Appendix E
Biological Resources

Final
Biological Technical Report

Newport Banning Ranch,
Newport Beach, California

Prepared for

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1.0 INTRODUCTION

This Biological Technical Report describes existing biological resources on the Project site; identifies associated potential biological resource impacts related to development in accordance with the proposed Newport Banning Ranch Project; and sets forth measures designed to mitigate identified significant adverse impacts.

1.1 PROJECT LOCATION AND DESCRIPTION

The approximate 401-acre Project site is located in the City of Newport Beach (the City) and unincorporated Orange County, California (Exhibit 1). Approximately 40 acres of the Project site are within the incorporated boundary of the City, and approximately 361 acres are in unincorporated Orange County within the City's Sphere of Influence. The Project site is located on the U.S. Geological Survey (USGS) Newport Beach 7.5-minute quadrangle (Exhibit 2). The entire site is located within the boundary of the Coastal Zone, which was mapped by the California Legislature and later made permanent through adoption of the California Coastal Act of 1976.

The Project site is generally bound on the north by the County of Orange Talbert Nature Preserve/Regional Park in the City of Costa Mesa and residential development in the City of Newport Beach; on the south by West Coast Highway and residential development in the City of Newport Beach; on the east by residential, light industrial, and office development in the Cities of Costa Mesa and Newport Beach; and on the west by the USACE wetlands restoration area and the Santa Ana River. The City of Huntington Beach is west of the Santa Ana River.

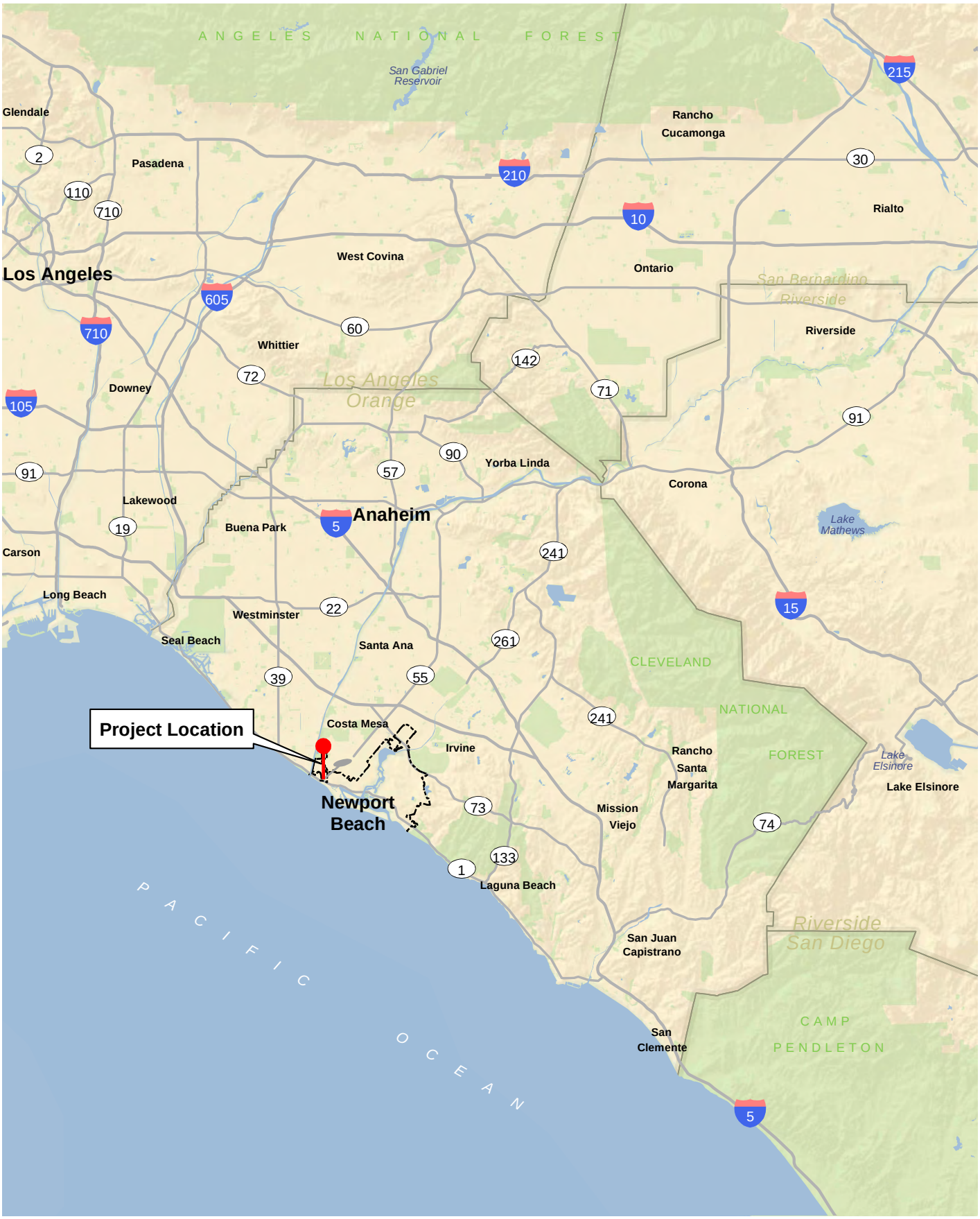
The Project site has been utilized as an active oilfield since the 1940s; ongoing oil operations, oil wells, and pipelines occur throughout the Project site. An extensive road network to the oil wells, pipelines, and support facilities is present and fragments the habitat on the Project site. In addition, annual vegetation weed whipping/mowing activities occur on site to comply with fuel reduction activities associated with the active oil field areas.

The Project site encompasses four distinct topographic features: (1) a gently sloping coastal plain forming the western edge of the Newport Mesa over the eastern portion of the Project site; (2) bluffs along the western edge of the mesa; (3) drainages and arroyos; and (4) lowlands of which a majority were historically tidal marsh associated with Semeniuk Slough (City of Newport Beach 2006). The lowlands were separated from Semeniuk Slough by a levee and have lost their tidal influence; tidal influence is currently limited to 4.8 acres at the southwestern corner of the lowlands (City of Newport Beach 2006). Elevations range from approximately sea level to 100 feet above mean seal level (msl). Soil types on the Project site include beaches;[1] Bolsa silt loam; Capistrano sandy loam (9–15 percent slopes); Marina loamy sand (2–9 percent slopes); Myford sandy loam (0–2 percent slopes, 2–9 percent slopes, and 9–30 percent slopes, eroded); pits[2]; riverwash; and tidal flats (Exhibit 3). Beaches, Bolsa silt loam, Myford sandy loam (0–2 and 2–9 percent slopes), pits, riverwash, and tidal flats are included in the list of hydric soil by the National Hydric Soils List for Orange County and Part of Western Riverside County, California (USDA NRCS 2009). No blueline streams as identified on USGS maps are present on the Project site; however, a tidal channel occurs near the proposed oil consolidation area in the lowlands in the southwestern portion of the Project site.

The proposed Project would allow for the development of the site with residential, commercial, resort inn, and park and recreational uses, and would provide open space uses that would

[1] Historically, "beaches" are sandy, gravelly, or cobbly shores that are washed and rewashed by tidal and wave action.

[2] "Pits" are open excavations from which soil and underlying material have been removed for construction.



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Regional Location

Exhibit 1

Newport Banning Ranch

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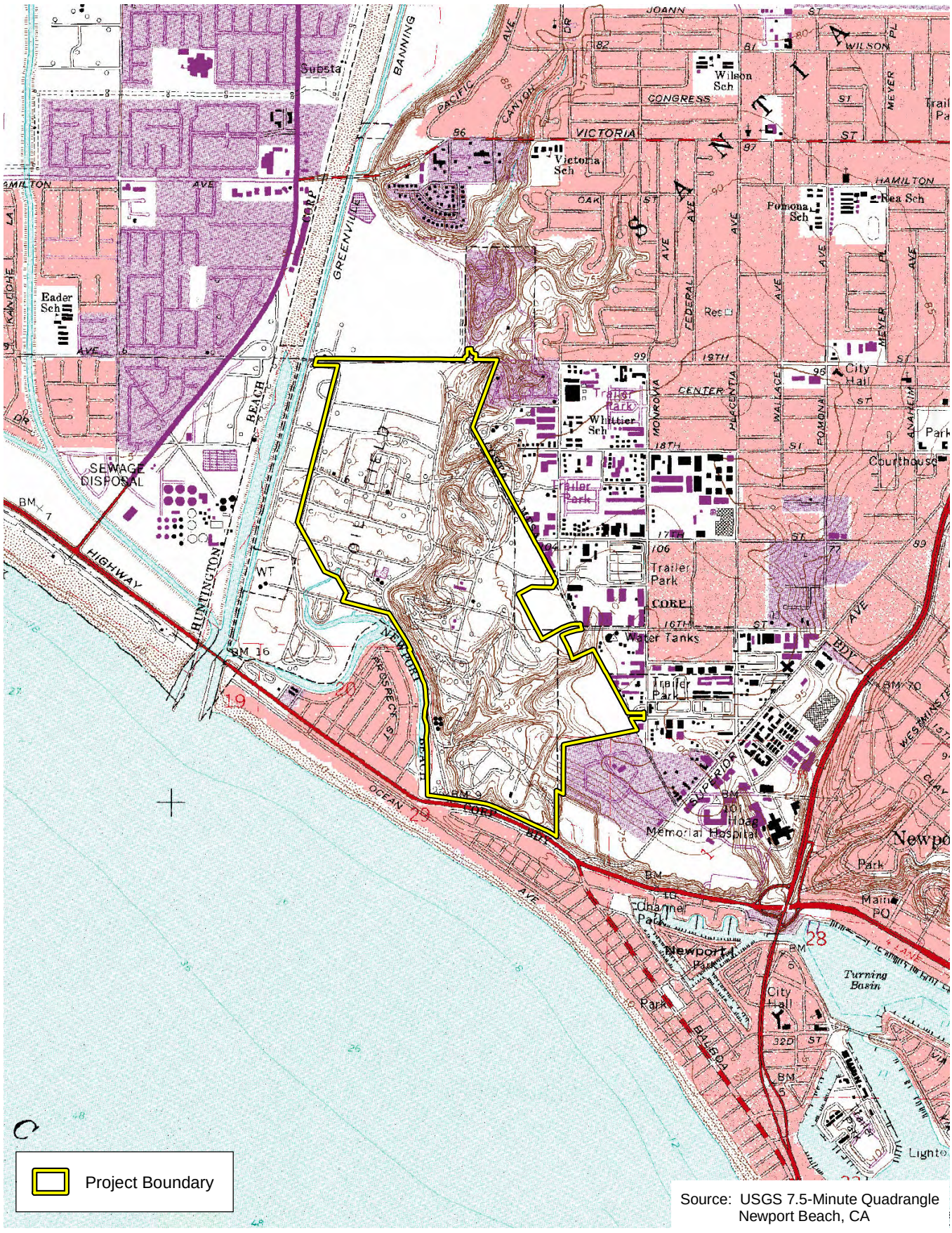

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Local Vicinity

Exhibit 2

Newport Banning Ranch

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W E
S

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Feet

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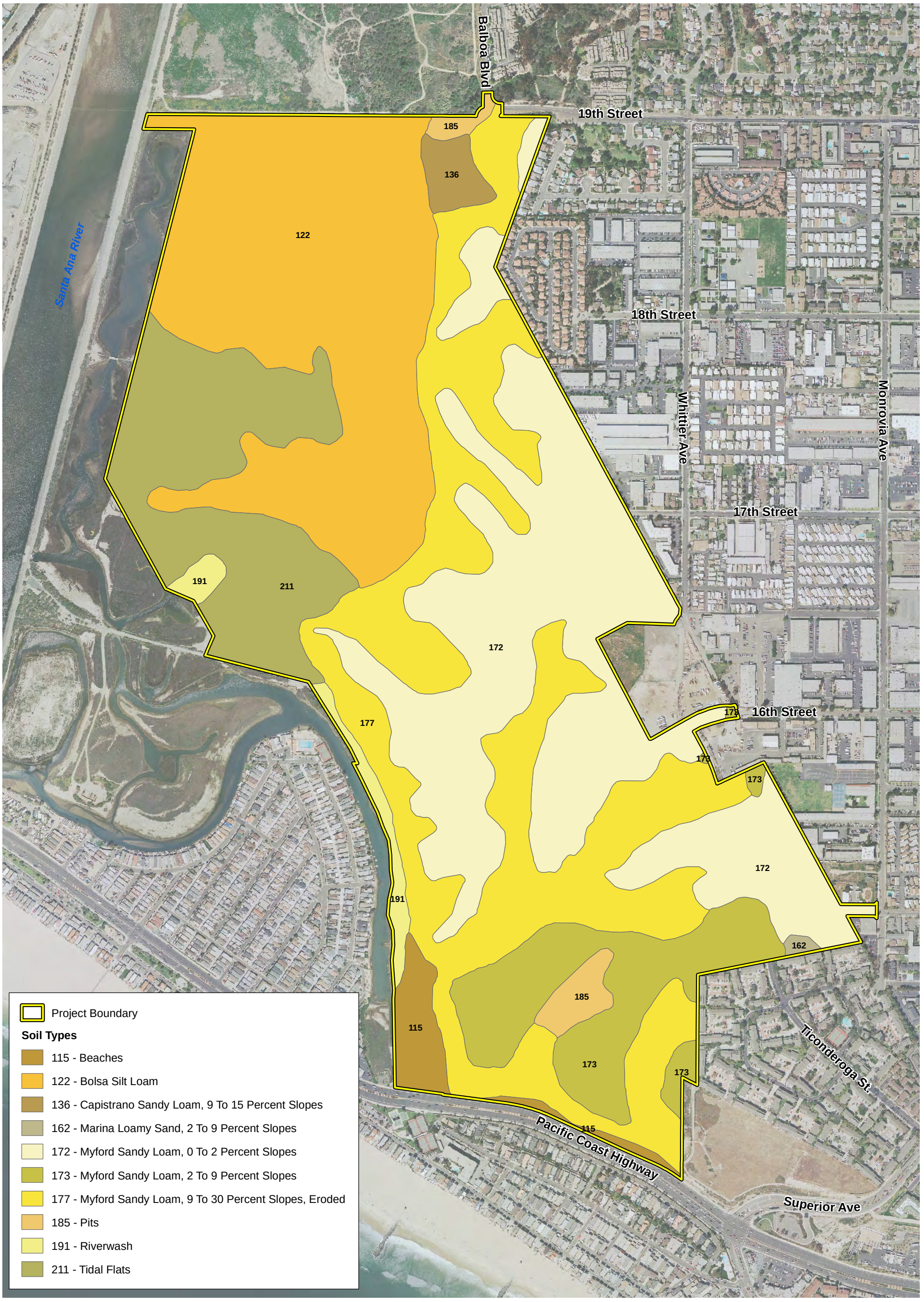

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Soil Types

Exhibit 3

Newport Banning Ranch

N W E S

600 300 0 600

Feet

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permit the designation of oil use retention and consolidation on a portion of the open space area of the Project site (Exhibit 4). The proposed Project includes infrastructure to support the proposed land uses, including public parks and open space to serve future Project residents and the community at large.

The 401-acre Project site is proposed for development with 1,375 residential dwelling units (du); 75,000 square feet (sf) of commercial uses, and a 75-room resort inn. Approximately 51.4 gross acres are proposed for active and passive park uses including a 26.8-gross-acre public Community Park. Approximately 252.3 gross acres (approximately 63 percent) of the 401-acre site are proposed for natural resources protection in the form of open space. Of the 252.3 gross acres, approximately 16.5 gross acres would be used for interim oil operations. Upon the future cessation of oil operations, these oil consolidation sites would be abandoned and remediated, and the consolidation sites would be restored as open space. The proposed Project includes the development of a vehicular and a non-vehicular circulation system for automobiles, bicycles, and pedestrians, including a proposed pedestrian and bicycle bridge from the Project site across West Coast Highway.

1.2 REGULATORY SETTING

This section contains a discussion of the applicable laws, ordinances, regulations, and standards that govern biological resources and that must be adhered to prior to and during construction of the proposed Project.

