairs were observed nesting adjacent to the project survey area boundary. In addition, western snowy plover were

observed nesting adjacent to the project survey area. To minimize impacts to the California least tern and western snowy plover, it is recommended that construction occur outside of the breeding season (March to September). The breeding season for raptors and some MBTA-covered species is February 1 to August 15. Should construction occur within the breeding season, indirect impacts (i.e., construction noise, lighting, erosion, etc.) to the species would occur. In addition, sediments eroded as a result of construction activities may enter the lagoon and potentially increase the turbidity of the water. This would significantly impact the ability of California least terns to forage in the lagoon. Impacts to the California least tern and western snowy plover would be considered significant and require mitigation.

9.2.3 Raptor Habitat, Nesting, and Foraging

The project survey area contains suitable habitat for nesting and foraging migratory bird species, including raptors. Noise generated from construction activities due to project implementation may have an indirect impact on nesting migratory birds. Therefore, indirect impacts to nesting migratory birds, including raptors, would be considered significant and requires mitigation.

9.2.4 Water Quality

Water quality in jurisdictional areas can be adversely affected by surface water runoff and sedimentation during construction. The use of petroleum products (e.g., fuels, oils, and lubricants) and erosion of cleared land during construction could potentially contaminate surface water. Water quality in aquatic systems and terrestrial species that depend on these resources may be adversely affected. Impacts to water quality would be significant unless mitigated.

9.3 OTHER REGULATORY REQUIREMENTS

9.3.1 City of Oxnard General Plan

The proposed project is located within the jurisdiction of the City of Oxnard General Plan. Therefore, the project would be required to adhere to all goals and policies as identified in the General Plan. Failure to adhere to these goals and policies would be considered significant.

9.3.2 City of Port Hueneme General Plan

A portion of the proposed project is located within the jurisdiction of the City of Port Hueneme General Plan. Therefore, the project would be required to adhere to all goals and policies as identified in the General Plan. Failure to adhere to these goals and policies would be considered significant.

10.0 MITIGATION MEASURES

10.1 DIRECT/INDIRECT IMPACTS

10.1.1 Vegetation Communities/Habitat

Seven vegetation communities occur within the project survey area. Four of these vegetation communities are sensitive (OW, CBM, SFD, and SCSM). Of these, the proposed project would impact OW (Table 3). To mitigate for potential impacts to offsite sensitive vegetation communities during construction, fencing shall be placed along the Environmentally Sensitive Areas (ESA) adjacent to construction areas to prevent indirect impacts to sensitive habitats. Mitigation for direct impacts to OW habitat are recommended at a

1:1 ratio (i.e., restoration of the temporarily impacted habitat). It is also recommended that biological monitoring occur during construction activities to prevent indirect impacts. The biological monitor shall work with the contractor to implement specific mitigation measures required while working within/adjacent to ESAs. Installation of orange habitat fencing is recommended to avoid direct and indirect impacts to these areas. It is also recommended that staging areas, including lay down areas, equipment storage, etc be located outside ESAs to avoid impacting these sensitive areas. OW habitat restoration shall include replacement on the lagoon bottom of the top 12 inches of original soil to ensure suitable conditions for tidewater gobies and benthic fauna.

10.1.2 Botanical Species

Implementation of the project would not result in impacts to sensitive botanical species. Therefore, no mitigation is recommended.

10.1.3 Wildlife Species

- California least terns and western snowy plover were observed adjacent to the site. If feasible, construction will occur outside of the breeding season (March 15 to September 15). If construction occurs during breeding season, phase 1 project initiation through coffer dam installation shall be completed before May 1 to avoid direct impacts to foraging terns. In addition, a preconstruction clearance survey would be required within 300 feet of suitable habitat. If nesting birds are found, all construction activities shall be prohibited within a 300-foot buffer area surrounding the nest location until young have fledged. The qualified biologist shall ensure that the buffer area is appropriately defined with flagging and/or other means of suitable identification.
- To prevent a decrease in the foraging success of California least terns or western snowy plover, as well as to protect tide water goby, silt fencing will be installed during construction between the project area and waters of Ormond Lagoon to prevent runoff entering the lagoon. For project activities within waters of Ormond Lagoon, dual silt fencing should be installed around each work area to prevent/decrease the clouding of water within the lagoon as a result of runoff.
- Designated critical habitat for the tidewater goby occurs within the southern survey area of the project site (Table 4 and Figure 10). As recently as 2004, the species has been observed within the lagoon portion of the project area. It is assumed that goby are present and mitigation measures would be required during construction. Therefore, it is recommended that prior to the installation of the cofferdam, a permitted [10 (a) (1) (a)] tidewater goby biologist would need to capture and relocate gobies. To avoid impacts to tidewater goby eggs, Phase 1 project initiation through coffer dam installation shall be completed before May 1, as the peak breeding season for this species extends from late spring through early summer, and again in late summer through early fall. The biologist shall also be present during and after dewatering to ensure all gobies and other native fish are relocated to the lagoon prior to construction. A suitable number of biologists working under the supervision of the permitted biologist shall be present during and immediately after the dewatering phase to ensure that all gobies are detected. The temporary cofferdam shall remain in place throughout construction south of Hueneme Road to prevent tidewater goby from entering the construction area. In addition, the surface water pumps installed for the dewatering of the work area would be screened (<5 mm mesh size). A permitted tidewater goby biologist would also be required to remove any goby that may enter the work area from upstream.
- Although night construction is not anticipated, in the event that it becomes necessary, all lighting will be shielded to prevent illumination of the beach.

- In the event that the BEMP must be implemented between March 15 and September 15, a qualified biologist will conduct nesting surveys within the access route and maintenance to ensure that nesting birds are not present. If nesting WSP or CLT are present, FWS will be consulted prior to initiating the BEMP.

Implementation of the above mitigation measures will reduce potentially significant impacts to TWG, CLT and WSP to less than significant levels.

10.1.4 USACE, CDFG, and CCC Jurisdictional Areas

Temporary impacts to federal/state waters and CCC jurisdictional areas would occur as a result of project implementation. Temporary impact areas will be restored to existing contours and revegetated where applicable (Table 6). Water quality impacts resulting from the proposed project would require implementation of best management practices (i.e., straw waddles, silt fencing, etc.). Consultation with the wetland/wildlife agencies would be required. Impacts to federal/state waters would require a Section 404 permit with a RWQCB Section 401 Water Quality Certification. For impacts to CDFG jurisdictional areas, a Section 1600 Series Streambed Alteration Agreement would be required. Impacts to CCC jurisdictional areas would require a Coastal Zone Development Permit from the Coastal Commission.

Table 6. Project Impacts to Federal/State Jurisdictional Areas and Required Mitigation

Federal/State Jurisdictional Areas	Existing Acres (Project Survey Area)	Project Impacts[2]	Restoration (acres)
Federal Waters of the U.S. and Waters of the State - Concrete Channel	7.9	7.90	7.90
Federal Waters of the U.S. and Waters of the State - Natural Substrate	2.73	0.29	0.29
Federal Wetlands	6.83	0.00	0.00
CDFG Wetlands[1]	10.92	0.00	0.00
CCC Jurisdictional Areas	15.73	4.811	4.81
Total	N/A	8.19	8.19

[1] CDFG and CCC jurisdictional area totals include USACE wetland and non-wetland waters of the U.S. acreages.
[2] Project impacts to state and federal jurisdictional areas would be temporary.

Implementation of the above mitigation measures will reduce potentially significant impacts to USACE, CDFG and CCC jurisdictional areas to less than significant levels.

10.1.5 Raptor Habitat, Nesting, and Foraging

Nesting raptors, such as red-tailed hawks and other migratory birds are protected under the federal Migratory Bird Treaty Act. If construction occurs during the bird breeding season (defined roughly as February 1 to September 15), a preconstruction bird survey is recommended. If nesting birds are identified, a 300-foot construction buffer is recommended to avoid indirect impacts to nesting birds. For construction activities within urbanized areas, the monitoring biologist may reduce buffer widths depending on the level of tolerance of the bird species. For example, if a pair of house finches are identified nesting in a tree adjacent to the project and within a highly urbanized area (i.e., street side or residential), it can be assumed that the species is tolerant to urban disturbance. Noise abatement and/or seasonal restrictions may be required, as necessary.

Implementation of these mitigation measures would reduce the project's direct impact to nesting raptors or migratory birds to below a level of significance.

10.1.6 Water Quality

Since the project is adjacent to the Ormond Lagoon the project would be required to incorporate mitigation measures to divert and treat runoff so that no adverse impacts would occur to jurisdictional areas. The proposed project would also be required to prepare a Storm Water Pollution Prevention Plan, which would include construction and post-construction BMPs for reducing the levels of pollutants in runoff associated with the project. These may include but are not limited to silt fence, straw wattles, sand bags, etc. In consultation with the biological monitor, these measures would be implemented concurrent with construction activities.

Implementation of the above mitigation measures will reduce potentially significant indirect impacts to water quality to less than significant levels.

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APPENDIX A
Site Photographs

Photograph 1. Northern Survey Area, concrete-lined J Street Drain. Oleander lines the chain link fence.

Photograph 2. Northern Survey Area, oleander lines the chain link fence. Brazilian peppertree and eucalyptus spp. are adjacent to the drain alignment.

Photograph 3. Southern Survey Area, view of J Street Drain along the western boundary of project survey area.

Photograph 4. Southern Survey Area, foot bridge entrance to Ormond Beach Lagoon located at the terminus of Perkins Road (southern portion of survey area).

Photograph 5. Southern Survey Area, southeasterly view of the Ormond Beach Lagoon.

Photograph 6. Southern Survey Area, coastal brackish marsh and open water located within the Ormond Beach Lagoon.

Photograph 7. Southern Survey Area, southern coastal salt marsh located within the Ormond Beach Lagoon.

Photograph 8. Southern Survey Area, southern foredunes located in the western portion of the survey area.

Photograph 9. Southern Survey Area, northeasterly view of J Street Drain near outlet to Ormond Beach Lagoon. Note planted eucalyptus spp. along drainage channel.

Photograph 10. Southern survey area, disturbed habitat.

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APPENDIX B
Botanical Species Observed

APPENDIX B

Species Observed on the J Street Drain Project Site

Scientific Name	Common Name
Acacia longifolia	Sydney golden wattle
Ambrosia bipinnatifida	beach bur
Ambrosia psilostachya	western ragweed
Anagallis arvensis *	scarlet pimpernel
Arundo donax *	giant wild reed
Atriplex semibaccata *	Australian saltbush
Avena fatua *	wild oat
Baccharis pilularis	coyote brush
Baccharis salicifolia	mule fat
Bromus diandrus *	ripgut brome
Bromus rubens *	foxtail brome
Cakile maritima	searocket
Camissonia cheiranthifolia	beach suncup
Carpobrotus edule *	hottentot fig
Centaurea melitensis *	tocalote
Chenopodium murale *	goosefoot
Conyza canadensis *	common horseweed
Cotula coronopifolia *	brass buttons
Cuscuta salina	salty dodder
Cynodon dactylon *	Bermuda grass
Cyperus eragrostis	umbrella plant
Distichlis spicata	desert salt grass
Echinochloa crus-galli	Japanese millet
Erodium cicutarium *	red-stem stork's-bill
Eucalyptus spp. *	eucalyptus
Frankenia salina	alkali heath
Fraxinus sp.	ash
Gazenia sp. *	gazenia
Gnaphalium canescens	cudweed
Gnaphalium sp.	cudweed
Heliotropium curvassavicum	wild heliotrope
Heterotheca grandiflora *	telegraph weed
Hirschfeldia incana	Mediterranean mustard
Hordeum murinum *	wild barley
Lolium multiflorum *	Italian ryegrass
Melilotus albus *	white sweet clover
Melilotus indicus *	Indian sweet clover
Mesembryanthemum chrystallinum	ice plant
Myoporum laetum *	bastard sandlewood
Nerium oleander *	oleander
Nicotiana glauca *	tree tobacco
Polypogon monspeliensis *	rabbitfoot grass

Scientific Name	Common Name
Raphanus sativus *	wild radish
Ricinus communis *	castor bean
Rumex crispus *	curly dock
Salsola pestifer *	Russian thistle
Schinus terebinthifolius *	Brazilian peppertree
Scirpus acutus var. *occidentalis*	American tule
Sonchus asper *	sow thistle
Tamarix sp. *	salt cedar
Tetragonia tetragonoides	New Zealand spinach
Typha angustifolia	cattails
Washingtonia robusta *	Mexican fan palm

** denotes non-native*

Total 53 Species

APPENDIX C
Wildlife Species Observed

APPENDIX C

Wildlife Species Observed on the J Street Drain Project Site

Avian	
Agelaius phoeniceus	red-winged blackbird
Anas platyrhynchos	mallard
Calypte anna	Anna's hummingbird
Ardea herodias	great blue heron
Carpodacus mexicanus	housefinch
Cathartes aura	turkey vulture
Charadrius vociferus	killdeer
Columbia livia	rock dove
Corvus corax	common raven
Euphagus cyanocephalus	Brewer's blackbird
Fulica americana	American coot
Geothlypis trichas	common yellowthroat
Himantopus mexicanus	black-necked stilt
Larus occidentalis	western gull
Melospiza melodia	song sparrow
Mimus polyglottos	mockingbird
Oxyura jamaicensis	ruddy duck
Pelecanus occidentalis	**brown pelican**
Stelgidopteryx ruficollis	northern rough-winged swallow
Sturnus vulgaris	European starling
Mammalian	
Spermophilus beecheyi	California ground squirrel
Sylvilagus sp.	rabbit
Thomomys bottae	valley pocket gopher
Reptilian	
Sceloporus occidentalis	western fence lizard
Uta stansburiana	Side-blotched Lizard
Butterflies	
Pontia protodice	Common White

Bold *denotes sensitive species*

Total 26 species

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APPENDIX D

California Least Tern Snowy Plover Protocol Survey

Light-footed Clapper Rail, Western Snowy Plover, and California Least Tern Surveys
J Street Drain Project
Ventura County, California
2008

Prepared for

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July 17, 2008

INTRODUCTION

On 8 February 2008, Davenport Biological Services (DBS) was hired to evaluate the potential presence of several sensitive species within the action area of the proposed J Street Drain project site. The action area includes all areas that may be affected directly or indirectly by the proposed action. J Street Drain empties into Ormond Lagoon, which is located in Oxnard, California (Figures 1 & 2).

Initially, DBS was to evaluate the potential presence of the California least tern (*Sterna antillarum browni*), and western snowy plover (*Charadrius alexandrinus nivosus*), within the study area at Ormond Lagoon. Based on the results of the initial survey (10 April 2008), surveys for the light-footed clapper rail (*Rallus longirostris levipes*) were added due to the presence of suitable habitat for this species within and adjacent to the project area.

California Least Tern

The California least tern was listed as an endangered species under the Federal Endangered Species Act (ESA) on June 2, 1970 (Federal Register 35:8495). The California least tern is our smallest tern and measures approximately 9 inches long. Adult birds have a light gray back and a black cap and nape; their forehead is white. Adult birds have an orange-yellow bill with a dark tip. In contrast, first summer birds have dark feet and bill.

Between San Francisco Bay and San Diego Bay, the California least tern should be anticipated to occur throughout the coastal zone of California. California least terns commonly forage in coastal wetlands, bays, and near the surf zone. This species nests on sandy beaches, sand bars, salt flats, and other bare areas (areas that are essentially denuded or otherwise bares of vegetation). In addition, California least terns often forage within rivers, streams, and lakes located within 10 miles of the coast.

Western Snowy Plover

The western snowy plover was listed as a threatened species under the ESA on March 5, 1993 (Federal Register 58:12874). In southern California, the western snowy plover is our smallest plover and is approximately 6 inches long. The snowy plover is very pale in coloration and has a partial breast band and a dark ear patch. This species is active during the day.

Based on museum records, in the United States, the western snowy plover breeds along the west coast from Oregon to California; and includes some inland localities. The distribution of western snowy plovers continues along the west coast into Baja California, Mexico (Museum of Vertebrate Zoology, UC Berkeley). Western snowy plovers inhabit sandy beaches, mud flats, and salt-flats. They nest in the upper reaches of beaches, flats, and pans above the ordinary high water mark.

Light-footed Clapper Rail

The light-footed clapper rail was listed as an endangered species under the ESA on October 30, 1970 (Federal Register 35:16047). In addition, the light-footed clapper rail and California least tern are also listed as endangered species under CESA. The light-footed clapper rail is large compared to other rails in coastal, southern California (approx. 14 inches long). The plumage of this species is variable. However, the brown feathers on the back typically have grayish edges. The cheeks of the light-footed clapper rail are brownish gray. The light-footed clapper rail vocalizes mainly at dusk and dawn; but may be heard at any time during the day or night.

This rail should be anticipated to occur within all coastal fresh and saltwater marshes of central to southern California. Although most records of this species occur within chord grass (*Spartina sp.)* and, pickleweed (*Salicornia sp.)* dominated marshes, this species also uses cattail (*Typha latifolia)* and bulrush (*Scirpus* sp.) dominated freshwater and brackish marshes.

The migratory behavior of clapper rails is poorly known. Most populations of clapper rails are considered to be non-migratory (Eddleman and Conway, 1998). However, populations located in the northeast are largely migratory (Stewart 1954, Meanley 1985, and Sibley 1993 as in Eddleman and Conway, 1998). The light-footed clapper rail is apparently a non-migratory resident of coastal salt and freshwater marshes (U.S. Fish and Wildlife Service, 1985). However, dispersal movements of up to 21 kilometers have been documented (Zembal et al., 1985). Therefore, some flexibility in mobility should be anticipated for the light-footed clapper rail. Flexibility in movement between suitable sites is also supported by the presence of just one subspecies of clapper rail from Santa Barbara County, California to San Quintine Bay, Baja California, Mexico (U.S. Fish and Wildlife Service, 1985).

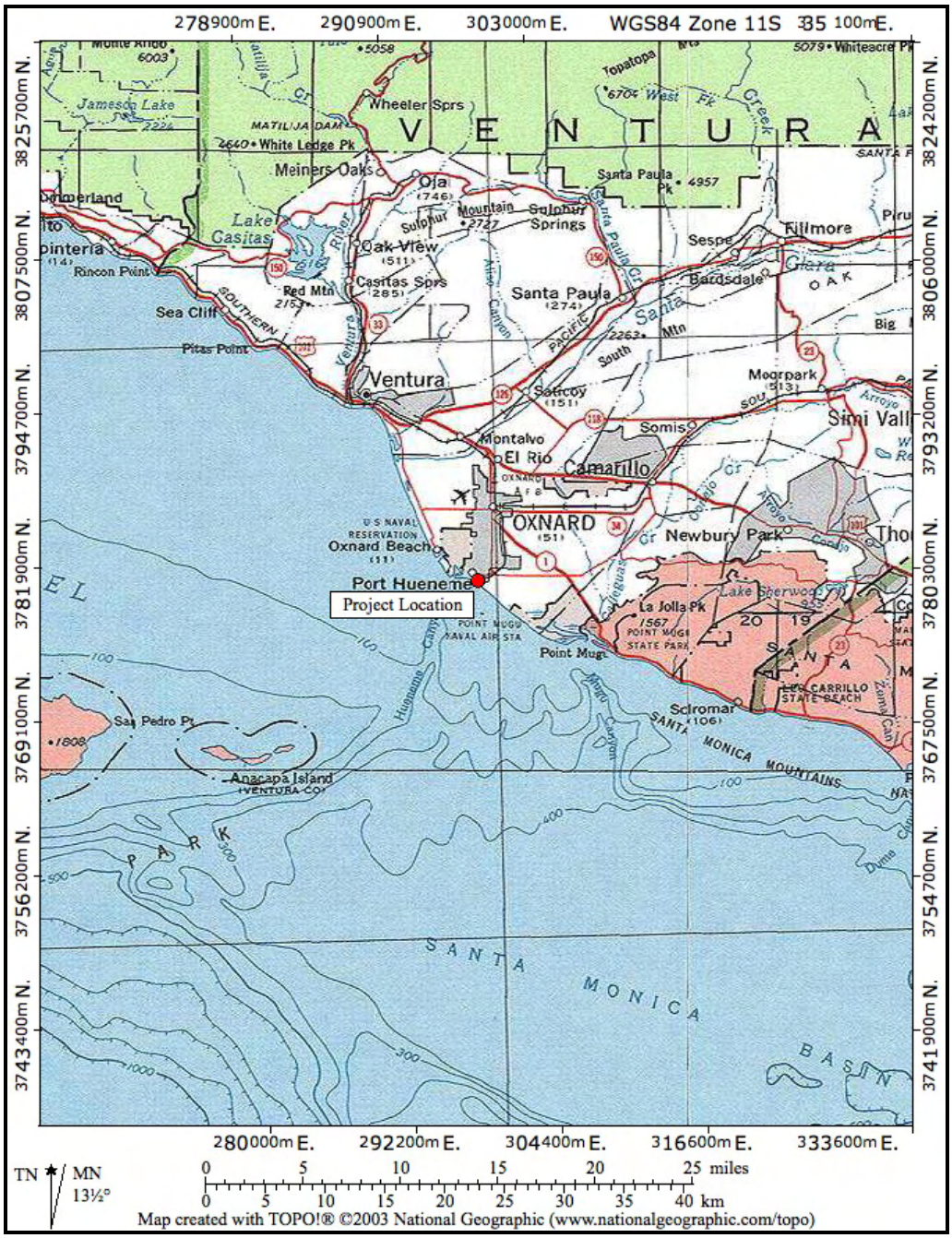

Figure 1. General location of the J Street Drain project/study area.

Figure 2. Location of the J Street Drain Project site.

METHODS

Background Search

Prior to conducting field surveys, a limited review of data concerning the historic locations of these animals was completed. Absent annual survey information or other recent information regarding the number and distribution of these species within or adjacent to the project area, information from the California Natural Diversity Data Base was reviewed. Absent relevant information within the CNDDB, specimens held at the Museum of Vertebrate Zoology, UC Berkeley (MVZ) was also reviewed.

Field Survey

To enhance and manage the collection of field data, the entire survey area was divided up into smaller survey areas (Figure 3).

California Least Tern

During the 2007 field season, no presence/absence survey guidelines were available from the U.S. Fish and Wildlife Service for the California least tern. Surveys for California least terns were strictly passive. Under no circumstances were California least terns pursued (i.e., chased, followed, trailed, tracked, shadowed, etc.) or their nests intentionally approached.

The survey was repeated 10 times, and the surveys were completed at least one week apart (Table 1). During each of the 10 survey events, two survey passes were completed of all potential habitat. Thus, a total of 20 survey passes were completed during the course of this survey. Surveys were completed by scanning all potential nesting and foraging areas for California least terns. The area surveyed extended up to 500 meters from the project site. The survey for California least terns was initiated on 10 April 2008, and was completed on 8 July 2008. Surveys were initiated and completed at various times and tidal regimes between sunrise and sunset.

During the survey, the locations of California least terns was determined in two ways. The location of incidentally discovered nests were determined using a Garmin GPSmap 60 CSx global positioning system (accuracy = +/-5 meters). In the case of nests, the distance to the nest was estimated while standing directly north or west of the nest site and the location adjusted accordingly. In addition, the locations of foraging attempts were initially located on geo-referenced aerial photographs of the lagoon. The positions of the foraging locations were then transferred to a geo-referenced map using ARC Map 9.2. The foraging locations are thus rough estimates of the exact location of the foraging attempt.

Figure 3. Shows survey areas.

Table 1. Shows dates, time, and weather conditions during each survey event for the California least tern.

Survey Date	Time (24 Hour)	Temperature (F^{o})	Wind Speed (mph)	Cloud Cover (%)
	Start/Stop	Start/Stop	Start/Stop	Start/Stop
10 Apr 2008	1000/1920	59/58	1-5/3-5	0/0
18 Apr 2008	1157/1940	60/59	1-5/8-10	20/0 ML
27 Apr 2008	1400/1900	72/67	1-5/1-5	0/20
04 May 2008	1230/1600	61/62	1-7/3-10	90/50
16 May 2008	1430/1750	76/72	1-5/1-5	0/0
24 May 2008	1530/1955	63/58	1-3/1-3	20/30
31 May 2008	1630/2000	63/62	4-7/4-10	2/5
7 Jun 2008	1622/2000	67/61	1-5/1-5	0/0
14 Jun 2008	0520/1900	64/60	3-10/6-13	40/100 ML
8 Jul 2008	1400/1900	64/63	1-3/3-5	20/100 ML

ML: Marine Layer

Western Snowy Plover

During the 2008 field season, no presence/absence survey guidelines were available from the U.S. Fish and Wildlife Service for the western snowy plover. Surveys for western snowy plovers were strictly passive. Under no circumstances were western snowy plovers pursued (i.e., chased, followed, trailed, tracked, shadowed, etc.) or their nests intentionally approached.

The survey was repeated 10 times, and the surveys were completed at least one week apart (Table 2). During each of the 10 survey events, at each survey area, two survey passes were completed of all potential habitat. Thus, a total of 20 survey passes were completed during the course of this survey at Ormond Lagoon. Surveys were completed by scanning all potential nesting and foraging areas for western snowy plovers. The area surveyed extended up to 500 meters from the project site. The survey for western snowy plovers was initiated on 10 April 2008, and completed on 8 July 2008. Surveys were initiated between sunrise and completed by sunset.

Table 2. Shows survey dates, time, and weather conditions during each survey event for the western snowy plover.

Survey Date	Time (24 Hour)	Temperature (F^{o})	Wind Speed (mph)	Cloud Cover (%)
	Start/Stop	Start/Stop	Start/Stop	Start/Stop
10 Apr 2008	1000/1920	59/58	1-5/3-5	0/0
18 Apr 2008	1157/1940	60/59	1-5/8-10	20/0 ML
27 Apr 2008	1400/1900	72/67	1-5/1-5	0/20
04 May 2008	1230/1600	61/62	1-7/3-10	90/50
16 May 2008	1430/1750	76/72	1-5/1-5	0/0
24 May 2008	1530/1955	63/58	1-3/1-3	20/30
31 May 2008	1630/2000	63/62	4-7/4-10	2/5
7 Jun 2008	1622/2000	67/61	1-5/1-5	0/0
14 Jun 2008	0520/1900	64/60	3-10/6-13	40/100 ML
8 Jul 2008	1400/1900	64/63	1-3/3-5	20/100 ML

Light-footed Clapper Rail

The survey was repeated 7 times, and the surveys were completed at least one week apart (Table 3). In an effort to decrease the probability of a false negative survey, two survey passes were completed per survey. Thus, within the project area, a total of 14 survey passes were completed during the course of this study. During each survey event, the playback of rail calls was used where clapper rails were not heard. During the use of call broadcasts, rail calls were played at approximately 10-meter intervals and only short broadcasts were used (approx. 5 seconds of "kek" calls). The short broadcast of calls was repeated twice at each 10-meter interval, following an approximately two minute delay. The survey for light-footed clapper rails was initiated on 18 April 2008, and was completed on 15 June 2008. Morning surveys were initiated between 0600 and completed by 1000 hours. Evening surveys were completed within one hour of sunset.

Table 3. Shows survey dates, time, and weather conditions during each survey event for the light-footed clapper rail.

Survey Date	Time (24 Hour)	Temperature (F^{o})	Wind Speed (mph)	Cloud Cover (%)
	Start/Stop	Start/Stop	Start/Stop	Start/Stop
18 Apr 2008	1750/1940	59/54	1-8/3	0/0 ML
27 Apr 2008	0700/0800	67/60	1-5/1-5	20/30
04 May 2008	1800/1930	59/57	2-7/2-7	30/40 ML
16 May 2008	0612/0800	60/63	0-1/0-1	0/0
25 May 2008	0600/0730	52/53	1-3/1-3	40/40
1 Jun 2008	0600/0700	55/56	0-1/0-1	20/20
15 Jun 2008	0500/0600	57/57	0/0	100/100 ML

RESULTS

Background Search

California Least Tern

Based on the annual breeding season survey of California least terns, four general sites were monitored in Ventura County during the 2007 nesting season (Marschalek 2008). The monitored sites include McGrath State Beach, Ormond Beach, Hollywood Beach, and Point Mugu. At Ormond Beach, a maximum of 50 pairs of California least terns were documented in 2007. Based on the 1993 annual breeding season survey (Caffrey 1994), the Ormond Beach site was divided into three sites; Perkins, Middle, and Edison. During the 1993 nesting season, 14 pairs of California least terns were observed at the Edison site and three pairs observed at the Perkins site. The Ormond Beach site of 2007 appears to coincide with what was called the Edison site during the 1993 survey. Based on Marschalek (2008), the Perkins Site does not appear to have been monitored in 2007.

Western Snowy Plover

Unlike the California least tern, the annual survey for western snowy plovers is not comprehensive. Consequently, no comprehensive annual census data exists for western snowy plovers at Ormond Lagoon.

Based on information held in the California Natural Diversity Data Base, nesting western snowy plovers have been documented adjacent to Ormond Lagoon (CNDDB 2006). One of the records (Occurrence No. 39) indicated that a general nesting area of western snowy plovers is located approximately 1.5 miles southwest of Port Hueneme. At this general location, numerous nests have been documented. Other nesting western snowy plovers have been

documented just north of the inlet to the Channel Island Harbor, four miles southwest of Oxnard (Occurrence No. 123).

Light–footed Clapper Rail
Based on the annual breeding season survey of the light-footed clapper rail, Ormond Beach lagoon has not been monitored for this species (Zembal et al. 2007). Based on this report, the closet monitored population of light-footed clapper rails occurs at Point Mugu. From 2000 to 2007, the population of rails at Point Mugu has ranged between 7 and 17 individuals. Pair status remains unknown at Point Mugu.

Field Survey

California Least Tern
All, of the upper beach habitat bordering the project area, especially the dunes, is suitable nesting habitat for the California least tern. In addition, approximately 2.5 acres of suitable nesting habitat occurs within the project area (Figure 3).

California least terns did not arrive at Ormond Lagoon until mid May (Table 4). No nests of California least terns were detected within the project area during this survey. However, at least three pairs of California least terns were observed nesting near the project area (Figure 3). These three pairs routinely foraged within Ormond lagoon and within the J Street Drain. In addition, California least terns from the Southern California Edison nesting area, located south of the project site, also foraged within the lagoon. Foraging attempts by California least terns were mapped during each survey event (Figure 3). Based on observations made during these surveys, shallow, near shore areas were routinely used by the tern while foraging. California least terns were routinely observed flying over the project site while going to and returning from searches for food.

Table 4. Tabulated data from California least tern survey at the J Street Drain study area in 2008.

Survey Date	Survey Time (24 Hour)	Survey Area	Max Number Observed @ One Time	Activity
	Start/Stop			
10 Apr 2008	1000/1920	_____	_____	____
18 Apr 2008	1157/1940	_____	_____	_____
27 Apr 2008	1400/1900	_____	_____	_____
04 May 2008	1230/1600	_____	_____	_____
16 May 2008	1430/1750	_____	_____	_____
24 May 2008	1530/1955	B,C,E	1,1,2	C,F,N
31 May 2008	1630/2000	A,C,B,E	3,3,5,3	F,F,F,N
7 Jun 2008	1622/2000	B,C,E	1,2,5	F,F,N
14 Jun 2008	0520/1900	A,C,E	1,2,6	F,F,N
8 Jul 2008	1400/1900	A,,B,C,E	1,13,3,3	F,F,F,N

C: Courting; F: Foraging; N: Nesting

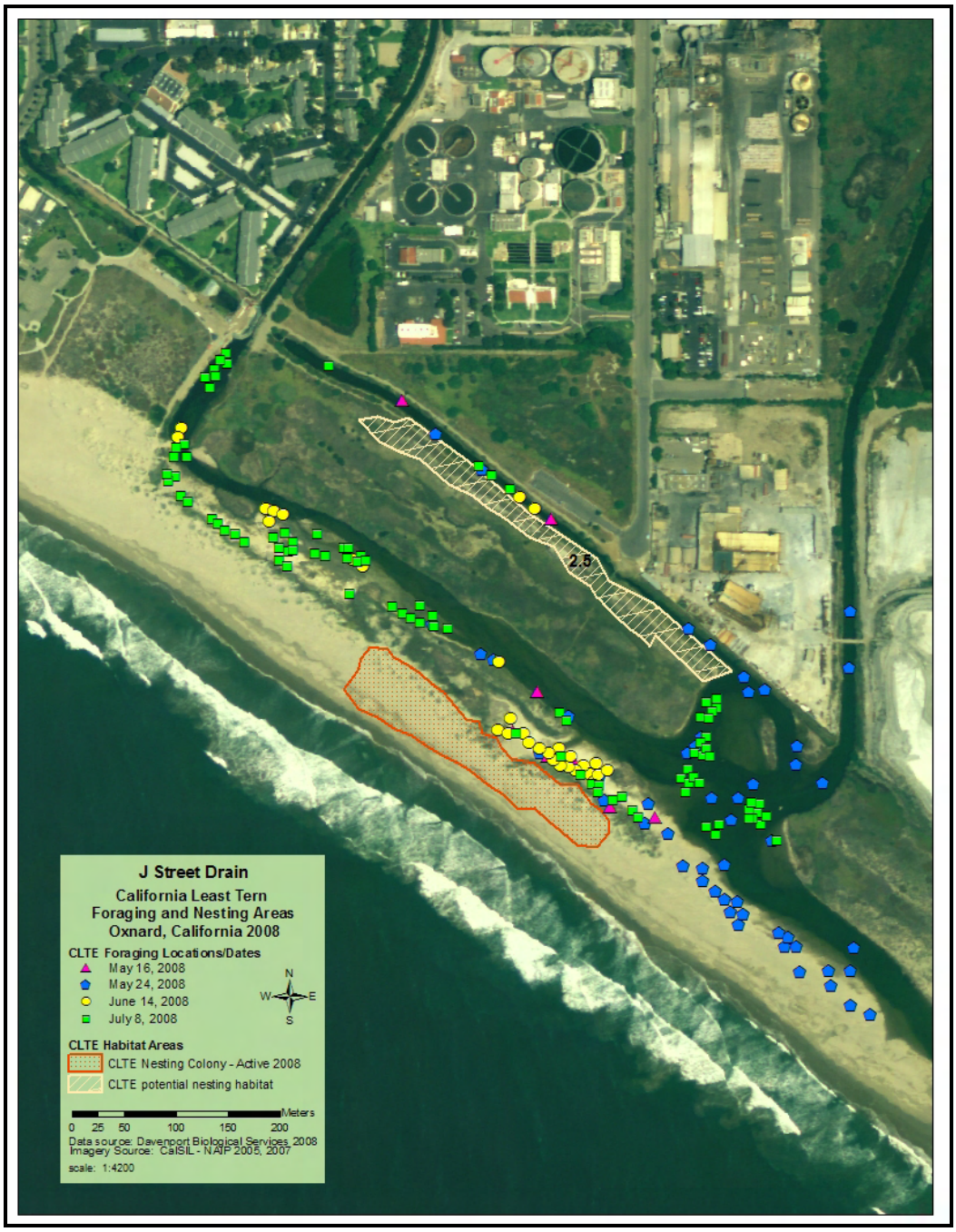

Figure 3. Figure shows locations of commonly used foraging areas by the California least tern within the lagoon during the 2008 survey. Figure also shows location of small nesting colony of California least terns during 2008. Note, during the 2008 survey, water levels were higher within the lagoon than indicated in the aerial photograph.