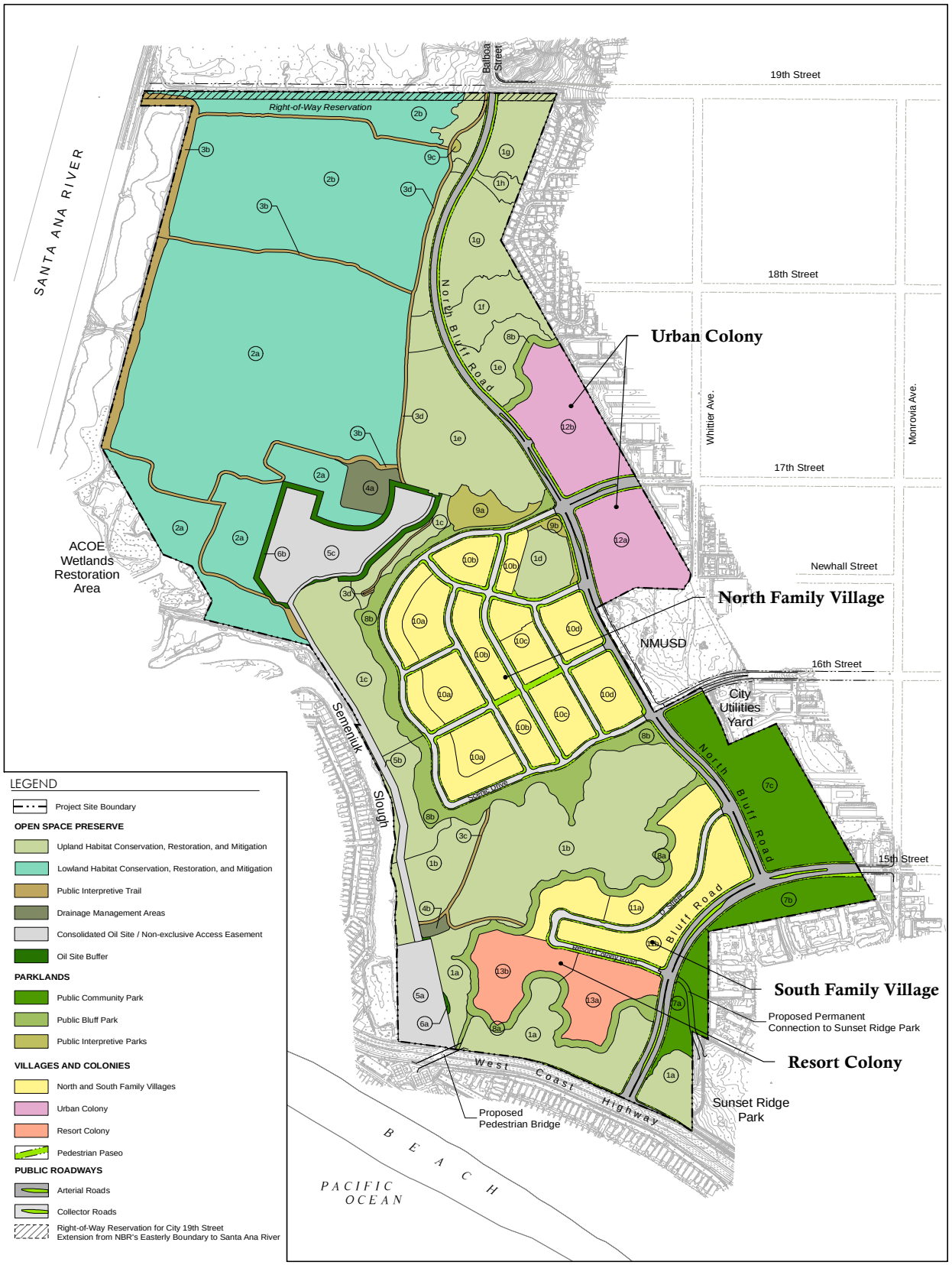
Federal

Federal Endangered Species Act (16 United States Code [USC] 153 et seq.)

The Federal Endangered Species Act of 1973 (FESA) provides for (1) the conservation of plant and animal species that are listed by the federal government as “Endangered” or “Threatened” with extinction throughout all or a significant portion of their range and (2) the conservation of the ecosystems on which they depend. The FESA is implemented by enforcing Sections 7 and 9 of the FESA. A federally listed species is protected from unauthorized “take” pursuant to Section 9 of the FESA. “Take”, as defined by the FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt to engage in any such conduct”. All persons are prohibited from taking a federally listed species unless and until (1) the appropriate Section 10(a) permit has been issued by the U.S Fish and Wildlife Service (USFWS) or (2) an Incidental Take Statement is obtained as a result of formal consultation between a federal agency and the USFWS pursuant to Section 7 of the FESA and the implementing regulations that pertain to it (50 *Code of Federal* Regulations [CFR] 402). “Person” is defined in the FESA as “an individual, corporation, partnership, trust, association, or any private entity; any officer, employee, agent, department or instrumental of the federal government; any State, Municipality, or political subdivision of the State; or any other entity subject to the jurisdiction of the U.S.”. The Project Applicant is a “person” for purposes of the FESA.

Sections 404 and 401 of the Clean Water Act of 1972 (33 USC 1251 et seq.)

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into “Waters of the U.S.”, including wetlands. The U.S. Army Corps of Engineers (USACE) is the designated regulatory agency responsible for administering the 404 permit program and for making jurisdictional determinations. This permitting authority applies to all “Waters of the U.S.” where the material has the effect of (1) replacing any portion of “Waters of the U.S.” with dry land or (2) changing the bottom elevation of any portion of “Waters of the U.S.”. These fill



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Conceptual Land Use

Exhibit 4

Newport Banning Ranch

N W E S

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materials would include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in "Waters of the U.S.". Dredge and fill activities are typically associated with development projects; water-resource related projects; infrastructure development and wetland conversion to farming; forestry; and urban development.

Under CWA Section 401, an activity requiring a USACE Section 404 permit must obtain a State Water Quality Certification (or waiver thereof) to ensure that the activity will not violate established State water quality standards. The State Water Resources Control Board (SWRCB), in conjunction with the nine California Regional Water Quality Control Boards (RWQCBs), is responsible for administering the Section 401 water quality certification program.

Under Section 401 of the federal CWA, an activity involving discharge into a water body must obtain a federal permit and a State Water Quality Certification to ensure that the activity will not violate established water quality standards. The U.S. Environmental Protection Agency is the federal regulatory agency responsible for implementing the Section 401 CWA program. However, pursuant to the CWA, the SWRCB, in conjunction with the nine RWQCBs, has been delegated the responsibility to administer the water quality certification (401) program.

Migratory Bird Treaty Act of 1918 (16 USC 703–711)

The Migratory Bird Treaty Act (MBTA) of 1918, as amended in 1972, makes it unlawful, unless permitted by regulations, to "pursue; hunt; take; capture; kill; attempt to take, capture or kill; possess; offer for sale; sell; offer to purchase; purchase; deliver for shipment; ship; cause to be shipped; deliver for transportation; transport; cause to be transported; carry or cause to be carried by any means whatever; receive for shipment, transportation, or carriage; or export, at any time, or in any manner, any migratory bird for the protection of migratory birds or any part, nest, or egg of any such bird" (16 USC 703).

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protect all species and subspecies of these families.

Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald and Golden Eagle Act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act and strengthened other enforcement measures. A 1978 amendment authorizes the Secretary of the Interior to permit the taking of golden eagle nests that interfere with resource development or recovery operations. A 1994 Memorandum (59 Federal Register 22953) on April 29, 1994, from President William J. Clinton to the heads of Executive Agencies and Departments sets out the policy concerning collection and distribution of eagle feathers for Native American religious purposes.

State

California Endangered Species Act (California Fish and Game Code §§2050 et seq.)

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the *California Fish and Game Code,* an Incidental Take Permit from the California Department of Fish and

Game (CDFG) is required for projects that could result in the take of a State-listed Threatened or Endangered species. Under the CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass", as the federal act does. As a result, the threshold for a take under the CESA is higher than that under the FESA. An incidental take permit authorized by the CDFG under Section 2081(b) of the *California Fish and Game Code* would be required where a project could result in the take of a State-listed Threatened or Endangered Species. The application for an Incidental Take Permit under Section 2081(b) has a number of requirements, including the preparation of a conservation plan, generally referred to as a Habitat Conservation Plan.

California Environmental Quality Act (14 California Code of Regulations §15386; California Fish and Game Code §1802)

The CDFG may play various roles during the CEQA process. As a trustee agency, the CDFG has jurisdiction over certain resources held in trust for the people of California. Trustee agencies are generally required to be notified of CEQA documents relevant to their jurisdiction, whether or not these agencies have actual permitting authority or approval power over aspects of the underlying project (14 *California Code of Regulations* [CCR] 15386). The CDFG, as a trustee agency, must be notified of CEQA documents regarding projects involving fish and wildlife of the State, as well as Rare and Endangered native plants, wildlife areas, and ecological reserves. Although as a trustee agency the CDFG cannot approve or disapprove a project, lead and responsible agencies are required to consult with the CDFG. The CDFG, as the trustee agency for fish and wildlife resources, shall provide the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities and shall make recommendations regarding those resources held in trust for the people of California (*California Fish and Game Code* §1802).

California Coastal Act (§30240)

The California Coastal Act was enacted to protect the California coastline by managing the conservation and development of coastal resources through land use planning and regulation. An environmentally sensitive habitat areas (ESHA) is defined in Section 30107.5 of the California Coastal Act as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could easily be disturbed or degraded by human activities and development". The entire Project site is within the Coastal Zone as defined by the Coastal Act.

The California Coastal Act regulates all development activities in areas of special concern, such as wetlands and other ESHAs. Under the Coastal Act, wetlands are defined in Section 30121 of the *California Public Resources Code* (PRC) as "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".

Section 30240 of the California Coastal Act requires that

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

Streambed Alteration (California Fish and Game Code §§1600–1616)

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources and/or riparian vegetation are subject to CDFG regulations, pursuant to Section 1600 through Section 1603 of the *California Fish and Game Code.* Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFG as waters within their jurisdiction, nor can a person use any material from the streambeds without first notifying the CDFG of such activity. For a project that may affect stream channels and/or riparian vegetation regulated under Sections 1600 through 1603, CDFG authorization is required in the form of a Streambed Alteration Agreement.

Native Plant Protection (California Fish and Game Code §§1900 –1913)

This section lists Threatened, Endangered, and Rare plants so designated by the California Fish and Game Commission.

Natural Communities Conservation Plan (California Fish and Game Code §§2800–2835)

On August 30, 1991, the California Fish and Game Commission considered a petition in support of listing the coastal California gnatcatcher (*Polioptila californica californica*) as a State Endangered species. The Commission decided not to list the coastal California gnatcatcher in favor of pursuing preparation of a Natural Communities Conservation Plan (NCCP) program, as proposed by Assembly Bill (AB) 2172 (*California Fish and Game Code* §§2800 et seq.). AB 2172 authorizes the CDFG to enter into agreements with any person for the purpose of preparing and implementing NCCPs and for preparing guidelines for developing and implementing NCCPs. AB 2172 also permits NCCPs to be prepared by local, State, or federal agencies independently or in cooperation with other persons, and requires the CDFG to be compensated for costs incurred in the preparation and implementation of NCCPs.

The purpose of the NCCP program is to provide regional or areawide protection and to promote perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. AB 2172 was designed in response to the fact that individual species protection under the CESA and the FESA is costly and historically ineffective as a mechanism for protection from or the prevention of plant and wildlife species extinction, and that a habitat-based, multi-species, or ecosystem-driven preservation approach has a greater potential for long-term success. The focus of the NCCP program represents a dramatic shift from "individual species" to "habitat" preservation.

On March 25, 1993, the U.S. Department of the Interior listed the coastal California gnatcatcher as a Threatened species and adopted a special rule in accordance with Section 4(d) of the FESA that authorizes landowners and local jurisdictions to voluntarily participate in the State of California NCCP Act of 1992.

Since that time, the County of Orange—in conjunction with State and federal resource agencies, local jurisdictions, utility companies, the Transportation Corridor Agencies, and major private landowners—prepared the NCCP/HCP for the Central/Coastal Subregion (approved on July 10, 1996). These plans are intended to ensure the long-term survival of the coastal California gnatcatcher and other special status, coastal sage scrub-dependent plant and wildlife species in accordance with State-sanctioned NCCP program guidelines. The Project site occurs within the Central/Coastal Subregion.

NCCP/HCP implementation began when the Central/Coastal Subregional NCCP/HCP program was completed and approved in 1996. The USFWS monitors the plan to ensure it is successfully implemented. The design of the Central/Coastal NCCP/HCP Subregion was intended to preserve the most biologically rich areas within the subregion while identifying areas suitable for development.

Existing Use Areas are portions of the Central/Coastal Subregion owned by non-participating landowners and public agencies and are subject to the provisions of Chapter 4.4.1 of the NCCP/HCP. Existing Use Areas contain important populations of Identified Species that are geographically removed from the Reserve System such that they do not provide primary connectivity functions (i.e., these areas exist as "islands" of Identified Species populations). These areas include existing open space maintained by community and homeowners associations, other privately owned lands, and some public parklands. The provisions governing Existing Use Areas apply only to existing natural habitat areas within the designated Existing Use Areas. The NCCP/HCP does not authorize Incidental Take within the Existing Use Areas; such activities must be submitted to the USFWS for review and approval, consistent with existing federal law and the provisions of Section 7.3 of the NCCP/HCP and the NCCP/HCP Implementation Agreement. The Project site occurs within the Santa Ana River Mouth Existing Use Area (Exhibit 5). This area has been designated as an Existing Use Area because "it provides existing gnatcatcher habitat; it is located adjacent to Talbert Nature Preserve and has significant potential to contribute to the long-term biological function of the Reserve System; and it would be inappropriate to authorize Incidental Take of what could be a significant population of coastal California gnatcatcher without being able to review available biological data" (County of Orange 1996a).

California Fully Protected Species (California Fish and Game Code §§3511, 4700, 5050, and 5515)

These sections provide a provision for the protection of bird, mammal, reptile, amphibian, and fish species that are "fully protected". Fully protected animals may not be harmed, taken, or possessed.

Nesting Bird Protection (California Fish and Game Code §§3503, 3503.5, and 3513)

These sections state that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by code or any regulation made pursuant thereto. Section 3503.5 explicitly provides protection for all birds-of-prey, including their eggs and nests. Section 3513 makes it unlawful to take or possess any migratory non-game bird as designated in the MBTA.

California Code of Regulations Title 14 (§§670.2 and 670.5)

These sections list animals designated as Threatened or Endangered in California. The CDFG designates species considered to be indicators of regional habitat changes, or candidate species for future State listing, such as California Species of Special Concern.

California Porter-Cologne Water Quality Control Act

Pursuant to the California Porter-Cologne Water Quality Control Act, the SWRCB and the nine RWQCBs may require permits ("Waste Discharge Requirements" [WDRs]) for the fill or alteration of "Waters of the State". The term "Waters of the State" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (*California*

Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP)

Exhibit 5

Newport Banning Ranch

N
W E
S

650 325 0 650

Feet

BonTerra CONSULTING

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Water Code §13050[e]). Although "waste" is partially defined as any waste substance associated with human habitation, the SWRCB interprets this to include fill discharge into water bodies. The SWRCB and the RWQCBs have interpreted their authority to require WDRs to extend to any proposal to fill or alter "Waters of the State", even if those same waters are not under USACE jurisdiction. Pursuant to this authority, the SWRCB and the RWQCBs may require the submission of a "report of waste discharge" under Section 13260 of the *California Water Code*, which is treated as an application for a WDR.

1.3 REGIONAL ENVIRONMENTAL SETTING/CLIMATE

The Project site is located immediately inland from West Coast Highway along the the Southern California coast near the mouth of the Santa Ana River, which is to the southwest and Newport Bay to the southeast. The Project site is one of 28 areas identified in the *City of Newport Beach General Plan* as an Environmental Study Area (ESA). ESAs are undeveloped areas supporting natural habitats that may be capable of supporting sensitive biological resources. An ESA may support species and habitats that are sensitive and rare within the region or may function as a migration corridor for wildlife. The portions of the ESAs within the Coastal Zone that contain sensitive or rare species may also qualify as Environmentally Sensitive Habitat Areas (ESHAs), as defined by the California Coastal Act.

Southern California experiences a Mediterranean climate characterized by mild, rainy winters and hot, dry summers. There can also be dramatic differences in rainfall from year to year. Consequently, the vegetation types in the Southern California areas consist of drought-tolerant, woody shrubs and trees and annual, fall/winter-sprouting grasses.