Western Snowy Plover

All, of the upper beach habitat bordering the project area, including the dunes, is suitable habitat for the western snowy plover. In addition, approximately 2.5 acres of suitable nesting habitat occurs within the project area (Figure 4).

No snowy plovers were detected within the immediate project area during this survey. However, three pairs of snowy plovers, as well as several others, were observed adjacent to the project area (Table 5; Figure 4). At least one of these pairs established a nest adjacent to the project area. This nest was located across the lagoon within the dunes.

Table 5. Tabulated data from survey for western snowy plover at the J Street Drain study area. F: foraging; L: loafing; N: nest

Date	Survey Time	Maximum Number Observed	Survey Area	Activity	Easting	Northing
10 Apr 08	1000-1920	6	C	L	0298823	3779215
19 Apr 08	1200-1500	2 2 1	E F F	F F N? (very stealthy)	0298630 0298947 0298596	3779356 3779118 3779397
27 Apr 08	1400-1900	1 2 (+ nest)	F F	F N	0298561 0298630	3779420 3779370
04 May 08	1230-1600	2 3	F F	F, L F	0298893 0298837	3779172 3779161
16 May 08	1430-1900	2 (+ prev. nest)	F	F N	0298630 0298630	3779340 3779370
24 May 08	1530-2000	2 2	E F	F F	0298669 0298813	3779338 3779232
31 May 08	1630-2000	0	----	----	----	----
7 Jun 08	1622-2000	2	F	F	0299077	3778982
14 Jun 08	1520-1900	0	----	----	----	----
8 July 08	1610-1900	5	F	F, L	0298947	3779110

F: Foraging; L: Loafing/Perching; N: Nest

Figure 4. Figure shows location of observed western snowy plovers and nest location during 2008 survey.

Light-footed Clapper Rail

Approximately 5.52 acres of suitable light-footed clapper rails occurs within the project area. An additional 4 acres of suitable light-footed clapper rail habitat occurs adjacent to the project (Figure 4).

No light-footed clapper rails were detected during this survey. One Virginia rail (*Rallus limicola*) and one Sora (*Porzana carolina*) were detected during this survey.

Figure 4. Shows location and amount of light-footed clapper rail habitat within and adjacent to project area.

DISCUSSION

California Least Tern

There are three recognized nesting sites of California least tern near Ormond Lagoon. The locations are identified as the Perkins Street Site, Middle Site, and the Edison Site (Caffrey 1994). The project site appears to coincide with the Perkins Street Site. Although suitable nesting habitat for California least terns remains at the Perkins Street Site, and within the project area, no nesting was observed within the project site. The lack of nesting is likely due to the high disturbance of the site by people visiting the lagoon and/or trying to gain access to the beach. The sandy stretch of habitat that would be suitable for nesting (Survey Area H) is entirely trampled by people visiting the lagoon. People gain access to Survey Area H and I by two small foot-bridges. In addition, a large population of California ground squirrels (*Spermophilus beecheyi*) inhabits Survey Area H. California ground squirrels may prey on the eggs and chicks of ground nesting birds such as California least terns. The suitable nesting area is also degraded due to the presence of exotic invasive plants (e.g., sweet clover (*Melilotus alba*), crab grass (*Cynodon dactylon*), and ice-plant (*Carpobrotus* sp.) and is reduced in size due to their presence.

The three pairs of California least terns observed nesting across the lagoon from the project site foraged often within various areas of the lagoon (Figure 3). The foraging locations appeared to shift depending on the velocity of the wind. During windy conditions, the terns shifted their foraging to the calmer waters located just down wind of marsh vegetation and dunes. During calmer days, their foraging was more widespread across the lagoon but seemed concentrated near shallower waters.

Western Snowy Plover

Although suitable nesting habitat occurs within the immediate area of the project site, no nesting was observed within the project site. The lack of nesting is likely due to the high disturbance of the site by people visiting the lagoon. The sandy stretch of habitat that would be suitable for nesting (i.e., Survey Area H) is entirely trampled by people visiting the lagoon and/or trying to gain access to the beach. In addition, and as for the California least tern, California ground squirrels may pose a risk to nesting western snowy plovers. Nesting western snowy plovers were observed next to the project site but on the other side of the lagoon (Figure 4).

Light-footed Clapper Rail

Suitable habitat for nesting light-footed clapper rails occurs within the project site. The reason for the absence of rails is unknown. Interesting, only one Virginia rail and one Sora were detected during this survey, and they were only detected once. Other than the American coot (*Fulica americana*), no other rails were detected nesting within lagoon. The apparent absence of other rails remains unknown.

California Brown Pelican

California brown pelicans (*Pelecanus occidentalis californicus*) were commonly observed bathing in the lagoon and roosting on the sand spit that separates Ormond Lagoon from the Pacific Ocean. In May, three to five California brown pelicans were observed in this area. By mid June, the number of California brown pelicans had grown to more than 60 birds. Given the location of this site to Anacapa Island (a major nesting area for this species), the number of California brown pelicans using this area should be anticipated to increase.

CONCLUSION

Foraging California least terns were observed within and adjacent to the project site. Although suitable nesting habitat for California least terns, western snowy plovers, and light-footed clapper rails occurs within the project site, none of these species nested within the immediate area of the site. Nesting California least terns and snowy plovers were observed adjacent to the project site on the other side of the lagoon.

RECOMMENDATIONS (Avoidance, Minimization, and Mitigation Measures)

Avoid ground-disturbing and habitat impacting activities within the project area during the breeding season of migratory birds (February 15 through July 30). If project activities cannot avoid these dates, conduct nesting season surveys to ensure active nests are not destroyed by project activities.

To prevent a decrease in the foraging success of California least terns, prevent release of soils or other materials into waters of Ormond Lagoon.

To prevent a decrease in the foraging success of California least terns, install silt fences between the project area and waters of Ormond Lagoon to prevent clouding of the water due to runoff. For project activities within waters of Ormond Lagoon, install dual silt fences around each work area to prevent/decrease the clouding of water within the lagoon.

To offset project related impacts to Ormond Lagoon, enhance the site for future nesting California least terns and western snowy plovers by preventig general public access to Survey Area I. This can be accomplished by the installation of a sufficient gate at each of the two foot-brides. In addition, current signing discussing the sensitivity of the site can be enhanced by informing the public that there is no beach access.

To offset project related impacts to Ormond Lagoon, enhance the site for future nesting California least terns and snowy plovers, by instituting and funding a weed management program within Survey Areas H and I. The removal of exotic plants will increase the area of suitable nesting habitat for both California least terns and western snowy plovers.

To offset project related impacts to Ormond Lagoon, enhance the site post construction for future nesting California least terns and snowy plovers by instituting and funding a California ground squirrel eradication/management program within Survey Areas H and I. As California ground squirrels may prey upon nesting birds, their removal from the nesting area will enhance nest success of these species within this area.

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APPENDIX E
USACE and CDFG Jurisdictional Wetland Delineation

Jurisdictional Wetland Delineation Report

J Street Drain Project
Ventura County, California

July 2008

Revised September 2011

Prepared for

Ventura County Watershed Protection District
800 South Victoria
Ventura, California 93009-1610

Prepared by

HDR Engineering, Inc.
3230 El Camino Real, Suite 200
Irvine, California 92602

Jurisdictional Wetland Delineation Report
J Street Drain Project

July 2008
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800 South Victoria
Ventura, California 93009-1610

Prepared by

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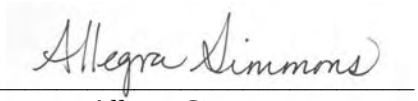
Shannon M. Allen
Certified Wetland Delineator



Allegra Simmons
Trained Wetland Delineator

Ingrid Eich
Certified Wetland Delineator

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1.0 INTRODUCTION

At the request of the Ventura County Watershed Protection District (District), HDR Engineering, Inc. (HDR) conducted a wetland delineation for the J Street Drain Project (Figure 1). This report presents the results of a U.S. Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), and California Coastal Commission (CCC) Jurisdictional Wetland Delineation conducted on site. The purpose of the delineation is to determine areas that may be subject to federal and state wetland regulation and permitting.

This study is intended to establish jurisdictional limits in compliance with the Unified Federal Method for Wetland Delineation (1987), Arid West Supplement pursuant to federal standards. Should project construction result in measurable impacts to resources determined to be within the jurisdiction of the USACE and/or CDFG, one or more of the following permitting documents may be required, depending on jurisdictional determinations (JD) made by the regulatory authorities identified by this study:

- A USACE Individual Permit pursuant to Section 404 of the federal Clean Water Act (CWA) (1990, as amended), and/or qualification under a Nationwide Permit pursuant to Section 404 of the CWA; and/or
- Clean Water Certification in compliance with the California Porter-Cologne Water Quality Control Act as defined by the state Regional Water Quality Control Board (RWQCB) or federal CWA Section 401 Certification requirements;
- A Section 1600-Series Streambed Alteration Agreement (SAA) with the CDFG in compliance with CDFG Code; and
- Coastal Zone Management Act, Coastal Development Permit.

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2.0 PROJECT DESCRIPTION AND LOCATION

2.1 PROJECT LOCATION

The project site is located along J Street, which is on the border of the City of Oxnard and City of Port Hueneme in Ventura County (Figure 1). The project site continues into the Ormond Beach Lagoon, which is located south of the J Street Drain (Drain). The predominant surrounding land uses consist of residential development on each side of J Street, some commercial uses near Hueneme Road, and the Oxnard Wastewater Treatment Plant (OWTP) near the lagoon. General site photos are located in Appendix A.

2.2 PROJECT DESCRIPTION

The existing Drain is a trapezoidal concrete-lined channel located along the centerline of J Street, and begins upstream at the Redwood Street crossing and terminates downstream at the west boundary of the Ormond Beach Lagoon (Figure 2). The facility also includes culverts under the street crossings at the following locations:

- Redwood Street
- Teakwood Street
- Yucca Street
- Bard Road
- Pleasant Valley Road
- Clara Street
- Hueneme Road
- Railroad crossing – Ventura County Railroad (VCRR)

The existing concrete lining ends approximately 50 feet south of the Hueneme Drain Pump Station and the remaining earthen portion continues downstream before turning east at the sand berm.

The Ventura County Watershed Protection District (then known as the Ventura County Flood Control District) was formed on September 12, 1944, when the California State Legislature approved the Ventura County Flood Control Act. The District was formed, in part, to provide for the control and conservation of flood and stormwaters and for the protection of watercourses, watersheds, public highways, life and property in the District from damage or destruction from these waters. On January 1, 2003, the name was changed to the Ventura County Watershed Protection District (District) to reflect changes in community values, regulatory requirements, and funding opportunities. The District's mission is to protect life, property, watercourses, watersheds, and public infrastructure from the dangers and damages associated with flood and stormwaters. Goals of the District include:

- Comprehensive, long range watershed planning
- Collaboration with watershed stakeholders
- Administration of adopted regulations, policies, and resolutions
- Responsible and accountable use of public resources
- Excellence in public service

The District possesses jurisdictional authority over any channel containing runoff with a peak flow rate of more than 500 cubic feet per second (cfs) during a 100-year storm. Laterals and side drains contributing runoff to the jurisdictional channels (referred to as "redline" channels) are under the jurisdiction of the state and or appropriate local agency (City of Oxnard for this project). However, lateral and side drain

connections to jurisdictional channels must obtain an encroachment permit from the District and provide sufficient information and engineering studies to show that the connection does not negatively impact the conveyance capacity of the jurisdictional channel.

In order to identify and focus long range priorities within the District an Integrated Watershed Protection Plan (IWPP) was prepared. The objectives of the IWPP include:

- To provide a systematic process for the inclusion of projects into the District's Capital Improvement Plan over its 5-year planning period; and
- To improve the long-range District planning process for the 20-year period subsequent to the Capital Improvement Plan by allocating projected revenues to identified projects. The IWPP also provides Level-of-Service evaluation that identifies the need for additional project funding to achieve desired flood mitigation goals.

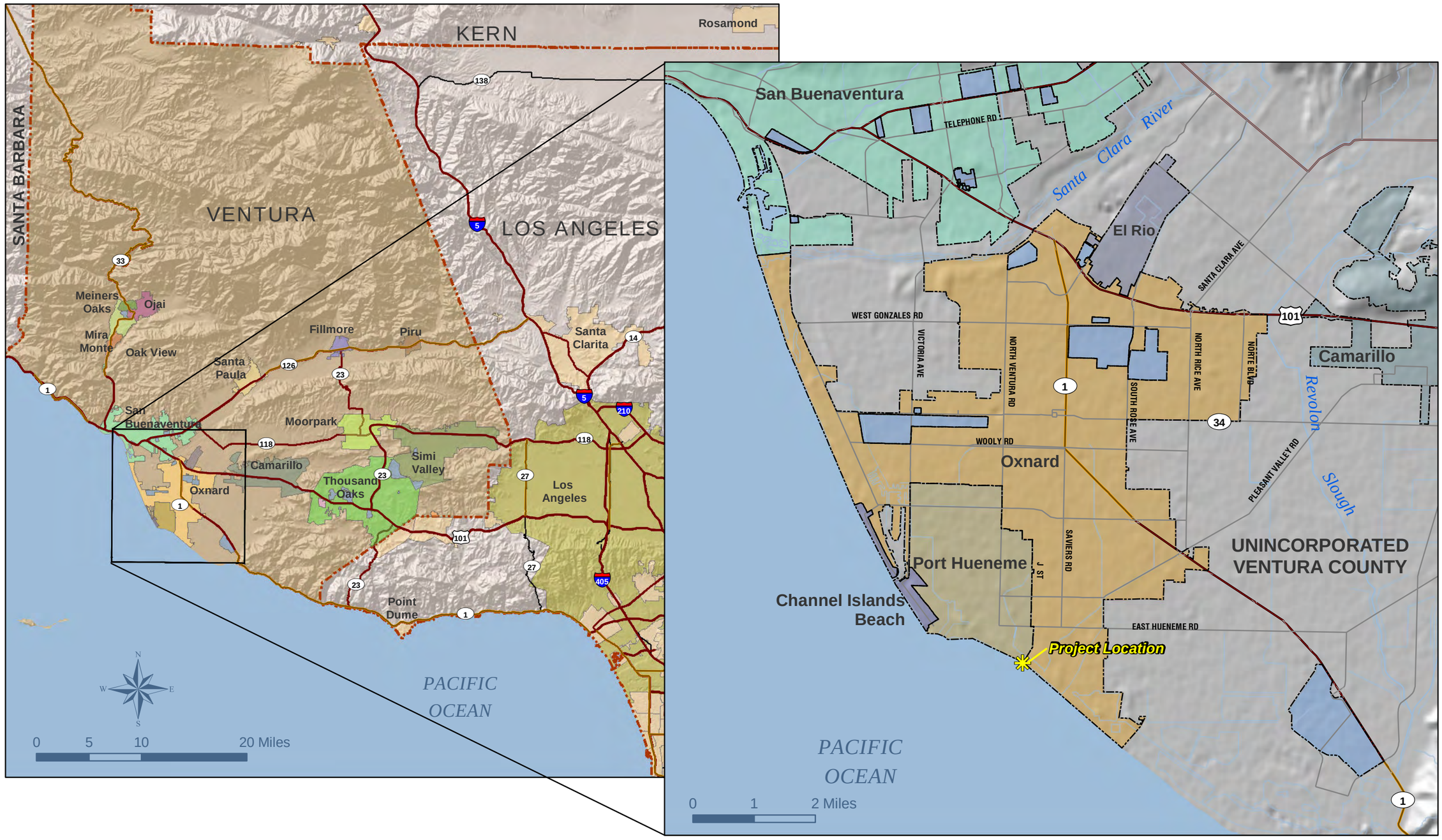
According to studies sponsored by the District, the area surrounding the J Street Drain is anticipated to flood during a severe rain event. The J Street Drain Channel Improvement Study and Preliminary Design (URS 2005) estimates that the capacity of the J Street Drain to be 500-600 cfs, which could be exceeded during a ten-year flood event. Flood damages were estimated using the depth of flooding in the residential and commercial areas along J Street, the structural value data obtained from the District, and the 1975 revised depth-damage curves for residential and small business structures calculated by the Federal Insurance Administration (FIA). The benefit cost analysis (BCA) was conducted using estimated pre-project flood damages and losses to calculate benefits. Based on calculations a total of $55.7 million was estimated as the damage that would result from a 100-year flood in the J Street Drain Channel.

In addition to the Drain capacity, the outlet of the Drain is sometimes constrained by a sand berm that can reach over 7 feet in height surrounding the Ormond Beach Lagoon. The sand berm hinders the direct flow path of the J Street Drain channel to the Pacific Ocean. The berm currently directs the water to the east. If there is no opening to the ocean then water ponds in the Lagoon and can reach up the Drain to Hueneme Road.

The sand berm at the Ormond Beach Lagoon was periodically manually breached prior to 1992 by the District to create a discharge path directly to the ocean and prevent water and silt buildup in the channel. However, this practice was stopped in 1992 due to environmental concerns and restrictions. Natural breaching also occurs under existing conditions when the water surface reaches an elevation of 5.1 to 5.6 feet National Geodetic Vertical Datum (NGVD) (7.5 to 8 feet NGVD) above mean sea level (msl). Therefore, the sand berm at the Ormond Beach Lagoon breaches naturally under existing conditions.

2.3 PURPOSE, NEED AND PROJECT OBJECTIVES

The purpose of the proposed project is to provide flood protection to the 100-year flood level for the area surrounding J Street Drain. The need is evidenced by the studies that show the Drain has a current capacity to handle a ten-year flood event without overtopping the channel. Without the increase in flood protection the local area would continue to be susceptible to flooding, as well as federal requirements to purchase flood insurance for properties within the 100-year flood zone after the Federal Emergency Management Agency (FEMA) remaps the project area in the future.



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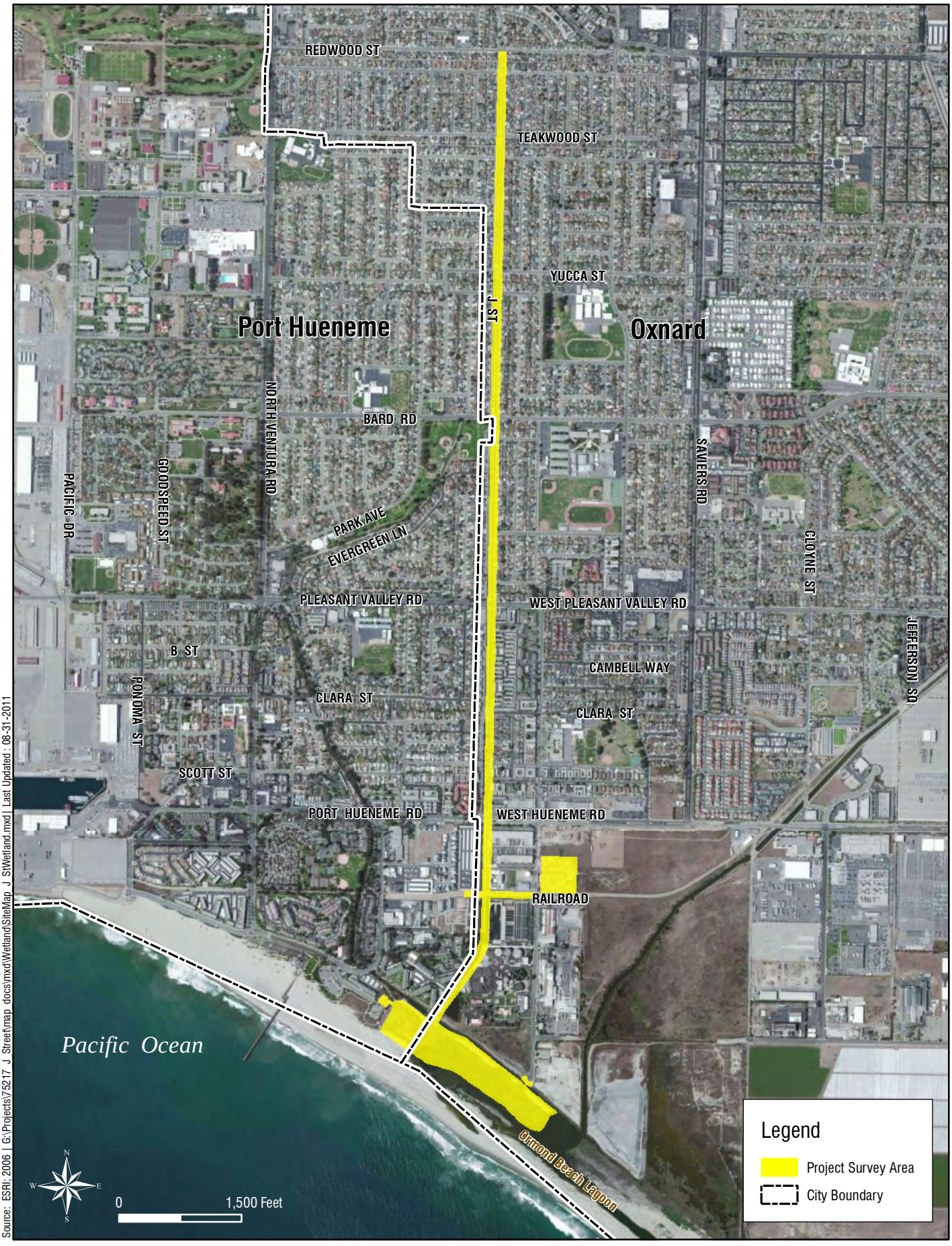
Project Regional & Vicinity Map

FIGURE 1



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Project Survey Area

FIGURE 2

Along with the proposed increase in drain capacity, the proposed project also includes a Beach Elevation Maintenance Plan (BEMP). The BEMP identifies a set of environmental conditions that might cause flooding during a storm event. Once these conditions are observed, a predetermined list of actions would be implemented to ensure the opening of the lagoon outlet when the water surface reaches a target safe elevation. The Ormond Beach Lagoon inlet normally remains in a semi-closed condition due to sand accretion on Ormond Beach, but during most winters it breaches naturally to allow free outflow during storms and some high tides. The BEMP is a guideline to assist the District in responding to the potential flood threat caused by persistence of the sand berm during potentially damaging storm events of varying magnitudes. The BEMP defines a maximum safe beach height, and provides for a coordinated response to groom the sand berm at a pre-specified location immediately prior to a predicted storm event.

Project Objectives

The District's primary objectives of the project include:

- Flood control protection – increase drain capacity for 100-year flood flow;
- Maintain the existing functional characteristics of the Ormond Lagoon;
- Ensure project compatibility with future Ormond Beach Lagoon restoration plans;
- Minimize the disturbance to tidewater goby habitat downstream of the J Street lined channel, as well as snowy plover and California least tern nesting areas on Ormond Beach;
- Minimize operation and maintenance requirements, especially during storms; and
- Minimize effects on water quality of the lagoon.

2.4 PROJECT CHARACTERISTICS

The proposed project would involve increasing the capacity of the existing channel to reduce flooding in residential and commercial areas of Oxnard and Port Hueneme. The existing trapezoidal concrete-lined channel has a variable depth averaging 4 feet deep with a bottom width varying from 20 to 30 feet with 1:1 side slopes.

Channel Portion

Upstream

The proposed J Street Drain would involve converting the existing trapezoidal concrete channel into an open rectangular channel with an invert 2.5 to 4 feet below the existing channel bottom. The existing trapezoidal channel would be widened and deepened to increase the capacity; the channel walls would be vertical and top of the channel open. The existing culverts under the street crossings (listed above) would also be replaced by larger structures to improve flow conveyance. The existing concrete lining ends approximately 50 feet south of the Hueneme Drain Pump Station and the remaining earthen portion continues downstream before turning east at the beach.

Downstream

The existing J Street Drain Channel concrete lining terminates approximately 50 feet south of the Hueneme Drain Pump Station, near the Hueneme Drain confluence. Because the concrete lined portion of the channel invert would be lowered 2.5 to 4 feet to create the required capacity, excavation would continue downstream towards the sand berm. The finished invert would be daylighted via an earthen ramp to the lagoon at a 10:1 slope over a distance of up to 40 feet. A 10-foot thick layer of four-ton rock riprap would be placed horizontally at the end of the concrete drain and below the earthen ramp to dissipate energy flow. It is anticipated that the movement of water (tidal and drain flow) would ultimately result in an equilibrium elevation within the channel transition area.

Beach Outlet Portion

No alterations are proposed to the Ormond Beach Lagoon. The lagoon would continue to function as it does now with periodic natural breaching.

2.5 CONSTRUCTION

The demolition of the existing drain and construction of the new, higher capacity drain, will take place in phases. At this stage of the engineering design it is anticipated that the demolition and construction would start at the southern end of the Drain, south of Hueneme Road and move northward in phases. The initial construction activities include installation of groundwater dewatering wells, a coffer dam, and channel flow bypass. The groundwater dewatering wells will be approximately 15 to 20 feet deep, and placed along the work area of the J Street Drain. These wells will be installed and removed as construction moves upstream. Once installed, these wells will be attached to temporary pumps to extract groundwater for discharge into the Perkins Drain. The groundwater will be tested in accordance with the requirements of the Regional Water Quality Control Board (RWQCB) prior to placement into Perkins Drain. If the pumped groundwater is determined to be acceptable, it would then be allowed to be discharged. This will ensure that no surface water contamination would result from dewatering.

The electric power to run these pumps will be supplied from the existing Hueneme Drain Pump Station. The rate of groundwater pumping would be at the discretion of the project contractor, though it is recommended that the groundwater level should be 2 feet below the construction work area.

A coffer dam will be placed across the channel at the south end of the construction area. The coffer dam will block tidal flow into the work area. Figures 3a through 3d illustrate the proposed coffer dam. Block nets would be installed immediately upstream and downstream of the proposed coffer dam site to isolate it, and all native fish between the nets, including the endangered tidewater goby, will be relocated beyond the downstream net before coffer dam installation begins. The coffer dam and block net will be removed after project completion. This work will be conducted by approved, qualified biologists who will verify that all fish have been removed from the work area prior to the start of further construction.

The channel flow bypass will be a diversion installed to allow for any channel flow to bypass the construction area and enter the Perkins Drain. In addition, the Hueneme Drain Pump Station will pump water from the Hueneme Drain across the J Street Drain to the Perkins Drain during construction at the south end of Phase I. Once the initial construction activities of installation of groundwater wells, coffer dam, and channel bypass are completed, fish remaining within the channel section upstream of the coffer dam can be relocated and demolition can begin.

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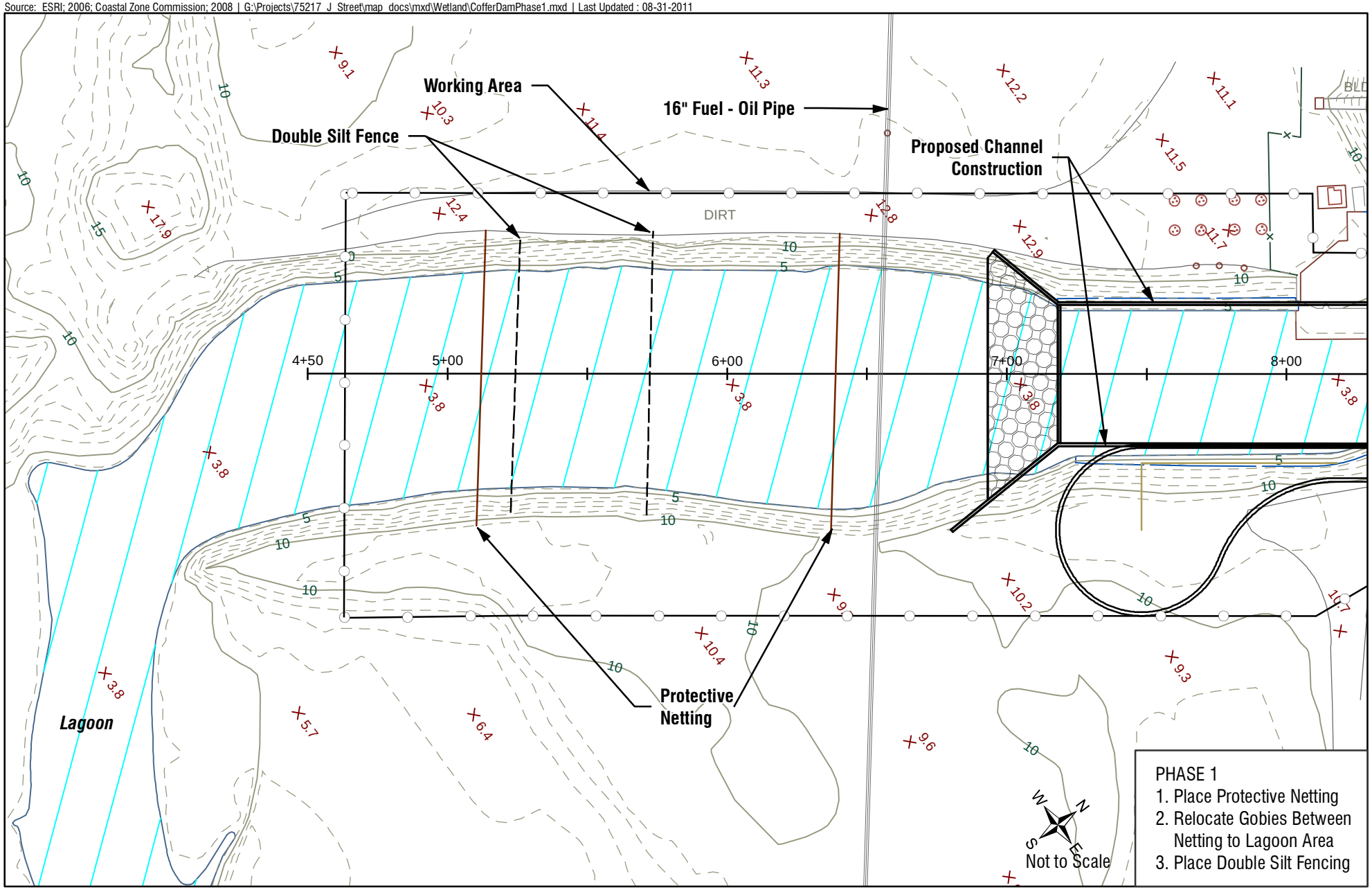

Coffer Dam Construction - Phase 1

FIGURE 3a

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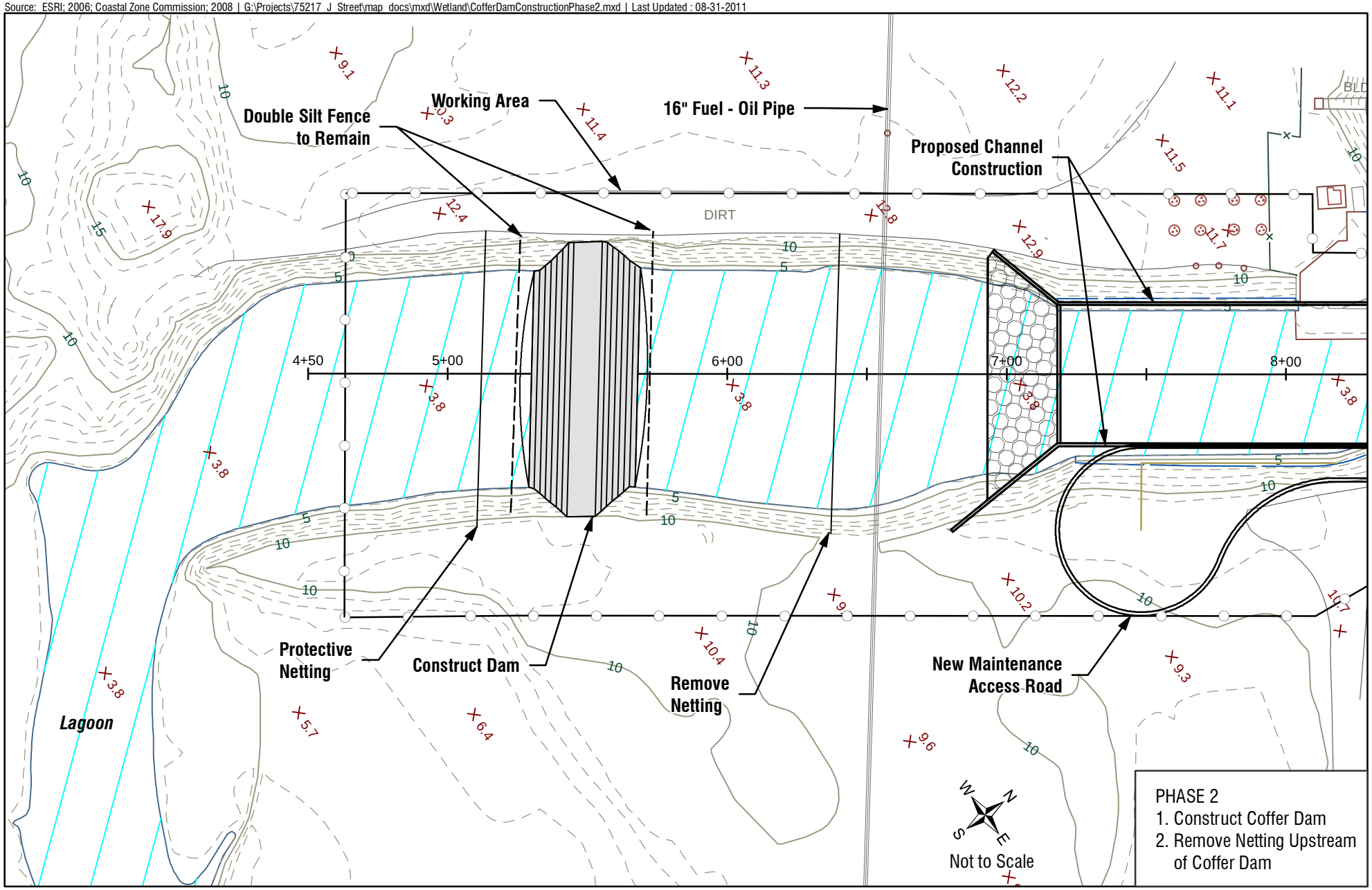

Coffer Dam Construction - Phase 2

FIGURE 3b

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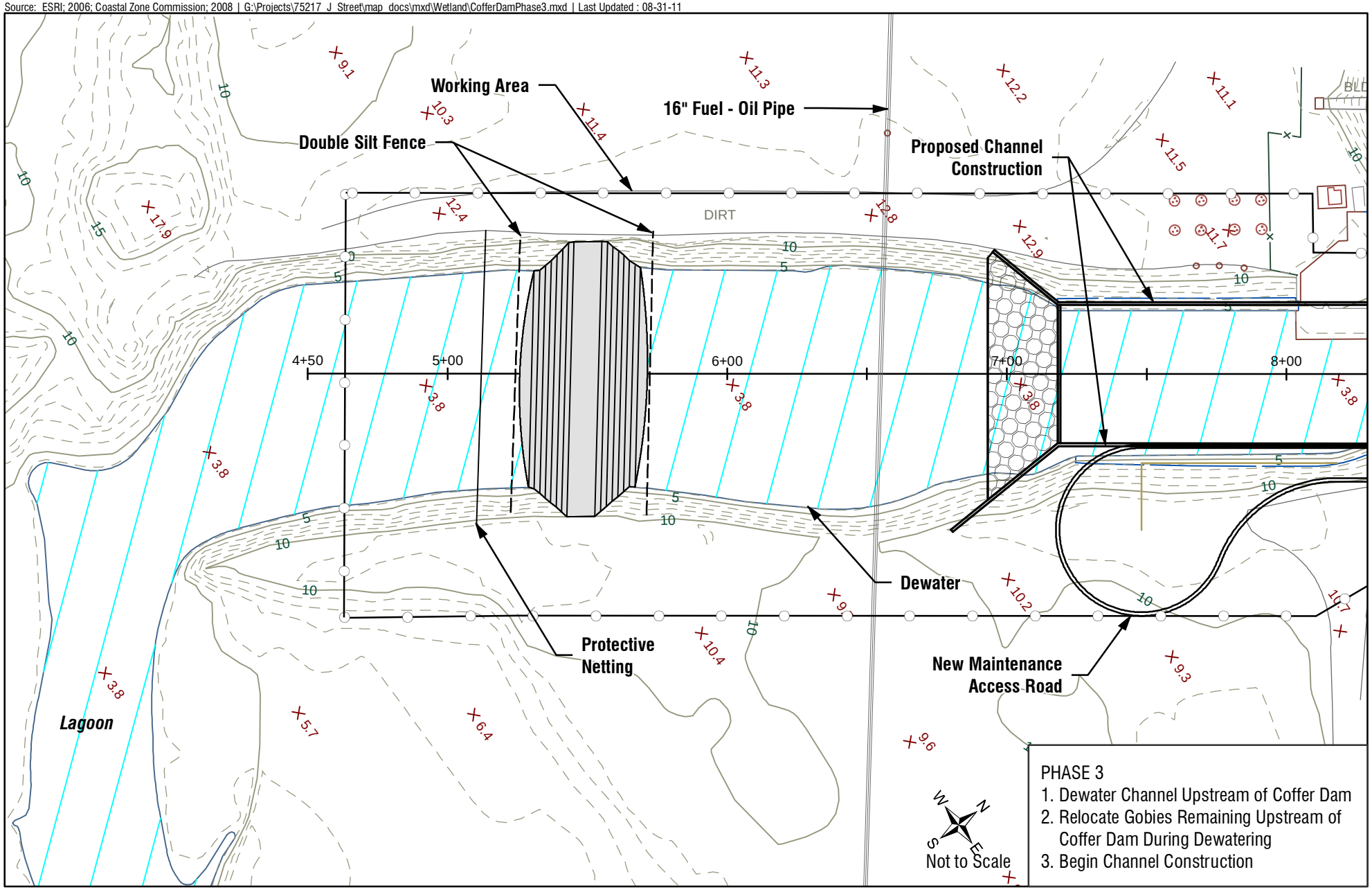

Coffer Dam Construction - Phase 3

FIGURE 3c

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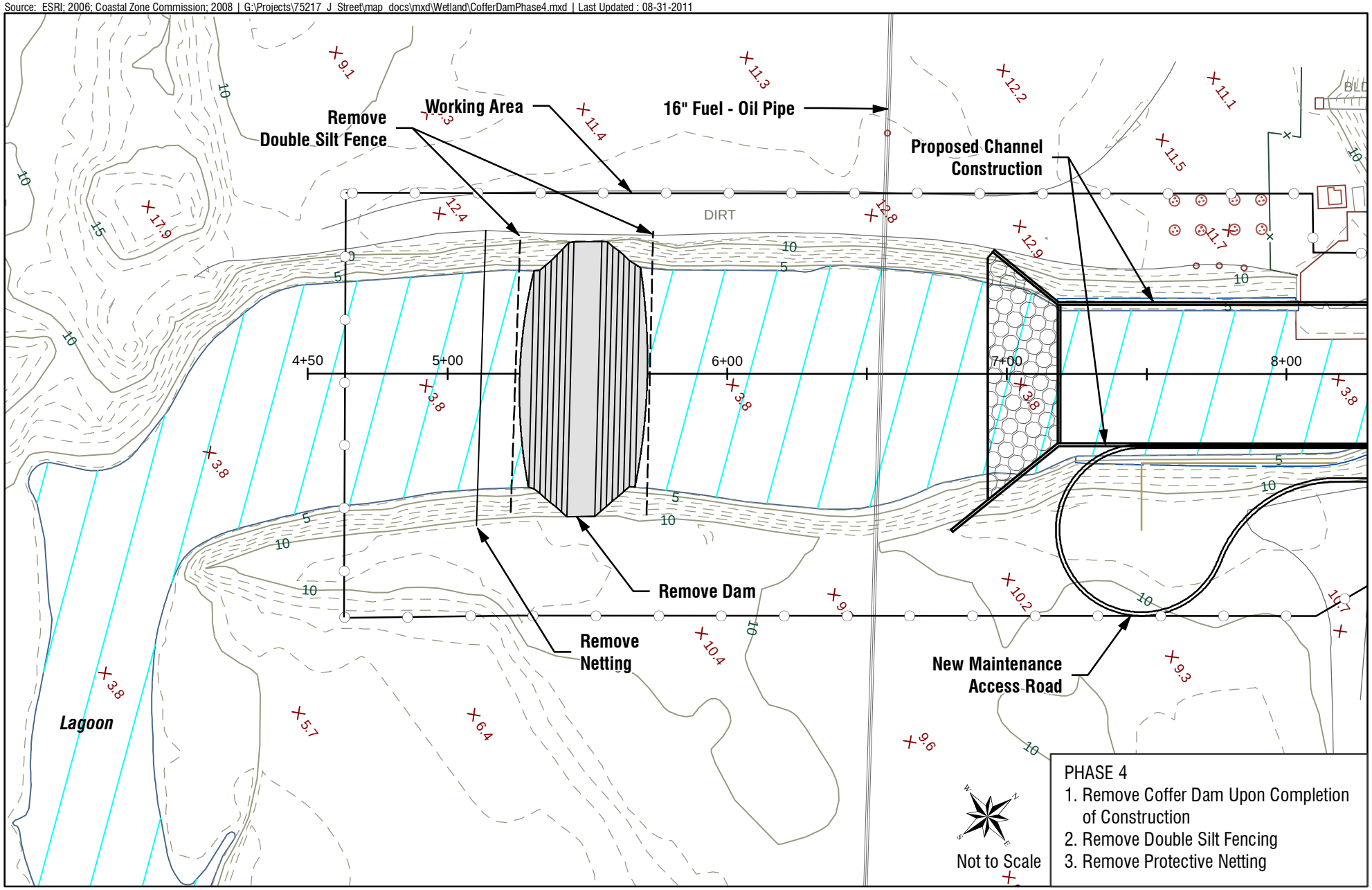


Coffer Dam Construction - Phase 4

FIGURE 3d

Demolition will initially start with adjacent fencing removal and landscape removal if necessary. After the permanent fencing is removed, temporary fencing will be installed along adjacent properties to limit access to the work area and ensure public safety. Demolition will consist of utilizing heavy equipment to break up and remove the concrete from the existing drain. Access to the area south of Hueneme Road will be from Hueneme Road via the District maintenance road on the east side of the drain. The contractor may decide to use the drain itself as an access way after entering the District right-of-way at Hueneme Road. The concrete will be broken on site for transport but the contractor will be required to find an appropriate location to grind the concrete further for appropriate recycling (as required by Ventura County ordinances).

After the concrete is removed, existing soil will be excavated to the appropriate dimensions for safe shoring (if necessary) and proper installation of subdrains and forms for the new drain. The excavated material will be removed by the contractor and hauled away from the site via a City-approved haul route (which is dependant on the ultimate location secured by the contractor). Some soils may remain on site for backfilling once the new drain is installed. Materials, including subdrain materials, reinforcing bar, and the concrete for the new drain will be delivered to the site via the approved access route from Hueneme Road. The work will only occur during hours approved by the City of Oxnard, which are anticipated to be from 7 am to 7 pm on weekdays.

Once each phase of the new drain is complete, the permanent perimeter fencing will be reinstalled. Any landscaping damaged outside of District easement on private property, will be replaced. Where the adjacent property is owned by the City, the landscaping will be replaced by the City under agreement with the District. Maintenance of the adjacent landscaping is the responsibility of the local jurisdiction once the materials are installed.

2.6 OPERATIONAL – BEACH ELEVATION MANAGEMENT PLAN

The Ormond Beach Lagoon inlet normally remains in a semi-closed condition due to sand accretion on Ormond Beach, but during most winters it breaches naturally to allow free outflow during storms and some high tides. These events do not drain the lagoon entirely, as urban runoff and high tides contribute fresh and salt water flows. To date, there has been one instance of the inlet remaining closed during a minor storm event and causing upstream flooding, this took place on January 18, 2010. This event flooded the OWWTP, which was at risk of releasing untreated sewage effluent into the surrounding waterways, roads, and residential properties due to electrical failure of inundated equipment. To prepare for the reoccurrence of the combination of the outlet being closed, the lagoon water surface being above a high threshold level, and a storm being forecast, a Beach Elevation Management Plan (BEMP) has been developed as part of the proposed J Street Drain project. The BEMP defines a maximum safe beach height, and provides for a coordinated response to groom the sand berm at a pre-specified location immediately prior to a predicted storm event. Implementation of the BEMP will generally occur outside of the breeding bird season between September 16 and March 14. On rare occasions, the BEMP may be implemented after March 14 with mitigation measures in place to protect breeding birds.

The purpose of the BEMP is to protect the lives and well-being of the communities and industrial facilities along J Street Drain and Ormond Beach Lagoon by maintaining downstream water levels below a predetermined safe elevation.

The BEMP is a guideline to assist the District in responding to the potential flood threat caused by persistence of the sand berm during potentially damaging storm events of varying magnitudes. It should be noted that the BEMP would be implemented when conditions warrant, which may be more than once

annually, to avoid an emergency. Therefore, implementation of the BEMP would constitute a new maintenance activity associated with operation of the proposed project.

Management Procedure

The grooming would be performed by a tracked dozer designated by the O&M Deputy Director in coordination with the District Director or his/her designee. Once the O&M Deputy Director determines that the BEMP threshold criteria have been met, the dozer shall be pre-positioned at the south side parking lot of Port Hueneme Beach Park. As soon as the BEMP is enacted, the dozer operator accompanied by District environmental staff would move the dozer to the designated beach grooming location, and shave the sand berm down to the maximum safe beach elevation. The dozer access path to the groom location would be the same as the one currently used by lifeguards from Port Hueneme Beach Park. Access to the beach from this point would avoid the nesting sites used by California least terns and western snowy plovers in 2008 (Davenport 2008, Hartley 2009 and 2010, Smith, 2009 and 2010). The grooming width would measure approximately100 feet parallel to the coastline. The removed sands would be placed on the beach adjacent to the groomed area. The grooming procedure would be completed within several hours, including removal of equipment from the beach. The designated grooming area would be permanently marked with rods driven deep into the sand. Elevation markings would be depicted on the rods. The grooming location would be coordinated with USFWS to limit potential impact to habitat areas.

During the grooming operation, the work site would be secured by the District to prevent interruption by or injury of the general public. Members of the Ventura County Sheriff Department or lifeguards, as well as their designees, may assume responsibility for the protective duty.

3.0 METHODS

In order to assess and delineate the onsite wetland resources, HDR biologists Shannon M. Allen and Allegra Simmons, surveyed the project area (and adjacent land) on April 28, 2008 between the hours of 0830 to 1700, and on April 29, 2008 between the hours of 0830 to 1750. Weather conditions were conducive for surveying on both days with clear skies, temperatures ranging from 65 degrees Fahrenheit to the low 70s, and winds between 7-9 mph. Habitats onsite were examined to determine drainage features and wetlands connectivity. All potential wetland areas were measured in terms of presence/absence of hydrology, hydrophytic vegetation, and indicators for hydric soil. Transects and test pits were established, as recommended and in accordance with the Unified Federal Method for Wetland Delineation (USACE 1987), to measure and assess these wetland indicators. The delineation followed protocol requiring the use of the recently instated Regional Supplement to the USACE Wetland Delineation Manual: Arid West.

During the baseline survey, the project site and adjacent land (project survey area) was surveyed for potential wetlands. Due to the size and shape of the project survey area, it was necessary to divide the area into two survey areas: northern and southern. The northern survey area consists primarily of the existing J Street Drain, which is a concrete-lined channel, beginning at Redwood Street and continuing south to Hueneme Rd (Figure 4a). The full length of the drain is fenced to prohibit people from entering. This area is primarily developed with residential and commercial development.

The southern survey area includes an approximately 2,600-foot portion of the drain, which continues south of Hueneme Road and flows into the Ormond Beach Lagoon. Given the developed nature of the drain, the focus of the delineation was on the Ormond Beach Lagoon portion of the southern survey area. The concrete lined channel of the drain ends approximately 50 feet south of the Hueneme Drain Pump Station, located adjacent to the northwestern boundary of the survey area (Appendix A, Photograph 1). The southern survey area consists of an island of vegetation surrounded on all sides by water. Two foot bridges on the northern survey boundary connect the area to the mainland. The majority of the survey area supports natural vegetation communities, however, the northern portion has experienced significant disturbance (dumping of fill dirt and grading) (Figure 4b). Several vegetation communities occur within the survey area and include southern foredunes (SFD), coastal brackish marsh (CBM), southern coastal salt marsh (SCSM), and disturbed habitat (DH). General site photographs of the southern survey area are located in Appendix A (Photographs 2 through 8).

Within the southern survey area, four transects were conducted to delineate jurisdictional boundaries. For each transect, several (3-4) test pits were dug and analyzed using the supplemental arid west form to establish jurisdiction of potential wetlands onsite. In addition, soil cores were used to identify changes in soil composition, which helped to establish wetland boundaries between soil pits.

BEMP Area

The access route to and on the beach for the proposed beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. Portions of the BEMP area fall below the mean high tide line which was used to delineate the limits of Corps and CCC jurisdiction on the beach.

3.1 FEDERAL WETLAND DEFINITIONS

The federal regulations that implement Section 404 of the CWA, which was enacted in 1972, define "wetlands" as follows:

> *"Those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas."* (40 CFR 232.2[r])

Federal jurisdictional wetlands that are regulated by the USACE under Section 404 of the CWA must exhibit all three of these characteristics: hydrology, hydrophytes, and hydric soils (USACE 1987). Areas that may function as wetlands ecologically, but exhibit only one or two of the three characteristics, do not currently qualify as federal jurisdictional wetlands; thus, activities to these resources are not regulated under Section 404.

The USACE also regulates the discharge of dredge and/or fill material into "waters of the United States." The term "waters of the United States" is defined by USACE regulations at 33 CFR Part 328.3 9(a) as:

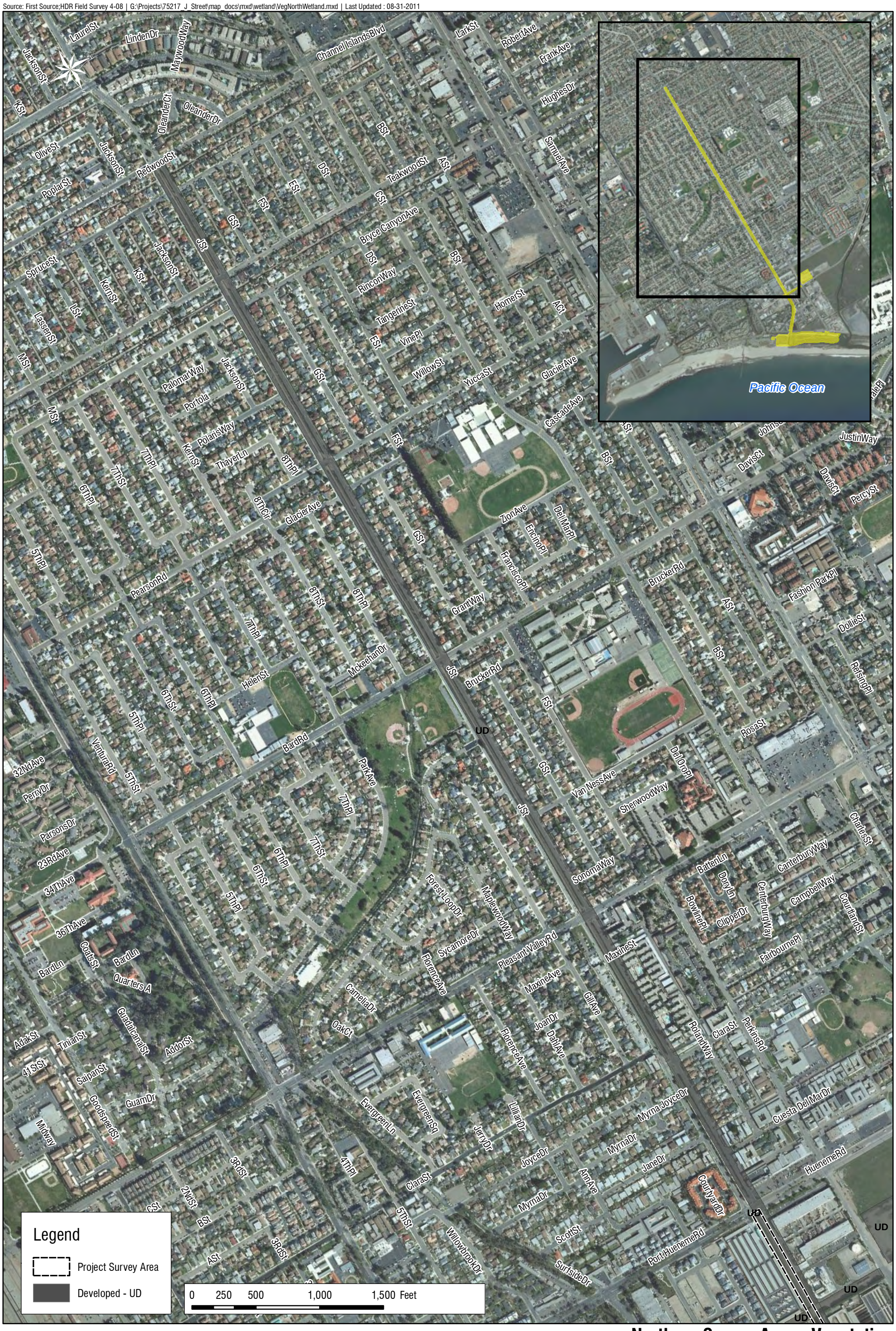
1) *All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
2) *All interstate waters including interstate wetlands;*
3) *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:*

   (i) which are or could be used by interstate or foreign travelers for recreational or other purposes; or

   (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

   (iii) which are used or could be used for industrial purpose by industries in interstate commerce;
4) *All impoundments of waters otherwise defined as waters of the United States under the definition;*
5) *Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;*
6) *The territorial seas;*
7) *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.*

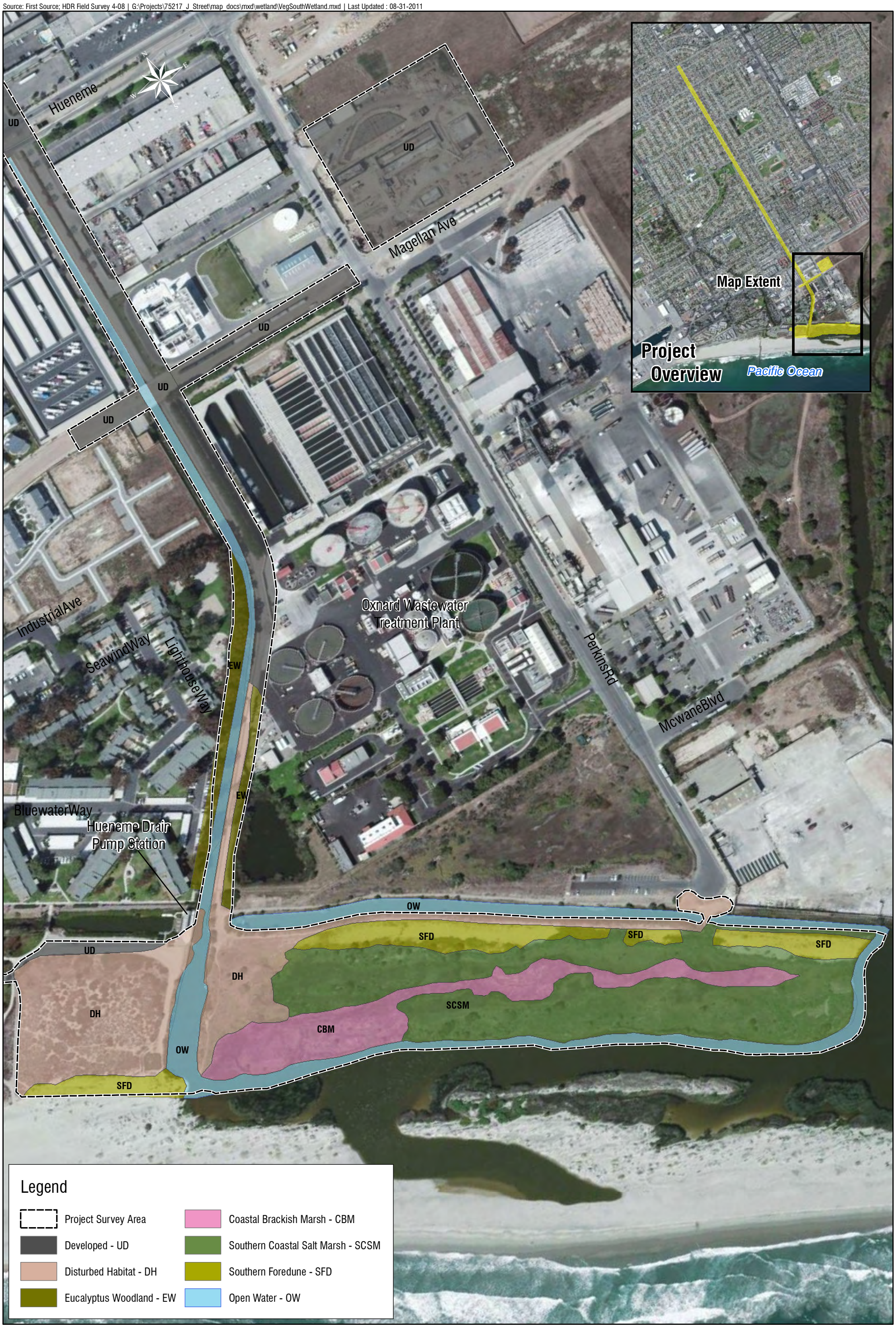
Source: First Source;HDR Field Survey 4-08 | G:\Projects\75217_J_Street\map_docs\mxd\wetland\VegNorthWetland.mxd | Last Updated : 08-31-2011



Northern Survey Area - Vegetation

FIGURE 4a

Source: First Source; HDR Field Survey 4-08 | G:\Projects\75217_J_Street\map_docs\mxd\wetland\VegSouthWetland.mxd | Last Updated : 08-31-2011



Southern Survey Area - Vegetation

FIGURE 4b

The USACE also takes jurisdiction in non-tidal waters when wetlands are not present according to the ordinary high water mark (OHWM). This is defined as:

> *"…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."*

Federal Clean Water Act Jurisdiction per the Supreme Court's Decision in: *Rapanos v. United States* and *Carabell v. United States*

In 2006, the Supreme Court addressed the jurisdictional scope of Section 404 of the CWA, specifically the term "the waters of the U.S.," in Rapanos v. U.S. and in Carabell v. U.S. (hereafter referred to as Rapanos). The Justices issued five opinions with no single opinion commanding a majority of the court.

A plurality of the court vacated the original Court of Appeals judgments and remanded both cases to the lower courts for re-evaluation. The decision provides two new analytical standards for determining whether water bodies that are not traditional navigable waters (TNWs), including wetlands adjacent to those non-TNWs, are subject to CWA jurisdiction:

- If the water body is relatively permanent, or if the water body is a wetland that directly abuts (e.g., the wetland is not separated from the tributary by uplands, a berm, dike, or similar feature) a relatively permanent water body (RPW), or
- If a water body, in combination with all wetlands adjacent to that water body, has a "significant nexus" with TNWs.

CWA jurisdiction over TNWs and their adjacent wetlands was not in question in this case and, therefore, was not affected by the *Rapanos* decision. In addition, at least five of the Justices in *Rapanos* agreed that CWA jurisdiction exists over all TNWs and over all wetlands adjacent to TNWs (USACE 2007).

The Environmental Protection Agency (EPA) issued a memorandum on June 5, 2007 to provide guidance to the EPA regions and the USACE in implementing the Supreme Court's decision in the *Rapanos* and *Carabell* cases. These cases specifically address the jurisdiction over waters of the U.S. under the CWA. The memorandum identifies some key points with relation to the case and asserting jurisdiction over waters. Therefore, this ruling was taken into consideration during the wetland delineation.

3.2 STATE JURISDICTIONAL AREA DEFINITIONS

California Department of Fish and Game

According to the definition used by the CDFG, state wetlands are "lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water," and they exist where <u>any one</u> of the following conditions are present:

> *1) Predominantly undrained hydric soils (soils with low concentrations of oxygen in the upper layers during the growing season);*
>
> *2) A predominance, at least periodically, of hydrophytic plants (plants that have adapted to the low availability of oxygen and others stresses in saturated soils);*

3) A non-soil substrate (such as a rocky shore) that is saturated with water or covered by shallow water each year at some point during the growing season.

CDFG Section 1602 states that an entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

California Coastal Commission

The California Coastal Commission relies on the definition for a "wetland" as set forth in Section 30121 of the Coastal Act which states:

"Wetland" pertains to 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.

The CCC Administrative Regulations (Sections 13577 (b)) provides a more explicit definition:

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.

4.0 RESULTS

Northern Survey Area

The northern survey area consists primarily of a concrete-lined drain. This portion of the drain from Hueneme Road to Redwood Street was historically constructed in upland areas (Figure 4a). A jurisdictional wetland delineation was not conducted in this portion of the drain due to the developed nature of the drain within the project survey area. However, federal and state wetland agencies may take jurisdiction over the concrete-lined portion of the drain as potential waters of the U.S.

Southern Survey Area

The southern survey area, from Hueneme Road to the ocean, is made up of the existing concrete lined channel and the Ormond Beach Lagoon. Within the Lagoon the dominant vegetation community consists of SCSM and in smaller amounts, CBM (Figure 4b). SCSM is dominated by saltgrass (*Distichlis spicata*), alkali heath (*Frankenia salina*), and western ragweed (*Ambrosia psilostachya*). A jurisdictional wetland delineation was conducted in the lagoon portion of the survey area. A jurisdictional wetland delineation was not conducted within the concrete-lined drain and associated outlet as the drain does not support the vegetation and soils required for USACE jurisdiction. However, this area potentially qualifies as waters of the U.S and is discussed in greater detail below in Section 3.1.

BEMP Access Area

The grooming would be performed by a tracked dozer designated by the O&M Deputy Director in coordination with the District Director or his/her designee. The dozer access path to the groom location would be the same as the one currently used by lifeguards from Port Hueneme Beach Park (Figure 5b). Beach elevation maintenance would occur below the mean high tide line (HTL) which was used to delineate the upper boundary of USACE and CCC jurisdiction (Figure 5b). The BEMP would not occur within CDFG jurisdictional areas.

Table 1 summarizes the findings of transects conducted within the survey area. Completed Arid West Region USACE Wetland Determination Data Forms are included in Appendix B.

4.1 FEDERAL JURISDICTIONAL AREAS

Northern Survey Area

As identified above, this portion of the survey area is concrete lined and historically occurred in upland areas. Therefore the focus of the wetland delineation occurred in the southern survey area. However, the existing channel potentially qualifies as federal waters of the U.S (Figure 5a).

Southern Survey Area (Ormond Beach Lagoon)

Within the southern survey area, four wetland transects were conducted (Figure 5b). Changes in vegetation communities and/or hydrophytic plants were the preliminary determinant for transect locations. For each transect, several test pits were dug to determine the presence of hydric soils (Table 1).