The temperature in the region is moderated by the coastal influence of the Pacific Ocean, which creates mild conditions throughout most of the year. The stable atmosphere creates cloudless conditions, producing dry summers and a subtropical climate with many days of sunshine (Ritter 2006). The most distinguishing characteristic of a Mediterranean climate is its seasonal precipitation. In Southern California, precipitation is characterized by brief, intense storms between November and March. It is not unusual for a majority of the annual precipitation to fall during a few storms over a close span of time. Rainfall patterns are subject to extreme variations from year to year and longer-term wet and dry cycles. Average annual rainfall for the City is 10.85 inches (U.S. Bureau of Labor Statistics et al. 2009).

2.0 SURVEY METHODOLOGIES

General and focused biological surveys were conducted on the Project site by BonTerra Consulting from 2008 through 2011 for the City of Newport Beach for the Newport Banning Ranch Project and by Glenn Lukos Associates (GLA) from 1998 to 2002 and from 2006 to 2011 for the Applicant. Vegetation mapping for the proposed Project was prepared by BonTerra Consulting.

2.1 LITERATURE REVIEW

Prior to conducting field surveys on site, BonTerra Consulting conducted a literature search to identify special status plants, wildlife, and habitats known to occur in the vicinity of the Project site. The literature search was updated during preparation of this Section. Sources reviewed include the California Native Plant Society's (CNPS's) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2011); the CDFG's California Natural Diversity Database (CNDDB) (CDFG 2011a); and a compendium of special status species published by the USFWS and the CDFG (CDFG 2011a, 2011c). Database searches included the U.S. Geological Survey's (USGS') Seal Beach, Newport Beach, Tustin, and Laguna Beach

7.5-minute quadrangles. In addition, previous survey reports prepared by GLA were also reviewed.

2.2 VEGETATION MAPPING/PLANT SURVEYS

Vegetation mapping and general plant surveys were conducted on September 10 and 14–17, 2009. In addition, a few locations were revisited on January 11, 2010 and October 7, 2010, to update the vegetation map, but the entire site was not visited at that time. The purpose of the mapping was to describe vegetation conditions present on the Project site and to evaluate the potential of the habitats to support special status species. All plant species observed were recorded in field notes and are listed in Table A-1 of Appendix A.

Vegetation mapping and plant surveys were directed/conducted by Senior Botanist Sandy Leatherman, and by biologists Amber Oneal, Allison Rudalevige, Jeff Crain, Andrea Edwards, and Jennifer Pareti.

Plant species were identified in the field or collected for later identification. Plants were identified using taxonomic keys in Hickman (1993), Munz (1974), Abrams (1923, 1944, 1951), and Abrams and Ferris (1960). Taxonomy follows Hickman (1993) or current scientific journals for scientific and common names. Vegetation types were classified based on the *County of Orange Habitat Classification System Natural Resources Geographic Information System (GIS) Project* (Gray and Bramlet 1992). However, not all the vegetation types are represented by this classification system so the *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base* (CDFG 2003) was also utilized.

2.3 FOCUSED SPECIAL STATUS PLANT SURVEYS

BonTerra Consulting conducted focused special status plant surveys on the Project site on March 29 and 31; April 7, 9, 27, and 28; May 21 and 22; June 30; July 9 and 21; and August 4 and 13, 2009. Prior to the surveys, known reference populations of the focal species were visited to ensure survey times were appropriate. All areas of the Project site with potentially suitable habitat for special status plant species were surveyed using meandering transects. Field notes were taken during the surveys. The location of each special status plant population found on the Project site was mapped using a hand-held Garmin Global Positioning System (GPS) unit. Photographs of the Project site are provided in Appendix B. Voucher specimens were collected and will be deposited in the Rancho Santa Ana Botanic Garden Herbarium or at the University of California, Riverside Herbarium. Results of the special status plant surveys are included in Appendix C.

GLA conducted focused plant surveys for the applicant in fall 2006 with a focus on southern tarplant (*Centromadia parryi* ssp. *australis*), which flowers in late summer and early fall. Focused surveys were also performed in spring 2007; however, because of the drought conditions, surveys were repeated in 2008, beginning in March and extending through May (GLA 2009b).

2.4 GENERAL WILDLIFE SURVEYS

Vegetation mapping and general wildlife surveys were conducted concurrently. General observations of wildlife were also noted during all focused surveys in 2009, 2010, and 2011. During the surveys, each vegetation type was evaluated for its potential to support special status species that are known or expected to occur in the region. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during

the day and involved searching for and identifying diagnostic signs including scat, footprints, scratch-outs, dust bowls, burrows, and trails. All wildlife species observed during all survey efforts were recorded in field notes and are listed in Table A-2 of Appendix A. Taxonomy and nomenclature for wildlife generally follows Crother (20011) for amphibians and reptiles, American Ornithologists Union (2010) for birds, and Baker et al. (2003) for mammals. Change this in section.

2.5 FOCUSED SPECIAL STATUS WIDLIFE SURVEYS

In addition to the general wildlife surveys, focused surveys were conducted on the Project site for fairy shrimp (multiple species), burrowing owl (*Athene cunicularia*), coastal California gnatcatcher, southwestern willow flycatcher (*Empidonax traillii extimus*), and least Bell's vireo (*Vireo bellii pusillus*). Results of the surveys are included in Appendix D (fairy shrimp), Appendix E (burrowing owl), Appendix F (coastal California gnatcatcher), and Appendix G (least Bell's vireo and southwestern willow flycatcher).

2.5.1 Fairy Shrimp Surveys

Dry-season focused surveys for fairy shrimp were conducted by GLA/PCR in fall 1998, during which time fairy shrimp cysts were identified in two vernal pools on the Project site. Additional wet-season surveys by GLA in 2000 identified San Diego fairy shrimp (*Branchinecta sandiegonensis*) on the site. Subsequent wet season monitoring by GLA and BonTerra Consulting and wet season surveys were conducted by GLA during the 2007–2008, 2008–2009, and 2009–2010 rainfall seasons to identify any additional areas that ponded for sufficient duration and whether any additional areas contained San Diego fairy shrimp. Surveys for the 2010–2011 were completed in mid-April 2011.

Surveys for the presence of aquatic wildlife were performed with the aid of an invertebrate dip net. Representative portions of pool bottom, edges, and vertical water columns were sampled. Samples were collected using the dip net, and specimens were stored in containers with water collected from the pool where the specimen was found. Specimens were placed in ethyl alcohol solution for preservation within four hours of collection. Specimens were inspected using a dissecting microscope and the key found in Eriksen and Belk (1999). The results of these surveys are included in Appendix D.

2.5.2 Burrowing Owl Surveys

All focused surveys for burrowing owl followed the *Burrowing Owl Survey Protocol and Mitigation Guidelines* prepared by the California Burrowing Owl Consortium (CBOC) (CBOC 1993). These guidelines outline a survey methodology that includes a habitat assessment, a focused burrow survey, four focused owl surveys during the winter (December 1–January 31), and four focused owl surveys during the peak of the breeding season (April 15–July 15).

BonTerra Consulting conducted a survey for wintering owls in 2009. Burrow surveys were conducted on January 22, 2009, by Ms. Rudalevige, and on January 23 and 26, 2009, by Ms. Rudalevige and BonTerra Consulting Biologist Lindsay Messett (BonTerra Consulting 2009b). Ms. Rudalevige and Ms. Messett conducted focused owl surveys within suitable habitat on the Project site on January 27, 28, 29, and 30, 2009. The burrow surveys and focused owl surveys were conducted by walking in transects to ensure 100 percent visual coverage of suitable habitat on the Project site. The focused surveys were conducted either in the morning from one hour before sunrise to two hours after sunrise, or in the evening from two hours before sunset to one hour after sunset.

Ms. Rudalevige and Ms. Messett conducted focused surveys for this species during the 2009 breeding season following the same methodology on May 11, 13, 20, 21, and 26, 2009. The results of wintering and breeding season surveys are included in Appendix E.

GLA conducted updated wintering and breeding season owl surveys in 2010 and also conducted previous focused owl surveys in winter 2008, spring/summer 2008, and winter 2009. These surveys also followed CBOC guidelines (GLA 2010a).

2.5.3 Coastal California Gnatcatcher

Focused surveys for the coastal California gnatcatcher followed USFWS presence/absence survey protocol (USFWS 1997a). BonTerra Consulting Senior Biologist Brian Daniels (TE-821401-3) conducted surveys on March 25 and April 1, 9, 16, 23, and 30, 2009. Six surveys were conducted at least one week apart during the breeding season (between March 15 and June 30). These surveys covered all potentially suitable habitat for the coastal California gnatcatcher on the Project site. Tape recordings of coastal California gnatcatcher songs and other vocalizations were played in appropriate habitat to solicit a response. The locations where gnatcatchers were first observed were plotted on an aerial photograph. The number of birds (individuals or pairs) was noted at each sighting. Data regarding general habitat characteristics for each gnatcatcher was also collected. The surveys were conducted during appropriate weather conditions, generally between dawn and noon. The results of these surveys are included in Appendix F.

GLA previously conducted focused surveys for coastal California gnatcatcher in April and May 2006 and March and April 2007. These surveys also followed USFWS presence/absence survey protocol.

2.5.4 Southwestern Willow Flycatcher and Least Bell's Vireo

Focused surveys for the southwestern willow flycatcher and least Bell's vireo were conducted on the Project site on April 13 and 24; May 4, 14, and 25; June 4, 15, and 25; and July 3 and 9, 2009, by Mr. Daniels. All surveys followed the recommended USFWS guidelines for both species. The survey protocol for the southwestern willow flycatcher was revised in July 2000, and requires a total of five surveys with the first survey conducted between May 15 and May 31, the second survey conducted between June 1 and June 21, and the last three surveys conducted between June 22 and July 17. Updated guidelines for the least Bell's vireo were issued on April 8, 1999, and require that at least eight surveys be conducted from April 10 to July 31 with a ten-day interval between each site visit. Taped vocalizations for the southwestern willow flycatcher were employed on May 25; June 15 and 25; and July 3 and 9, 2009. All surveys were conducted under suitable weather conditions and during early morning hours when bird activity is at a peak. Results of the surveys are included in Appendix G.

GLA previously conducted focused surveys for the least Bell's vireo and southwestern willow flycatcher between April and July 2006 and between April and July 2007. These surveys also followed USFWS presence/absence survey protocol.

2.5.5 Jurisdictional Delineation

A jurisdictional delineation was conducted to determine whether jurisdictional "Waters of the U.S.", including wetlands (if present), and/or "Waters of the State" are present on the Project site. The delineation was conducted by BonTerra Consulting on June 25 and July 14, 15, 16, and 22, 2009. In addition, BonTerra Consulting conducted a review of portions of the Project site with GLA on September 30, 2009. Ann – get any dates of survey updates here. Results of the survey are included in Appendix H.

USACE jurisdictional waters are typically defined by the ordinary high water mark (OHWM) and other specific criteria. Wetlands, a subset of jurisdictional waters, are defined as those that possess the following three parameters: (1) hydrology that provides permanent or periodic inundation by groundwater or surface water; (2) hydric soils; and (3) hydrophytic vegetation, as indicated in the 1987 *U.S Army Corps of Engineers Wetlands Delineation Manual* ("Wetlands Manual") (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* ("Arid West Supplement"), the latter issued by the USACE in September 2008. Both the 1987 Wetlands Manual and the Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of "Waters of the U.S." and wetland resources.

The RWQCB shares jurisdiction with the USACE unless isolated conditions are present. If isolated waters conditions are present, the RWQCB takes jurisdiction using the USACE's definition of the OHWM and/or the three-parameter wetlands methodology pursuant to the 1987 Wetlands Manual.

CDFG jurisdictional limits are similar to those of USACE jurisdiction, but include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. The results of the jurisdictional delineation are included in Appendix H.

The California Coastal Commission regulates the use of land and water in the coastal zone. The Coastal Commission, with the assistance of the CDFG, generally identifies the presence of wetlands based on the USFWS wetland definition and classification system (Cowardin et al. 1979). However, the Coastal Commission generally requires the presence of only one of the three parameters (e.g., hydrology, hydric soils, or hydrophytic vegetation) for an area to qualify as a wetland, unless it can be demonstrated that there is strong evidence of upland conditions (Dixon 2003).[3]

3.0 EXISTING BIOLOGICAL RESOURCES

This section describes the biological resources that occur or potentially occur on the Project site. Vegetation types, wildlife populations and movement patterns, special status vegetation types, and special status plant and wildlife species that are either known to occur or to potentially occur on the Project site are discussed below.

3.1 VEGETATION TYPES

The following 45 five vegetation types and land cover types occur on the Project site: southern coastal bluff scrub, California sagebrush scrub, Encelia scrub, coyote brush scrub, coyote brush scrub/mule fat scrub, goldenbush scrub, southern cactus scrub, southern cactus scrub/Encelia scrub, saltbush scrub, disturbed southern coastal bluff scrub, disturbed sage scrub, disturbed Encelia scrub/mule fat scrub, disturbed Encelia scrub, disturbed goldenbush scrub, disturbed goldenbush scrub/mule fat scrub/salt marsh, disturbed southern cactus scrub, disturbed southern cactus scrub/Encelia scrub, ruderal/disturbed Encelia scrub, ruderal/disturbed Encelia

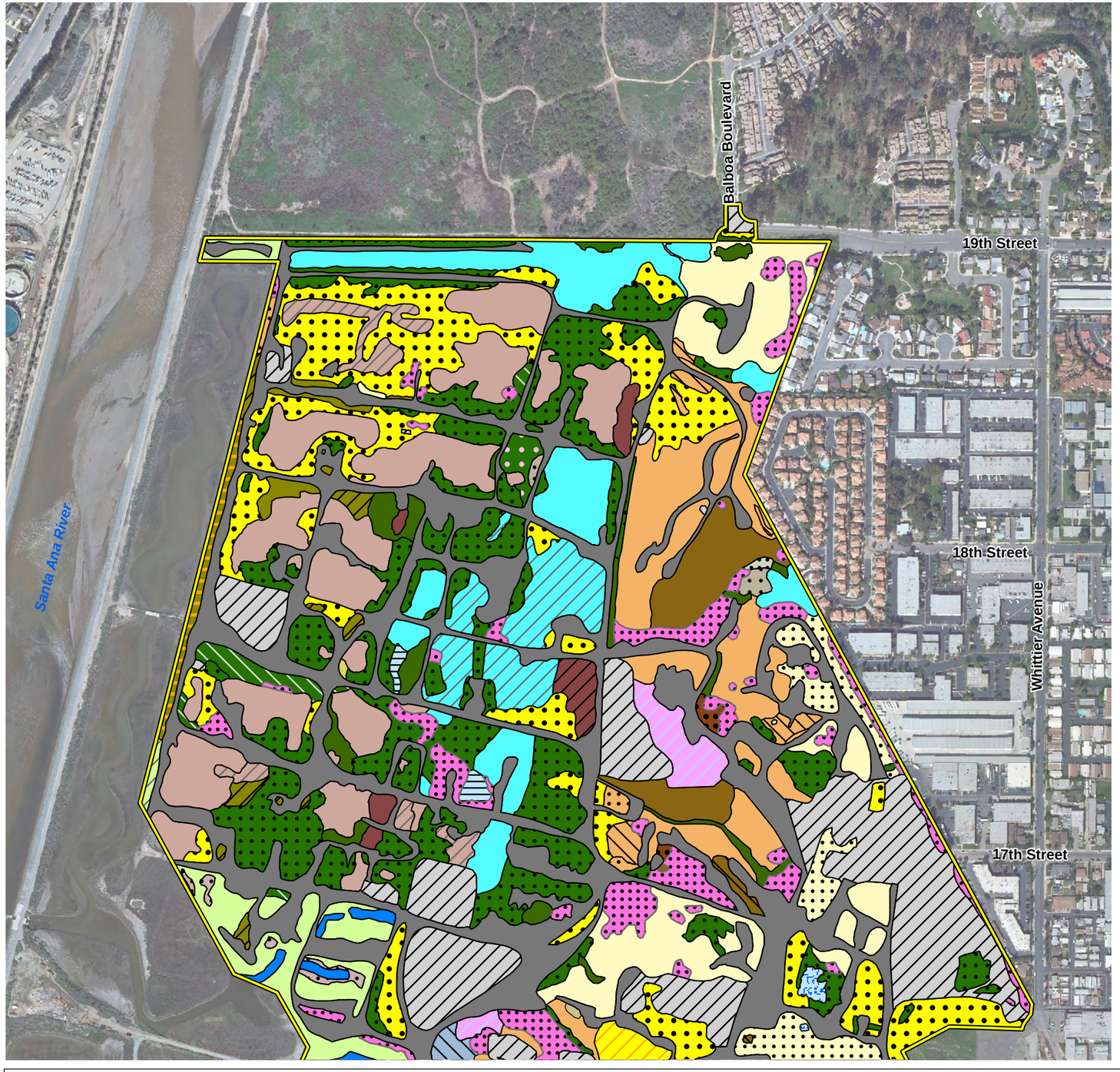
[3] In applying this definition, Coastal Commission staff typically use a "one-parameter" approach, meaning it is a site that (1) exhibits a positive test for a predominance of plants with an indicator status of Facultative (FAC) (equally likely to occur in wetlands or non-wetlands) or wetter or (2) a positive test for hydric soils or (3) a positive test for wetland hydrology, is presumed to be a wetland unless the presumption can be "rebutted by strong, independent evidence of upland condition" (source: Dr. John Dixon, Staff Ecologist, Coastal Commission hearing on November 5, 2003). Dr. Dixon also wrote in an opinion referenced in a staff report prior to the 2003 hearing that "In recognition of the fact that a proportion of wetland indicator plants occur in uplands, the wetland presumption may be falsified where there is strong, positive evidence of upland conditions". Therefore, once the Coastal Commission establishes the presumption, the burden shifts to the applicant who must then prove that one or both of the other indicators do not exist".

scrub/disturbed mule fat scrub, ornamental/disturbed southern coastal bluff scrub, non-native grassland, non-native grassland/ruderal, ruderal, vernal pool, ephemeral pool, freshwater marsh, alkali meadow, disturbed alkali meadow, salt marsh, disturbed salt marsh, mudflat, open water, mule fat scrub, willow scrub, willow riparian forest, disturbed mule fat scrub, disturbed mule fat scrub/ruderal, disturbed mule fat scrub/goldenbush scrub, disturbed willow scrub, disturbed willow riparian forest, giant reed, cliff, ornamental, disturbed, and disturbed/developed.