Table 1. Summary of Transect Data

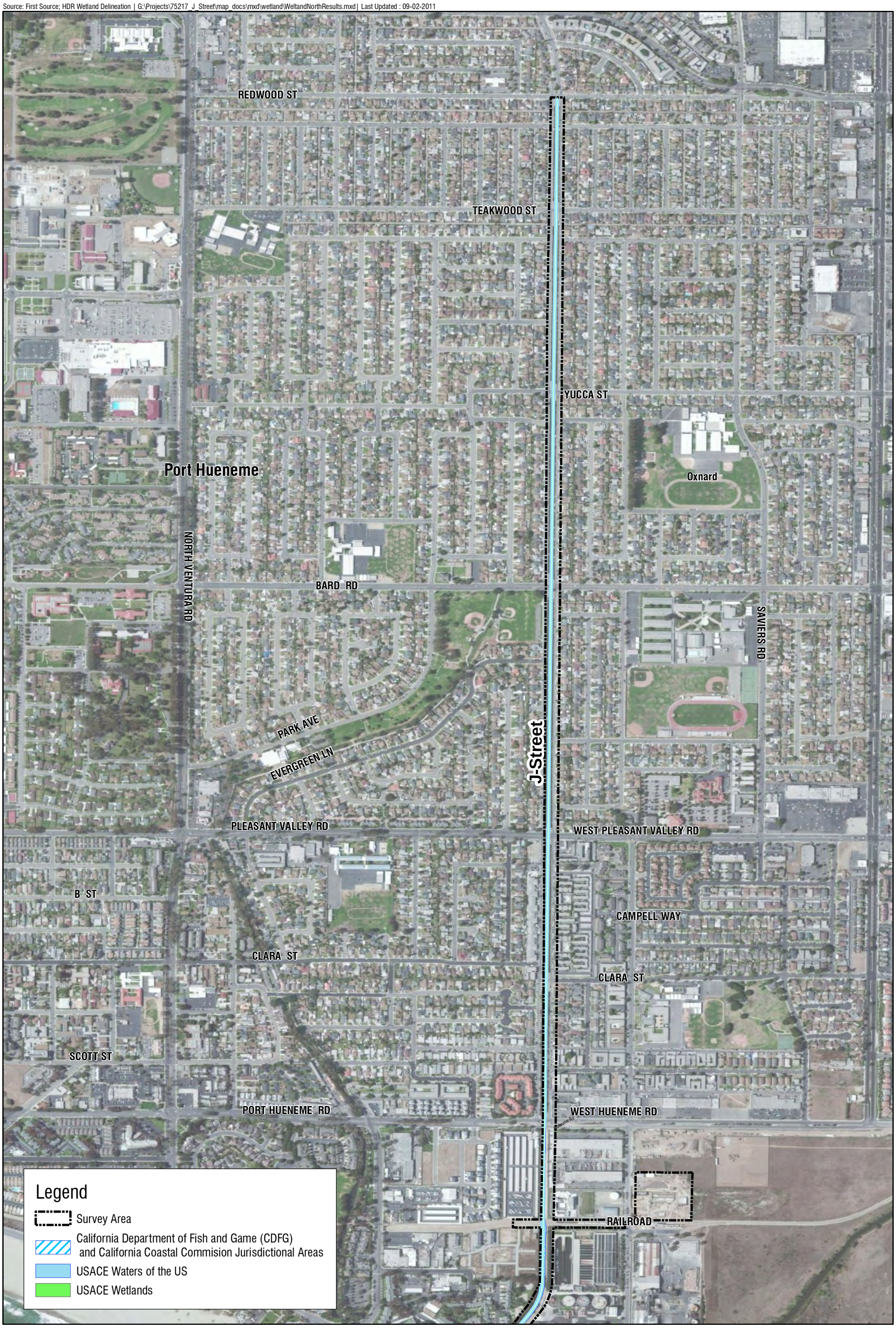
Transect No.	Point No.	Hydrophytes	Hydric Soils	Hydrology	Jurisdictional Areas		
					CDFG	CCC	USACE
1	1	Yes	No	Yes	Yes	Yes	No
1	2	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
1	3	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
2	1	Yes	No	Yes	Yes	Yes	No
2	2	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
2	3	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
2	4	Yes	No	Yes	Yes	Yes	No
3	1	Yes	No	Yes	Yes	Yes	No
3	2	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
3	3	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
3	4	Yes	No	Yes	Yes	Yes	No
4	1	Yes	No	Yes	Yes	Yes	No
4	2	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
4	3	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland
4	4	Yes	Yes	Yes	Yes	Yes	Jurisdictional Wetland

Overall the site consists of problematic sandy soils. These soils are considered to be problematic because they are excessively drained and thus, have difficulty developing anaerobic conditions which is an indicator of hydric soils. However, given the location of the test pit (lagoon), hydrologic indicators (e.g., high water table, saturation), and dominance of hydrophytic plants, it was concluded that the soils are hydric. This conclusion was also based on the determination that these problematic soils were inundated for at least two weeks during the growing season. The protocol wetland delineation identified the existence of federal jurisdictional wetlands and waters of the U.S. within the southern survey area (Table 2).

Table 2. Summary of USACE Jurisdictional Areas

USACE	Project Area
Waters of the U.S. (acres) - Concrete Channel	7.90
Waters of the U.S. (acres) - Natural Substrate	2.73
Wetlands (acres)	6.83
Total Jurisdictional Areas	17.46

Source: First Source; HDR Wetland Delineation | G:\Projects\75217_J_Street\map_docs\mxd\wetland\WeltandNorthResults.mxd| Last Updated : 09-02-2011

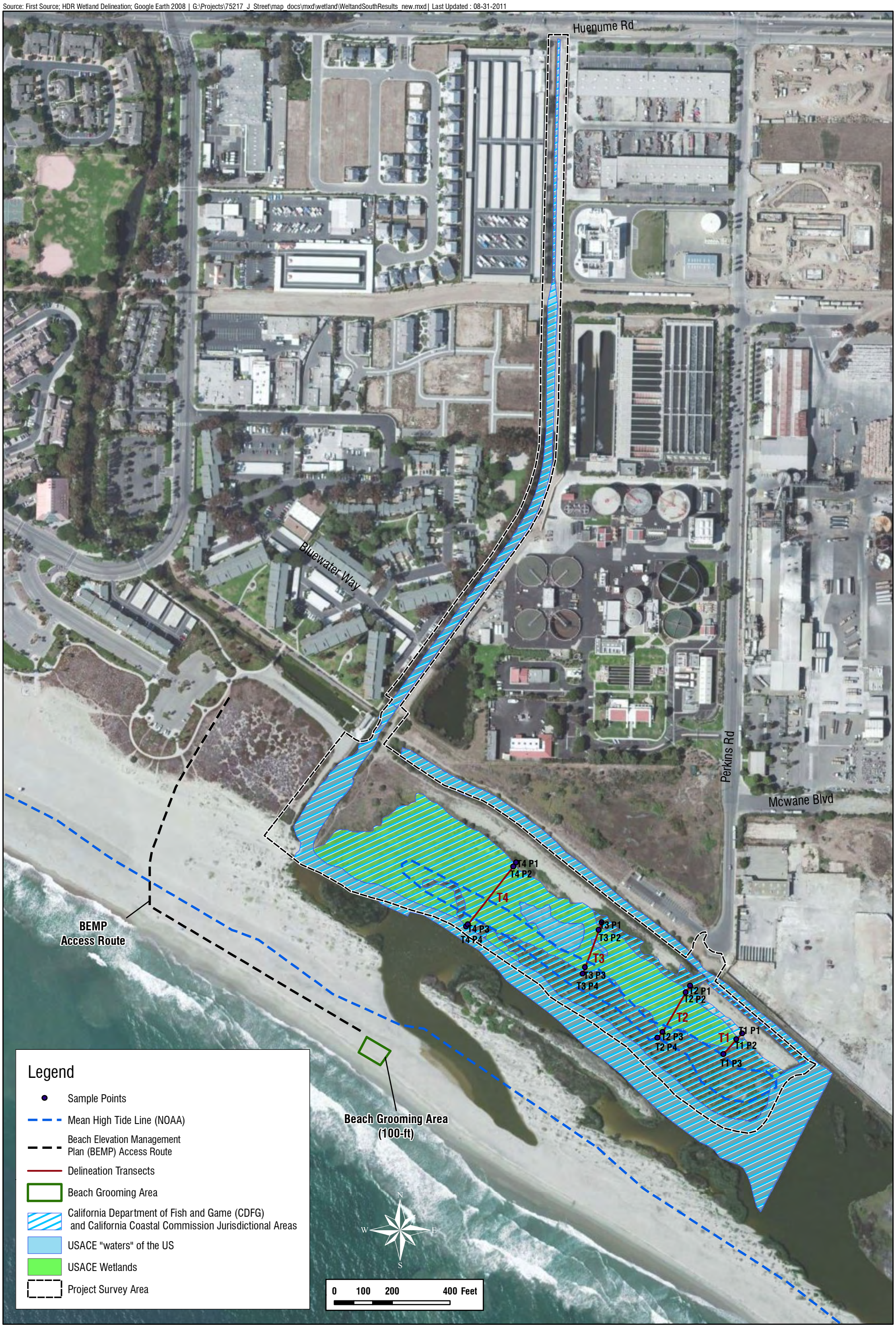


Northern Survey Area - Jurisdictional Areas

FIGURE 5a

HDR ONE COMPANY | *Many Solutions*℠

Source: First Source; HDR Wetland Delineation; Google Earth 2008 | G:\Projects\75217_J_Street\map_docs\mxd\wetland\WeltandSouthResults_new.mxd| Last Updated : 08-31-2011



Southern Survey Area - Jurisdictional Areas

FIGURE 5b

Transect 1

The Transect 1 survey was conducted on the southeast portion of the survey area (Figure 5b, and Appendix A, Photograph 9). Transect 1 traversed SFD, SCSM, and CBM vegetation communities. The indicators in this area include saltgrass, alkali heath, and American tule (*Scirpus acutus var. occidentalis)*, all of which are hydrophytic plant species. Three test pits were dug and of these, Transect 1 Point 2 (T1P2) was found to have problematic sandy soils (Photographs 10 and 11). However, given the presence of other wetland indicators and layer of dark organic material, the soil was determined to be hydric. From 3 to 20 inches, the primary soil matrix color was 7.5YR 4/1. A soil profile for T1P3 was not conducted due to the overwhelming hydrogen sulfide smell encountered when digging. Thus, soils at T1P3 were identified as hydric. A high water table and/or saturation were present at all of the test pits. Federal jurisdictional wetlands were identified within this transect.

Transect 2

The Transect 2 survey was conducted approximately 230 feet northwest of Transect 1 in the southern portion of the survey area (Appendix A, Photograph 12). Transect 2 traversed SCSM and CBM, with dominant hydrophytic plant species such as saltgrass, alkali heath, and cattails (*Typha angustifolia*).

Four test pits were dug and T2P3 contained problematic sandy soils. However, redox features were present in the soil matrix and it was determined to be hydric (Photographs 13 and 14). Soil matrix colors varied for each pit. The general range of color was 10YR 4/1 to 10YR 4/3 and 7.5YR 3/1 and 5YR 3/2. A high water table and saturation were present at all of the test pits (Photograph 15). Federal jurisdictional wetlands were identified within this transect.

Transect 3

The Transect 3 survey was conducted approximately in the middle of the survey area (Appendix A, Photograph 16). Transect 3 traverses SCSM and CBM with dominant hydrophytic plant species such as saltgrass, cattails, and western ragweed. Four test pits were dug and of these, T3P2 and T3P3 identified problematic sandy soils (Photographs 17 and 18). However, given the presence of hydrology and hydrophytic plants, the soil was determined to be hydric. General soil matrix colors ranged from 10YR 3/1 to 7.5YR 4/1, 3/1, and 3/2. A high water table, saturation, and/or watermarks were present at all of the test pits. Federal jurisdictional wetlands and waters were identified within this transect.

Transect 4

The Transect 4 survey was conducted in the northwestern portion of the survey area (Appendix A, Photograph 19). Transect 4 traverses SFD, SCSM, and CBM with dominant hydrophytic plant species including, saltgrass, cattails, and American tule. Four test pits were dug and of these, T4P2 identified problematic sandy soils (Photographs 20 and 21). These soils are considered hydric due to the presence of hydrology and hydrophytes. General soil matrix colors ranged from 10YR 4/2 to 7.5YR 4/1 and 3/2. Soils at T4P3 and T4P4 had redox features, indicating prolonged inundation and therefore, hydric soils. A high water table, saturation, and watermarks were present at all test pit locations. Federal jurisdictional wetlands were identified within this transect. A summary of USACE jurisdictional areas are provided in Table 2.

BEMP Access Area

As mentioned above, beach elevation maintenance would occur below the mean high tide line (HTL) which was used to delineate the upper boundary of USACE and CCC jurisdiction (Figure 5b).

4.2 STATE JURISDICTIONAL AREAS

As discussed previously in Section 2.2, the criteria used to define CDFG and CCC wetlands are less restrictive in terms of wetland indicators. An area can qualify as a state wetland if only one wetland indicator is present. While the boundaries of CDFG jurisdiction sometimes closely reflect those of the USACE, the CDFG jurisdiction generally covers a broader zone, including the USACE jurisdictional OHWM. However, CDFG jurisdiction also extends across the bank to the edge of the riparian habitat.

Due to the less restrictive nature of the CDFG and CCC requirements, the areas that qualify as state jurisdictional areas are usually larger but also include federal jurisdictional areas. The northern survey area does not support the appropriate indicators to qualify as CDFG wetlands. However, the concrete-lined drain located in the northern survey area may qualify as state waters. In addition, the northern survey area is not within the CCC Coastal Zone and, therefore, would not qualify as CCC jurisdictional areas.

Within the southern survey area, the lagoon portion of the survey area and the Drain portion of the project area south of Hueneme Road qualify as CDFG jurisdictional areas. Additionally, the southern survey area is within the Coastal Zone (all areas south of Hueneme Road), and therefore, all USACE and CDFG jurisdictional areas within the Coastal Zone qualify as CCC jurisdictional areas (Table 3, Figure 5b).

Table 3. Summary of CDFG and CCC Jurisdictional Areas

CDFG/CCC	Project Area
Waters of the State – Concrete Channel	7.90
Waters of the State – Natural Substrate	2.73
CDFG Wetlands	10.92
CCC Jurisdictional Areas[1] (acres)	15.73
Total State Jurisdictional Areas (acres)	21.55

[1] CDFG and CCC jurisdictional area totals include USACE wetland and waters of the U.S. acreages.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Any measurable modifications to the drainage or dredge to the watercourse could result in impacts, necessitating permitting for temporary or permanent impacts. The proposed improvements to the drain would temporarily impact state/federal jurisdictional areas (Table 4 and Figures 6a and 6b). It should be noted that impacts to federal and state jurisdictional areas would occur primarily within the existing concrete-lined channel. As the channel is concrete-lined, federal and state agencies may decline to take jurisdiction over this portion of the project. However, the southern portion of the project occurs within the natural soil substrate of the lagoon. It is anticipated that federal and state agencies will take jurisdiction over this area. Improvements to the drain would include removal of the existing concrete channel, replacement of existing rock riprap, lowering the elevation of the drain, and modifying the contour of the channel to a box configuration. Additional impacts would include the installation of a cofferdam within the Lagoon and the subsequent pumping/draining of ground and lagoon water within the construction/work area. Construction activities would impact the natural substrate of the lagoon (Figure 6b). As a result of these improvements, temporary impacts would occur to federal waters of the U.S and state.

BEMP Access Area

The access route to and on the beach for the beach elevation maintenance activities would follow the same pathway that the lifeguards and beach maintenance vehicles use on a daily basis to reach the groomed beach. No impacts to CDFG jurisdiction will occur from implementation of the BEMP. As previously discussed, portions of the BEMP would occur below the mean HTL which was used to delineate the upper boundary of USACE and CCC jurisdiction (Figure 6b). Implementation of the BEMP would temporarily impact 0.57 acre of USACE non-wetland waters and CCC jurisdictional waters. Temporarily impacted areas of beach are subject to tidal changes and wave action that will rapidly restore the beach to a natural state.

Table 4. Project Impact to Federal/State Jurisdictional Areas

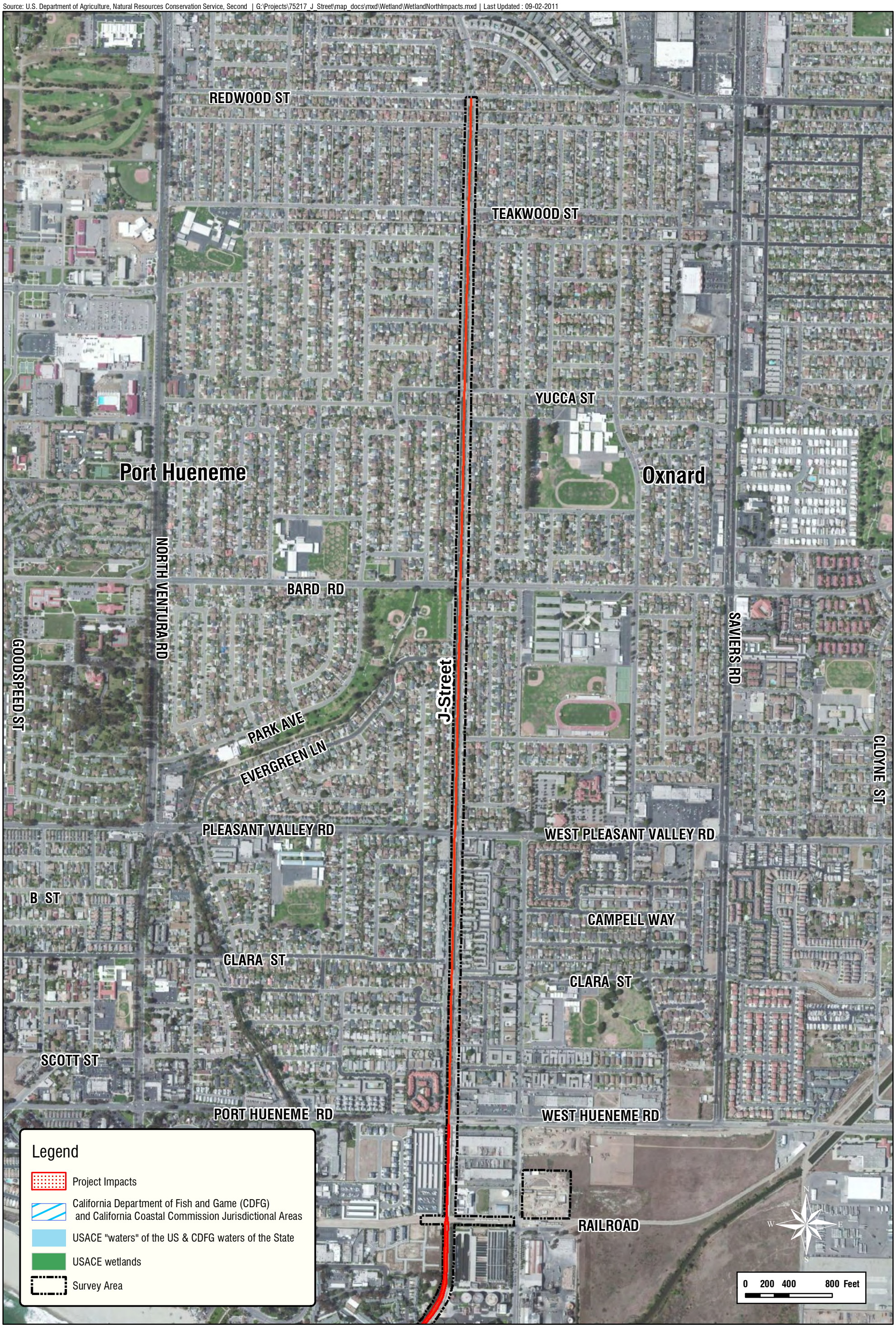
Federal/State Jurisdictional Areas	Existing Acres (Project Survey Area)	Project Impacts[2]
Federal waters of the U.S. and waters of the State - Concrete Channel	7.9	7.9
Federal waters of the U.S. and waters of the State - Natural Substrate	2.73	0.29
Federal Wetlands	6.83	0.00
CDFG Wetlands[1]	10.92	0.00
CCC Jurisdictional Areas	15.73	4.81[1]
Total	n/a	8.19

[1] CDFG and CCC jurisdictional area totals include USACE wetland and waters of the U.S. acreages.
[2] Project impacts to state and federal jurisdictional areas would be temporary.
[3] Mitigation for temporary project impacts to jurisdictional areas would be satisfied through on-site restoration.

Impacts to federal wetlands and/or waters of the U.S. would require consultation with USACE to obtain Section 404 Permit and associated Section 401 Water Quality Certification via the RWQCB. Impacts to state jurisdictional areas would also necessitate consultation with CDFG and RWQCB. The state resource agencies typically recommend that impacts to state jurisdictional areas be: (1) avoided to the extent feasible, (2) minimized if complete avoidance cannot be provided, or (3) mitigated if complete avoidance or minimization cannot be achieved. Wetland impacts trigger the need for a 1600 Series Streambed

Alteration Agreement with CDFG and Clean Water Certification pursuant to the Porter-Cologne Act or CWA as administered by the RWCQB in order to ensure adequate mitigation for project-related impacts to state jurisdictional areas. Similarly, any impacts to CCC jurisdictional areas would require a Coastal Zone Development Permit from the CCC under the Local Coastal Program.

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Second | G:\Projects\75217_J_Street\map_docs\mxd\Wetland\WetlandNorthImpacts.mxd | Last Updated : 09-02-2011



Project Impacts (Northern Survey Area) - Jurisdictional Areas

Figure 6a

Source: First Source; HDR Wetland Delineation; Google Earth 2008 | G:\Projects\75217_J_Street\map_docs\mxd\wetland\WetlandSouthImpacts.mxd| Last Updated : 08-31-2011

Project Impacts (Southern Surey Area) - Jurisdictional Areas

FIGURE 6b

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APPENDIX A

Site Photographs

Photograph 1. Northwest corner of the survey area, northeasterly view of the J Street Drain outlet into the Ormond Beach Lagoon. Hueneme Pump Station is located adjacent to the outlet (red arrow).

Photograph 2. Central portion of southern survey area, northwesterly view of coastal brackish marsh.

Photograph 3. Central portion of southern survey area, westerly view of southern coastal salt marsh.

Photograph 4. Northwestern portion of the southern survey area, southwesterly view of the lagoon. Southern foredunes in the foreground.

Photograph 5. Northwestern portion of the southern survey area, southeasterly view of disturbed habitat along the northeastern boundary.

Photograph 6. Southeastern portion of the southern survey area, southeasterly view of southern foredunes.

Photograph 7. Southeastern portion of the southern survey area, northeasterly view of eastern survey area boundary from foot bridge.

Photograph 8. Western portion of the southern survey area, southerly view of western survey area boundary (left bank).

Photograph 10. Transect 1, westerly view.

Photograph 11. Transect 1, soil pit.

Photograph 11. Transect 1, problematic sandy soils encountered within the survey area.

Photograph 12. Transect 2, southwesterly view.

Photograph 13. Transect 2, sandy soils with redox concentrations.

Photograph 14. Transect 2, soil pit.

Photograph 15. Transect 2, soil pit with high water table present.

Photograph 16. Transect 3, southerly view.

Photograph 17. Transect 3, soil pit.

Photograph 18. Transect 3, soil sample.

Photograph 19. Transect 4, westerly view.

Photograph 20. Transect 4, soil pit.

Photograph 21. Transect 4, soil sample.

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APPENDIX B

Routine Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/28/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T1P1

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C Lat: 34°,8',16.70"N Long: 119°,11', 1.78" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil Yes or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes _____ No X Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland?** **Yes _____ No X**

Remarks: The soils are sand- no organic or redox features present. Photos 173-175.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	75	Yes	FACW
2 Ambrosia psilostachya	10	No	FAC
3. Melilotus alba	3	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
Total Cover:	88		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X No _____**

Remarks:

SOIL

Sampling Point: T1P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-24	10YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: Sandy soil with no organic or redox features present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C8)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 24 inches

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 12 inches

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There are hydrophytes and hydrology. However, the area is not inundated enough to have hydric soils.

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/28/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T1P2

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',16.50" N Long: 119 ,11', 2.07" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil Yes, or Hydrology Ni naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area Within a Wetland?** **Yes X No _____**
Hydric Soil Present:	Yes X No _____	
Wetland Hydrology Present:	Yes X No _____	

Remarks: Sandy soils are excessively drained. However, a layer of organic material (not mucky) 3 inches thick has accumulated. Photos 176-177.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	70	Yes	FACW
2. Frankenia salina	18	No	FACW
3. Melilotus indica	5	No	FAC
4. Scirpus acutus var. occidentalis	3	No	OBL
5.			
6.			
7.			
8.			
9.			
Total Cover:	96		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X No _____**

Remarks:

SOIL

Sampling Point: T1P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	7.5YR 3/2	100					Sand	
3-20	7.5YR 4/1	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	X	Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Dark organic layer from 0-3 inches, but not a mucky layer. Soils are sandy and excessively drained.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 12 inches

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 3 inches

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/28/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T1P3

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8', 15.99" N Long: 119,11', 2.55" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland?** **Yes X No _____**
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	70	Yes	FACW
2. Scirpus acutus var. occidentalis	20	No	OBL
3. Frankenia salina	15	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:	105		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X No _____**

Remarks:

SOIL

Sampling Point: T1P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
X	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)		Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: As we began to dig the soil pit, the hydrogen sulfide smell was overwhelming.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)	X	Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): 0-1

Water Table Present? Yes X No _____ Depth (inches): 0-1

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0-1

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T2P1

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 2-3

Subregion (LRR): C Lat: 34, 8',18.322" N Long: 119,11',3.958" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes _____ No X Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes _____ No X**

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	40	Yes	FACW
2. Frankenia salina	30	Yes	FACW
3. Ambrosia psilostachya	20	No	FAC
4. Ambrosia bipinnatifida	15	No	NL
5.			
6.			
7.			
8.			
9.			
Total Cover:	105		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20% Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq$3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T2P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	7.5YR 3/2	100					Sandy	Mineral
1-8	7.5YR 3/1	98	7.5YR 5/6	2	C	RC	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: Top layer (0-1) of soil is dry and sandy with live roots. The second layer (1-8) has more clay content and some redox features. However, redox features are not prevelant enough to warrant hydric soils. The soil is transitioning to hydric. From 8-24 inches the soil is sandy with little to no clay content.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C8)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 24

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 7

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T2P2

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',18.08" N Long: 119,11',4.12" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	65	Yes	FACW
2. Frankenia salina	25	No	FACW
3. Ambrosia psilostachya	8	No	FAC
4. Melilotus indica	2	No	FAC
5.			
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0% Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T2P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 2/1	100						Detritus/primarily organic
2-5	10YR 4/1	98	7.5YR 4/6	2	C	PL/RC	Sandy	
5-15	10YR 4/2	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)		Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
X	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
	Water Marks (B1)	X	Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 6

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T2P3

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',16.72"N Long: 119,11',5.05"W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation no, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**
Remarks: sandy soils are problematic. Photos 188-193	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	65	Yes	FACW
2. Frankenia salina	20	No	FACW
3. Typha angustifolia	15	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T2P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10YR 2/1	100						Organic material
1-4	7.5YR 3/2	100					Sand	
4-6	7.5YR 4/1	97	5YR 3/4	3	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	X	Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Problematic soils-sandy.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township/Range: _____

Landform (hillside, terrace, fan, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present: Yes _____ No _____ Wetland Hydrology Present: Yes _____ No _____	**Is the Sampled Area Within a Wetland? Yes _____ No _____**
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is $\leq$3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (3)
- _____ Hydrogen Sulfide (A4)
- _____ Stratified Layers (A5) (**LRR C**)
- _____ 1 cm Muck (A9) (**LRR D**)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)
- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1)
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)
- _____ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- _____ Red Parent Material (TF2)
- _____ 1 cm Muck (A9) (**LRR C**)
- _____ 2 cm Muck (A10) (**LRR B**)
- _____ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2) (**Nonriverine**)
- _____ Drift Deposits (B3) (**Nonriverine**)
- _____ Surface Soil Cracks (B6)
- _____ Inundation on Aerial Imagery (B7)
- _____ Water-stained Leaves (B8)
- _____ Biotic Crust (B10)
- _____ Aquatic Invertebrates (B11)
- _____ Crayfish Burrows (B12)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres on Living Roots (C2)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Plowed Soil (C8)
- _____ Muck Surface (C7)
- _____ Saturation on Aerial Imagery (C8)
- _____ Shallow Aquitard (D4)
- _____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- _____ Water Marks (B1) (**Riverine**)
- _____ Sediment Deposits (B2) (**Riverine**)
- _____ Drift Deposits (B3) (**Riverine**)
- _____ Drainage Patterns (B9)
- _____ Dry Season Water Table (C3)
- _____ Salt Deposits (C5)
- _____ Mud Casts (C9)
- _____ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches):_____

Water Table Present? Yes _____ No _____ Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches):_____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T3P1

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',20.44" N Long: 119,11',7.62" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes _____ No X Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes _____ No X**

Remarks: Photos 195-

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	50	Yes	FACW
2. Ambrosia psilostachya	30	Yes	FAC
3. Melilotus indica	15	No	FAC
4. Typha angustifolia	5	No	OBL
5.			
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T3P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-24	7.5YR 3/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks: Sandy soils with organic material and redox features starting to form- not significant enough to meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C8)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ____ No X____ Depth (inches):_____

Water Table Present? Yes X____ No ____ Depth (inches): 20

Saturation Present? (includes capillary fringe) Yes X____ No ____ Depth (inches): 10

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T3P2

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',20.19" N Long: 119,11',7.74" W Datum: _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	75	Yes	FACW
2. Ambrosia psilostachya	10	No	FAC
3. Melilotus indica	10	No	FAC
4. Typha angustifolia	5	No	OBL
5.			
6.			
7.			
8.			
9.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq$3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T3P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-0.5	10YR 2/1	100						Organic material
0.5-6	7.5YR 4/1	100					Sand	
6-12	5YR 5/1	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	X	Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Sandy soils preventing anaerobic conditions to occur. However, the area is a wetland with obvious hydrophytes and hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 11

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T3P3

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',18.91" N Long: 119,11', 8.28" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**

Remarks: Sandy soils are problematic, however still considered a hydric soil.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Acacia longifolia	15	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover:	15		
Herb Stratum			
1. Distichlis spicata	50	Yes	FACW
2. Typha angustifolia	40	Yes	OBL
3. Ambrosia psilostachya	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T3P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Sand	
3-14	7.5YR 3/1	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	X	Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Sandy soils preventing anaerobic conditions. However, given the hydrology and vegetation, the area is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
X	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 1

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T3P4

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',18.68"N Long: 119,11',8.38"W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes __ No X____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes _____ No X**

Remarks: Photo 217

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Acacia longifolia	10	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover:	10		
Herb Stratum			
1. Distichlis spicata	50	Yes	FACW
2. Polypogon monspeliensis	20	Yes	FACW
3. Ambrosia psilostachya	15	No	FAC
4. Typha angustifolia	15	No	OBL
5.			
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq$3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T3Ps4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	7.5YR 4/1	100					Sand	
6-19	10YR 3/1	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C8)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X___ Depth (inches):_____

Water Table Present? Yes X___ No ___ Depth (inches): 7.5

Saturation Present? (includes capillary fringe) Yes X___ No ___ Depth (inches): 7

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T4P1

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8",22.45" N Long: 119,11',11.17" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes _ No X Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes _____ No X**
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	60	Yes	FACW
2. Ambrosia psilostachya	20	No	FAC
3. Typha angustifolia	15	No	OBL
4. Melilotus indica	5	No	FAC
5.			
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq$3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T4P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-9	7.5YR 4/1	100					Sandy	
9-12	10YR 4/2	100					Sandy	Fine-medium grain sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: Sandy soils- not saturated long enough to produce anaerobic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C8)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 5-6

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T4P2

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',22.32" N Long: 119,11',11.28" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**

Remarks: Sandy soils- however hydrology and hydrophytes support a wetland determination. Photo 206

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	50	Yes	FACW
2. Typha angustifolia	40	Yes	OBL
3. Melilotus indica	5	No	FAC
4. Ambrosia psilostachya	5	No	FAC
5.			
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T4P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-11	7.5YR 3/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	X	Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Sandy soil- too excessively drained to develop anaerobic conditions. However, hydrophytes and hydrology support a wetland determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
X	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 2

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T4P3

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',20.32" N Long: 119,11',13.11" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Acacia longifolia	15	Yes	UPL
2. Tamarisk ramosissima	5	No	FAC
3.			
4.			
5.			
Total Cover:	20		
Herb Stratum			
1. Scirpus acutus var. occidentalis	30	Yes	OBL
2. Distichlis spicata	20	Yes	FACW
3. Typha angustifolia	20	Yes	OBL
4. Melilotus indica	15	No	FAC
5. Polypogon monspeliensis	5	No	FACW
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq$3.0[1]

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T4P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	7.5YR 2.5/1	100						Organic material
1-18	10YR 4/2	92	5YR 4/6	8	C	PL/RC	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C8)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes X No ____ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 6

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: J Street Drain City/County: Oxnard/Ventura Sampling Date: 4/29/2008

Applicant/Owner: Ventura County Watershed Protection District State: CA Sampling Point: T4P4

Investigator(s): Shannon Allen, Allegra Simmons Section, Township/Range: N/A

Landform (hillside, terrace, fan, etc.): Coastal marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 34,8',20.25" N Long: 119,11',13.32" W Datum:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present: Yes X No _____ Wetland Hydrology Present: Yes X No _____	**Is the Sampled Area Within a Wetland? Yes X No _____**
Remarks: Photo 214	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Tamarisk ramosissima	15	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	15		
Herb Stratum			
1. Distichlis spicata	30	Yes	FACW
2. Scirpus acutus var. occidentalis	30	Yes	OBL
3. Typha angustifolia	20	No	OBL
4. Ambrosia psilostachya	10	No	FAC
5. Melilotus indica	10	No	FAC
6.			
7.			
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

_____ Prevalence Index is $\leq 3.0^1$

_____ Morphological Adaptations[1] (Provide supporting date in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: T4P

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 2/1	100						
3-12	5YR 4/1	73	5YR 5/8	12	C	PL/RC	Sand	
			Gley1 3/N	15	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)	X	Sandy Redox (S5)		Red Parent Material (TF2)
	Histic Epipedon (A2)		Stripped Matrix (S6)		1 cm Muck (A9) (**LRR C**)
	Black Histic (3)		Loamy Mucky Mineral (F1)		2 cm Muck (A10) (**LRR B**)
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)		Other (Explain in Remarks)
	Stratified Layers (A5) (**LRR C**)		Depleted Matrix (F3)		
	1 cm Muck (A9) (**LRR D**)		Redox Dark Surface (F6)		
	Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)		
	Thick Dark Surface (A12)		Redox Depressions (F8)		
	Sandy Mucky Mineral (S1)		Vernal Pools (F9)		
	Sandy Gleyed Matrix (S4)				

Indicators for Problematic Hydric Soils[3]:

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

	Surface Water (A1)		Aquatic Invertebrates (B11)		Water Marks (B1) (**Riverine**)
X	High Water Table (A2)		Crayfish Burrows (B12)		Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)		Hydrogen Sulfide Odor (C1)		Drift Deposits (B3) (**Riverine**)
X	Water Marks (B1)		Oxidized Rhizospheres on Living Roots (C2)		Drainage Patterns (B9)
	Sediment Deposits (B2) (**Nonriverine**)		Presence of Reduced Iron (C4)		Dry Season Water Table (C3)
	Drift Deposits (B3) (**Nonriverine**)		Recent Iron Reduction in Plowed Soil (C8)		Salt Deposits (C5)
	Surface Soil Cracks (B6)		Muck Surface (C7)		Mud Casts (C9)
	Inundation on Aerial Imagery (B7)		Saturation on Aerial Imagery (C8)		FAC-Neutral Test (D7)
	Water-stained Leaves (B8)		Shallow Aquitard (D4)		
	Biotic Crust (B10)		Other (Explain in Remarks)		

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 8

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX F
Potential Sensitive Species Table

J Street Drain Potential Sensitive Species Table

SPECIES	STATUS	PREFERRED HABITAT	OBSERVED ON SITE	POTENTIAL FOR OCCURRENCE
Botanical				
Astragalus pycnostachyus var. lanosissimus Ventura Marsh milk-vetch	Federal Endangered State Endangered CNPS List 1B.1	Coastal dunes, marshes and swamps; elevations 1-35 meters. Requires well-drained soils and areas with a relatively high water table. Blooms June to October	No	The potential for the species to occur on site is high. This species of milk vetch is a perennial and was not observed during the general biology survey.
Cordylanthus maritimus ssp. Maritimus Salt marsh bird's-beak	Federal Endangered State Endangered CNPS List 1B.2	Coastal dunes, marshes and swamps; elevations 0-30 meters. This species requires influence by freshwater input. Blooms May to October.	No	The potential for the species to occur on site is high. However, this species was not observed during the survey. Nor any species of bird's –beak.
Malacothrix similis Mexican Malacothrix	CNPS List 1A	Coastal sage scrub and chaparral	No	This species is generally associated with Santa Cruz and San Miguel Islands. This species was last reported in Ventura County in 1925. No coastal sage scrub habitat occurs on site. The potential for this species to occur on site is low
Zoological				
Actinemys marmorata pallida Southwestern pond turtle	State Species of Special Concern	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms	No	The majority of the site is a concrete lined channel which is not appropriate for this species. However, the Ormond Lagoon has appropriate habitat. However this is isolated due to surrounding development. The potential for this species to occur on site is low.

SPECIES	STATUS	PREFERRED HABITAT	OBSERVED ON SITE	POTENTIAL FOR OCCURRENCE
Charadrius alexandrinus nivosus Western snowy plover	Federal Threatened State Species of Special Concern	Coastal beaches, dune-backed beaches, sparsely-vegetated dunes, and salt pans at estuaries and lagoons.	No	During the focused survey for this species, individuals were observed offsite to the southwest of the site. The individuals were not observed on site most likely due to the foot traffic associated with hikers, dogs and homeless.
Cicindela hirticollis gravida Sandy beach tiger beetle	State Rank S1	Found in close association with a body of water, common on the sandy beaches of oceans, lakes, rivers and streams	No	This species is believed to be extirpated from this area. The last known occurrence was at Port Hueneme in 1956. There is no potential for this species to exist onsite.
Eucyclogobius newberryi Tidewater goby	Federal Endangered State Species of Special Concern	Brackish water in lagoons created by coastal streams	No	The potential for the species to occur onsite is high. Records indicate occupation as recent as 1995.
Passerculus sandwichensis beldingi Belding's savannah sparrow	State Endangered	Salt marsh vegetated by pickleweed (*Salicornia virginica*)	No	The potential for this species to occur within the lagoon portion project area is low as their preferred vegetative cover, pickleweed, does not occur within the project area. However, populations of the species occur within pickleweed vegetation located approximately 480 feet southwest of the lagoon.
Sternula antillarum browni California least tern	Federal Endangered State Endangered	Coastal sandy bare areas e.g., beaches, sand bars, and salt flats.	Yes	The potential for this species to occur within the lagoon portion of the project area is moderate. Breeding populations of the species have been observed to the west of the lagoon. However, human and domestic animal traffic within the lagoon reduces the potential for the species to nest within the project area.

APPENDIX G

2009 and 2010 California Least Tern Breeding Survey Reports

State of California
The Resources Agency
Department of Fish and Game
Wildlife Branch

California Least Tern Breeding Survey
Ormond Beach, Ventura County
2009 Season

by
Reed V. Smith

Nongame Wildlife Program

Final Report

To

State of California
Department of Fish and Game
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123

California Least Tern Breeding Survey
Ormond Beach, Ventura County
2009 Season

Reed V. Smith
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Ventura, CA 93003
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Prepared 9/30/09

State of California
The Resources Agency
Department of Fish and Game

California Least Tern Breeding Survey
Ormond Beach, Ventura County
2009 Season

by

Reed V. Smith
104 N. Evergreen Drive
Ventura, CA 93003

ABSTRACT

This year's breeding season work was conducted by me under contract to the California Department of Fish and Game in accordance with US Fish and Wildlife protocols for monitoring Least Tern nesting under a Endangered Species Act Recovery Permit. I conducted 14 weekly surveys of Ormond Beach from Port Hueneme beach to the boundary fence for Naval Base Ventura County (Pt. Mugu) from April 29 to August 9, 2009. During that period I located and monitored 44 California Least Tern nests from nest initiation to fledging of young.

INTRODUCTION

Ormond Beach is located between Naval Base Ventura County – Pt. Mugu (Arnold Road) and the city of Port Hueneme (J. Street Drain.) The beach is approximately 2.2 miles long. From West to East: The sandy beach is backed by the J. Street Estuary, a Pickleweed wetland, the Reliant Energy Power plant and then another Pickleweed wetland. The West end is owned by the City of Oxnard, and the East end is owned by the California Coastal Conservancy.

The portion of the beach used for nesting by California Least Terns is typified by 3-6 foot high small dunes on the ocean side. Inland of the small dunes is a wide, level sandy area. This is the area where the nests are placed. This area is vegetated by Beach Bur, Beach Morning Glory, Sea Rocket and Beach Evening Primrose. The vegetation provides shelter from sun and predators for the least tern chicks. Behind the nesting area are higher dunes marking the inland extent of

nesting. The beach is not cleaned or groomed so driftwood and wrack collect on the seaward edge.

Efforts to protect least tern nesting have been ongoing for approximately 20 years by various NGOs, including the Ventura Audubon Society, the Conejo Valley Audubon Society, the Nature Conservancy and the Sierra Club. These private efforts have had the support of the California Department of Fish and Game and the U. S. Fish and Wildlife Service. The area immediately west of the Reliant Energy power plant has been the primary nesting area for most of that time. Over the years various types of fences have been put up in the spring and taken down in the fall. For the last 3 years least terns have used both the west area and the area immediately west of Arnold Road on the other end of the beach. This year the terns used only the western portion for nesting

Over the years the City of Oxnard has been trying to develop the area. Various proposals have been put forth including a city park, a marina, a housing development, etc. Currently the city is considering an industrial park along Arnold Road and an over 1,200 home residential development at Arnold Road and Port Hueneme Road. This is going on in spite of the city council saying that Ormond Beach is recognized as a valuable habitat for wildlife. The city has recently circulated a draft 2030 General Plan that shows industrial land use adjacent to and south of Port Hueneme Road. The land is currently used for agriculture and is a good buffer between industrial areas and the wetland/dune complex at Ormond Beach. The draft plan also designates the sandy beach as "Park and Recreation" use. This could lead to "Park" type management with beach grooming, sand moving and park infrastructure.

METHODS

Once a week I walked Ormond Beach along meandering transects to locate least tern nests. Once located, the nest was marked with a tongue depressor 1 meter inland of the nest, the longitude and latitude were recorded using Global Positioning System (GPS) and the number of eggs was recorded along with the date. On subsequent surveys the nest was checked to determine if incubation was continuing. This was done remotely when possible to reduce disturbance to the least tern colony. The number of least terns present was recorded on each site visit.

All hatched nests were recorded and the number of chicks noted. Nest hatching was determined by the presence of chicks nearby, tern fecal matter on the nest scrape and the absence of eggs or chicks and/or by examining the nest site for small portions of egg shell left from hatching. Failed nests were also recorded. If possible the cause of the nest failure was recorded. The outcome was determined by examination of the nest site for signs of the cause; i.e. predator tracks, partially eaten eggs, human footprints, etc.

After observing that a nest had hatched the chicks were observed to determine their growth and fate. Nest abandonment was determined by the absence of adult terns tending it, the eggs being present beyond the expected hatching date, the presence of dew on the eggs in the early morning, and a reduced temperature of the eggs.

RESULTS and DISCUSSION

The first California Least Tern appeared in the area on May 6, 2009. The 2009 nesting season for least terns on Ormond Beach produced ~24 fledglings. Out of a total of 44 nests initiated, 35 nests hatched. By August 14, 2009 all terns had left the area.

The birds place nests in level areas behind the seaward line of small dunes. Most nests were initiated between June 3 and June 10, 2009. When the nests hatched the parents fed the chicks initially within 100 feet of the nest site. After that the chicks moved to a more protected area within the more vegetated portions of the nesting area.

When the birds fledged they moved to the outer beaches, closer to the foraging areas. Most of them waited at the east end of the J. Street Estuary for fish delivered by the parents.

Nest Locations

This year the nests were all located west of the Reliant power plant. Forty one (93%) were within the fenced nesting area there. Three (7%) were located on the narrow strip of sand between the J Street Estuary and the outer beach. No nests were initiated on the east (Arnold Road) end of the beach.

One possible explanation for the lack of nests on the east end of the beach is the lack of suitable forage fish in the nearshore waters. No CLT were observed foraging outside the surf line until early August. The east end of the beach has no close ponds containing forage fish. The west end of the beach is adjacent to the J. Street Estuary and freshwater ponds immediately behind the dunes on TNC property. Many CLT were observed foraging in these waters.

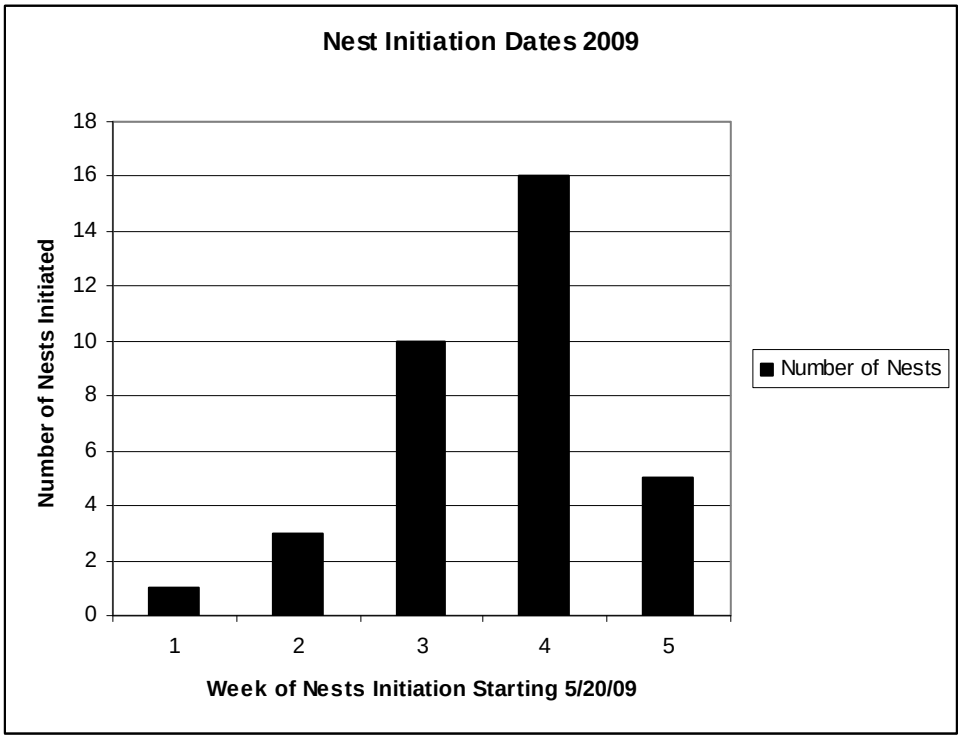
An initial look at anchovies landing receipts by Briana Brady, DFG Marine Resources, indicates a significant decline from nearshore Ventura County waters for the first six months of 2009. She indicated that there is usually a lag in receipt by DFG of this data and a more reliable report on this will be available in December of this year.

During my monitoring over the last couple years I have observed that least terns do not use the ½ mile long area in front of the Reliant Energy power plant for nesting. (Western Snowy Plovers do not nest there either.) The nest distribution map shows this. There is no apparent physical difference between this area and the portions of the beach on either side that the terns do use for nesting. The power plant operation is quite noisy. Least terns use calls to locate and identify their chicks. The power plant noise could interfere with this. There might be a vibration of the land caused by the power plant that the birds don't like, but this has not been detected. No study has determined the cause of this lack of nesting in the area.

A map of all 2009 Least Tern nests is in Attachment 1.

Nest Initiation

The first terns arrived May 6, 2009. The first nest was located May 22, 2009 and the last nest located July 8, 2009. Approximate nest initiation dates were determined by going back 21 days from the approximate hatch dates. A total of 44 nests were initiated.



Nest Fates

A total of 33 nests hatched as evidenced by chicks in the nest scrape or near by, egg shell nearby or adults vociferously defending area, scrape without eggs or chicks and tern fecal matter present and no evidence of other fate.

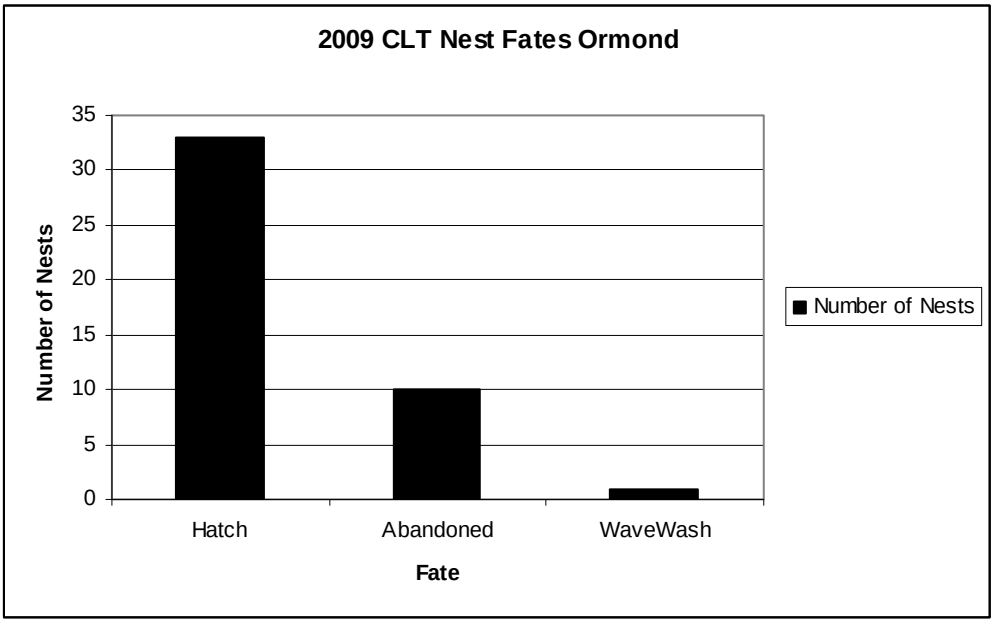
The number of abandoned nests was 10. Abandonment was determined by 2 or more weeks past expected hatching date, no adult tracks nearby, sun bleaching of the eggs, eggs with morning dew on them or cold temperature of the eggs. All abandoned eggs were opened to check on whether or not the egg was fertilized. Six (50%) of the abandoned eggs were not fertilized, Six (50%) were fertile as evidenced by an embryo in the egg.

No nests were predated. One nest was wave washed.

The following is a breakdown of the fate of the nests:

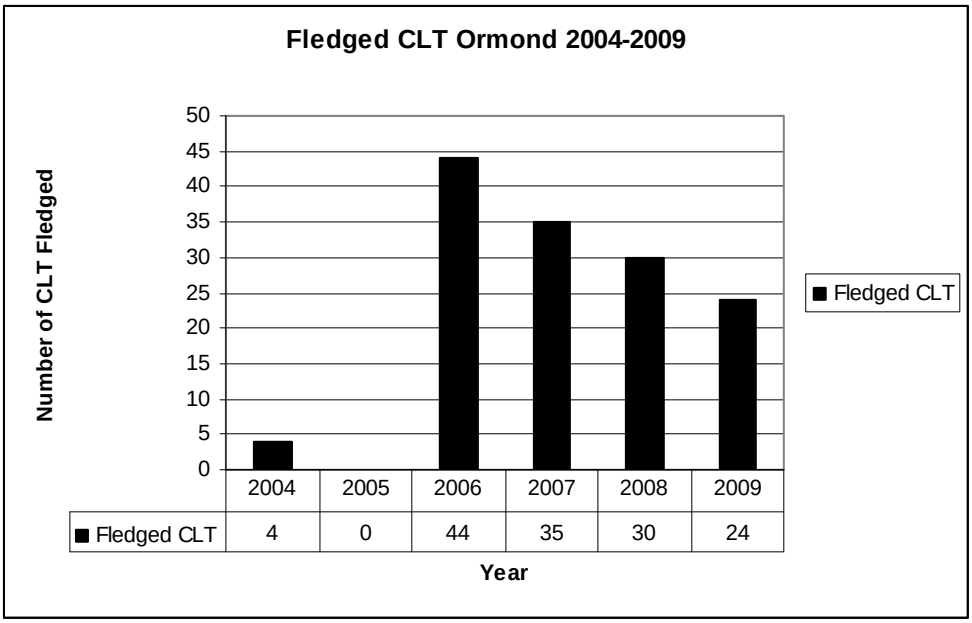
Hatched	33	(75%)
Abandoned	10	(23%)

Wave Washed 1 (2%)



The nest abandonment rate was the highest in several years. (2009 – 23%; 2008 – 6.2%) This may have been caused by people walking through the nesting area and riding bikes and motorcycles through the nesting area. Another factor may have been the lack of suitable forage fish in nearshore waters. (See discussion about nest locations above.)

The 2009 breeding season was a success on Ormond Beach. Thirty three nests hatched producing 24 fledgling least terns. The fledgling to pair ratio was .54. This is an increase from the last year and above the range wide "normal" ratio which has an average range of .28 to .38 over the prior 4 years.



Comparison of 2009 CLT Breeding on Ormond Beach to Prior Years

Year	2004	2005	2006	2007	2008	2009
Number of Nests	29	27	53	52	81	44
Number of unsuccessful nests	26	25	17	11	14	11
Number of hatched nests	3	2	36	41	67	33
Percent of nests hatching	10.3%	7.4%	67.9%	78.8%	82.7%	75.00%
Number of Fledges	4	0	44	35	30	24
Fledge to Nesting Adult Pair Ratio	0.14	0.00	0.83	0.67	0.37	0.54

The failure in least tern fledglings during 2004 and 2005 was probably caused by the use of the beach by powered paragliders and ultralight aircraft. These aircraft would often fly low over the nesting areas disturbing the terns. A city ordinance was passed prohibiting landing and take off by these aircraft in late 2005. This eliminated the disturbance with a rebound in fledgling numbers in 2006.

There had been a decline in the total number of CLT fledglings in the last 4 years, though the fledgling per pair ratio has gone up and down.

See Attachment 2 for the Master Nest List

Discussion

The primary factor in reducing dogs off leash on the beach was an active enforcement effort by the City of Oxnard's Animal Regulation Department. In 2008 there was an average of 102 dog visits per month on the Arnold Road end of the beach. This year the number of visits per month was down to 65. Enforcement of the leash laws may discourage dog owners who want their dogs to run without a leash from visiting the beach.

The US Fish and Wildlife Service, Et. Al., also constructed a plastic mesh fence around the designated Least Tern nesting area west of the Reliant Energy Power plant.

The U.S. Navy's Environmental Division at Naval Base Ventura County – Point Mugu had a program to remove Corvids and Coyotes that prey on Least Tern nests. This appears to have reduced the number of Corvids and Coyotes foraging on Ormond Beach.

The California Department of Fish and Games hires a monitor for the breeding season but has no management plan for the beach and no authority for management beyond its general responsibility for protecting endangered species. This agency does address problems as they arrive on a case by case basis, when there is a wildlife biologist available.

The U.S. Fish and Wildlife Service has no management plan for the beach beyond its general responsibility for protecting endangered species. They do take part in discussions with a wide range of agencies and NGOs on ways to protect Least Terns on Ormond Beach.

The City of Oxnard owns the western portion of the beach, but has no specific protection plan in place and has not taken an active role in management of the beach. The Oxnard Police Department will respond to off road vehicles on the beach.

The California Coastal Conservancy (CCC) owns the eastern portion of the beach and takes a leadership role in holding regular meetings with interested agencies, NGOs and individuals concerning the use of the area. They have no specific plan for the protection of least terns. On August 12, 2009 a meeting was held to discuss problems on Ormond Beach. Attending were representatives of DFG, USFWS, TNC and the CCC in addition to myself and Cynthia Hartley, the Western Snowy Plover monitor, who organized the meeting. The enforcement representative, DFG Warden Coombs made it clear that enforcement of the prohibition against entry would be simple if the area was completely fenced and adequately signed. There was reluctance on the part of the CCC representative Peter Brand to close any portion of the beach. (See Attachment 3 for the minutes of the meeting.) I asked Peter Brand why the CCC has not turned the property over to another agency or NGO for proper preserve management. He refused to answer the question.

Currently there is no law or ordinance specifically prohibiting entry into the nesting area. The only laws protecting the nesting areas are the Endangered Species Act with it's prohibition of take defined as disturbing the birds and California Fish and Game Code sections dealing with destruction of birds' nests and take of fully protected birds. These laws require a high degree of proof in order to be enforced. If the land owners closed access to the nesting areas, while allowing general public access to the outer beach, protective enforcement as simple trespasses would be easier. The City of Oxnard could pass an ordinance prohibiting the entry into nesting areas that would be easily enforceable. The USFWS is actively pursuing this option.

Recommendations

The following recommendations could result in an increase in success in Least Tern nesting on Ormond Beach.

1. Enforcement of existing dog leash laws. This has started and has been successful.

2. A docent program to educate the public that uses the beach on the ways to not disturb nesting Least Terns. A Docent/Volunteer coordinator has been hired to create a docent program last year, but he has not succeeded in getting an effective program up and running.

3. Oppose any development of lands South of Hueneme Road as this would increase human use of the beach and result in degradation of the wetland and beach habitats on Ormond Beach.

4. Public events should not be scheduled on Ormond Beach during the nesting season.

5. Collect the two portions of the beach that are used by Least Terns under a single owner with an adequate management and protection plan or develop a plan in concert with the 2 property owners (the California Coastal Conservancy and the City of Oxnard.)

6. Encourage landowners to prohibit entry into the fenced nesting area from April 1 to September 15 annually. Then the local police department and DFG wardens could enforce the protection.

   A simple enhancement of protection would be for the City of Oxnard to enact an ordinance prohibiting entry into fenced nesting areas by anyone except authorized monitors.

7. The entire area used by least terns for nesting needs to be fenced.

ACKNOWLEDGEMENTS

I would like to thank Cynthia Hartley and Chris Kahler for their assistance in monitoring this beach this year.

Funding for this project was provided by the U. S. Fish and Wildlife Service Grant-in-Aid for threatened and endangered species program (Section 6).

ATTACHMENT 1

2009 Least Tern Nest Locations

ATTACHMENT 2

2009 CLT Master Nest List

Least Tern Master Nest List		Location: Ormond Beach 2009					
Nest No.	Egg No.	Date Found	Hatch Date	Other Outcome	Date	GPS Coordinates 34N; 119W	Comments

1	2	5/22/2009	6/17/2009			7.902; 10.597	Same as #12
2	2	5/27/2009	7/1/2009			7.868, 10.506	
3	1	5/27/2009		Abandoned	7/1/2009	7.872, 10.497	
4	2	5/27/2009	6/17/2009			7.883, 10.571	
5	2	5/27/2009	6/24/2009			7.992; 10.652	
6	1	6/3/2009	6/10/2009			8.271, 11.234	
7	2	6/3/2009	6/24/2009			7.971, 10.656	
8	1	6/3/2009		Abandoned	6/10/2009	7.974, 10.650	
9	1	6/3/2009		Abandoned	7/22/2009	7.985, 10.653	
10	2	6/3/2009	6/24/2009			8.002, 10.666	
11	2	6/3/2009	6/24/2009			7.932, 10.639	
12	2	6/3/2009	6/17/2009			7.903, 10.614	Same as #1
13	2	6/3/2009	6/24/2009			7.889, 10.571	
14	1	6/3/2009	7/1/2009			7.876, 10.545	
15	2	6/3/2009	6/24/2009			7.945, 10.576	
16	2	6/3/2009	6/24/2009			7.985, 10.649	
17	2	6/3/2009	6/24/2009			8.000, 10.651	
18	2	6/4/2009	7/1/2009			7.835, 10.491	
19	1	6/4/2009		Abandoned	7/8/2009	7.896, 10.601	
20	1	6/10/2009		Wave Wsh	7/1/2009	8.235, 11.184	
21	2	6/10/2009		Abandoned	7/8/2009	7.844. 10.540	
22	2	6/10/2009	7/1/2009			7.850, 10.540	
23	1	6/10/2009	7/1/2009			7.912, 10.573	
24	3	6/10/2009	7/1/2009			7.928, 10.555	
25	2	6/10/2009	7/1/2009			7.927, 10.551	
26	1	6/10/2009	7/1/2009			7.918, 10.615	
27	2	6/10/2009	7/1/2009			7.937, 10.655	
28	2	6/10/2009	6/24/2009			7.980, 10.659	
29	3	6/10/2009	7/1/2009			8.283, 11.254	
30	1	6/12/2009		Abandoned	7/8/2009	7.901, 10.489	
31	1	6/17/2009		Abandoned	7/22/2009	7.943, 10.642	
32	1	6/17/2009	7/8/2009			7.936, 10.634	
33	1	6/17/2009	7/8/2009			7.934, 10.635	
34	2	6/17/2009	7/1/2009			7.936, 10.609	
35	2	6/17/2009	7/1/2009			7.929, 10.596	
36	1	6/17/2009		Abandoned	7/22/2009	7.923, 10.594	
37	2	6/17/2009	7/1/2009			7.866, 10.536	
38	2	6/17/2009	7/8/2009			7.864, 10.545	Same as #45

39	2	6/17/2009	7/8/2009			7.880, 10.575	
40	2	6/17/2009	7/1/2009			7.948, 10.585	
41	2	6/17/2009	6/24/2009			8.006, 10.662	
42	1	6/24/2009		Abandoned	7/22/2009	7.887, 10.565	
43	2	6/24/2009	7/1/2009			7.897, 10.586	
44	2	6/24/2009	7/1/2009			7.950, 10.632	
45	2	6/17/2009	7/8/2009				Same as #38
46	2	7/8/2009		Abandoned	7/8/2009	7.895, 10.592	

Attachment 3

Ormond Beach Enforcement Meeting Minutes

Ormond Beach Enforcement Meeting Minutes

August 12, 2009
U.S. Fish and Game Ventura office
2493 Portola Road, Suite B
Ventura, CA 93003
1:30p.m. – 4:00 p.m.

In attendance

Dan Blankenship, California Department of Fish and Game
Peter Brand, California Coastal Conservancy
Jake Coombs, California Department of Fish and Game
Chris Dellith, U.S. Fish and Wildlife Service
Cynthia Hartley, Snowy Plover Nest Monitor
Rich Handley, The Nature Conservancy
Chris Kahler, Ventura County Shorebirds
Reed Smith, Least Tern Nest Monitor

Objective

Bring together land owners, law enforcement and wildlife protection agencies to discuss and resolve problems with homeless and trespassers that threaten sensitive habitat and endangered species survival on Ormond Beach.

Presentation

Cynthia Hartley presented an overview of threats to the nesting success of Snowy Plovers on Ormond Beach focusing on problems that have impacted nesting success this year in 2009. Last year in 2008 just 2 out of 43 nests failed whereas so far this year 14 out of 31 nests have either been predated or vandalized. Threats include trespassers in the fenced off breeding area (walkers, walkers with dogs and off road vehicles) and homeless living between the fence line and the surf.

Discussion Highlights

A better presence needs to be established on the beach to convince the public that the property is being monitored. This includes improved fencing, signage, law enforcement presence and more docent volunteers. Rich Handley reports that a part time Nature Conservancy employee will be starting in a few weeks and will spend a large portion of that time on the beach.

FENCING and SIGNAGE: In order to aid law enforcement several improvements need to be made to the protective fencing around the breeding area. Law enforcement cannot enforce no trespassing laws if it isn't obviously clear that the area is restricted. Without better signage and complete enclosure of the restricted area it is unenforceable. The Coastal Conservancy condones adding signs to the fencing. The city manager for Oxnard needs to be contacted to request permission for signs on the fencing on Oxnard City property. This is critical as it may derail a prosecution if "no trespassing" signs are posted without permission of the land owner. There was discussion about year round fencing in the future that would be symbolic during the non-breeding season. Just before breeding season additional fencing would be mounted on the permanent posts to restrict entrance into the breeding area. This may also make the process of putting up the breeding season fencing easier. More discussion on this will be required in the future.

HOMELESS: There appears to be no city codes that specifically address homeless sleeping on the beach, or anywhere else. Without a city code for this issue we will not be able to legally remove the homeless that are sleeping on the beach outside of the fence exclosures by the breeding areas. A possible solution to this problem would be to approach Oxnard City Attorney Alan Holmberg to create a new city code that would make homeless sleeping on the beach illegal. An appeal to the Oxnard City Council would also be needed. Once existing city codes have been more thoroughly researched we will discuss this alternative.

AGENT AUTHORIZATION FORM: The problem the California Coastal Conservancy (CCC) has with the Agent Authorization form provided by the city is that the language in the document appears to be all inclusive in regard to restricting access to CCC property. The intent of CCC is to restrict access to only the fenced off breeding area on the property from March 15-September 15. A dialogue needs to be established between both agencies to address this concern so that the form is acceptable to the CCC lawyer. Until the document is signed and submitted by CCC it is unlikely we will have significant local law enforcement support.

VIDEO CAMERAS: In order to improve our awareness of trespassing and vandalism activities in the breeding areas we may be able to make use of the Reliant Energy Plant to mount video cameras. Camera resolution is a potential issue as we may not be able to identify individuals in order to support prosecution in the case of a take. However even a low resolution camera may give us a profile of peak activity times of trespassing in the restricted breeding areas. This may provide enough information to allow law enforcement to intercept trespassers on the ground. More information is needed about camera resolution and costs. A dialogue with Reliant is also needed to determine if they would be willing to help out.

LAW ENFORCEMENT PRESENCE: An increase in law enforcement presence on the beach may help reduce the problems we are having. Ideally law enforcement would actively engage people on the beach. This may also discourage the homeless. The Oxnard City Police Department has indicated recently that they would like the California Fish and Game Department to become more involved. Both agencies are resource limited and overworked, but a solution is likely. Fish and Game could potentially use extra funds to enable occasional sweeps of the beach in order to increase presence. If severe violation occurs, Fish and Game can be called (1 888 DFG-CALTIP or 888 334-2258) and will respond, although there may be a delay. It would be best to establish a dialogue between the two agencies to work out the best way forward.

BEACH FORTS: Beach forts are a focal point of partiers, trash, predators, illegal sexual activity and encourage homeless encampments. Larger forts need to be removed.

CCC proposes an observation tower at the end of Arnold Road to help connect the community with the wildlife on the beach.