A general description of each of the vegetation types and other areas is included below, and a plant compendium is included in Appendix A. Exhibits 6a and 6b, Vegetation Types and Other Areas, present the vegetation map of the Project site. The total acreage of each vegetation type is summarized in Table 1.

TABLE 1
VEGETATION TYPES ON THE PROJECT SITE

Vegetation Type	Existing (Acres)
Coastal Sage Scrub	**37.63**
Southern Coastal Bluff Scrub	9.21
California Sagebrush Scrub	0.29
Encelia Scrub	15.73
Coyote Brush Scrub	0.33
Coyote Brush Scrub/Mule Fat Scrub	0.06
Goldenbush Scrub	0.87
Southern Cactus Scrub	8.91
Southern Cactus Scrub/Encelia Scrub	2.17
Saltbush Scrub	0.06
Disturbed Coastal Sage Scrub	**20.64**
Disturbed Southern Coastal Bluff Scrub	5.66
Disturbed Sage Scrub	0.30
Disturbed Encelia Scrub/Mule Fat Scrub	0.49
Disturbed Encelia Scrub	4.33
Disturbed Goldenbush Scrub	1.19
Disturbed Goldenbush Scrub/Mule Fat Scrub/Salt Marsh	1.06
Disturbed Southern Cactus Scrub	1.04
Disturbed Southern Cactus Scrub/Encelia Scrub	0.78
Ruderal/Disturbed Encelia Scrub	0.80
Ruderal/Disturbed Encelia Scrub/Disturbed Mule Fat Scrub	2.74
Ornamental/Disturbed Southern Coastal Bluff Scrub	2.25
Grassland and Ruderal	**120.40**
Non-Native Grassland	85.76
Non-Native Grassland/Ruderal	6.51
Ruderal	28.13
Grassland Depression Features	**0.40**
Vernal Pool	0.33
Ephemeral Pool	0.07
Marshes and Mudflats	**31.45**
Freshwater Marsh	0.50
Alkali Meadow	20.39
Disturbed Alkali Meadow	2.42
Salt Marsh	6.01



Project Boundary

Vegetation Types and Other Areas

Coastal Sage Scrub
- Southern Coastal Bluff Scrub
- California Sagebrush Scrub
- Encelia Scrub
- Coyote Brush Scrub
- Coyote Brush Scrub/Mule Fat Scrub
- Goldenbush Scrub
- Southern Cactus Scrub
- Southern Cactus Scrub/Encelia Scrub
- Saltbush Scrub

Disturbed Coastal Sage Scrub
- Disturbed Southern Coastal Bluff Scrub
- Disturbed Sage Scrub
- Disturbed Encelia Scrub/Mule Fat Scrub
- Disturbed Encelia Scrub
- Disturbed Goldenbush Scrub
- Disturbed Goldenbush Scrub/ Mule Fat Scrub/Salt Marsh
- Disturbed Southern Cactus Scrub
- Disturbed Southern Cactus Scrub/ Encelia Scrub
- Ruderal/Disturbed Encelia Scrub
- Ruderal/Disturbed Encelia Scrub/ Disturbed Mule Fat Scrub
- Ornamental/ Disturbed Southern Coastal Bluff Scrub

Grassland and Ruderal
- Non-Native Grassland
- Non-Native Grassland/Ruderal
- Ruderal

Grassland Depression Features
- Vernal Pool
- Ephemeral Pool

Marshes and Mudflats
- Freshwater Marsh
- Freshwater Marsh
- Disturbed Alkali Marsh
- Salt Marsh
- Disturbed Salt Marsh
- Mudflat
- Open Water

Riparian Scrub/Forest
- Mule Fat Scrub
- Willow Scrub
- Willow Riparian Forest

Disturbed Riparian Scrub/Forest
- Disturbed Mule Fat Scrub
- Disturbed Mule Fat Scrub/ Ruderal
- Disturbed Mule Fat Scrub/ Goldenbush Scrub
- Disturbed Willow Scrub
- Disturbed Willow Riparian Forest

Other Areas
- Giant Reed
- Cliff
- Ornamental
- Disturbed
- Disturbed/Developed

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Vegetation Types and Other Areas

Exhibit 6a

Newport Banning Ranch

N W E S

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Feet

Bonterra CONSULTING

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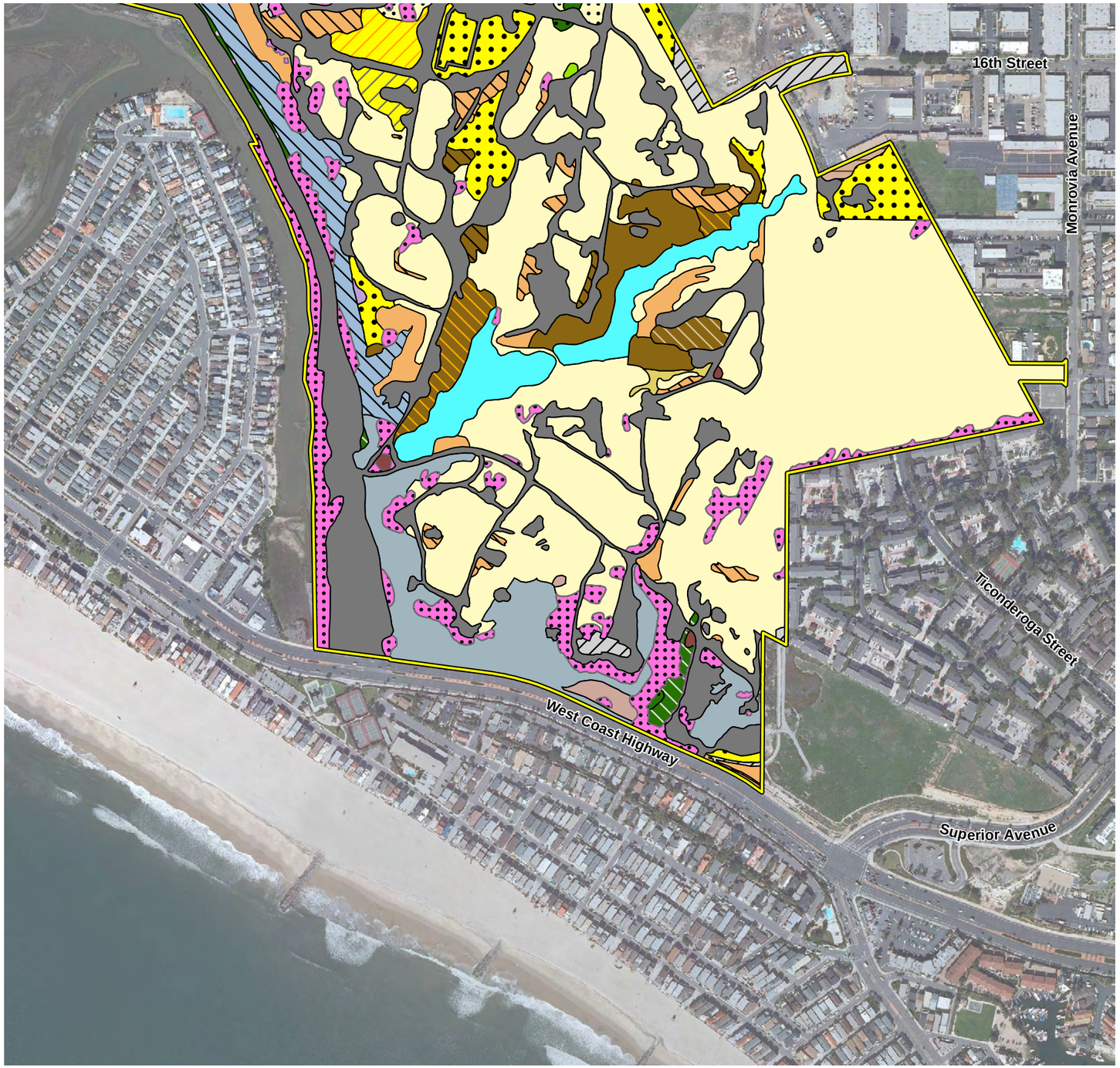

Project Boundary

Vegetation Types and Other Areas

Coastal Sage Scrub
- Southern Coastal Bluff Scrub
- California Sagebrush Scrub
- Encelia Scrub
- Coyote Brush Scrub
- Coyote Brush Scrub/Mule Fat Scrub
- Goldenbush Scrub
- Southern Cactus Scrub
- Southern Cactus Scrub/Encelia Scrub
- Saltbush Scrub

Disturbed Coastal Sage Scrub
- Disturbed Southern Coastal Bluff Scrub
- Disturbed Sage Scrub
- Disturbed Encelia Scrub/Mule Fat Scrub
- Disturbed Encelia Scrub
- Disturbed Goldenbush Scrub
- Disturbed Goldenbush Scrub/ Mule Fat Scrub/Salt Marsh
- Disturbed Southern Cactus Scrub
- Disturbed Southern Cactus Scrub/ Encelia Scrub
- Ruderal/Disturbed Encelia Scrub
- Ruderal/Disturbed Encelia Scrub/ Disturbed Mule Fat Scrub
- Ornamental/ Disturbed Southern Coastal Bluff Scrub

Grassland and Ruderal
- Non-Native Grassland
- Non-Native Grassland/Ruderal
- Ruderal

Grassland Depression Features
- Vernal Pool
- Ephemeral Pool

Marshes and Mudflats
- Freshwater Marsh
- Freshwater Marsh
- Disturbed Alkali Marsh
- Salt Marsh
- Disturbed Salt Marsh
- Mudflat
- Open Water

Riparian Scrub/Forest
- Mule Fat Scrub
- Willow Scrub
- Willow Riparian Forest

Disturbed Riparian Scrub/Forest
- Disturbed Mule Fat Scrub
- Disturbed Mule Fat Scrub/ Ruderal
- Disturbed Mule Fat Scrub/ Goldenbush Scrub
- Disturbed Willow Scrub
- Disturbed Willow Riparian Forest

Other Areas
- Giant Reed
- Cliff
- Ornamental
- Disturbed
- Disturbed/Developed

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Vegetation Types and Other Areas

Exhibit 6b

Newport Banning Ranch

N W E S

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Feet

Bonterra CONSULTING

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TABLE 1 (Cont.)
VEGETATION TYPES ON THE PROJECT SITE

Vegetation Type	Existing (Acres)
Disturbed Salt Marsh	0.26
Mudflat	0.43
Open Water	1.44
Riparian Scrub/Forest	**21.71**
Mule Fat Scrub	3.32
Willow Scrub	1.14
Willow Riparian Forest	17.25
Disturbed Riparian Scrub/Forest	**38.87**
Disturbed Mule Fat Scrub	28.87
Disturbed Mule Fat Scrub/Ruderal	0.88
Disturbed Mule Fat Scrub/Goldenbush Scrub	2.03
Disturbed Willow Scrub	1.03
Disturbed Willow Riparian Forest	6.06
Other Areas	**133.15**
Giant Reed	0.39
Cliff	0.10
Ornamental	23.05
Disturbed	85.59
Disturbed/Developed	24.02
Total	***404.25***

Note: These acreages are based on GIS mapping. The difference between the approximate 401-acre Project site and the approximate 404-acre existing area is the approximately 3 acres outside of the property line is associated with off-site impact areas (e.g., Newport-Mesa Unified School District property and Costa Mesa and Newport city properties).

Source: BonTerra Consulting 2011.

Southern Coastal Bluff Scrub

Southern coastal bluff scrub occurs along the exposed bluffs and cliffs at the southern edge of the Project site overlooking West Coast Highway. These exposed areas contain low-growing native and non-native species and some elements of maritime succulent scrub, which can also be used to describe components of this vegetation type. Southern coastal bluff scrub is dominated by bush sunflower (*Encelia californica*), bladderpod (*Isomeris arborea*), California buckwheat (*Eriogonum fasciculatum*), coastal cholla (*Cylindropuntia prolifera*), coastal prickly pear (*Opuntia littoralis*), and at some locations, locally dense areas of California box-thorn (*Lycium californicum*). The most common non-native species in this area are hottentot fig (*Carpobrotus edulis*) and Myoporum (*Myoporum laetum*).

California Sagebrush Scrub

California sagebrush scrub occurs on a cut slope in the eastern edge of the Project site, where it was planted adjacent to the City Utilities Yard. This area contains an overhead sprinkler system and species that are typically planted in a hydroseed mix (i.e., brittlebush [*Encelia farinosa*]). This vegetation type is dominated by California sagebrush (*Artemisia californica*) with scattered brittlebush and California buckwheat. The understory is minimal in this area.

Encelia Scrub

Encelia scrub occurs in large areas in the northeastern portion of the Project site and along the bluffs and southern portions of the mesa. This vegetation type is dominated by bush sunflower, and it occurs as a monoculture in many of the northern patches. Other species present in lower densities include bladderpod, wreath plant (*Stephanomeria virgata*), goldenbush (*Isocoma menziesii*), California buckwheat, coastal prickly pear, and coastal cholla.

Coyote Brush Scrub

Coyote brush scrub occurs in a small patch in an eroded area above the large drainage in the southern portion of the Project site. This vegetation type is dominated by coyote brush (*Baccharis pilularis*) with scattered mule fat (*Baccharis salicifolia* ssp*. salicifolia*) present.

Coyote Brush Scrub/Mule Fat Scrub

Coyote brush scrub/mule fat scrub occurs on a slope in the center of the Project site in an eroded drainage. This vegetation type is co-dominated by coyote brush and mule fat. A small amount of bush sunflower is also present.

Goldenbush Scrub

Goldenbush scrub occurs in patches along the roads in the lowland area of the Project site. Most of these areas occur directly adjacent to the roads used for the oilfield activities. The vegetation also occurs as a monoculture of goldenbush on the edges of the alkali meadow and mule fat scrub vegetation types.

Southern Cactus Scrub

Southern cactus scrub occurs on the south-facing slopes along the canyons on the Project site. This vegetation type consists of 20 percent or more vegetative cover of cactus throughout the area, which was mapped according to the County of Orange Habitat Classification System (Gray and Bramlet 1992). The cactus cover is dominated by coastal prickly pear or coastal cholla. The sage scrub surrounding the cactus patches is comprised primarily of bush sunflower; California buckwheat and bladderpod are also present.