Recommendations

- Completely fence in the breeding area in the future on the east side (by Mugu fence).
- Create new signs
    1. Fence line signs: Make them more consistent (i.e. have only 1 or 2 kinds of signs on display) and list all code violations a trespasser could be prosecuted for, including the wording “No Trespassing” and affix them every 2-3 posts around the whole fence.
    2. Instructive signs: For display at trail entrances and in the Arnold Rd Parking lot. Remove the graphic showing the dog on leash.
    3. Consider creating a sign indicating that the California Coastal Conservancy is the property owner
- Enhance the docent program to have more eyes on the beach
- Investigate mounting a video camera on the Reliant Energy Plant to monitor the breeding areas
- More frequent visits to the beach by law enforcement to engage the public and establish a stronger presence
    1. Fish and Game could occasionally do a beach sweep to check fishing licenses and other potential violations, meanwhile their presence on the beach would increase visibility of law enforcement
    2. Same as above for city police, only they would engage homeless on the beach (until a new legal code can be created)
- Improve the gate at the end of the Arnold Rd parking lot to prevent the passage of off road vehicles, and also allow law enforcement vehicle access to the beach using a lock and key
- Reach a compromise between Oxnard City and California Coastal Conservancy lawyer so that the Agent Authorization form is acceptable to both.
- Use Oxnard City Corps to remove beach forts
- Send out a press release in the beginning of the breeding season to announce the closure of the breeding grounds
- Consider utilizing homeless outreach groups to redirect homeless to shelters

Action Items

	Item	Responsibility	Due Date
1	Create new signs to be circulated for comment	Chris Kahler	Update next meeting
2	Research city ordinances that address homeless sleeping on the beach	Chris Kahler	Update next meeting
3	Contact the Oxnard City Manager to find out who can give permission to post “no trespassing” signs on the protective fencing on Oxnard City Property	Chris Kahler	Update next meeting
4	Inquire with Fish and Game supervisors to see if it would be possible to add Ormond Beach patrols to the Fish and Game schedule	Jake Coombs	Update next meeting
5	Continue to push through the Arnold Rd Gate improvement	Peter Brand	Update next meeting
6	Give Peter Brand the contact info for Officer Marostica	Cynthia Hartley	August 14
7	Check with California Coastal Conservancy lawyer about Agent Authorization document, begin a dialogue with the City of Oxnard to complete the form	Peter Brand	Update next meeting
8	Investigate mounting a camera on the Reliant Energy Plant	Chris Dellith	Update next meeting
9	Press release announcing breeding ground closure	TBD	March 1, 2010
10	Create a management plan	Chris Kahler to take the lead, with help from the group	Update next meeting

Next Meeting – October 2009, time and day to be announced

State of California
The Resources Agency
Department of Fish and Game
Wildlife Branch

California Least Tern Breeding Survey
Ormond Beach, Ventura County
2010 Season

by
Reed V. Smith

Nongame Wildlife Program

Final Report

To

State of California
Department of Fish and Game
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123

California Least Tern Breeding Survey
Ormond Beach, Ventura County
2010 Season

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Prepared 9/10/10

State of California
The Resources Agency
Department of Fish and Game

California Least Tern Breeding Survey
Ormond Beach, Ventura County
2010 Season

by

Reed V. Smith
104 N. Evergreen Drive
Ventura, CA 93003

ABSTRACT

This year's breeding season work was conducted by me under contract to the California Department of Fish and Game in accordance with US Fish and Wildlife protocols for monitoring Least Tern nesting under an Endangered Species Act Recovery Permit. I conducted 14 weekly surveys of Ormond Beach from Port Hueneme beach to the boundary fence for Naval Base Ventura County (Pt. Mugu) from April 23 to August 4, 2010. During that period I located and monitored 48 California Least Tern nests from nest initiation to fledging of young.

INTRODUCTION

Ormond Beach is located between Naval Base Ventura County – Pt. Mugu (Arnold Road) and the city of Port Hueneme (J. Street Drain.) The beach is approximately 2.2 miles long. From West to East: The sandy beach is backed by the J. Street Estuary, a Pickleweed wetland, the Reliant Energy Power plant and then another Pickleweed wetland. The West end is owned by the City of Oxnard, and the East end is owned by the California Coastal Conservancy.

The portion of the beach used for nesting by California Least Terns is typified by 3-6 foot high small dunes on the ocean side. Inland of the small dunes is a wide, level sandy area. This is the area where the nests are placed. This area is vegetated by Beach Bur, Beach Morning Glory, Sea Rocket and Beach Evening Primrose. The vegetation provides shelter from sun and predators for the least tern chicks. Behind the nesting area are higher dunes marking the inland extent of

nesting. The beach is not cleaned or groomed so driftwood and wrack collect on the seaward edge.

Efforts to protect least tern nesting have been ongoing for approximately 20 years by various NGOs, including the Ventura Audubon Society, the Conejo Valley Audubon Society, the Nature Conservancy and the Sierra Club. These private efforts have had the support of the California Department of Fish and Game and the U. S. Fish and Wildlife Service. The area immediately west of the Reliant Energy power plant has been the primary nesting area for most of that time. Over the years various types of fences have been put up in the spring and taken down in the fall. Least terns have used both the west area and the area immediately west of Arnold Road on the other end of the beach.

Over the years the City of Oxnard has been trying to develop the area. Various proposals have been put forth including a city park, a marina, a housing development, etc. Currently the city is considering an industrial park along Arnold Road and an over 1,200 home residential development at Arnold Road and Port Hueneme Road. This is going on in spite of the city council saying that Ormond Beach is recognized as a valuable habitat for wildlife. The city has recently circulated a draft 2030 General Plan that shows industrial land use adjacent to and south of Port Hueneme Road. The land is currently used for agriculture and is a good buffer between industrial areas and the wetland/dune complex at Ormond Beach. The draft plan now designates the sandy beach as “Resource Protection”.

METHODS

Once a week I walked Ormond Beach along meandering transects to locate least tern nests. Most nests were located by observing an adult tern sitting on the sand. Once located, the nest was marked with a tongue depressor 1 meter inland of the nest, the longitude and latitude were recorded using Global Positioning System (GPS) and the number of eggs was recorded along with the date. On subsequent surveys the nest was checked to determine if incubation was continuing. This was done remotely when possible to reduce disturbance to the least tern colony. The estimated number of least terns present was recorded on each site visit.

All hatched nests were recorded and the number of chicks noted. Nest hatching was determined by the presence of chicks nearby, tern fecal matter on the nest scrape and the absence of eggs or chicks and/or by examining the nest site for small portions of egg shell left from hatching. Failed nests were also recorded. If possible the cause of the nest failure was recorded. The outcome was determined by examination of the nest site for signs of the cause; i.e. predator tracks, partially eaten eggs, human footprints, etc.

After observing that a nest had hatched the chicks were observed to determine their growth and fate. Nest abandonment was determined by the absence of adult terns tending it, the eggs being present beyond the expected hatching date, the presence of dew on the eggs in the early morning, and a reduced temperature of the eggs.

RESULTS and DISCUSSION

The first California Least Tern appeared in the area on May 12, 2010. The 2010 nesting season for least terns on Ormond Beach produced ~14 fledglings. Out of a total of 48 nests initiated, 35 nests hatched. By August 11, 2010 all terns had left the area.

The birds place nests in level areas behind the seaward line of small dunes. Most nests were initiated between May 26 and June 9, 2010. When the nests hatched the parents fed the chicks initially within 100 feet of the nest site. After that the chicks moved to a more protected area within the more vegetated portions of the nesting area.

When the birds fledged they moved to the outer beaches, closer to the foraging areas. Most of them waited at the east end of the J. Street Estuary for fish delivered by the parents.

Nest Locations

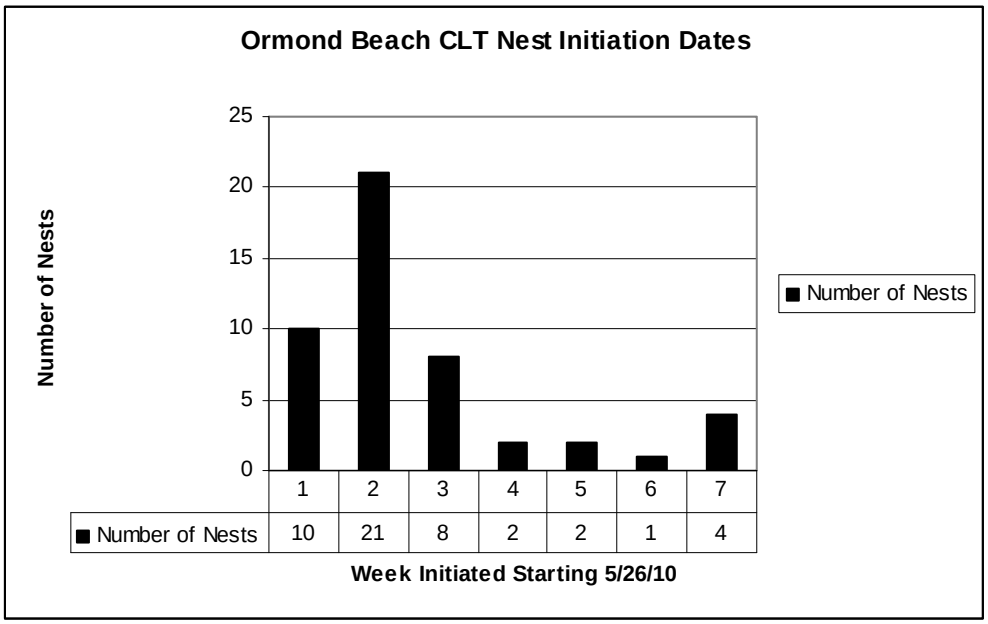
This year most of the nests were all located west of the Reliant power plant. Thirty eight nests (79.2%) were within the fenced nesting area there. One nest (2.1%) was located on the narrow strip of sand between the J Street Estuary and the outer beach. Nine nests (18.7%) were initiated on the east (Arnold Road) end of the beach.

During my monitoring over the last couple years I have observed that least terns do not use the ½ mile long area in front of the Reliant Energy power plant for nesting. (Western Snowy Plovers do not nest there either.) The nest distribution map shows this. There is no apparent physical difference between this area and the portions of the beach on either side that the terns do use for nesting. The power plant operation is quite noisy. Least terns use calls to locate and identify their chicks. The power plant noise could interfere with this. There might be a vibration of the land caused by the power plant that discourages nesting, this had been detected by scientists using microscopes on the power plant property. No study has definitively determined the cause of this lack of nesting in the area.

A map of all 2010 Least Tern nests is in Attachment 1.

Nest Initiation

The first terns arrived May 12, 2010. The first nest was located May 26, 2010 and the last nest located July 7, 2010. Approximate nest initiation dates were determined by going back 21 days from the approximate hatch dates. A total of 48 nests were initiated.



Nest Fates

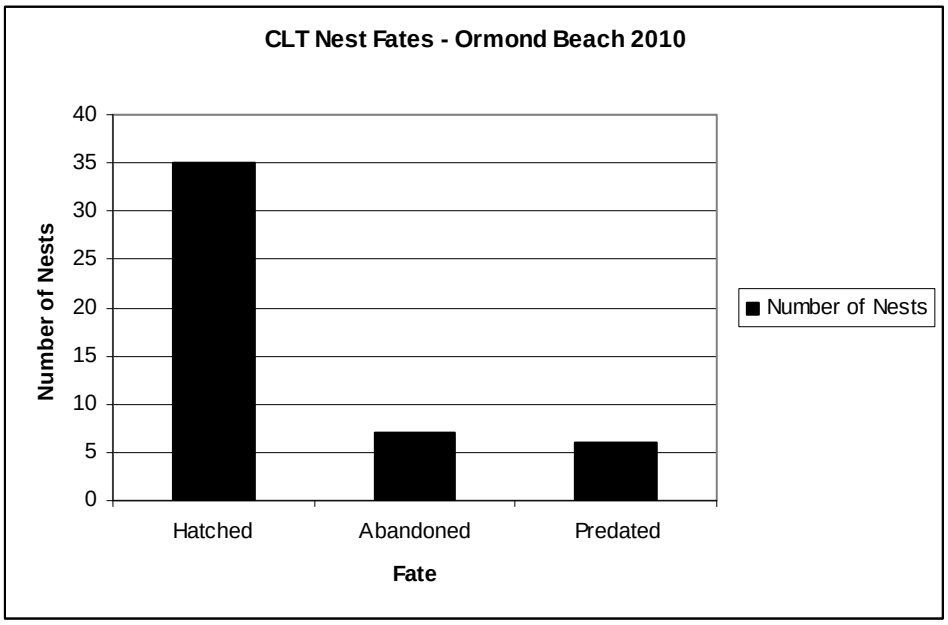
A total of 35 nests hatched as evidenced by chicks in the nest scrape or near by, egg shell nearby or adults vociferously defending area, scrape without eggs or chicks and tern fecal matter present and no evidence of other fate.

The number of abandoned nests was 7. Abandonment was determined by 2 or more weeks past expected hatching date, no adult tracks nearby, sun bleaching of the eggs, eggs with morning dew on them or cold temperature of the eggs. All abandoned eggs were collected and delivered to the Western Foundation of Vertebrate Zoology.

Six nests were predated with Ground Squirrels being the suspected predator. Ground squirrels were observed by Cynthia Hartley (Ormond Beach WSP monitor) predating nests. All of the squirrel predated nests were located on the east end of the beach adjacent to Arnold Road. One nest inside the western fenced area was predated by a crow.

The following is a breakdown of the fate of the nests:

Hatched	35	(73%)
Abandoned	7	(14.5%)
Predated	6	(12.5%)

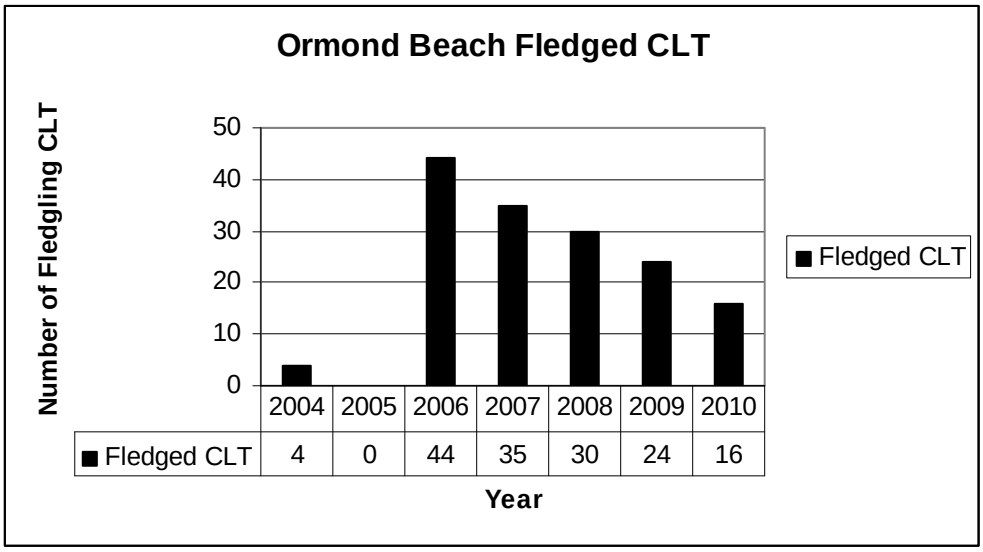


The nest abandonment rate was lower than last year. (2010 – 14.5%; 2009 – 23.0%) A chain link fence was constructed between The Nature Conservancy property and the beach behind the west nesting area and an improved gate was placed at the end of Arnold Road. These were paid for by The Nature Conservancy.

The quality of the fencing material around the nesting areas was improved. This was financed in part by a grant from Amgen, Inc. in recognition of Cynthia Hartley's volunteer hours on Ormond Beach and was administered by myself through the Ventura Audubon Society. The sandy beach portion of the Arnold Road nesting area was completely enclosed by mesh fencing.

These access controls all but eliminated human entry to the fenced nesting areas.

The 2010 breeding season was a success on Ormond Beach. Forty eight pairs hatched thirty five nests producing 16 fledgling least terns. The fledgling to pair ratio was .33. This is a decrease from the last year and within the range wide "normal" ratio which has an average range of .28 to .38 over the prior 4 years.



Comparison of 2010 CLT Breeding on Ormond Beach to Prior Years

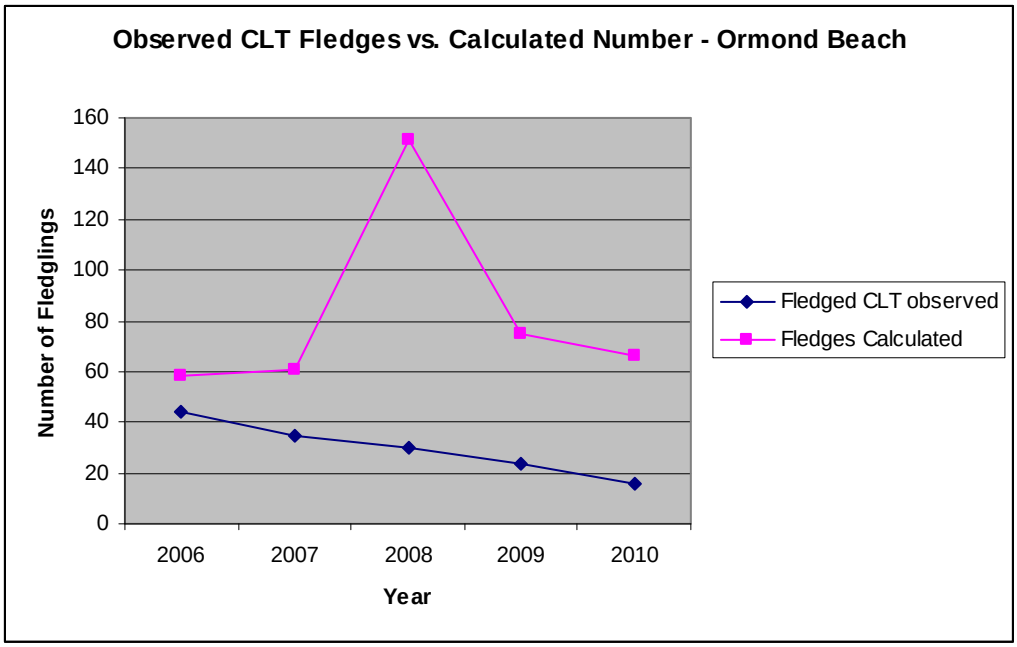
Year	2004	2005	2006	2007	2008	2009	2010
Number of Nests	29	27	53	52	81	44	48
Number of unsuccessful nests	26	25	17	11	14	11	13
Number of hatched nests	3	2	36	41	67	33	35
Percent of nests hatching	10.3%	7.4%	67.9%	78.8%	82.7%	75.00%	72.90%
Number of Fledges	4	0	44	35	30	24	16
Fledge to Nesting Adult Pair Ratio	0.14	0.00	0.83	0.67	0.37	0.54	0.33

The failure in least tern fledglings during 2004 and 2005 was caused by the use of the beach by powered paragliders and ultralight aircraft. These aircraft would often fly low over the nesting areas disturbing the terns. A city ordinance was passed prohibiting landing and take off by these aircraft in late 2005. This eliminated the disturbance with a rebound in fledgling numbers in 2006.

Hatching success for 2006 through 2010 has averaged 74.8% with the average number of nests hatched at 42. The range of hatchings success has varied from 67.9% to 82.7% so this years 72.9% rate is only slightly depressed. There had been a decline in the total number of CLT fledglings in the last 5 years, though the fledgling per pair ratio has gone up and down. The reason for this decline has not been determined.

Kathy Keane has proposed a new way of estimating fledgling numbers. She suggests we should take the number of hatched eggs and subtract the chick and fledgling mortality and use the number derived as the number of fledglings.

This method gives a different picture of success:

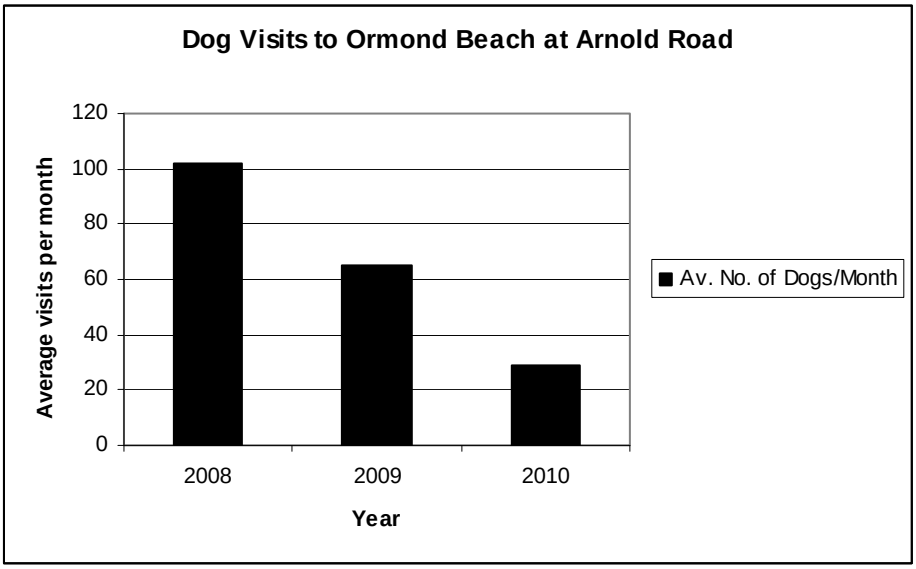


See Attachment 2 for the Master Nest List

Discussion

Two adult least tern mortalities and two chick mortalities were noted. One of the adults had no apparent damage and it was collected and taken to the Western Foundation of Vertebrate Zoology. The other adult had been apparently taken by a Peregrine Falcon. The two chicks were 1st week birds and were too decomposed to warrant collection.

In 2008 there was an average of 102 dog visits per month on the Arnold Road end of the beach. In 2009 the number of visits per month was down to 65. This year the number of dog visits per month was 29. The primary factor in reducing dogs off leash on the beach was an active enforcement effort by the City of Oxnard's Animal Regulation Department. This was greatly aided by Mr. Walter Fuller, a volunteer docent who called the enforcement officers when he saw a dog on the beach off leash. Mr. Fuller collected the data on dog visits Monday through Saturday from 5:30AM to 1:30PM from May through August. Enforcement of the leash laws may discourage dog owners who want their dogs to run without a leash from visiting the beach.



Dog owners that enter the beach from the west do so onto a portion of the beach owned by the city of Port Hueneme. Dogs are prohibited on Port Hueneme beaches but that prohibition is not enforced. Numerous off leash dogs were observed near the western nesting area.

The California Department of Fish and Games hires a monitor for the breeding season but has no management plan for the beach and no authority for management beyond its general responsibility for protecting endangered species. This agency does address problems as they arrive on a case by case basis, when there is a wildlife biologist available.

The U.S. Fish and Wildlife Service has no management plan for the beach beyond its general responsibility for protecting endangered species. They do take part in discussions with a wide range of agencies and NGOs on ways to protect Least Terns on Ormond Beach.

The City of Oxnard owns the western portion of the beach, but has no specific protection plan in place and has not taken an active role in management of the beach. The Oxnard Police Department will respond to off road vehicles on the beach.

The California Coastal Conservancy (CCC) owns the eastern portion of the beach and takes a leadership role in holding regular meetings with interested agencies, NGOs and individuals concerning the use of the area. They have no specific plan for the protection of least terns

Recommendations

The following recommendations could result in an increase in success in Least Tern nesting on Ormond Beach.

1. Enforcement of existing dog leash laws. This has started and has been successful.

2. Expand the Docent program to include the western nesting area. This year there was a docent program, led by Chris Kahler, active on the Arnold Road end of the beach. Nine CLT nests were initiated there and 3 hatched the week of June 16, 2010. The other 6 nests were predated by ground squirrels. This meant that the bulk of the active nesting was on the western nesting area and the docent program did not cover that area.

3. Oppose any development of lands South of Hueneme Road as this would increase human use of the beach and result in degradation of the wetland and beach habitats on Ormond Beach.

4. Public events should not be scheduled on Ormond Beach during the nesting season.

5. Collect the two portions of the beach that are used by Least Terns under a single owner with an adequate management and protection plan or develop a plan in concert with the 2 property owners (the California Coastal Conservancy and the City of Oxnard.)

ACKNOWLEDGEMENTS

I would like to thank Cynthia Hartley and Chris Kahler for their assistance in monitoring this beach this year.

Funding for this project was provided by the U. S. Fish and Wildlife Service Grant-in-Aid for threatened and endangered species program (Section 6).

ATTACHMENT 1

2010 Least Tern Nest Locations

ATTACHMENT 2

2010 Master Nest List

Nest No.	Egg No.	Date Found	Hatch Date	Other Outcome	Date	Coordinates 34N	119W
1	1	5/26/2010	6/16/2010			7.276	9.676
2	2	5/26/2010	6/16/2010			7.275	9.701
3	2	5/26/2010	6/16/2010			7.297	9.727
4	2	5/26/2010	6/23/2010			7.875	10.544
5	2	5/26/2010	6/23/2010			7.909	10.601
6	1	5/26/2010	6/9/2010			7.895	10.581
7	2	5/26/2010	6/16/2010			7.914	10.581
8	1	5/26/2010		Abandoned	7/7/2010	7.919	10.611
9	1	5/26/2010	6/23/2010			7.993	10.692
10	1	5/26/2010	6/23/2010			7.978	10.673
11	2	6/2/2010		Pred. GS	6/23/2010	7.283	9.68
12	2	6/2/2010		Pred. GS	6/23/2010	7.255	9.669
13	3	6/2/2010		Pred. GS	6/23/2010	7.304	9.742
14	2	6/2/2010		Pred. GS	6/23/2010	7.308	9.744
15	1	6/2/2010	6/23/2010			7.880	10.546
16	1	6/2/2010	6/30/2010			7.915	10.55
17	2	6/2/2010	6/30/2010			7.927	10.551
18	2	6/2/2010	6/30/2010			7.933	10.553
19	2	6/2/2010	6/23/2010			7.932	10.575
20	2	6/2/2010	6/23/2010			7.948	10.584
21	1	6/2/2010	6/16/2010			7.932	10.601
22	2	6/2/2010	6/23/2010	Abandoned	7/7/2010	7.928	10.604
23	2	6/2/2010	6/23/2010			7.938	10.61
24	2	6/2/2010	6/23/2010			7.934	10.615
25	2	6/2/2010	6/23/2010			7.918	10.626
26	2	6/2/2010	6/16/2010			7.947	10.63
27	1	6/2/2010	6/30/2010			7.964	10.666
28	2	6/2/2010	6/23/2010		6/23/2010	7.973	10.656
29	2	6/2/2010		Abandoned	7/7/2010	7.985	10.653
30	2	6/2/2010		Abandoned	7/7/2010	7.986	10.644
31	2	6/2/2010	6/23/2010			7.993	10.691
32	2	6/9/2010		Pred. GS		7.266	9.675

33	2	6/9/2010	6/23/2010			7.869	10.562
34	2	6/9/2010	6/30/2010			7.895	10.607
35	2	6/9/2010	6/23/2010			7.909	10.602
36	2	6/9/2010	6/23/2010			7.914	10.559
37	2	6/9/2010	6/30/2010			7.943	10.634
38	1	6/9/2010	6/23/2010			7.970	10.679
39	1	6/9/2010		Abandoned	7/21/2010	7.986	10.678
40	2	6/16/2010		Pred. GS	6/23/2010	7.249	9.647
41	2	6/16/2010	6/23/2010			7.913	10.596
42	2	6/23/2010	7/7/2010			7.955	10.671
43	2	6/27/2010	6/30/2010			7.942	10.658
44	2	6/30/2010	7/7/2010			7.962	10.674
45	2	7/7/2010		Abandoned	7/21/2010	7.950	10.681
46	2	7/7/2010	7/14/2010			7.925	10.550
47	1	7/7/2010	7/14/2010			7.904	10.515
48	2	7/7/2010		Abandoned	7/21/2010	8.128	11.000

APPENDIX H

2009 and 2010 Western Snowy Plover Breeding Survey Reports

State of California
The Resources Agency
Department of Fish and Game
Wildlife Branch

Western Snowy Plover Breeding Survey
Ormond Beach, California

2009 Season

by
Cynthia Hartley

South Coast Region, 2008-02

Final Report
To

State of California
Department of Fish and Game
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123

Western Snowy Plover Survey
Ormond Beach, California

2009 Season

Cynthia Hartley
Ventura, CA

Prepared 28 September 2009

State of California
The Resources Agency
Department of Fish and Game

Western Snowy Plover Breeding Survey
Ormond Beach, California

by

Cynthia Hartley
Ventura, CA

Executive Summary

The abundance and productivity of the threatened western snowy plover (WSP) (*Charadrius alexandrinus nivosus*) was monitored at Ormond Beach located in Oxnard, Ventura County, California from March 19, 2009 to September 5, 2009.

An average of 30 adult WSP were recorded weekly during the survey period. There were a total of 23 breeding individuals, which includes 13 males and 10 females. Thirty three WSP nests were located of which 54.5% successfully hatched (18 nests) and 45.5% failed (15 nests). Of the failed nests, one was vandalized by an off-road vehicle, seven were confirmed to have been predated and seven failed due to undetermined causes. Nest predators identified were squirrels and ravens. The number of dog visits to the beach decreased in 2008 (333 sightings in 2009 compared to 553 in 2008); however, the number of predators have increased with a corresponding increase in nest failure. There has been an increase in the number of homeless people living on the beach, which has attracted more predators and may be the reason for increased nest predation.

INTRODUCTION

The western snowy plover (WSP) (*Charadrius alexandrinus nivosus*) breeds along the coast of the Pacific Ocean in California, Oregon, and Washington and at alkaline lakes in the interior of the western United States (Page et al. 1991). Loss of habitat, predation pressures, and disturbance have caused the decline of the coastal population of WSP and led to the listing of the Pacific Coast Population of WSP as Threatened on March 5, 1993 (Federal Register 1993).

Ormond Beach is located between Naval Base Ventura County, Pt. Mugu (i.e., Arnold Road) and the City of Port Hueneme (i.e., J Street drain). The beach is approximately 2.2 miles long. From west to east, the sandy beach is backed by Perkins Street, a pickleweed wetland, the Reliant Energy power plant, and another pickleweed wetland. The west end is owned by the City of Oxnard, the center and eastern portion are owned by the California Coastal Conservancy. The survey area is bounded by the Point Mugu boundary fence on the southeast, to Port Hueneme beach on the northwest, and includes the Ormond Beach Salt Pannes directly inland from the northeast end of Ormond Beach. Figure 1 shows an aerial view of the nesting areas.

Figure 1. Ormond Beach survey area

Plovers utilize dune backed beaches for nesting and digging scrapes, which they line with shells and other bits of material. They lay three camouflaged eggs and incubate for approximately 28 days. Chicks are precocial and typically are attended to by the male, which guards the surviving chicks and leads them to forage. Chicks fledge approximately four weeks after hatching. On Ormond Beach, plovers utilize two distinct areas for nesting, which are located on the southeastern and northwestern ends of the beach. There is an approximately 0.5 mile stretch of beach in front of the Reliant Energy power plant where no nests are found. Over the past years, various types of protective fencing have been put up in the spring and taken down in the fall. This year the protective fencing completely enclosed the breeding area on the northwest end of the beach. The breeding area on the southeast end of the beach was enclosed on three sides with the inland side left open (Figure 1). The beach is not cleaned or groomed, so driftwood and wrack collect on the seaward edge and provide forage for nesting birds.

Efforts to protect plover nesting have been ongoing for approximately 20 years by various non-governmental organizations including the Ventura Audubon Society, the Conejo Valley Audubon Society, the Nature Conservancy, and the Sierra Club. These private efforts have had the support of the California Department of Fish and Game and the U. S. Fish and Wildlife Service.

The objective of this work was to monitor all nests, eggs and young of the plover and estimate reproductive success. The number of adults and chicks observed each week was recorded, nests were located and tracked until completion, and nest outcome was determined where possible. Threats to nesting success were determined and documented.

METHODS

Population Abundance and Nest Fate

Monitoring of Ormond Beach was conducted by walking wandering transects a minimum of once per week over the entire length of the beach in each direction from the boundary fence of Navy Base Ventura County, Pt. Mugu to Port Hueneme Beach. The Ormond Beach Salt Pannes were also included in the survey area. All plovers observed were recorded by age and gender. All nests located were recorded by date found, GPS coordinates, and number of eggs. Nests were marked with a colored tongue depressor placed approximately three to five feet inland. Each nest was followed until hatching or date lost prior to hatching. Once a nest no longer contained eggs, a 2 meter area around the nest was examined for eggshell fragments, egg yolk, tracks of birds or possible predators or any other disturbance. Next, the nest scrape was carefully examined for shell fragments. Nest hatching was determined by locating a pip shell (1-4 mm) within the hatched nest, by observing displaying behaviors of adults and locating chicks when possible. Larger shell fragment, fragments with egg

membrane still attached and/or egg contents were indicative of nest predation (Mabee 1997). If no eggshell pip, fragment or egg content could be located and no adult defending behavior or chick presence was observed, the nest was determined to be a probable failure. Cause of failure was determined as best as possible based on tracks, eggshell evidence or lack of evidence, observations of predators in the nest vicinity and eyewitness reports.

Nest Initiation
Nest initiation was calculated for nests confirmed to have hatched by subtracting 28 days from the first observed survey date in which no eggs remained in the nest. For nests determined to have failed, nest initiation was taken to be the first date the nest was observed with eggs.

Breeding Adults
The number of breeding adults was estimated using the survey with the highest combined number of active nests and broods. This number was calculated by adding the number of active nests, based on the calculated nest initiation dates, and the number of active broods sighted on the same survey date. The survey with the highest number of nests and broods was used to calculate the number of breeding adults representative of the season. One breeding male and female were attributed to each active nest and one breeding male was attributed to each active brood.

Dogs
The number of dogs entering the beach via the Arnold Road parking lot access was recorded by a volunteer docent, Walter Fuller. Observations were made between the hours of 6:30 am and 1:30 pm Monday through Saturday from April 1 through September 5.

RESULTS and DISCUSSION

Population Abundance
An average of 30 adult WSP were observed on weekly surveys throughout the survey period. The monthly averages are shown in Figure 2. From the months of April through July, the monthly average population count fluctuated between 24 and 34 adults. During these months, most adults were located in the fore or back dune area. Starting in mid-August, the pattern of WSP spatial dispersal changed and the population counts increased to an average of 41 during the month. WSPs no longer spread out on the beach in territories and instead began gathering in one of two flocks located on either end of the survey area. Detailed population data gathered during each survey is included in Attachment 1.

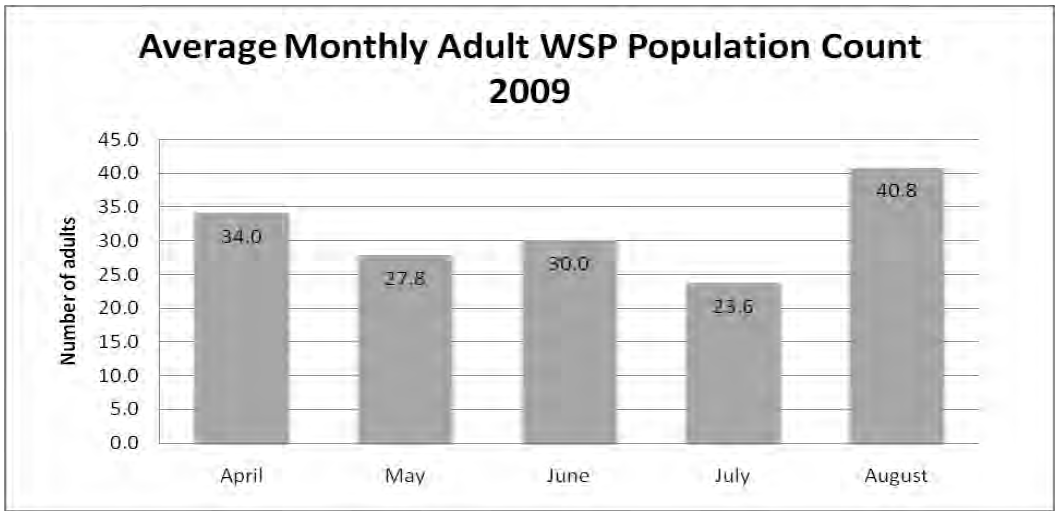


Figure 2. Average monthly number of adult plovers observed during the 2009 survey period.

Breeding Adults

The maximum estimated number of breeding adults is calculated to be a total of 23 individuals, with 13 males and 10 females. This is based on a maximum of 10 active nests and three broods observed on May 3. Nest numbers and chick observations are detailed in Attachment 2.

Banded Birds

Banded WSP observed during the survey period were recorded and the data sent to Frances Bidstrup, with Point Reyes Bird Observatory. The banded bird NO:YW, which was banded as a chick in 2004 at Vandenberg Air Force Base, was first observed in the 2009 season on the north west end of Ormond Beach on April 1. It was sighted repeatedly in the same location through the end of June. It was not observed engaging in breeding behavior during this time. This same bird had been sighted in 2008 in the months of April and May in the same location. Seven new banded birds were observed beginning late in August coinciding with the changed dispersal patterns. Included in these sightings were four 2009 hatch year birds - one each from Moss Landing State Beach, Moss Landing Salt Ponds, and two from Salinas National Wildlife Refuge. The three remaining birds had been banded at Vandenberg Air Force Base in 2008 or 2007. A detailed record of banded bird sightings is included in Attachment 3.

Nest Activity

Spatial Dispersal of Plover Nests

Consistent with each year surveyed since 2003, WSP utilize two distinct areas for nesting on either the southwestern or northeastern ends of the beach. There is an approximately 0.5 mile length of beach in front of the Reliant Energy power plant where no nests are found. This area is bounded by the east and west nesting areas. Nineteen nests were established on the northwest end of Ormond Beach, 13 nests were on the southeast side, and a single nest was west of Perkins Estuary. Nests have been

found in the salt pannes during past breeding seasons; however, no nests were found there this year or in the last 2 years.

Nest Initiation

The first nest was located on March 19, 2009 and the final nest on July 24, 2009. A total of 33 WSP nests were located during the 2009 breeding season. Approximate date of nest initiation was calculated for 32 of the 33 nests. One nest was found after hatch, therefore, it was not possible to calculate nest initiation. One clutch (a 10-day old chick) was found west of the Perkin's Street Estuary after hatch.

Only one nest was initiated in March. Following that time, strong offshore winds occurred for approximately three weeks, so subsequent nest initiation did not begin until after the beginning of April when a total of 11 nests where established in that month. All WSP nests failed within a two week period in mid-May and no new nests were established for two weeks. Thus, there is a pause in nest initiation in May so only six new nests were established. In June, 10 nests were initiated decreasing to four new nests in July. No new nests were found in August. Figure 3 summarizes nest initiation by month. For a detailed account of recorded nest observations see Attachment 4.

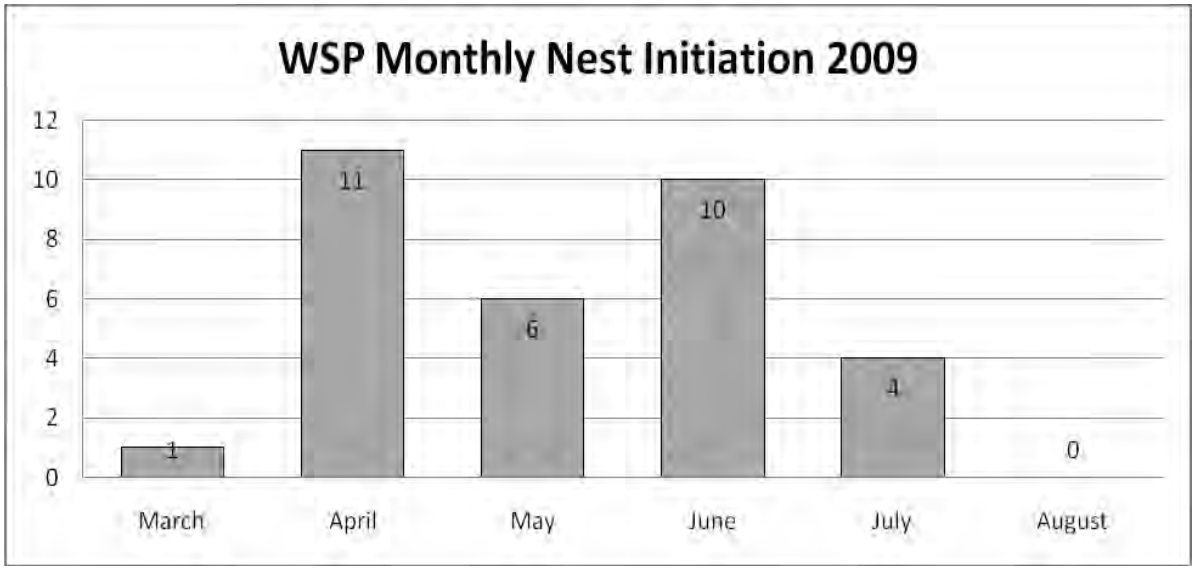


Figure 3. Total number of plover nests initiated each month in 2008.

Nesting Outcome

Eighteen out of the 33 nests were determined to have hatched. Hatched nests were confirmed by the presence of pip shells, chicks less than one week old nearby, and/or displaying adults close to the nest. One nest was located as an undisturbed scrape lined with shells, did not map to a location of a previous nest in any year, no eggs were present, but pip shells were found in the scrape. Fifteen nests were determined to have failed because they contained no pip shells and the eggs disappeared less than four weeks after discovery (Figure 4).

Nest Failures

Predation was confirmed in seven of the 15 failed nests by the presence of large shell fragments, egg yolk or shell halves within one meter of the nest. Due to animal footprints around nests, predation was confirmed in two nests by a squirrel and in 1 nest by a corvid. Three nests had broken eggs but no discernable prints; however, all of these nests were in areas of heavy squirrel infestation. It is likely that the eggs were stolen by squirrels and destroyed away from the nest. One nest did not have shell fragments, but one egg was stolen while the adults were still incubating. One week later the adults abandoned the remaining two eggs (26 days after nest discovery). Subsequently, the remaining eggs disappeared from the nest at 34 days and 43 days after nest discovery.

Hatch	18	**54.5%**
Fail	15	**45.5%**
Predated	*7*	*21.2%*
Undertermined	*7*	*21.2%*
Vandalized	*1*	*3.0%*
Abandoned	*0*	*0.0%*

There were seven nests that met the criteria of failure because the eggs disappeared from the nests with no evidence of hatching (pips, chicks or displaying adults); however, there were no obvious signs of predation, so these nests are labeled undetermined failure. Due to the problems with nest predation, a mini-exclosure was used on one nest. However, 24 days after the nest was marked and protected, a small four-wheel off-road vehicle trespassed into the breeding ground, removed the nest exclosure and repeatedly ran over the nest. Because of the extensive damage to the area, it was not possible to identify the nest scrape or any egg fragments. However, two small pieces of animal tissue were found in the sand roughly at the nest location. No nests were abandoned (Figure 4).

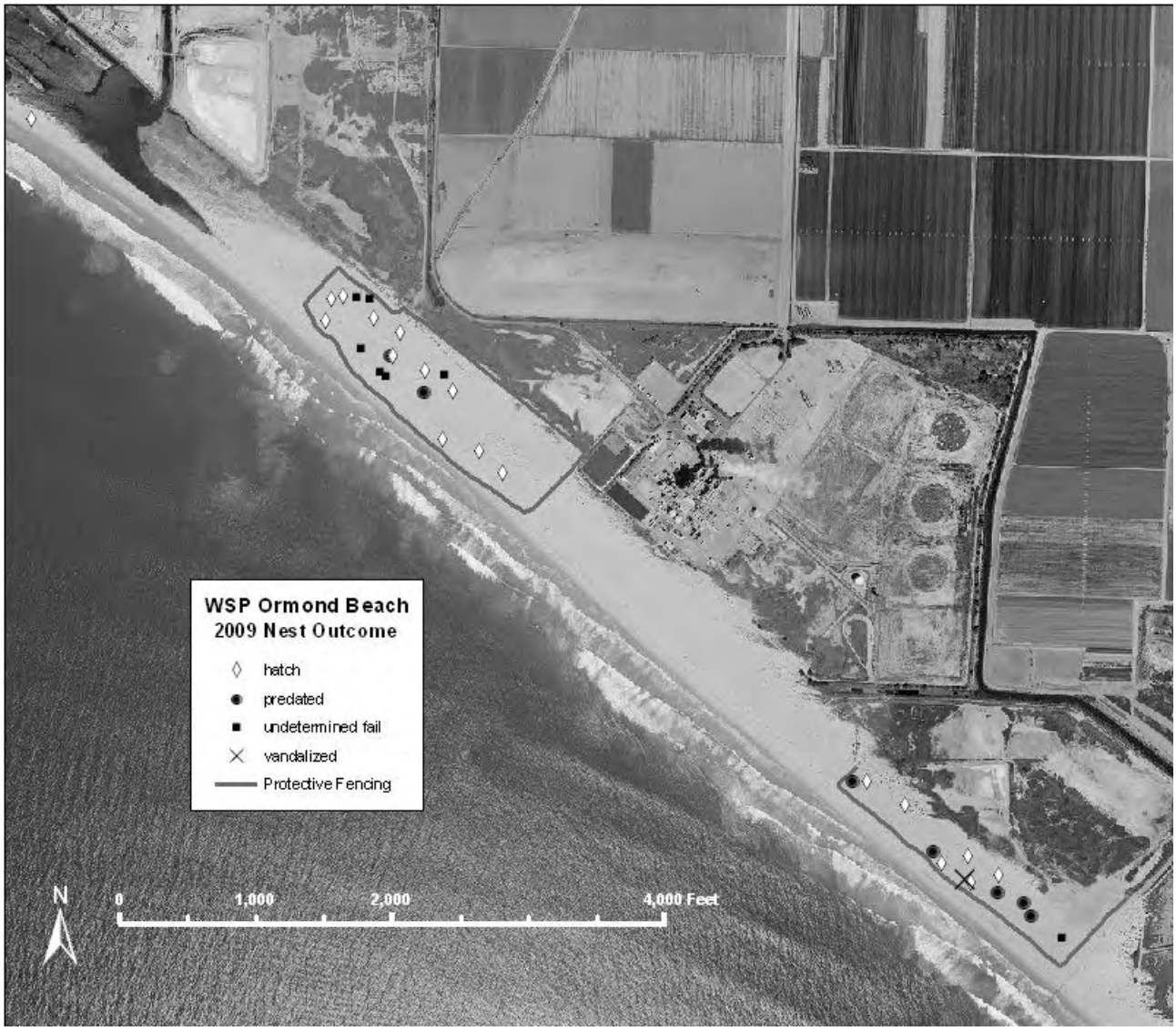


Figure 4. Spatial arrangement and nest outcome of WSP nests during the 2009 breeding season at Ormond Beach.

Threats to Nesting Success

During the 2009 WSP breeding season, the greatest threat to nesting success were predators and trespassers in the breeding areas.

Humans

Homeless living adjacent to the southeast fenced area left food, trash and human excrement in the fore dunes, which attracted predators such as rodents, squirrels and gulls as evidenced by tracks. There was a large population increase of ground squirrels this year and at least two nests were predated as a result. All the nests in that area were destroyed in the month of May and only two nests were subsequently established, both of which failed (one was vandalized and one was predated by a corvid). Homeless

also walked into the fenced areas to hide sleeping equipment and to access the beach. One nest located near a heavily used area, with two unhatched eggs, was trampled by a human.

On the northwest end of the beach there was frequent trespassing through the center of the fenced breeding grounds. Individuals cut the fence from the back of the property and walked through to reach the beach. In one case, I witnessed a person walking a dog through the active breeding ground. One nest in that area was trampled twice. Fortunately, the first time just the nest marker was stepped on and the second time the eggs had already hatched.

Natural Predators

Several raptors were observed in or near the breeding areas during the season. These include a Peregrine Falcon, an American Kestrel, and a Cooper's Hawk. On August 17, a Cooper's Hawk was observed taking a WSP (pers. communication, Rich Handley) and a dead female WSP with a broken neck was found in April (pers. communication, Chris Kahler). The dead WSP was deposited with the Western Foundation of Vertebrate Zoology. In addition, a Long-Tailed Weasel has been observed and photographed in the Salt Panne (pers. communication, Walter Fuller).

Domestic Dogs

Between April 1 and September 1, a total of 333 dogs were documented entering the beach from the Arnold Road parking lot. Observations were made between the hours of 6:30 am and 1:30 pm Monday through Saturday each week, so it is reasonable to extrapolate that the actual number of dog visits to the beach was over 600 during the WSP breeding season in 2009. This data does not account for any dogs that entered Ormond Beach via Hueneme Beach. Compared to data collected in 2008, there has been a decrease in dog visits to the beach (Figure 5).

In early 2009, Oxnard City Animal Control started ticketing dog owners with off-leash dogs and it appears to have been effective in decreasing the number of dogs on the beach; however, off-leash dogs continue to be a problem. Despite the decrease of dogs on the beach, most dog owners still unleash their dogs once they reach the sand, ignoring the leash law signs in the parking lot and verbal warnings.

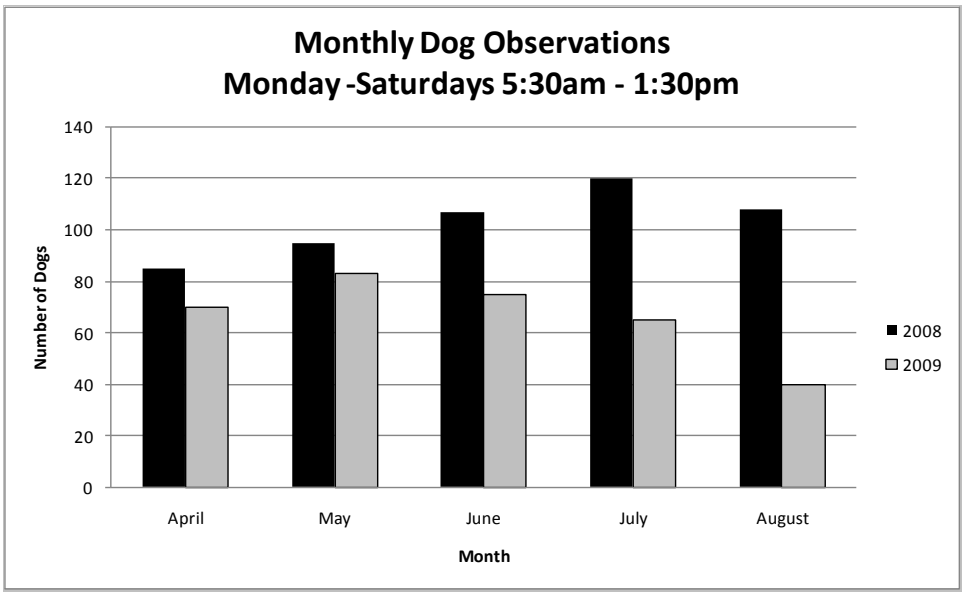


Figure 5. Monthly average of dog visits recorded between 06:30 and 13:30 hours Monday through Saturday.

Law Enforcement Meeting

In 2009 there was an increase in nest vandalism and homeless activities on Ormond Beach and a corresponding decrease in WSP breeding success. Signs are posted in the Arnold Road parking lot regarding the leash law code which has been enforced by Oxnard Animal Control beginning in 2009. There are also signs in the Arnold Road parking lot and on the protective fencing notifying the public about the seasonal beach closure, however there has been no enforcement of this restriction and compliance has only been voluntary. The presence of homeless living on the beach and next to the restricted areas has also been allowed to occur largely unchecked (in March 2009 one homeless man was asked to leave by Oxnard Police). Because the laws and city codes regarding these issues are less clear and jurisdiction is also uncertain a meeting was called to bring together local enforcement agencies, landowners and biologists to discuss these problems. The meeting was held on August 12, 2009 at the US Fish and Wildlife Service office in Ventura and was attended by representatives from US Fish and Wildlife Service, California Department of Fish and Game, the nest monitors for California Least Terns and Western Snowy Plovers, the Ventura County docent coordinator and the land managers for the California Coastal Commission and The Nature Conservancy Ormond Beach properties. The Oxnard Police Department was unable to attend at the last minute due to a conflict. A list of recommendations and action items were compiled for improving communication and determining the best way forward to restrict homeless and enforce closure of the breeding areas. A follow up meeting is planned for October 2009 and this matter will require further work. Detailed meeting minutes are included in Attachment 5.

ACKNOWLEDGEMENTS

I would like to thank Walter Fuller, Rich Handley, Chris Kahler and Vincent Kinsch for their assistance in monitoring this year. Special thanks to Reed Smith for his guidance and mentoring and his assistance in monitoring throughout the breeding season. Thanks also to Nancy Frost and the Oxnard Animal Control Department.

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Attachment 1. WSP population abundance per survey.

Date	Total adults	Total all ages	Females	Males	Unknown	Chicks	Juveniles
3/14/2009	20	20	6	8	6	0	0
3/20/2009	17	17	5	9	3	0	0
3/28/2009	22	22	7	14	1	0	0
4/1/2009	35	35	6	29	0	0	0
4/9/2009	25	25	3	20	2	0	0
4/18/2009	42	42	10	31	1	0	0
4/23/2009	34	34	7	22	5	0	0
5/3/2009	38	44	9	27	2	6	0
5/11/2009	29	34	8	16	5	4	1
5/14/2009	26	34	5	21	0	8	0
5/19/2009	28	29	5	23	0	0	1
5/22/2009	20	25	4	15	1	5	0
5/29/2009	26	28	4	22	0	0	2
6/4/2009	23	26	2	21	0	0	3
6/12/2009	29	35	10	19	0	0	6
6/19/2009	24	24	6	18	0	0	0
6/26/2009	44	44	12	31	1	0	0
7/2/2009	32	33	12	20	0	0	1
7/9/2009	22	26	4	16	2	4	0
7/15/2009	24	29	8	15	1	1	4
7/24/2009	25	29	8	15	2	4	0
7/31/2009	15	17	4	8	3	2	0
8/7/2009	16	28	9	7	0	4	8
8/14/2009	26	31	5	2	19	0	5
8/21/2009	57	63			57	0	6
8/29/2009	64	64			64	0	0
9/5/2009	51	51			51	0	0
average	**30**						

Attachment 2. Total number of active nests and brood observations for the WSP breeding season of 2009. The maximum number of clutches occurred on May 3 when there were 10 active nests and three observed broods

Date	Chicks	Juveniles	Calculated Active Nests	# broods	nests + broods	Notes - chick detail/breeding behavior
3/14/2009	0	0	0	0	0	
3/20/2009	0	0	1	0	1	
3/28/2009	0	0	1	0	1	Pair making scrapes, west end by white pole. East end: Another scrape near nest location reported by Walter, pair nearby.
4/1/2009	0	0	2	0	2	
4/9/2009	0	0	6	0	6	
4/18/2009	0	0	7	0	7	
4/23/2009	0	0	10	0	10	
5/3/2009	6	0	10	3	13	3 broods: (one@2wks old) (three@1wk old) and (two@1wk old)
5/11/2009	4	1	2	2	4	2 broods: (2@2wks old) (2 newly hatched chicks)
5/14/2009	8	0	2	5	7	5 broods: (two@3wks) (one chick 3wks) (one@2wks) (two@2wks) and (2@1wk old)
5/19/2009	0	1	3	2	5	
5/22/2009	5	0	3	2	5	2 broods: (three@2wks old) (two@3wks)
5/29/2009	0	2	1	0	1	
6/4/2009	0	3	2	0	2	
6/12/2009	0	6	6	0	6	
6/19/2009	0	0	9	0	9	
6/26/2009	0	0	11	0	11	
7/2/2009	0	1	9	0	9	
7/9/2009	4	0	6	3	9	all chicks 1 week old (2 broods with one chick each and 1 brood with 2 chicks)
7/15/2009	1	4	3	1	4	
7/24/2009	4	0	3	2	5	2 broods: (one@2wks old) (three@3wks)
7/31/2009	2	0	1	1	2	Chicks were 3 weeks old, one brood
8/7/2009	4	8	1	4	5	4 broods: two clutches of 3 week old chicks, (one 4 week old) and (3 HYs still with male)
8/14/2009	0	5	1	1	2	1 HY with male, 4 HY alone
8/21/2009	0	6	0	2	2	2 different HY with adult male
8/29/2009	0	0	0	0	0	
9/5/2009	0	0	0	0	0	

Attachment 3. Banded WSP detail during the 2009 breeding survey.

Date	Band Combo	Sex	Band Details	Behavior	Additional Info
4/1/2009	NO:YW	male	2004 -VAFB	Foraging in wrack with a flock of 8 other males, west end	
4/9/2009	NO:YW	male	2004 -VAFB	Foraging in wrack with a flock of 13 other males, west end	
4/18/2009	NO:YW	male	2004 -VAFB	Foraging in hind dunes on west end	
5/19/2009	NO:YW	male	2004 -VAFB	Foraging in wrack, west end by estuary	
6/4/2009	NO:YW	male	2004 -VAFB	Foraging in wrack, west end by estuary	
6/26/2009	NO:YW	male	2004 -VAFB	Foraging in wrack, west end by estuary	
8/21/2009	AW:NY	unknown	2007 fledge VAFB	Foraging in wrack, east end near Arnold Rd.	
8/21/2009	PY:YY	HY	2009 fledge Moss Landing State Beach	Foraging in wrack, by Reliant plant	
8/21/2009	AY:YB	HY	2009 fledge Moss Landing Salt Ponds	Roosting, west end by Hueneme Beach	
8/29/2009	NY:GW	unknown	2008 fledge VAFB	Foraging in wrack, by Reliant plant	Sighted on Santa Rosa Island Feb 2009
8/29/2009	NW:OY	unknown	2008 fledge VAFB	Foraging in wrack, west end by Hueneme Beach	
8/29/2009	WP:AW	HY	2009 fledge Salinas National Wildlife Refuge	Foraging in dunes, west end by Hueneme Beach	
9/5/2009	OO:WW	HY	2009 fledge Salinas National Wildlife Refuge	Roosting, west end by Hueneme Beach	Sighted at Surfer's Knoll Ventura 9/3/09

Attachment 4. WSP Nest Details

Nest #	Location	Date Found	Date eggs gone	Eggs Laid	Eggs Hatched	# days	Outcome	Fate	Comments
09OB01	east	3/19/2009	4/16/2009	3	1	27	succeed	hatch	3 eggs went to 2 eggs 4 weeks after discovery (4/16). One week later the nest was found to have been trampled (4/23). A single, age appropriate chick was sighted on the west side on 4/29/09 (2 week old chick)
09OB02	west	4/1/2009	4/29/2009	3	3	28	succeed	hatch	pips found
09OB03	east	4/9/2009	5/2/2009	3	3	23	succeed	hatch	pips found
09OB04	east	4/9/2009	5/11/2009	3	3	32	succeed	hatch	pips found
09OB05	east	4/18/2009	5/22/2009	3	0	34	fail	predation	One egg was stolen from the nest while the adults were still incubating. No pips, no new clutches around or distracting adults
09OB06	east	4/18/2009	5/2/2009	3	3	14	succeed	hatch	pips found
09OB07	east	4/23/2009	5/11/2009	3	3	18	succeed	hatch	no pips, but a male distracting nearby
09OB08	east	4/23/2009	5/14/2009	2	0	21	fail	predated	predated squirrel
09OB09	west	4/23/2009	5/11/2009	3	0	18	fail	undetermined	eggs gone, no pips, no prints
09OB10	west	4/23/2009	5/11/2009	3	0	18	fail	predated	eggs gone, no pips, no prints
09OB11	west	4/25/2009	5/11/2009	3	0	16	fail	undetermined	eggs gone, no pips, no prints
09OB12	east	4/29/2009	5/11/2009	3	3	12	succeed	hatch	pips found
09OB13	east	5/3/2009	5/11/2009	3	0	8	fail	predated	predated squirrel
09OB14	west	5/3/2009	5/11/2009	3	0	8	fail	undetermined	eggs gone, no pips, no prints
09OB15	west	5/6/2009	5/11/2009	3	0	5	fail	undetermined	eggs gone, no pips, no prints
09OB16	east	5/14/2009	5/29/2009	3	0	15	fail	predated	broken egg & yolk near nest, could not read footprints but suspect squirrel predation

Nest #	Location	Date Found	Date eggs gone	Eggs Laid	Eggs Hatched	# days	Outcome	Fate	Comments
09OB17	west	5/19/2009	5/29/2009	3	0	10	fail	predated	broken egg & yolk near nest, could not read footprints probable squirrel or raccoon (Rich Handley has seen raccoons in the vicinity)
09OB18	east	5/22/2009	6/4/2009	3	0	12	fail	undetermined	no pips, no new clutches around or distracting adults
09OB19	west	6/10/2009	7/2/2009	3	3	22	succeed	hatch	pips found
09OB20	west	6/12/2009	7/9/2009	3	3	27	succeed	hatch	pips found
09OB21	west	6/12/2009	7/2/2009	3	3	20	succeed	hatch	pips found
09OB22	west	6/12/2009	7/6/2009	3	0	24	fail	undetermined	no pips, no new clutches around or distracting adults
09OB23	west	6/19/2009	7/15/2009	3	3	26	succeed	hatch	pips found
09OB24	west	6/19/2009	7/9/2009	3	3	20	succeed	hatch	pips found
09OB25	west	6/24/2009	7/15/2009	3	3	21	succeed	hatch	pips found
09OB26	east	6/26/2009	7/21/2009	3	0		fail	vandalism	nest was run over by an ATV
09OB27	west	6/26/2009	7/9/2009	3	2	13	succeed	hatch	pips found
09OB28	west	6/26/2009	7/15/2009	3	3	19	succeed	hatch	pips found
09OB29	west	7/9/2009	7/24/2009	3	2	22	succeed	hatch	pips found
09OB30	east	7/24/2009	8/21/2009	3	0		fail	predated	no pips, distracting adults or chicks sited. Raven tracks seen around nest.
09OB31	west	7/24/2009	7/31/2009	2	0	7	fail	undetermined	eggs gone, no pips, no prints
09OB32	estuary	7/29/2009	7/29/2009	unknown	unknown	?	succeed	hatch	chick spotted west of J Street Estuary
09OB33	west	unknown	8/14/2009	unknown	unknown	?	succeed	hatch	unmarked nest scrape found in a location that does not correspond to any nest in any other season. Pips in nest scrape
			Total	**91**	**44**				

Attachment 5. Meeting Minutes from Ormond Beach Enforcement Meeting

Ormond Beach Enforcement Meeting Minutes

August 12, 2009
U.S. Fish and Game Ventura office
2493 Portola Road, Suite B
Ventura, CA 93003
1:30p.m. – 4:00 p.m.

In attendance

Dan Blankenship, California Department of Fish and Game
Peter Brand, California Coastal Conservancy
Jake Coombs, California Department of Fish and Game
Chris Dellith, U.S. Fish and Wildlife Service
Cynthia Hartley, Snowy Plover Nest Monitor
Rich Handley, The Nature Conservancy
Chris Kahler, Ventura County Shorebirds
Reed Smith, Least Tern Nest Monitor

Objective

Bring together land owners, law enforcement and wildlife protection agencies to discuss and resolve problems with homeless and trespassers that threaten sensitive habitat and endangered species survival on Ormond Beach.

Presentation

Cynthia Hartley presented an overview of threats to the nesting success of Snowy Plovers on Ormond Beach focusing on problems that have impacted nesting success this year in 2009. Last year in 2008 just 2 out of 43 nests failed whereas this year 14 out of 31 nests have either been predated or vandalized. Threats include trespassers in the fenced off breeding area (walkers, walkers with dogs and off road vehicles) and homeless living between the fence line and the surf.

Discussion Highlights

A better presence needs to be established on the beach to convince the public that the property is being monitored. This includes improved fencing, signage, law enforcement presence and more docent volunteers. Rich Handley reports that a part time Nature Conservancy employee will be starting in a few weeks and will spend a large portion of that time on the beach.

FENCING and SIGNAGE: In order to aid law enforcement several improvements need to be made to the protective fencing around the breeding area. Law enforcement cannot enforce no trespassing laws if it isn't obviously clear that the area is restricted. Without better signage and complete enclosure of the restricted area it is unenforceable. The Coastal Conservancy condones adding signs to the fencing. The city manager for Oxnard needs to be contacted to request permission for signs on the fencing on Oxnard City property. This is critical as it may derail a prosecution if "no trespassing" signs are posted without permission of the land owner. There was discussion about year round fencing in the future that would be symbolic during the non-breeding season. Just before breeding season additional fencing would be mounted on the permanent posts to restrict entrance into the breeding area. This may also make the process of putting up the breeding season fencing easier. More discussion on this will be required in the future.

HOMELESS: There appears to be no city codes that specifically address homeless sleeping on the beach, or anywhere else. Without a city code for this issue we will not be able to legally remove the homeless that are sleeping on the beach outside of the fence exclosures by the breeding areas. A possible solution to this problem would be to

approach Oxnard City Attorney Alan Holmberg to create a new city code that would make homeless sleeping on the beach illegal. An appeal to the Oxnard City Council would also be needed. Once existing city codes have been more thoroughly researched we will discuss this alternative.

AGENT AUTHORIZATION FORM: The problem the California Coastal Conservancy (CCC) has with the Agent Authorization form provided by the city is that the language in the document appears to be all inclusive in regard to restricting access to CCC property. The intent of CCC is to restrict access to only the fenced off breeding area on the property from March 15-September 15. A dialogue needs to be established between both agencies to address this concern so that the form is acceptable to the CCC lawyer. Until the document is signed and submitted by CCC it is unlikely we will have significant local law enforcement support.

VIDEO CAMERAS: In order to improve our awareness of trespassing and vandalism activities in the breeding areas we may be able to make use of the Reliant Energy Plant to mount video cameras. Camera resolution is a potential issue as we may not be able to identify individuals in order to support prosecution in the case of a take. However even a low resolution camera may give us a profile of peak activity times of trespassing in the restricted breeding areas. This may provide enough information to allow law enforcement to intercept trespassers on the ground. More information is needed about camera resolution and costs. A dialogue with Reliant is also needed to determine if they would be willing to help out.