Southern Cactus Scrub/Encelia Scrub

Southern cactus scrub/Encelia scrub occurs on the southeast- and south-facing slopes near the large drainage in the southern portion of the Project site. These areas contain less than 20 percent cover by cactus overall, the standard for mapping southern cactus scrub as described in the County of Orange Habitat Classification System (Gray and Bramlet 1992). This vegetation is dominated by bush sunflower with coastal prickly pear and coastal cholla scattered throughout, but in higher densities than in the Encelia scrub vegetation type described above. Other species include California buckwheat and bladderpod.

Saltbush Scrub

Saltbush scrub is located in a small patch near the center of the Project site. It is surrounded by mowed,[4] non-native grassland. It is dominated by big saltbush (*Atriplex lentiformis*).

Disturbed Southern Coastal Bluff Scrub

Disturbed southern coastal bluff scrub occurs along the exposed bluffs and cliffs at the southwestern edge of the Project site. These areas have been invaded by non-native species, such as hottentot fig and Myoporum, more heavily than the areas described above. In addition, landslides and invasion by non-native specieshave caused disturbance. This vegetation type is dominated by bush sunflower, hottentot fig, California buckwheat, bladderpod, coastal cholla, and coastal prickly pear.

Disturbed Sage Scrub

Disturbed sage scrub occurs in a small patch in the center of the mesa on the Project site. This area has been heavily disturbed by oilfield activities. The vegetation is recovering sage scrub that is dominated by deerweed (*Acmispon glaber* [*Lotus scoparius* var. *scoparius*]) , which is an early successional sage scrub species to colonize following disturbance. Other species present include bush sunflower, goldenbush, wreath plant, California-aster (*Corethrogyne filaginifolia)*, tree tobacco (*Nicotiana glauca*), and telegraph weed (*Heterotheca grandiflora*).

Disturbed Encelia Scrub/Mule Fat Scrub

Disturbed Encelia scrub/mule fat scrub occurs in a small patch in the center of the mesa on the Project site adjacent to the large concrete debris piles from oilfield activities, and has been subject to maintenance along the edges. Opportunistic native and non-native plants are growing in and around the concrete debris. This vegetation type is co-dominated by bush sunflower and mule fat. Non-native species indicative of the disturbance are tree tobacco and castor bean (*Ricinus communis*). Coastal prickly pear is also present.

Disturbed Encelia Scrub

Disturbed Encelia scrub occurs in patches throughout the mesa on the Project site. These areas are disturbed by the low-level mowing on the Project site, and the bush sunflower plants were shorter than 12 inches at the time of the survey. This vegetation type is dominated by bush sunflower, with annual and perennial grass species. These grass species were not identifiable during the surveys because of mowing to shorter than six inches.

Disturbed Goldenbush Scrub

Disturbed goldenbush scrub occurs in patches along the roads in the lowland area of the Project site. This vegetation type occupies similar areas to that of the undisturbed goldenbush scrub, but differ because of the co-dominance of non-native and ornamental species. This vegetation type is comprised of goldenbush, pampas grass (*Cortaderia selloana*), and sweet fennel (*Foeniculum vulgare*).

[4] It should be noted that regular mowing activities have been conducted since the beginning of oilfield operations for purposes of oilfield maintenance and safety. These activities are permitted in accordance with California Coastal Commission South Coast Regional Coastal Zone Conservation Commission Claim for Exemption No. E-7-27-73-144.

Disturbed Goldenbush Scrub/Mule Fat Scrub/Salt Marsh

Disturbed goldenbush scrub/mule fat scrub/salt marsh occurs in a strip along the western edge of the lowland area directly between a dirt access road and the USACE saltmarsh restoration site. This vegetation type is dominated by goldenbush, mule fat, woolly seablite (*Suaeda taxifolia*), alkali heath (*Frankenia salina*), and common woody pickleweed (*Salicornia pacifica*). Non-native species present due to the proximity to the road include poison hemlock (*Conium maculatum*) and five-hook bassia (*Bassia hyssopifolia*).

Disturbed Southern Cactus Scrub

Disturbed southern cactus scrub occurs as small patches in open, eroded soils on the mesa of the Project site. These patches are adjacent to dirt oilfield roads and are surrounded by mowed non-native grassland. This vegetation type is dominated by coastal prickly pear and non-native species including tree tobacco and castor bean. Coastal cholla may also be present.

Disturbed Southern Cactus Scrub/Encelia Scrub

Disturbed southern cactus scrub/Encelia scrub occurs in open, eroded soils on a slope south of the large drainage in the southern portion of the Project site. This area is surrounded by dirt roads and mowed non-native grassland. This vegetation type is dominated by coastal prickly pear, coastal cholla, bush sunflower, tree tobacco, and castor bean.

Ruderal/Disturbed Encelia Scrub

Ruderal/disturbed Encelia scrub vegetation occurs in a patch near the center of the mesa on the Project site. This is another area of the Project site that contains debris piles from oilfield activities and is surrounded by a dirt road. The plants in this area are growing out from spaces in the concrete debris and along the debris pile edges. This vegetation type is dominated by tree tobacco, black mustard (*Brassica nigra*), and bush sunflower.

Ruderal/Disturbed Encelia Scrub/Disturbed Mule Fat Scrub

Ruderal/disturbed Encelia scrub/disturbed mule fat scrub occurs in patches near the center of the mesa on the Project site. As mentioned above under Disturbed Encelia Scrub/Mule Fat Scrub, this area contains debris piles from oilfield activities and is surrounded by dirt roads. The plants consist of opportunistic native and non-native species that have colonized soil piles and open areas within and along the edges of the debris piles. This vegetation type is dominated by tree tobacco, bush sunflower, and mule fat. Other species present include telegraph weed, black mustard, and castor bean.

Ornamental/Disturbed Southern Coastal Bluff Scrub

Ornamental/disturbed southern coastal bluff scrub occurs on the bluffs in the center of the Project site. This area is dominated by a mix of hottentot fig, bush sunflower, California buckwheat, and bladderpod.

Non-Native Grassland

Non-native grassland occurs throughout the mesa on the Project site. The species composition varies by patch. The non-native grassland in the southern portion of the bluffs contains native grasses intermixed with non-native grasses and forbs, with the non-native grasses constituting a

larger percentage of vegetation cover than the native grasses. Species present in this vegetation type include foxtail chess (*Bromus madritensis* ssp. *rubens*), slender oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), hare barley (*Hordeum murinum* ssp. *leporiunum*), rattail fescue (*Festuca myuros*), and red-stemmed filaree (*Erodium cicutarium*). Within these non-native grasslands there are pockets of native species that were not mapped because they were mowed to a height ofless than six inches and could not be delineated.

Non-Native Grassland/Ruderal

Non-native grassland/ruderal occurs in the central portion of the upland area adjacent to disturbed/developed areas. These areas contain a mixture of non-native grasses and ruderal species. These areas were also mowed to a height of less than six inches at the time of the surveys. Species present include foxtail chess, slender oat, red-stemmed filaree, black mustard, and tocalote/Maltese star thistle (*Centaurea melitensis*).

Ruderal

Ruderal vegetation is scattered throughout the mesa and lowland on the Project site. These areas have heavily compacted soils and are mowed on a regular basis. The species composition of this vegetation is similar to non-native grassland, but with a higher component of non-native herbs and shrubs, and a smaller component of non-native grasses. A few scattered, weedy native species are also present in these areas. Species present in this vegetation type include black mustard, sweet fennel, tree tobacco, castor bean, western ragweed (*Ambrosia psilostachya*), fascicled tarweed (*Deinandra fasciculata*), salt grass (*Distichlis spicata*), and red-stemmed filaree.

Vernal/Ephemeral Pools

Two features previously described as vernal pools due to the presence of the San Diego fairy shrimp are present on the mesa near the eastern-central portion of the Project site. These areas were originally delineated by GLA. The larger feature (VP1) (0.30 acre) appears to have been artificially created as a result of its historical use for oil production and recreation activities. It is located in the middle of oil operation areas and includes numerous pipelines and oilfield infrastructure. Vegetation in VP1 now includes perennial spike rush (*Eleocharis macrostachya*), salt grass, and woolly marbles (*Psilocarphus brevissimus*). Mule fat also covers a large portion of this feature. The smaller feature (VP2) (0.02 acre) does not support hydrophytic vegetation characteristic of vernal pools, and is located on an existing oilfield pad that includes a well and pipelines (one of which crosses the “pool”). VP2 is best described as a shallow depression on an active oilfield production well pad. It was designated as a vernal pool based solely on the presence of adult San Diego fairy shrimp during wet season surveys in 2000 (GLA 2009b).

These areas were dry at the time of the 2009 vegetation surveys but were ponded during the 2009–2010 and 2010–2011 rainfall years, both of which reflected well-above average rainfall years. The 2009–2010 rainfall season was 158 percent of normal and, the 2010–2011 season was 189 percent of normal for the entire season. Rainfall totals for December 2010 are estimated to be a 50-year event and were 647 percent of normal for the month.

In addition to the two pools described above, during the above-average rainfall of 2009–2010, a 0.007 acre artificial depression was identified immediately east of VP1, in which a single immature San Diego fairy shrimp was detected. However, the depression failed to hold water for a sufficient period of time to allow fairy shrimp to reach full maturity. This feature has been designated as AD3.

As a result of the record rainfalls experienced during the 2010–2011 rainy season, additional areas of temporary ponding were observed. Each of these ponded areas was surveyed and monitored. Many of these areas do not exhibit ponding for more than a few days after a normal rain event. Surveys have been conducted to determine if any fairy shrimp species (listed and non-listed) are present. The USFWS protocol for fairy shrimp surveys requires that ponded areas be tested as long as the region continues to experience rain events. Due to the extended rainy season this year, surveys were not completed until mid-April 2011.

Surveyed Depressions

The record rainfall in 2009–2010 and 2010–2011 created areas of ponding within artificial depressions. These depressions were created as a result of oilfield operations and—due to the presence of oil facilities and potential soil contamination—will be cleaned up and remediated as part of proposed Project's oilfield abandonment and remediation activities.[5] During the 2009–2010 and/or 2010–2011 rainy seasons, 23 depressions were identified. The ponding is characterized as temporary as the average depth of water in these areas was approximately 3–4 inches, which is present immediately after heavy rains. For many of the features, the water evaporates within days after a rain event. Many of the features do not pond water during normal rainfall years. Surveys were conducted during the rainy season to monitor the duration of ponding in each of the identified features. Some of these depressions were created as a result of routine removal of contaminated soils during oilfield clean-up activities, which will require further remediation. Other areas were created as artificial impoundments resulting from berms constructed to contain stockpiles of bioremediated oil-impacted soils or to prevent erosion of areas around oil wells and other oilfield facilities. Many of these depressions lack vegetation, but if present, the vegetation in these areas is generally composed of a mix of upland vegetation, non-native grassland, or disturbed ruderal habitat. These temporary ponded areas range in size from 0.003 to 0.09 acre, with one feature covering 0.26 acre (Table 2). The temporary ponded areas were identified based upon their potential to support fairy shrimp. There are other areas on site which have been observed to collect water after rain events; however, these features are not included in the table below because they are located on unsuitable substrate (e.g., asphalt roads and parking lots) and the water was determined to be too shallow (1–2 inches) and evaporated within a few days.

[5] The Banning Ranch oilfield has been in active oil production operation since the 1940s, and oil production, abandonment, and remediation activities are undertaken pursuant to a Coastal Act exemption.

TABLE 2
POOLS/PONDED AREAS ON THE PROJECT SITE

Pool	Size (Acre)	Vegetation Type	Origin/Function	Survey Information
VP1	0.30	Disturbed Mulefat	Historic oil production and recreation area, currently crossed by numerous pipelines and infrastructure	San Diego Fairy Shrimp
VP2	0.02	Disturbed – Developed	Shallow depression on active oil production well pad.	San Diego Fairy Shrimp
AD3	0.007	Non-native, Upland grassland	Artificial depression in active pipeline corridor.	San Diego Fairy Shrimp
A	0.04	Non-native, Upland grassland	Depression with oilfield infrastructure at edge of pool.	Versatile Fairy Shrimp Only
B	0.03	Disturbed	Temporary stockpile of bio-remediated soils; depression from oilfield excavation activities.	Versatile Fairy Shrimp Only
C	0.04	Disturbed	Oilfield excavation and stockpile area.	Versatile Fairy Shrimp Only
D	0.02	Disturbed	Oilfield excavation area.	Versatile Fairy Shrimp Only
E	0.05	Disturbed Mulefat	Historic oil sump with contaminated soils – remediation necessary.	San Diego Fairy Shrimp
F	0.02	Non-native, Upland grassland	Bermed area to protect oilfield road.	None
G	0.003	Non-native grassland	Oilfield sump with multiple pipelines.	San Diego Fairy Shrimp
H	0.005	Non-native grassland	Shallow depression created by oilfield activities.	None
I	0.03	Non-native grassland	Bermed area to store construction debris and protect oilfield road	San Diego Fairy Shrimp
J	0.09	Non-native grassland	Bermed area to store construction debris and protect oilfield road.	San Diego Fairy Shrimp
K	0.03	Non-native grassland	Shallow artificial oilfield depression.	None
L	0.04	Non-native grassland	Shallow artificial oilfield depression.	None
M	0.02	Disturbed	Oilfield pipe and material storage yard; standpipes in ponded area.	Versatile Fairy Shrimp Only
N	0.06	Disturbed	Oilfield storage equipment area largely covered with gravel.	Versatile Fairy Shrimp Only
O	N/A	Disturbed	Oilfield storage equipment area largely covered with gravel failed to pond for sufficient duration for fairy shrimp to emerge.	None
P	0.009	Disturbed	Oilfield soil remediation area.	Versatile Fairy Shrimp Only
Q	N/A	Developed	Roadside feature.	None
R	N/A	Disturbed	Roadside feature.	Versatile Fairy Shrimp Only
S	N/A	Developed	Roadside feature.	None
T	N/A	Developed	Paved roadway.	Versatile Fairy Shrimp Only
U	N/A	Developed	Paved roadway.	None
V	N/A	Disturbed	Existing well pad.	Versatile Fairy Shrimp Only
W	0.26	Non-native grassland	Relict depression in non-native grassland from Caltrans grading.	None

N/A: Not available; Caltrans: California Department of Transportation
Source: GLA 2011

Freshwater Marsh

Freshwater marsh occurs near areas of willow riparian forest in the lowland of the Project site. This area is dominated by freshwater plant species, but is adjacent to alkaline plant species. It could also possibly be characterized as brackish marsh. This vegetation type is dominated by cattail (*Typha* sp.) and southern bulrush (*Schoenoplectus californicus*). This area was dry during the 2009 vegetation surveys.

Alkali Meadow

Alkali meadow occurs in the closed depressions in the lowland of the Project site. These areas are not subject to tidal influence, but function as seasonal marshes in areas where surface water collects in the lowland areas of the Project site. These areas are near the USACE salt marsh restoration site. This vegetation type is dominated by common woody pickleweed, alkali heath, alkali heliotrope (*Heliotropium curassavicum* var. *oculatum*), alkali mallow (*Malvella leprosa*), and alkali weed (*Cressa truxillensis*). This vegetation type does not contain a large component of non-native species, but does contain scattered instances of the non-natives five-hook bassia and poison hemlock.

Disturbed Alkali Meadow

Disturbed alkali meadow also occurs in the closed depressions in the lowland areas. These areas, as mentioned above, are also not subject to tidal influence. They are disturbed due to the proximity to the oilfield activities, and the conditions are drier than undisturbed areas of alkali meadow; this allows the proliferation of opportunistic weedy species. This vegetation type is dominated by common woody pickleweed, alkali heath, poison hemlock, Italian thistle (*Carduus pycnocephalus* var. *pycnocephalus*), and five-hook bassia.

Salt Marsh

Salt marsh vegetation occurs in the southern portion of the lowland on the Project site and at the northwestern corner of the Project site. This vegetation type receives muted tidal influence and contained standing water during the surveys. This area is dominated by a mix of common woody pickleweed, alkali heath, and saltwort (*Batis maritima*), with some scattered woolly seablite.

Disturbed Salt Marsh

Disturbed salt marsh vegetation occurs in the southern portion of the lowland on the Project site between the dirt road and the USACE salt marsh restoration site. This vegetation type is connected directly to the salt marsh that receives tidal influence; however, it is disturbed by its proximity to the road. This area is dominated by common woody pickleweed, alkali heath, seablite, poison hemlock, and black mustard.