LAW ENFORCEMENT PRESENCE: An increase in law enforcement presence on the beach may help reduce the problems we are having. Ideally law enforcement would actively engage people on the beach. This may also discourage the homeless. The Oxnard City Police Department has indicated recently that they would like the California Fish and Game Department to become more involved. Both agencies are resource limited and overworked, but a solution is likely. Fish and Game could potentially use extra funds to enable occasional sweeps of the beach in order to increase presence. If severe violation occurs, Fish and Game can be called (1 888 DFG-CALTIP or 888 334-2258) and will respond, although there may be a delay. It would be best to establish a dialogue between the two agencies to work out the best way forward.

BEACH FORTS: Beach forts are a focal point of partiers, trash, predators, illegal sexual activity and encourage homeless encampments. Larger forts need to be removed.

CCC proposes an observation tower at the end of Arnold Road to help connect the community with the wildlife on the beach.

Recommendations

- Completely fence in the breeding area in the future on the east side (by Mugu fence).
- Create new signs
    1. Fence line signs: Make them more consistent (i.e. have only 1 or 2 kinds of signs on display) and list all code violations a trespasser could be prosecuted for, including the wording "No Trespassing" and affix them every 2-3 posts around the whole fence.
    2. Instructive signs: For display at trail entrances and in the Arnold Rd Parking lot. Remove the graphic showing the dog on leash.
    3. Consider creating a sign indicating that the California Coastal Conservancy is the property owner
- Enhance the docent program to have more eyes on the beach
- Investigate mounting a video camera on the Reliant Energy Plant to monitor the breeding areas
- More frequent visits to the beach by law enforcement to engage the public and establish a stronger presence
    1. Fish and Game could occasionally do a beach sweep to check fishing licenses and other potential violations, meanwhile their presence on the beach would increase visibility of law enforcement
    2. Same as above for city police, only they would engage homeless on the beach (until a new legal code can be created)
- Improve the gate at the end of the Arnold Rd parking lot to prevent the passage of off road vehicles, and also allow law enforcement vehicle access to the beach using a lock and key

- Reach a compromise between Oxnard City and California Coastal Conservancy lawyer so that the Agent Authorization form is acceptable to both.
- Use Oxnard City Corps to remove beach forts
- Send out a press release in the beginning of the breeding season to announce the closure of the breeding grounds
- Consider utilizing homeless outreach groups to redirect homeless to shelters

Action Items

	Item	Responsibility	Due Date
1	Create new signs to be circulated for comment	Chris Kahler	Update next meeting
2	Research city ordinances that address homeless sleeping on the beach	Chris Kahler	Update next meeting
3	Contact the Oxnard City Manager to find out who can give permission to post "no trespassing" signs on the protective fencing on Oxnard City Property	Chris Kahler	Update next meeting
4	Inquire with Fish and Game supervisors to see if it would be possible to add Ormond Beach patrols to the Fish and Game schedule	Jake Coombs	Update next meeting
5	Continue to push through the Arnold Rd Gate improvement	Peter Brand	Update next meeting
6	Give Peter Brand the contact info for Officer Marostica	Cynthia Hartley	August 14
7	Check with California Coastal Conservancy lawyer about Agent Authorization document, begin a dialogue with the City of Oxnard to complete the form	Peter Brand	Update next meeting
8	Investigate mounting a camera on the Reliant Energy Plant	Chris Dellith	Update next meeting
9	Press release announcing breeding ground closure	TBD	March 1, 2010
10	Create a management plan	Chris Kahler to take the lead, with help from the group	Update next meeting

Next Meeting – October 2009, time and day to be announced

State of California
The Resources Agency
Department of Fish and Game
Wildlife Branch

Western Snowy Plover Breeding Survey
Ormond Beach, California

2010 Season

by
Cynthia Hartley
Permit# TE-181713-0

South Coast Region, 2008-02

Report

To

State of California
Department of Fish and Game
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123

Western Snowy Plover Survey
Ormond Beach, California

2010 Season

Cynthia Hartley
Ventura, CA

Prepared 28 September 2010

State of California
The Resources Agency
Department of Fish and Game

Western Snowy Plover Breeding Survey
Ormond Beach, California

by

Cynthia Hartley
Ventura, CA

Executive Summary

The abundance and productivity of the threatened western snowy plover (WSP) (*Charadrius alexandrinus nivosus*) was monitored at Ormond Beach located in Oxnard, Ventura County, California from March 15, 2010 to September 15, 2010.

An average of 34 adult WSP were recorded weekly during the survey period. There were a total of 24 breeding individuals, which includes 12 males and 12 females. Twenty seven WSP nests were located, of which 70% successfully hatched (19 nests), 22% failed (6 nests) and 2 had an undetermined outcome. For the first time in 3 years WSPs established five nests in a third area, the salt panne inland from the east end or Ormond Beach.

The biggest threat to nesting success in 2010 was nest predators. Nests were predated by ground squirrels and ravens. The use of mini-exclosures was initiated on the east end of Ormond Beach due to the high predation rate early in the season and the increase in ground squirrels and their dens in that area. The success rate with the exclosures was 100%. Unlike last year in 2009, no humans vandalized nests inside exclosures. Human trespassing was much less than in the previous year. However, trash left by humans continues to be a problem and a source of attraction to nest predators. The number of dog visits to the beach decreased again in 2010 (116 documented dog visits compared to 263 in 2009 and 468 in 2008 during the same period).

INTRODUCTION

The western snowy plover (WSP) (*Charadrius alexandrinus nivosus*) breeds along the coast of the Pacific Ocean in California, Oregon, and Washington and at alkaline lakes in the interior of the western United States (Page et al. 1991). Loss of habitat, predation pressures, and disturbance have caused the decline of the coastal population of WSP and led to the listing of the Pacific Coast Population of WSP as federally-threatened on March 5, 1993 (Federal Register 1993).

Ormond Beach is located between Naval Base Ventura County, Pt. Mugu (Arnold Road) and the City of Port Hueneme (J Street drain). The beach is approximately 2 miles long. From west to east, the sandy beach is backed by Perkins Street, a pickleweed wetland, the Reliant Energy power plant, and another pickleweed wetland. The west end is owned by the City of Oxnard, the center and eastern portion are owned by the California Coastal Conservancy. The survey area is bounded by the Point Mugu boundary fence on the southeast, to Port Hueneme Beach on the northwest, and includes the Ormond Beach Salt Pannes directly inland from the northeast end of Ormond Beach. Figure 1 shows an aerial view of the nesting areas.

Figure 1. Ormond Beach survey area

Plovers utilize dune backed beaches for nesting and digging scrapes, which they line with shells and other bits of material. They lay three camouflaged eggs and incubate for approximately 28 days. Chicks are precocial and typically are attended to by the male, which guards the surviving chicks and leads them to forage. Chicks fledge approximately four weeks after hatching. On Ormond Beach, plovers utilize two distinct areas for nesting, which are located on the southeastern and northwestern ends of the beach. There is an approximately 0.5 mile stretch of beach in front of the Reliant Energy power plant where no nests are found. Over the past years, various types and configurations of protective fencing have been put up in the spring and taken down in the fall. As in past years the protective fencing completely enclosed the breeding area on the northwest end of the beach. The breeding area on the southeast end of the beach was enclosed for the first time on all four sides (Figure 1). The beach is not cleaned or groomed, so driftwood and wrack collect on the seaward edge and provide forage for nesting birds.

Efforts to protect plover nesting have been ongoing for approximately 20 years by various non-governmental organizations including the Ventura Audubon Society, the Conejo Valley Audubon Society, the Nature Conservancy, and the Sierra Club. These private efforts have had the support of the California Department of Fish and Game and the U. S. Fish and Wildlife Service.

The objective of this work was to monitor all nests, eggs and young of the plover and estimate reproductive success. The number of adults and chicks observed each week was recorded, nests were located and tracked until completion, and nest outcome was determined where possible. Threats to nesting success were determined and documented.

METHODS

Population Abundance and Nest Fate

Monitoring of Ormond Beach was conducted by walking wandering transects a minimum of once per week over the entire length of the beach in each direction from the boundary fence of Navy Base Ventura County, Pt. Mugu to Port Hueneme Beach. The Ormond Beach Salt Pannes were also included in the survey area. All plovers observed were recorded by age and gender. All nests located were recorded by date found, GPS coordinates, and number of eggs. Nests were marked with a colored tongue depressor placed approximately three to five feet inland. Each nest was followed until hatching or date lost prior to hatching. Once a nest no longer contained eggs, a 2 meter area around the nest was examined for eggshell fragments, egg yolk, tracks of birds or possible predators or any other disturbance. Next, the nest scrape was carefully examined for shell fragments. Nest hatching was determined by locating a pip shell (1-4 mm) within the hatched nest, by observing displaying behaviors of adults and locating chicks when possible. Failed nests were determined based on eggshell evidence such as large shell fragments, fragments with egg membrane still attached and/or egg contents within 2 meters of the nest scrape (Mabee 1997). In addition signs of predator tracks, nest disturbance, observations of predators in the nest vicinity and eyewitness reports were used as evidence of failed nests. If no eggshell pip, fragment or egg content could be located, and no signs of nest disturbance as well as no adult defending behavior or chick presence observed, the nest outcome was recorded as unknown.

Nest Initiation

Nest initiation was calculated for nests confirmed to have hatched by subtracting 28 days from the first observed survey date in which no eggs remained in the nest. For nests determined to have failed or with unknown outcome, nest initiation was taken to be the first date the nest was observed with eggs.

Breeding Adults
The number of breeding adults was estimated. This number was calculated by adding the number of active nests and the number of active broods sighted on the same survey date. The survey with the highest combined number of nests and broods was used to calculate the number of breeding adults representative of the season. One breeding male and female were attributed to each active nest and one breeding male was attributed to each active brood.

Dogs
The number of dogs entering the beach via the Arnold Road parking lot access was recorded by a volunteer docent, Walter Fuller. Observations were made between the hours of 6:30 am and 1:30 pm Monday through Saturday throughout the breeding season.

RESULTS and DISCUSSION

Population Abundance
Throughout the survey period the average number of adult WSP observed was 34. The monthly averages are shown in Figure 2. The greatest number of birds were observed in the months of March and April with average counts of 48 and 58. During these months there continued to be gatherings of WSP on the outer beach. During May, June and July the population counts dropped to monthly averages of 33, 41 and 25, respectively. Fewer birds were observed on the beach and the majority of birds were seen in the fore or back dune area of the breeding areas or in the salt panne. In August, the numbers of WSP dropped to an average of 9 birds per survey. This corresponded to the end of the breeding season and birds were only observed foraging in the high tide area. In September, WSP were again observed in flocks corresponding to winter gatherings on the outer beach and the average number increased to 38. Detailed population data gathered during each survey is included in Attachment 1.

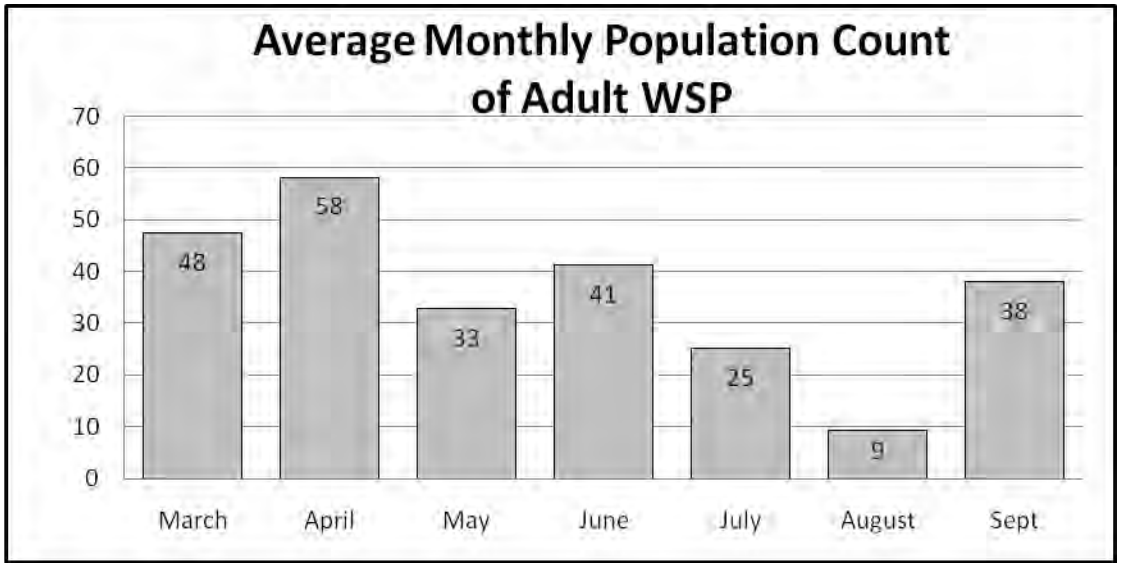

Figure 2. Average monthly number of adult plovers observed during the 2010 survey period.

Breeding Adults

The estimated number of breeding adults is calculated to be a total of 24 individuals, with 12 males and 12 females. This is based on the survey with the greatest number of active nests (n = 12). Nest numbers and chick observations are detailed in Attachment 2.

Banded Birds

Banded WSP observed during the survey period were recorded and the data was sent to Frances Bidstrup, with Point Reyes Bird Observatory. Banded birds observed included two that had fledged from Camp Pendelton, two from Oceano and one bird from Salinas National Wildlife Refuge (NWR). A male WSP banded S:K/P was observed on March 30th and April 3 foraging on the northwest end of Ormond Beach. It had been banded at Camp Pendleton sometime since 2004. A female banded S:K/V was observed on June 5th roosting on the outer beach near the northwest breeding area. It also had been banded at Camp Pendleton during the same time period. On May 31 another female banded bird GG:VG was observed displaying defending behavior in the salt panne. It fledged from and had been banded at Oceano in 2008. This bird was not re-sighted. A male WSP with the bands GP:RP was observed foraging in the high tide line in front of the Reliant Energy power plant on June 27. It fledged from the southern end of Salinas NWR in 2009. Finally, a bird with the band pattern RR:OY was observed foraging with a flock on the outer beach near Arnold Rd. on September 7. It was a hatch year bird and had just been banded at Oceano on July 22 of this year. A detailed record of banded bird sightings is included in Attachment 3.

Nest Activity

Spatial Dispersal of Plover Nests

WSP utilized three distinct areas for nesting in 2010. Consistent with previous years since at least 2003, nests were established on the northwest and southwestern or northeastern ends of the Ormond Beach. There is an approximately 0.5 mile length of beach in front of the Reliant Energy power plant bounded by the east and west nesting areas where no nests are found. This year nests were also found in the salt panne near Arnold Rd. (Figure 1). Nests have been observed in this location only in 2006 and 2007. Ten nests were established on the northwest end of Ormond Beach, 12 nests were on the southeast side, and 5 nests were found in the salt panne.

Nest Initiation
The first nest was located on April 3, 2010 and the final nest on August 4, 2010. A total of 27 WSP nests were located during the 2010 breeding season. No nests were initiated in March, although pairs were observed performing courtship behaviors (scrape construction and copulation). Nesting began in April when 6 nests were established. In May, nest initiation peaked with 13 new nests and in June, only 7 were found. In July there was only one new nest. No nests were found in August or September. Figure 3 summarizes nest initiation by month. For a detailed account of recorded nest observations see Attachments 4 and 5.

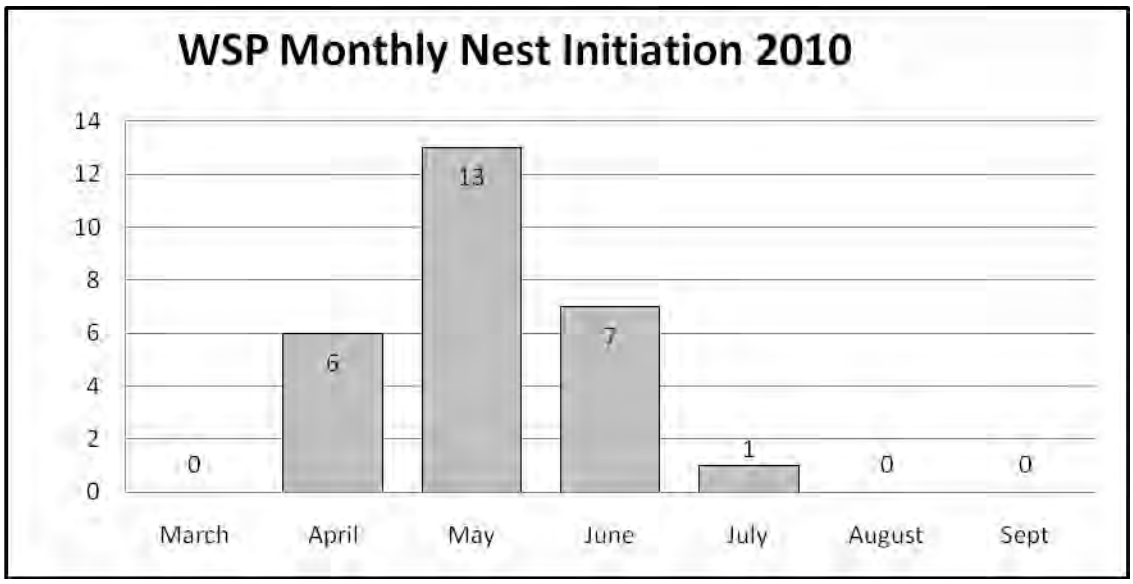

Figure 3. Total number of plover nests initiated each month

Nesting Outcome
Nineteen out of the 27 nests located during the season were determined to have hatched (70%). Six nests were determined to have failed due to predation (22%) and two nests had an unknown outcome (7%). No nests were determined to have been abandoned. All nests had three eggs and of the nests that hatched, all but two hatched each of the three eggs. One nest hatched two and one nest hatched 1 egg. See Attachments 4 and 5 for complete hatch details.

Outcome	Number	Percent
Hatch	19	70%
Predated	6	22%
Undetermined	2	7%
Abandoned	0	0%
Total	27	

Nest Failures
The 6 failed nests were the first nests of the season. All of these nests were located on the eastern end of Ormond Beach (Figure 4). Predation was confirmed in five of the failed nests. Two nests were predated by squirrels and 3 nests were predated by corvids. The sixth nest was either predated or destroyed by high winds two weeks after it was discovered. All nest evidence was blown away before it could be examined. Two undetermined nests had no signs of hatching and no signs of predation so the outcome is unknown.

The east end of Ormond Beach was heavily infested with ground squirrels all season, a trend that began in 2009 and became worse in 2010. Because of the loss of the first nests to predation, mini-exclosures were used on all subsequent nests on the east end. The success rate with exclosures was 100%.

Figure 4. Spatial arrangement and nest outcome of WSP nests during the 2010 breeding season at Ormond Beach.

Dogs

Between May 1 and September 1 a total of 116 dogs were recorded entering the beach from the Arnold Road parking lot. Observations were made between the hours of 6:30 am and 1:30 pm Monday through Saturday each week. This data does not account for any dogs that entered Ormond Beach via Hueneme Beach. Compared to data collected in 2008 and 2009, there has been a downward trend each year in dog visits to the beach (Figure 5). For the same time period in 2008 there were 468 dogs entering the beach and in 2009 there was 263. In early 2009, Oxnard City Animal Control started ticketing dog owners with off-leash dogs and has continued the practice in 2010.

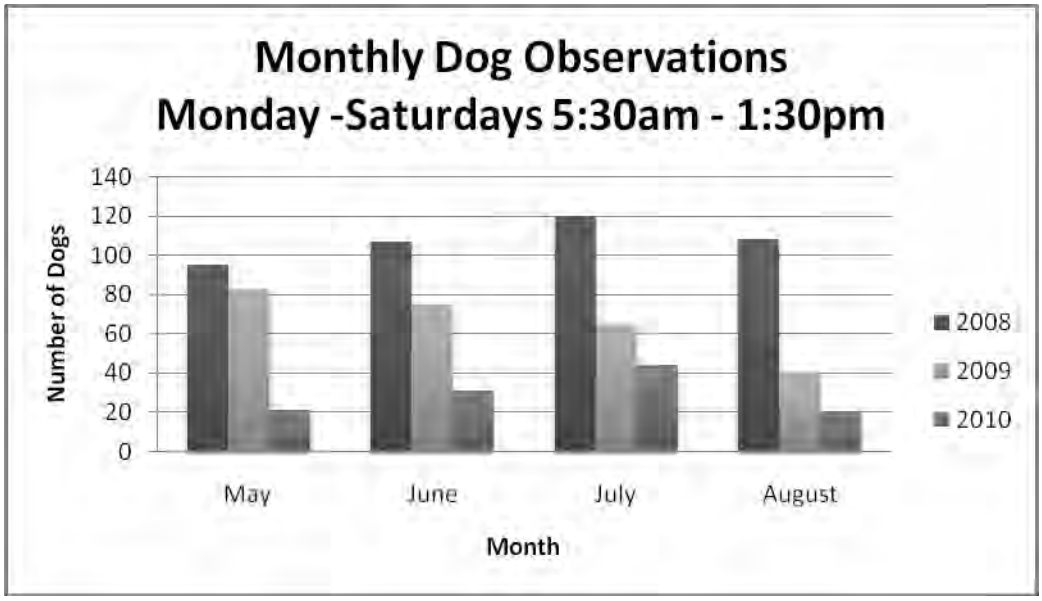

Figure 5. Average number of dogs visits recorded between 06:30 and 13:30 hours Monday through Saturday.

Threats to Nesting Success

During the 2010 WSP breeding season, the greatest threat to nesting success were predators. Ground squirrels were the biggest problem. Corvids also predated 3 nests early in the season. Another issue was strong winds which occurred from March until late May. Winds typically had sustained speeds of 15-25 mph and gusted up to 40 mph. In some cases winds persisted for a week at a time and on two occasions high winds caused the cancellation of the nest survey. Although WSP succeeded in establishing nests during this time, it is possible one nest was lost to the wind.

Natural Predators

Ground squirrels were seen on almost every survey in the southeastern breeding area. Squirrel dens are located inside and inland of all breeding areas and are especially numerous on the southeast end of the beach. On July 15, a squirrel was observed predating a California least tern (CLT) nest in the southeastern breeding area (personal observation). An adult tern and two adult WSP were attempting to distract the squirrel. All existing CLT nests were lost that day. A WSP nest was also in the area, but had a mini-exclosure on it. Without mini-exclosures it is likely that most WSP nests would have been lost to squirrel predation as what occurred in the 2009 breeding season. Crows and ravens were also observed on most surveys throughout the season at Ormond Beach and were responsible for 3 nest failures. Other predators observed in the area were a peregrine falcon that was seen on the Reliant Energy power plant and on the Pt. Mugu tower east of Arnold Rd. A long-tailed weasel and a coyote were observed in the salt panne area (pers. communication, Walter Fuller).

Humans

The biggest issue with human activity on Ormond Beach in 2010 was trash left on the beach. This attracts predators and contributes to the predation problem. Problems with transients were much less of a problem than in past years. No homeless people lived in the dunes by the nesting area as they did in 2009. Homeless encampments were confined to cypress trees behind the southeast nesting area and did not pose a problem to nesting birds. Human trespassers in the breeding grounds were also much less of a problem in 2010 compared to 2009. A large fort that attracted human trespassers into the breeding ground on the northwest end of the beach was removing in a pre-season beach cleanup on March 5, 2010. No new forts were established during the year. A large sturdy chain link fence with a gate was also installed at a common crossing point. Additional factors that helped were the use of a more durable fencing that was able to withstand high winds, the enclosure of the southeast breeding area was fenced on all four sides, and better signage.

Recommendations

There are several areas of improvement that could be implemented to increase breeding success of the WSP at Ormond Beach. Development of a management plan is critical to improving the fledgling success of the WSP at Ormond Beach. The management plan should address the following issues:

1) Continue to strictly enforce the dog leash law at all times. Ideally, dogs should be banned from the breeding areas during the breeding season with leash law enforcement during non-breeding times.
2) Add signage at the entrance to the beach showing which areas are opened and closed to the public. Include educational information on endangered breeding birds.
3) Initiate a predator control program to remove ground squirrels from breeding areas.
4) Repair the gate before the Arnold Road parking lot and close the parking lot from dawn to dusk.
5) Move the protective fencing further towards the high tide line on the southeast end since WSP establish nests on the fence line.
6) Do not allow scientific monitoring or educational field trips inside the breeding areas without the presence of a nest monitor.
7) Oppose any development of lands south of Hueneme Road as this would increase human use of the beach and result in degradation of the wetland and beach habitats on Ormond Beach.
8) Public events should not be scheduled on Ormond Beach during the nesting season (i.e. grunion runs, beach cleanups). Educational trips should stay 50 feet away from the protective fencing or the fencing boundaries should be extended.
9) Collect the three portions of the beach that are used by WSP under a single owner. Alternatively, ensure endorsement and active support of the management plan by all three property owners (the California Coastal Conservancy, Reliant Energy, and the City of Oxnard).

Acknowledgements

I would like to thank Walter Fuller, Rich Handley, Chris Kahler, Elliot Perez, and Vincent Kinsch for their assistance in monitoring this year. Special thanks to Reed Smith for his guidance and mentoring and his assistance in monitoring throughout the breeding season. Thanks also to Nancy Frost and the Oxnard Animal Control Department.

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Attachment 1. WSP population abundance per survey.

Date	Total: adults	Total: all ages	Females	Males	Unknown	Chicks	Hatch Year
3/20/2010	65	65	22	43	0	0	0
3/27/2010	30	30	7	19	4	0	0
4/3/2010	84	84	24	60	0	0	0
4/10/2010	54	54	10	44	0	0	0
4/17/2010	66	66	13	50	3	0	0
4/24/2010	29	29	5	24	0	0	0
5/1/2010	42	42	8	34	0	0	0
5/8/2010	aborted survey due to high winds						
5/15/2010	18	18	4	14	0	0	0
5/18/2010	27	0	0	0	0	0	0
5/22/2010	aborted survey due to high winds						
5/31/2010	44	44	10	34	0	0	0
6/5/2010	35	37	10	25	0	2	0
6/12/2010	36	36	6	25	5	0	0
6/19/2010	43	50	16	24	3	7	0
6/27/2010	51	66	17	34	0	12	3
7/7/2010	32	42	11	19	2	6	4
7/15/2010	28	32	12	14	2	2	2
7/24/2010	27	32	11	14	2	3	2
7/29/2010	14	17	7	5	2	3	0
8/4/2010	13	13	1	12	0	0	0
8/9/2010	8	11	4	3	1	3	0
8/16/2010	6	6	0	4	2	0	0
8/22/2010	13	15	5	4	4	0	2
8/29/2010	6	6	1	3	2	0	0
9/7/2010	23	23	0	0	23	0	0
9/11/2010	53	53	0	0	53	0	0
Average	**34**						

Attachment 2. Total number of active nests and brood observations. The maximum number of clutches occurred on May 31 with the occurrence of 12 active nests.

Date	# Chicks	Hatch Year	Calculated Active Nests	# broods with chicks	# breeding adults	Notes - chick detail/breeding behavior
3/20/2010	0	0	0	0	0	
3/27/2010	0	0	0	0	0	
4/3/2010	0	0	1	0	2	
4/10/2010	0	0	3	0	6	
4/17/2010	0	0	2	0	4	
4/24/2010	0	0	1	0	2	
5/1/2010	0	0	2	0	4	
5/8/2010				0		winds prevented survey
5/15/2010	0	0	6	0	12	
5/18/2010	0	0	7	0	14	
5/22/2010				0		winds prevented survey
5/31/2010	0	0	12	0	**24**	
6/5/2010	2	0	11	1	23	
6/12/2010	0	0	10	0	20	
6/19/2010	7	0	8	3	19	3 clutches of chicks(3@1wk old, 2@1wk, 2@2wks)
6/27/2010	12	3	6	5	17	5 clutches; banded bird GP:RP male
7/7/2010	6	4	5	2	12	2 clutches(3@<1wk old, 3@2wks)
7/15/2010	2	2	5	1	11	1 clutch of 2 chicks(1wk old)
7/24/2010	3	2	3	1	7	1 clutch of 3 chicks (days old)
7/29/2010	3	0	0	1	1	1 clutch of 3 chicks(1 week old)
8/4/2010	0	0	0	0	0	
8/9/2010	3	0	0	1	1	1 clutch of three 2-week old chicks crossing to the Mugu side *Last chick sigthing of the year*

Attachment 3. Banded WSP detail

Date	Band Combo	Sex	Band Details	Behavior	Additional Info
3/20/2010	S:K/P	male	Banded Camp Pendelton, any year since 2004	foraging	by J-St. Estuary
4/3/2010	S:K/P	male	Banded Camp Pendelton, any year since 2004	foraging	Arnold Rd.
5/31/2010	GG:VG	female	Banded 2008 Oceano	defending	Wetlands/salt panne
6/5/2010	S:K/V	female	Banded Camp Pendelton, any year since 2004	roosting	J St. Estuary
6/27/2010	GP:RP	male	Banded 2009 southern end of Salinas NWR "between the signs"	foraging	High tide line in front of Reliant Energy power plant
9/7/2010	RR:OY	HY	Banded on 7/22/2010 at Oceano	roosting	Arnold Rd. flock

Attachment 4. WSP nest details for nest numbers 1-14

Nest #	Location	Date Found	Survey date eggs gone	Eggs Laid	Eggs Hatched	Exclosure	Outcome	Fate	Comments
10OB01	east	4/1/2010	4/17/2010	3	0	no	Fail	predated/corvid	corvid tracks, broken eggs
10OB02	east	4/10/2010	4/17/2010	3	0	no	Fail	predated/squirrel	eggs gone, squirrel tracks
10OB03	east	4/8/2010	4/17/2010	3	0	no	Fail	predated/squirrel	eggs gone, squirrel tracks
10OB04	east	4/17/2010	4/23/2010	1	0	no	Fail	predated/corvid	corvid tracks, broken eggs
10OB05	east	4/17/2010	5/1/2010	3	0	no	Fail	unknown/wind	no eggs or sign of nest scrape
10OB06	east	5/1/2010	5/8/2010	3	0	no	Fail	predated/corvid	corvid tracks, broken eggs
10OB07	salt panne	5/3/2010	5/27/2010	3	3	yes	Hatch	succeed	chick observed near nest on 5/27/10, pips
10OB08	east	5/15/2010	6/5/2010	2	2	yes	Hatch	succeed	2 chicks observed near nest, pips
10OB09	east	5/31/2010	6/23/2010	3	3	yes	Hatch	succeed	2 chicks just hatched, 1 egg
10OB10	east	5/31/2010	7/2/2010	3	3	yes	Hatch	succeed	pips, exclosure
10OB11	west	5/31/2010	6/12/2010	3	3	yes	Hatch	succeed	pips found
10OB12	west	5/31/2010	6/27/2010	3	3	yes	Hatch	succeed	2 just hatch chicks in nest on 6/27/10; no eggs left on 7/2/10
10OB13	west	5/31/2010	6/19/2010	3	?	no	unknown	unknown	1 egg left, no pips
10OB14	west	6/2/2010	6/19/2010	3	3	no	Hatch	n/a	pips, chicks spotted in area on 6/16/10

Attachment 5. WSP nest details for nest numbers 15-27

Nest #	Location	Date Found	Date eggs gone	Eggs Laid	Eggs Hatched	Exclosure	Outcome	Fate	Comments
10OB15	east	6/5/2010	6/10/2010	3	3	yes	hatch	succeed	exclosure, no signs of disruption, female nearby distracting, chick sighted on 6/11/10
10OB16	west	6/9/2010	6/27/2010	3	3	no	hatch	succeed	pips found
10OB17	salt panne	6/10/2010	only chicks obs.	2	2	no	hatch	n/a	2 chicks, day old observed 6/10/10
10OB18	salt panne	6/10/2010	6/19/2010	3	3	no	hatch	n/a	3 chicks nearby ~ 1 wk old. No pips in nest, but no signs of disturbance.
10OB19	salt panne	6/19/2010	6/27/2010	3	?	no	no pips	unknown	no signs of predation, but no pips or chicks
10OB20	west	6/23/2010	7/24/2010	3	2	no	hatch	n/a	pips found
10OB21	west	6/23/2010	7/7/2010	3	3	no	hatch	n/a	1 egg left on 7/7/10
10OB22	west	6/23/2010	6/23/2010	3	3	no	hatch	n/a	3 chick newly hatched chicks in nest scrape
10OB23	east	7/2/2010	7/29/2010	3	3	yes	hatch	n/a	adult female sighted with v. young chick nearby 7/28/10; no eggs 7/29/10
10OB24	west	7/2/2010	7/24/2010	3	3	no	hatch	n/a	pips found
10OB25	salt panne	7/7/2010	only chicks obs.	3	3	no	hatch	n/a	3 chicks, <1 week old with adult male nearby, No documented nest in area with matching hatch date.
10OB26	west	7/7/2010	7/24/2010	3	3	no	hatch	n/a	pips found
10OB27	east	8/4/2010	8/5/2010	3	1	no	hatch	n/a	male next to nest, brooding new chick