Mudflat

Mudflats are located at the southern end of the lowland on the Project site within the salt marsh areas. These unvegetated areas are subject to tidal influence, and are naturally occurring areas that are not the result of disturbance.

Open Water

Open water was observed in the southern portion of the lowland during the 2009 vegetation surveys. These areas appeared to be salt or brackish water. Algae is present in the water.

Mule Fat Scrub

Mule fat scrub occurs in patches in the western portion of the Project site, typically surrounding alkali meadow areas and adjacent to areas of disturbed mule fat scrub. Although many of these areas are adjacent to roads, they have minimal ornamental species or disturbance. This vegetation type is dominated by dense stands of mule fat with scattered goldenbush, alkali heath, and telegraph weed.

Willow Scrub

Willow scrub occurs in a patch in the northern portion of the lowland. This vegetation type is similar to willow riparian forest; however, the Goodding's black willow (*Salix gooddingii*) and arroyo willow (*Salix lasiolepis*) are smaller in size and there is a higher percentage of mule fat.

Willow Riparian Forest

Willow riparian forest occurs along the northern edge of the Project site in patches in the lowland and in three of the largest arroyos on the Project site. This vegetation type occurs along the main drainage that is fed by nuisance runoff and in the lowland where the ground water is high with lower salinities. This vegetation type is dominated by black and arroyo willows that are greater than 20 feet in height. Other species present in the understory include mule fat, poison hemlock, pampas grass, and California blackberry (*Rubus ursinus*).

Disturbed Mule Fat Scrub

Disturbed mule fat scrub occurs throughout the Project site, primarily around closed depressions in the lowland and in some drainages. This vegetation type is dominated by mule fat. It has a large component of pampas grass and five-hook bassia because of its proximity to oilfield activities. Goldenbush and alkali heath are also present.

Disturbed Mule Fat Scrub/Ruderal

Disturbed mule fat scrub/ruderal vegetation occurs in depressions in the northern lowland on the Project site and has been disturbed by oilfield activities. This vegetation type is co-dominated by mule fat and ruderal species such as poison hemlock and pampas grass. These areas also contain giant reed (*Arundo donax*), alkali heliotrope, five-hook bassia, alkali heath, and small individual Goodding's black willows.

Disturbed Mule Fat Scrub/Goldenbush Scrub

Disturbed mule fat scrub/goldenbush scrub occurs in the central-western portion of the lowland and at the southern edge of the Project site. This vegetation type is co-dominated by mule fat and goldenbush. At the southern edge of the Project site, this vegetation type occurs in an erosional feature and has an understory of hottentot fig. In the lowland, this vegetation type is disturbed by oilfield activities and contains large patches of pampas grass.

Disturbed Willow Scrub

Disturbed willow scrub occurs in a small patch north of the large drainage in the southern portion of the Project site and in the center of the lowland. This vegetation type is dominated by arroyo willow, is disturbed by oilfield activities, and contains pampas grass.

Disturbed Willow Riparian Forest

Disturbed willow riparian forest occurs in the center of the eastern portion of the lowland, in areas with high groundwater with lower salinities. These areas are similar to willow riparian forest; however, they contain a large non-native component. This vegetation type is dominated by black and arroyo willows that are greater than 20 feet in height, and include large patches of poison hemlock and pampas grass.

Giant Reed

Giant reed occurs along a drainage in the northeastern portion and in numerous small patches in the lowland of the Project site. These areas contain dense stands of the non-native giant reed. There is minimal understory and no other species are present in these areas.

Cliff

Exposed cliffs occur along the northeastern edge of the Project site. This area is almost exclusively unvegetated.

Ornamental

Ornamental vegetation occurs (1) directly adjacent to the off-site office, institutional, and industrial areas and residences adjacent to the Project site's eastern boundary and (2) scattered throughout the Project site. This vegetation type includes numerous ornamental species that have been planted for aesthetic purposes or that have invaded from adjacent off-site development. The species present include Myoporum, wattle (*Acacia* sp.), hottentot fig, crystalline ice plant (*Mesembryanthemum crystallinum*), gum tree (*Eucalyptus* sp.), and bougainvillea (*Bougainvillea* sp.).

Disturbed

Disturbed areas consist of the existing unpaved access roads and remnant paved access roads throughout the Project site. These areas are typically unvegetated bare ground, but may contain scattered native or non-native weedy species and some ornamental species such as hottentot fig, telegraph weed, and black mustard.

Disturbed/Developed

Disturbed/developed areas occur throughout the center of the Project site. These areas consist of existing office trailers, maintenance facilities, staging areas, oil rigs, a flood-control channel, and paved access roads. These areas are typically unvegetated bare ground, but may contain scattered native or non-native weedy species and some ornamental species such as hottentot fig, telegraph weed, and black mustard.

3.2 WILDLIFE

Wildlife species observed or expected to occur within the Project site are discussed below. Any special status species mentioned below is discussed in greater detail in the "Special Status Wildlife" section. Species observed during all general and focused surveys are listed in Appendix A.

3.2.1 Fish

Most creeks and waterways in Southern California are subject to periods of high water flow in winter and spring and little to no flow during late summer and fall. While irrigation runoff was observed in the northernmost large arroyo on the Project site, the majority of drainage features on the Project site appear to convey water only following storm events. Therefore, no fish species are expected to occur in freshwater areas of the Project site.

The salt marsh and open water vegetation types in the western portion of the Project site receive muted tidal flows through the 92-acre USACE salt marsh restoration site to the west and may support estuarine fish species. Fish species with potential to occur within the salt marsh and open water areas include California killifish (*Fundulus parvipinnis*), longjaw mudsucker (*Gillichthys mirabilis*), Pacific staghorn sculpin (*Leptocottus armatus*), prickly sculpin (*Cottus asper*), and shiner perch (*Cymatogaster aggregata*). The Santa Ana River and the USACE salt marsh restoration site are estuarine channels west of the Project site that may also support these species.

3.2.2 Amphibians

Amphibians require moisture for at least a portion of their lifecycle and many require standing or flowing water for reproduction. Terrestrial species may or may not require standing water for reproduction; they survive in dry areas by aestivating (i.e., remaining beneath the soil in burrows or under logs and leaf litter, and emerging only when temperatures are low and humidity is high). Many of these species' habitats are associated with water and they emerge to breed once the rainy season begins. Soil moisture conditions can remain high throughout the year in some habitat types depending on factors such as amount of vegetation cover, elevation, and slope aspect.

Baja California treefrog (*Pseudacris hypochondriaca*) tadpoles were observed in a ponded depression on the Project site. Other common amphibian species that were observed or are expected to occur on the Project site include garden slender salamander (*Batrachoseps major*) and western toad (*Anaxyrus boreas*).

3.2.3 Reptiles

Reptilian diversity and abundance typically varies with vegetation type and character. Many species prefer only one or two vegetation types; however, most species will forage in a variety of habitats. Most reptile species that occur in open areas use rodent burrows for cover, protection from predators, and refuge during extreme weather conditions.

Reptile species observed or expected to occur on the Project site include western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), southern alligator lizard (*Elgaria multicarinata*), and gopher snake (*Pituophis catenifer*). Other reptile species that may occur on the Project site include western skink (*Eumeces skiltonianus*), ring-necked snake (*Diadophis punctatus*), red racer [coachwhip] (*Coluber* [*Masticophis*] *flagellum piceus*), California striped racer [whipsnake] (*Coluber* [*Masticophis*] *lateralis lateralis*), common kingsnake (*Lampropeltis getula*), and western rattlesnake (*Crotalus oreganus*).

3.2.4 Birds

A variety of bird species are expected to be residents on the Project site and to use the habitats throughout the year. Other species are present only during certain seasons. For example, the white-crowned sparrow (*Zonotrichia leucophrys*) is expected to occur on the Project site during the winter season and would then migrate north in the spring to breed during the summer.

Although the same individuals may not be present year-round on the Project site, the following bird species were observed during the surveys and can be considered resident: great blue heron (*Ardea herodias*), great egret (*Ardea alba*), black-crowned night-heron (*Nycticorax nycticorax*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), Allen's hummingbird (*Selasphorus sasin*), Nuttall's woodpecker (*Picoides nuttallii*), downy woodpecker (*Picoides pubescens*), black phoebe (*Sayornis nigricans*), Hutton's vireo (*Vireo huttoni*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), bushtit (*Psaltriparus minimus*), house wren (*Troglodytes aedon*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), orange-crowned warbler (*Oreothlypis celata*), common yellowthroat (*Geothlypis trichas*), spotted towhee (*Pipilo maculatus*), California towhee (*Melozone crissalis*), song sparrow (*Melospiza melodia*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Spinus psaltria*), and American goldfinch (*Spinus tristis*).

Summer-only residents in the region that nest or were suspected of nesting on the Project site during the surveys include black-chinned hummingbird (*Archilochus alexandri*), Pacific-slope flycatcher (*Empidonax difficilis*), ash-throated flycatcher (*Myiarchus cinerascens*), black-headed grosbeak (*Pheuticus melanocephalus*), blue grosbeak (*Passerina caerulea*), hooded oriole (*Icterus* cucullatus), and Bullock's oriole (*Icterus bullockii*).

Wintering species observed during the surveys include ruby-crowned kinglet (*Regulus calendula*), American pipit (Anthus rubescens), yellow-rumped warbler (*Dendroica coronata*), Townsend's warbler (*Dendroica townsendi*), savannah sparrow (*Passerculus sandwichensis*), Lincoln's sparrow (*Melospiza lincolnii*), white-crowned sparrow, and golden-crowned sparrow (*Zonotrichia atricapilla*).

The turkey vulture (*Cathartes aura*), a scavenger, was observed on the Project site. Other raptors (birds of prey) observed on the Project site include osprey (*Pandion haliaetus*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and great horned owl (*Bubo virginianus*).

3.2.5 Mammals

Small, ground-dwelling mammals observed on the Project site include California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), dusky-footed woodrat (*Neotoma fuscipes*), and black rat (*Rattus rattus*).

Bats occur throughout most of Southern California and may use any portion of the Project site as foraging habitat. Most of the bats that could potentially occur on the Project site are inactive during the winter and either hibernate or migrate, depending on the species. Several bat species may occur on the Project site, including pallid bat (*Antrozous pallidus*), big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), and western pipistrelle (*Pipistrellus hesperus*).

Medium- to large-sized mammals observed on the Project site include Virginia opossum (*Didelphis virginiana*), desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), common raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

3.2.6 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because these areas prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990). Corridors mitigate the effects of this fragmentation by (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators and human disturbances, thus reducing the risk that catastrophic events, such as fire or disease, will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other necessary resources (Noss 1983; Farhig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories:

1. Dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions).

2. Seasonal migration.

3. Movements related to home range activities, including foraging for food or water; defending territories; or searching for mates, breeding areas, or cover.

A number of terms such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" have been used in various wildlife movement studies to refer to areas where wildlife moves from one area to another. To clarify the meaning of these terms and to facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

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

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

- ***Wildlife crossing:*** A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are man made and include culverts, underpasses, drainage pipes, and tunnels. They provide access across or under roads, highways, pipelines, or other physical obstacles, which often represent "choke points" along a movement corridor and may impede wildlife movement and increase the risk of predation.

In a large open space area where there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors (as defined above) may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and to provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas. Based on their size, location, vegetative composition and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles (e.g., roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water and do not contain obstacles or distractions (e.g., man-made noise or lighting) that would generally hinder wildlife movement.

The Project site is located within an area that is largely constrained by urban development. Residential, office, light industrial, institutional, and limited retail development surround the Project site to the northeast, east, and south (separating it from the beach), and also west of the Santa Ana River. The Project site is adjacent to a USACE salt marsh restoration site, the mouth of the Santa Ana River, and the Talbert Marsh restoration site (located northwest of the Santa Ana River mouth). Talbert Regional Park is located immediately adjacent to the northern boundary of the Project site, and Fairview Park is located north of Talbert Park. The Project site and these open space areas provide an important regional resource area for wildlife. In particular, a variety of birds, including Threatened and Endangered species, use this area to breed while others use it during migration as a stopover site to rest and refuel. These areas are the primary areas of open space in the vicinity of the Project site, and the Santa Ana River provides a riverine connection between these areas from the coast upstream to Fairview Park. The Santa Ana River becomes channelized (with concrete sides and bottom) 0.8 mile upstream of Fairview Park; however, it still functions as a regionally important wildlife movement corridor for mobile species to reach open space areas upstream that would otherwise be inaccessible. Overall, the Project site is expected to be used by wildlife moving along the Santa Ana River (especially between the coast and Fairview Park) and, most importantly, as a migration stopover site by bird species migrating along the coastline.

The Newport Bay Ecological Reserve is located approximately 2.5 miles southeast of the Project site, and the Bolsa Chica Ecological Reserve is located approximately 5.5 miles northwest of the Project site; however, dense urban development (including along the shoreline) separates the Project site from both these Reserves. Birds, bats, and urban-tolerant wildlife species (e.g., coyotes, opossums, and raccoons) would be able to move through the urban matrix from both Reserves to the Project site. Estuarine fish may also be able to travel from the ocean to the Reserves and the USACE salt marsh restoration site/Santa Ana River/Talbert Marsh. However, most terrestrial wildlife species would not be able to move from Newport Bay and the Bolsa Chica Ecological Reserve, through the urban matrix, and to the Project site.

3.3 SPECIAL STATUS BIOLOGICAL RESOURCES

The following section addresses special status biological resources observed, reported, or that have the potential to occur on the Project site. These resources include plant and wildlife species that have been afforded special status and/or are recognized by federal and State resource agencies, as well as private conservation organizations. In general, the principal reason an individual taxon (i.e., species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size, geographic range, and/or distribution, which results, in most cases, from habitat loss. Tables 3 and 5 provide a summary of special status plant and wildlife species known to occur in the Project vicinity, including information on the status, likelihood for occurrence, and definitions for the various status designations. In addition, special status biological resources include vegetation types and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. These resources have been defined by federal, State, and local government conservation programs. Sources used to determine the special status of biological resources are listed below.

- ***Plants –*** Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2011); the CNDDB (CDFG 2011a); various USFWS *Federal Register* notices regarding listing status of plant species; and the CDFG's *Special Vascular Plants, Bryophytes, and Lichens List* (CDFG 2011b).
- ***Wildlife –*** California Wildlife Habitat Relationships Database System (CDFG BDB 2011); the CNDDB (CDFG 2011a); various USFWS *Federal Register* notices regarding listing status of wildlife species; and the CDFG's *Special Animals* List (CDFG 2011a).
- ***Habitats –*** the CNDDB (CDFG 2011a).

3.3.1 Definitions of Special Status Biological Resources

A **federally Endangered species** is one facing extinction throughout all or a significant portion of its geographic range. A **federally Threatened species** is one likely to become Endangered within the foreseeable future throughout all or a significant portion of its range. **Proposed Species** or **Candidate Species** are those officially proposed to be added to the federal Threatened and Endangered species list by the USFWS.

The State of California considers an **Endangered species** to be one whose prospects of survival and reproduction are in immediate jeopardy; a **Threatened species** as one present in such small numbers throughout its range that it is likely to become an Endangered species in the near future in the absence of special protection or management; and a **Rare species** as one present in such small numbers throughout its range that it may become Endangered if its present environment worsens. **California Species of Special Concern** is an informal designation used by the CDFG for some declining wildlife species that are not State Candidates for listing. Recently, the CDFG downlisted several species from Species of Special Concern to the **Watch List**. Although not considered special status, Watch List species are tracked by the CNDDB.

Species that are **California Fully Protected** and **Protected** include those protected by special legislation and may not be taken or possessed at any time. A species that is considered a **Special Animal** is one that is monitored by the CNDDB. **Species of Local Concern** are those

that have no official status with the resource agencies, but are being watched because either there is a unique population in the region[6] or the species is declining in the region.

CNPS lists California's special status plant in four lists: **List 1A** (plant species extinct in California); **List 1B** (Rare, Threatened, or Endangered throughout their range); **List 2** (considered Rare, Threatened, or Endangered in California but more common in other states); **List 3** (more information is needed); and **List 4** (plants that have limited distribution). The CNPS also assigns a threat code extension: **.1** ("seriously endangered" in California); **.2** ("fairly endangered" in California); and **.3** ("not very endangered" in California). The absence of a threat code extension indicates plants lacking any threat information.

3.3.2 Special Status Vegetation Types

In addition to providing an inventory of special status plant and wildlife species, the CNDDB also provides an inventory of vegetation types that are considered special status by State and federal resource agencies, academic institutions, and various conservation groups. Determination of the sensitivity level is based on the Nature Conservancy Heritage Program Status Ranks, which ranks vegetation types on a global and statewide basis according to the number and size of remaining occurrences and recognized threats. Special status vegetation types that occur on the Project site are discussed below.

Coastal sage scrub, which includes several forms/alliance in the CNDDB, has undergone a historical loss from land use changes in Southern California basins and foothills. Loss in sage scrub habitat has led to the listing of several plant and wildlife species as Threatened and Endangered. The determination of whether the on-site habitats are considered special status is based on the CNDDB Global/State rankings and/or the potential of the habitat to provide high wildlife value (significantly disturbed types were generally not considered sensitive). Special status coastal sage scrub vegetation types on the Project site include southern coastal bluff scrub, California sagebrush scrub, Encelia scrub, coyote brush scrub, coyote brush scrub/mule fat scrub, goldenbush scrub, southern cactus scrub, southern cactus scrub/Encelia scrub, and disturbed southern coastal bluff scrub. These areas account for 43.23 acres of the Project site.

Several riparian vegetation types are ranked as special status by the CNDDB. Most natural riparian vegetation in Southern California has been lost to or degraded by land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; water impoundments; and various other changes. Riparian vegetation is critical to the quality of in-stream habitat and aids significantly in maintaining aquatic life by providing shade, food, and nutrients that form the basis of the food chain. Riparian habitats are biologically productive as well as diverse, and are the exclusive habitat of several special status species. Riparian vegetation types on the Project site that are identified as special status by the CNDDB Global/State rankings and/or have the potential of the habitat to provide high wildlife value (significant disturbed types were generally not considered sensitive) include freshwater marsh, alkali meadow, disturbed alkali meadow, salt marsh, disturbed salt marsh, mule fat scrub, willow scrub, willow riparian forest, disturbed mule fat scrub, disturbed willow scrub, and disturbed willow riparian forest. There areas account for 87.25 acres of the Project site.

Although no Global or State ranking is provided by the CNDDB for vernal pools and ephemeral pools, these areas are considered special status due to the presence of fairy shrimp. Habitat loss and fragmentation is the largest threat to vernal pool species. It is estimated that 95 percent

[6] The proposed Project's regional setting includes the Central/Coastal Subregion NCCP/HCP. This subregion is bound by State Route (SR) 55 and SR-91 to the north; the Santa Ana River and Pacific Ocean to the west; El Toro Road and Interstate 5 to the east; and the Pacific Ocean to the south.

of vernal pool habitat in Southern California has been lost (USFWS 2005c). In addition to direct habitat loss, vernal pool hydrology can be altered by changes in hydrology, invasive species, contaminants, off-road vehicles, loss of pollinator species, inappropriate livestock grazing, and climate change (USFWS 2005c). The vernal pools and other ponded areas on the Project site cover approximately 00.50 acre.

Jurisdictional Waters

The extent of USACE, CDFG, and California Coastal Commission jurisdictional resources on the Project site was determined through jurisdictional delineations conducted by BonTerra Consulting in 2009 and GLA in 2007 and 2008 (GLA 2008 and 2009a). An approved jurisdictional determination was received from the USACE on June 3, 2009, based on information in GLA's March 5, 2009, submittal to the USACE (GLA 2009a). Approximately 53.76 acres of USACE jurisdictional areas occur on site, of which 53.15 acres consist of jurisdictional wetlands (see Exhibit 7a). The USACE has concurred with the findings of this delineation (USACE 2009). Approximately 12.08 acres of CDFG jurisdictional areas occur on the Project site (Exhibit 7b). In addition, approximately 84.48 acres of Coastal Commission jurisdictional resources are present on the Project site (Exhibit 7c).

3.3.3 Special Status Plants

Special status plant species that are known to occur in the vicinity of the Project site are discussed below and summarized in Table 3. A brief description of special status plant species that are known from the region are listed below alphabetically according to their scientific name.

Chaparral Sand-Verbena (Abronia villosa var. aurita)

Chaparral sand-verbena is a CNPS List 1B.1 species. It typically blooms between January and September (CNPS 2011). This annual herb occurs in sandy dunes, primarily in coastal sage scrub and chaparral habitats (Jepson Flora Project 2010; CNPS 2011), and is found between sea level and approximately 5,250 feet above msl (Baldwin et al. 2002). In California, this species is known from Orange, Riverside, San Bernardino, and San Diego Counties (CNPS 2011). In the vicinity of the Project site, this species has historically been reported near the Santa Ana River approximately 1.5 to 2 miles inland (CDFG 2010a, 1932 record). Limited suitable sandy soils occur, but no dune habitat is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; chaparral sand-verbena was not observed on the Project site.

Aphanisma (Aphanisma blitoides)

Aphanisma is a CNPS List 1B.2 species. It typically blooms between March and June (CNPS 2011). This annual herb is found on the Channel Islands and from coastal Los Angeles County south to Baja California, Mexico (Hickman 1993). It is associated with sandy soils in coastal shrublands and bluffs (Hickman 1993). In the vicinity of the Project site, aphanisma has been historically reported from along coastal bluffs less than a mile northeast of the Project site (CDFG 2010a) and more recently from Newport Back Bay. It is also present on the Dana Point Headlands. Limited suitable habitat for this species is present on the Project site; however, the bluffs on the Project site are more disturbed than the extant populations on the Dana Point Headlands. Focused surveys for special status plant species were conducted in spring/summer 2009; aphanisma was not observed on the Project site.

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USACE Jurisdiction

Exhibit 7a

Newport Banning Ranch

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

(REV: 082411 JFG) R:\Projects\Newport\J015\Graphics\Bio\Ex7a_USACE.pdf

Balboa Boulevard
19th Street
Drainage A
Santa Ana River
18th Street
Drainage B
Whittier Avenue
Monrovia Avenue
17th Street
16th Street
Drainage C
West Coast Highway
Drainage D
Ticonderoga Street
Superior Avenue

Project Boundary
CDFG Jurisdiction

*Drainage boundary not to scale.
**Note: CDFG data provided by BonTerra Consulting.

Path: D:\Projects\Newport\J015\MXD\BioTech\Ex_BioTech_CDFG_JD.mxd

CDFG Jurisdiction

Exhibit 7b

Newport Banning Ranch

N
W E
S

600 300 0 600
Feet

BonTerra CONSULTING

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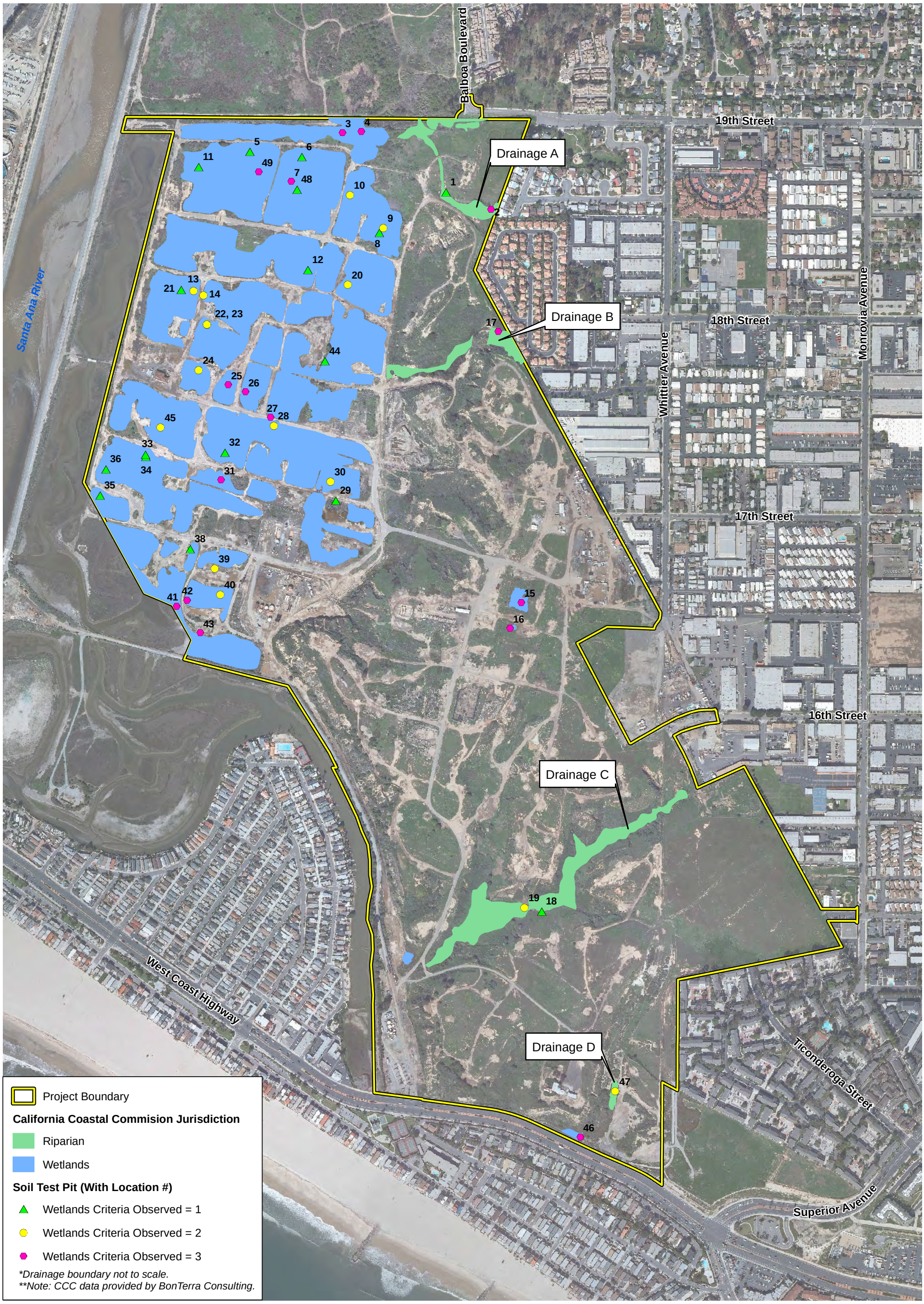

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CCC Jurisdiction

Exhibit 7c

Newport Banning Ranch

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

(REV: 082411 JFG) R:\Projects\Newport\J015\Graphics\Bio\Ex7c_ccc_jd.pdf

TABLE 3
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status			Habitat/Results of Surveys
	USFWS	CDFG	CNPS	
Abronia villosa var. *aurita* chaparral sand-verbena	–	–	1B.1	Limited suitable habitat (sandy soils), but no dune habitat; not observed during focused surveys.
Aphanisma blitoides aphanisma	–	–	1B.2	Limited disturbed suitable habitat; not observed during focused surveys.
Astragalus pycnostachyus var. *lanosissimus* Ventura marsh milk-vetch	FE	SE	1B.1	Suitable coastal marsh habitat; not observed during focused surveys.
Atriplex coulteri Coulter's saltbush	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Atriplex pacifica South Coast saltscale	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Atriplex parishii Parish's brittlescale	–	–	1B.1	Suitable habitat; not observed during focused surveys.
Atriplex serenana var. *davidsonii* Davidson's saltscale	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Calandrinia maritima seaside calandrinia	–	–	4.2	Suitable habitat; not observed during focused surveys.
Calochortus catalinae Catalina mariposa lily	–	–	4.2	Suitable habitat; not observed during focused surveys.
Calochortus weedii var. *intermedius* intermediate mariposa lily	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Calystegia sepium ssp. *binghamiae* Santa Barbara morning-glory	–	–	1A	Suitable habitat; not observed during focused surveys.
Centromadia australis ssp. parryi southern tarplant	–	–	1B.1	**Observed during focused surveys.**
Chaenactis glabriuscula var. *orcuttiana* Orcutt's pincushion	–	–	1B.1	No suitable habitat; not observed during focused surveys.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	FC	SE	1B.1	No suitable habitat; not observed during focused surveys.
Comarostaphylis diversifolia ssp. *diversifolia* summer holly	–	–	1B.2	No suitable habitat; not observed during focused surveys.
Chloropyron maritimum ssp. *maritimum* salt marsh bird's-beak	FE	SE	1B.2	Limited suitable habitat; not observed during focused surveys.
Dichondra occidentalis western dichondra	–	–	4.2	Suitable habitat; not observed during focused surveys.
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	–	–	1B.1	Limited suitable habitat; not observed during focused surveys.
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	FT	–	1B.2	No suitable habitat; not observed during focused surveys.
Dudleya multicaulis many-stemmed dudleya	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Dudleya stolonifera Laguna Beach dudleya	FT	ST	1B.1	No suitable habitat; not observed during focused surveys.

TABLE 3 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status			Habitat/Results of Surveys
	USFWS	CDFG	CNPS	
Eryngium aristulatum var. *parishii* San Diego button celery	–	–	1B.1	Suitable habitat; not observed during focused surveys.
Euphorbia misera cliff spurge	–	–	2.2	Suitable habitat; not observed during focused surveys.
Harpagonella palmeri Palmer's grapplinghook	–	–	4.2	Suitable habitat; not observed during focused surveys.
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	–	–	1A	Limited suitable habitat; not observed during focused surveys.
Hordeum intercedens vernal barley	–	–	3.2	Suitable habitat, however this species may not have been identifiable since the grassland areas were mowed at the time of the 2009 focused plant surveys; not observed during focused surveys.
Horkelia cuneata ssp. *puberula* mesa horkelia	–	–	1B.1	No suitable habitat; not observed during focused surveys.
Isocoma menziesii var. *decumbens* decumbent goldenbush	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Juncus acutus ssp. *leopoldii* southwestern spiny rush	–	–	4.2	**Observed during focused surveys.**
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	–	–	1B.1	Suitable habitat; not observed during focused surveys.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Lycium brevipes var. *hassei* Santa Catalina Island desert-thorn	–	–	1B.1	Outside known range; not observed during focused surveys.
Lycium californicum California box-thorn	–	–	4.2	**Observed during focused surveys.**
Nama stenocarpum mud nama	–	–	2.2	Suitable habitat; not observed during focused surveys.
Nasturtium gambelii Gambel's water cress	FE	ST	1B.1	Limited suitable habitat; not observed during focused surveys.
Navarretia prostrata prostrate vernal pool navarretia	–	–	1B.1	Suitable habitat; not observed during focused surveys.
Nemacaulis denudata var. *denudata* coast woolly-heads	–	–	1B.2	No suitable habitat; not observed during focused surveys.
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	–	–	1B.1	Suitable habitat; not observed during focused surveys.
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	–	–	4.2	Suitable habitat; not observed during focused surveys.
Quercus dumosa Nuttall's scrub oak	–	–	1B.1	Limited suitable habitat; not observed during focused surveys.
Sagittaria sanfordii Sanford's arrowhead	–	–	1B.2	No suitable habitat; not observed during focused surveys.
Senecio aphanactis chaparral ragwort	–	–	2.2	Suitable habitat; not observed during focused surveys.

TABLE 3 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR
IN THE PROJECT VICINITY

Species	Status			Habitat/Results of Surveys
	USFWS	CDFG	CNPS	
Sidalcea neomexicana Salt Spring checkerbloom	–	–	2.2	Suitable habitat; not observed during focused surveys.
Suaeda esteroa estuary seablite	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Suaeda taxifolia woolly seablite	–	–	4.2	**Observed during focused surveys.**
Symphyotrichum defoliatum San Bernardino aster	–	–	1B.2	Suitable habitat; not observed during focused surveys.
Verbesina dissita big-leaved crownbeard	FT	ST	1B.1	No suitable habitat; not observed during focused surveys.

LEGEND:

Federal (USFWS)
FE Endangered
FT Threatened
FC Federal Candidate

State (CDFG)
SE Endangered
ST Threatened

California Native Plant Society (CNPS) List Categories
List 1A Plants Presumed Extinct in California
List 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3 Plants About Which We Need More Information – A Review List
List 4 Plants of Limited Distribution – A Watch List

California Native Plant Society (CNPS) Threat Code Extensions
None Plants lacking any threat information
.1 Seriously Endangered in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 Fairly Endangered in California (20–80% of occurrences threatened)

Source: BonTerra Consulting 2011.

Ventura Marsh Milk-Vetch (Astragalus pycnostachyus var. lanosissimus)

Ventura marsh milk-vetch is a federally and State-listed Endangered species and a CNPS List 1B.1 species. It typically blooms between June and October (CNPS 2011). It is known from coastal marshes and seeps (Hickman 1993). This variety is known from one population in Oxnard, Ventura County (CNPS 2011). In the vicinity of the Project site, Ventura marsh milk-vetch has been historically reported from “La Bolsa” (assumed by the CNDDB to be Bolsa Bay) (CDFG 2010a, 1882 record). Suitable coastal marsh habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Ventura marsh milk-vetch was not observed on the Project site.

Coulter’s Saltbush (Atriplex coulteri)

Coulter’s saltbush is a CNPS List 1B.2 species. It typically blooms between March and October (CNPS 2011). This perennial herb occurs in alkaline or clay soils in coastal shrubland openings at elevations below 165 feet above msl (Hickman 1993). This species is perhaps native only to the southern coast of California (Hickman 1993). It is found in Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and San Diego Counties; the Channel Islands; and Baja California, Mexico (CNPS 2011). In the vicinity of the Project site, this species has been historically reported from Newport Bay (1932 record) and more recently from the San Joaquin Freshwater Marsh (CDFG 2010a). Suitable habitat for this species is present on the Project site.

Focused surveys for special status plant species were conducted in spring/summer 2009; Coulter's saltbush was not observed on the Project site.

South Coast Saltscale (Atriplex pacifica)

South Coast saltscale is a CNPS List 1B.2 species. It typically blooms between March and October (CNPS 2011). This annual herb occurs in coastal sage scrub on coastal bluffs (Jepson Flora Project 2010). It is found on the Channel Islands and from coastal Los Angeles County south to Baja California, Mexico (Hickman 1993; Jepson Flora Project 2010). In the vicinity of the Project site, South Coast saltscale has been historically reported from Newport Bay (1932 record) and from Laguna Beach and Crystal Cove State Park (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; South Coast saltscale was not observed on the Project site.

Parish's Brittlescale (Atriplex parishii)

Parish's brittlescale is a CNPS List 1B.1 species. It typically blooms between June and October (CNPS 2011). This annual herb occurs in alkaline or clay soils in flats or grasslands (Hickman 1993). It is found in southwestern California and the western Mojave Desert to Baja California, Mexico (Jepson Flora Project 2010). In the vicinity of the Project site, Parish's brittlescale has been historically reported from Laguna Beach (CDFG 2010a, 1907 record). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Parish's brittlescale was not observed on the Project site.

Davidson's Saltscale (Atriplex serenana var. davidsonii)

Davidson's saltscale is a CNPS List 1B.2 species. It typically blooms between April and October (CNPS 2011). This annual herb occurs along coastal bluffs, the interior margins of coastal salt marsh, or in alkali wetlands and playa habitats. It occurs from Santa Barbara County to San Diego County (CNPS 2011). In the vicinity of the Project site, Davidson's saltscale has been historically reported along the Santa Ana River approximately two miles inland (1932 record) and in the San Joaquin Freshwater Marsh (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009, and Davidson's saltscale was not observed on the Project site.

Seaside Calandrinia (Calandrinia maritima)

Seaside calandrinia is a CNPS List 4.2 species. It typically blooms between March and June, and uncommonly in February and August (CNPS 2011). This annual herb occurs in sandy soils and sea bluffs (Hickman 1993). It occurs along the southern coast to Baja California, Mexico and on the Channel Islands (Hickman 1993). In the vicinity of the Project site, this species has been reported from Laguna Beach (CDFG 2010a). The more common red maids (*Calandrinia ciliata)* was observed in the non-native grasslands on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; seaside calandrinia was not observed on the Project site.

Catalina Mariposa Lily (Calochortus catalinae)

Catalina mariposa lily is a CNPS List 4.2 species. This mariposa lily typically blooms between March and June and uncommonly blooms in February (CNPS 2011). This lily is a bulbous

perennial herb found in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. It is known to occur in Los Angeles, Orange, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties and on Santa Rosa, Santa Catalina, and Santa Cruz Islands (CNPS 2011). This species is present throughout Orange County. Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Catalina mariposa lily was not observed on the Project site.

Intermediate Mariposa Lily (Calochortus weedii var. intermedius)

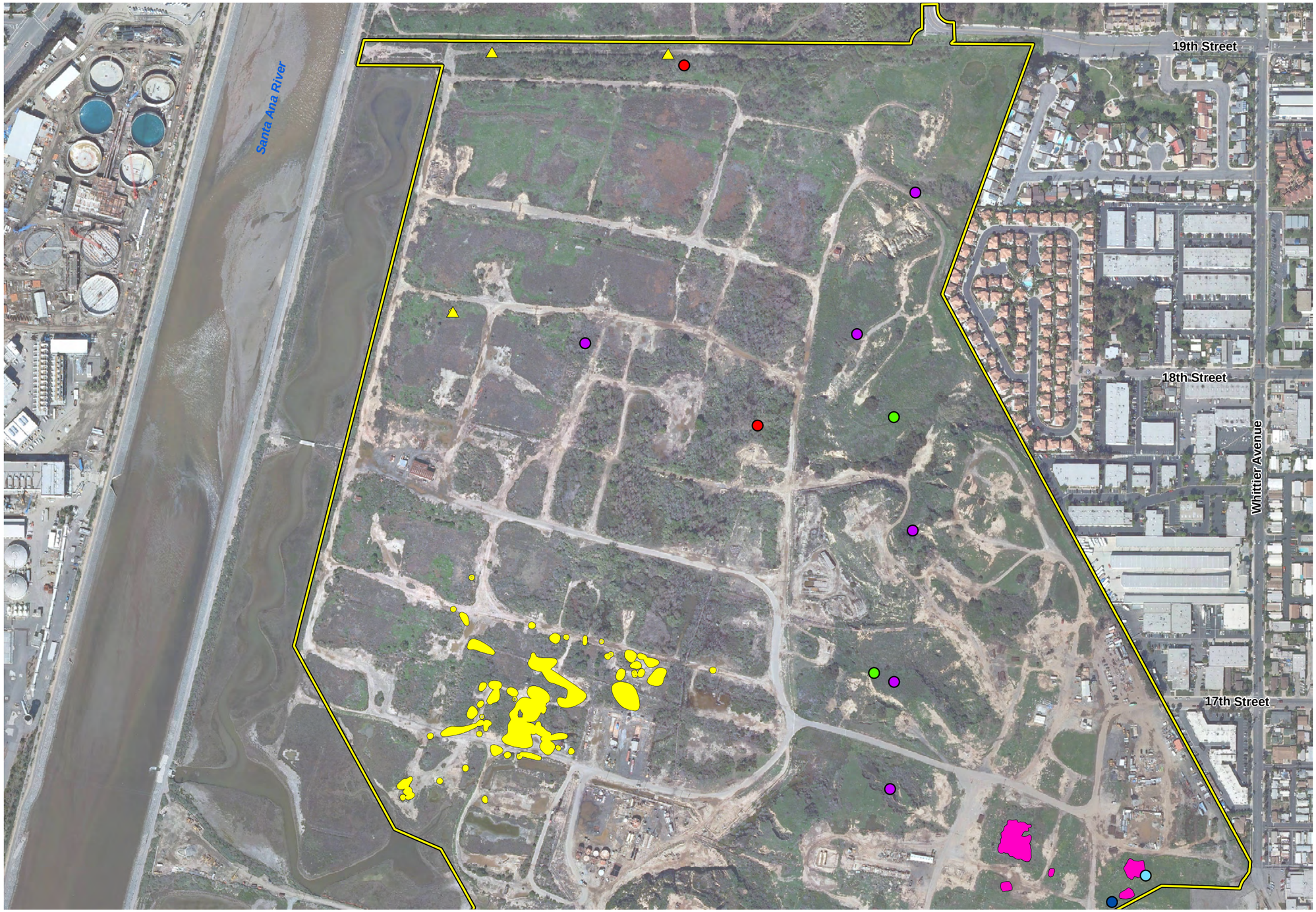
Intermediate mariposa lily is a CNPS List 1B.2 species. It typically blooms between May and July (CNPS 2011). This perennial bulbiferous herb occurs in coastal sage scrub and grassland on dry, rocky, open slopes below approximately 2,000 feet above msl (Munz 1974; Hickman 1993). In California, this species is known from Los Angeles, Orange, and Riverside Counties (CNPS 2011). In the vicinity of the Project site, this species has been reported from Laguna Canyon (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; intermediate mariposa lily was not observed on the Project site.

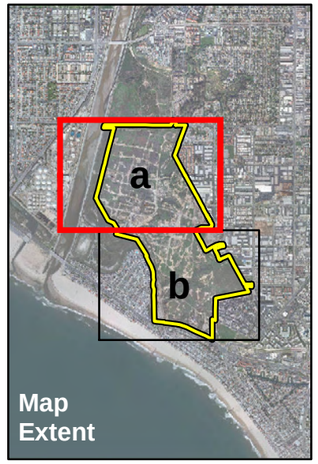
Santa Barbara Morning-Glory (Calystegia sepium ssp. binghamiae)

Santa Barbara morning-glory is a CNPS List 1A species. It typically blooms between April and May (CNPS 2011). This subspecies occurs in coastal marshes of the northern and central south coast (Hickman 1993). In the vicinity of the Project site, this species has been historically reported from the Bolsa Chica Ecological Reserve (CDFG 2010a; 1932 record). However, this species is presumed extinct (CNPS 2011). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Santa Barbara morning-glory was not observed on the Project site.

Southern Tarplant (Centromadia parryi ssp. australis)

Southern tarplant is a CNPS List 1B.1 species. It typically blooms between May and November (CNPS 2011). This annual herb occurs in saline, seasonally moist grasslands (Hickman 1993). It historically occurred from Santa Barbara County south to Baja California, Mexico. Many historical occurrences in Orange County have been extirpated (CNPS 2011). This species has been previously recorded on the Project site (GLA 2009b). A total of 24,747 individuals were observed during the 2009 focused surveys: 52 percent vegetative, 46 percent flowering, and 2 percent fruiting (Table 4; Exhibits 8a and 8b). Generally, southern tarplant occurred in alkali meadow or ruderal vegetation types, often along or within roads. Tarplant locations were typically in flat areas or within depressions. Commonly associated species included alkali heath, five-hook bassia, common woody pickleweed, crystalline iceplant, mule fat, and goldenbush.





Project Boundary

2010 Surveys

- Burrowing Owl

2009 Surveys

- Coastal California Gnatcatcher
- Coastal Cactus Wren
- Least Bell's Vireo
- Burrowing Owl
- San Diego Fairy Shrimp

Southern Tarplant

- Tarplant Location (Area too small to be accurately represented by polygon)
- Tarplant Population

Path: D:\Projects\Newport\J015\MXD\BioTech\ex_special_Status.mxd

Special Status Species Locations

Exhibit 8a

Newport Banning Ranch

N W E S

400 200 0 400

Feet

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- Project Boundary

2010 Surveys

- Burrowing Owl

2009 Surveys

- Coastal California Gnatcatcher
- Coastal Cactus Wren
- Least Bell's Vireo
- Burrowing Owl
- San Diego Fairy Shrimp

Southern Tarplant

- Tarplant Location (Area too small to be accurately represented by polygon)
- Tarplant Population

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Special Status Species Locations

Exhibit 8b

Newport Banning Ranch

N W E S

400 200 0 400

Feet

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TABLE 4
SOUTHERN TARPLANT OBSERVED ON THE PROJECT SITE

Location Number	Total Number of Plants Observed	Associated Species
1	120	alkali heliotrope, black mustard, mule fat, five-hook bassia, and tocalote/Maltese star thistle
2	157	mule fat, five-hook bassia, Spanish sunflower, and goldenbush
3	72	salt grass, alkali heath, goldenbush, and alkali heliotope
5	18	alkali heath, mule fat, common woody pickleweed, five-hook bassia, and goldenbush
6	48	goldenbush, five-hook bassia, alkali heath, and common woody pickleweed
7	350	goldenbush, alkali heath, common woody pickleweed, and five-hook bassia
8	22	goldenbush
9	470	alkali heath, common woody pickleweed, mule fat, alkali heliotrope, and goldenbush
10	710	goldenbush
11	150	mule fat, goldenbush, and pampas grass
12	9	mule fat, tocalote/Maltese star thistle, five-hook bassia, and goldenbush
13	19	Goodding's black willow, alkali heliotrope, mule fat, coyote brush, and goldenbush
14	700	mule fat, alkali heliotrope, and five-hook bassia
15	105	alkali heath, mule fat, and five-hook bassia
16	3	alkali heath and five-hook bassia
17	102	mule fat, alkali heath, five-hook bassia, arrowweed, and great marsh evening primrose
18	250	western goldenrod, five-hook bassia, and alkali heath
19	170	alkali heath, westen goldenrod, five-hook bassia, and sessileflower goldenaster
20	1,000	mule fat, five-hook bassia, alkali heath, and myoporum
21	26	western goldenrod, myoporum, telegraph weed, and five-hook bassia
22	112	alkali heath and sessileflower goldenaster
23	66	mule fat, alkali heath, five-hook bassia, sessileflower goldenaster, and crystalline iceplant
24	31	alkali heath
25	1,300	western goldenrod, alkali heath, mule fat, coyote brush, and Goodding's black willow
26	35	alkali heath
27	85	Mediterranean schismus, alkali heliotrope, five-hook bassia, and goldenbush
28	5,000	alkali heath, mule fat, tree tobacco, pampas grass, and myoporum
29	130	pampas grass, mule fat, and crystalline iceplant
30	125	alkali heath, common woody pickleweed, and mule fat
31	23	common woody pickleweed and pampas grass
32	130	common woody pickleweed, alkali heath, and mule fat
33	14	common woody pickleweed, alkali heath, and mule fat
34	790	mule fat, pampas grass, and alkali heliotrope
35	120	pampas grass, alkali heath, mule fat, and goldenbush
36	90	alkali heath, mule fat, pampas grass, and common woody pickleweed
37	3	mule fat and five-hook bassia
38	1,000	mule fat, common woody pickleweed, and alkali heath
39	28	five-hook bassia, mule fat, and common woody pickleweed

TABLE 4 (Continued)
SOUTHERN TARPLANT OBSERVED ON THE PROJECT SITE

Location Number	Total Number of Plants Observed	Associated Species
40	150	goldenbush, crystalline iceplant, five-hook bassia, and mule fat
41	375	goldenbush, five-hook bassia, crystalline iceplant, and mule fat
42	33	crystalline iceplant, alkali heath, goldenbush, and mule fat
43	4,300	mule fat, common woody pickleweed, alkali heath, pampas grass, and coyote brush
44	70	myoporum, goldenbush, and crystalline iceplant
45	160	alkali heath, mule fat, goldenbush, common woody pickleweed, and pampas grass
46	390	mule fat, goldenbush, alkali heath, and five-hook bassia
47	420	alkali heath, five-hook bassia, common woody pickleweed, and mule fat
48	17	tree tobacco, five-hook bassia, mule fat, alkali heath, and everlasting
49	3	salt grass and goldenbush
50	19	goldenbush and pampas grass
51	2,800	mule fat
52	8	alkali heliotrope, telegraph weed, and mule fat
53	25	alkali heliotrope, five-hook bassia, and mule fat
54	500	goldenbush, mule fat, and five-hook bassia
55	50	myoporum, bush sunflower, deerweed, goldenbush, and California buckwheat
56	9	common woody pickleweed, salt grass, California buckwheat, deerweed, and myoporum
57	22	myoporum, California buckwheat, and bush sunflower
58	110	pampas grass, goldenbush, common woody pickleweed, and salt grass
59	900	goldenbush, crystalline iceplant, alkali heath, five-hook bassia, and mule fat
60	400	pampas grass, goldenbush, common woody pickleweed, and salt grass
61	225	goldenbush, common woody pickleweed, pampas grass, and crystalline iceplant
62	56	goldenbush and mule fat
63	120	five-hook bassia, mule fat, goldenbush, and crystalline iceplant
64	2	alkai heliotrope and salt grass
Total	**24,747**	

Scientific Names for Associated Species

Baccharis pilularis - coyote brush
Baccharis salicifolia ssp. *salicifolia* - mule fat
Bassia hyssopifolia - five-hook bassia
Centaurea melitensis- tocalote/Maltese star thistle
Cortaderia selloana - pampas grass
Distichlis spicata- salt grass
Encelia californica - bush sunflower
Eriogonum fasciculatum - California buckwheat
Euthamia occidentalis- western goldenrod
Frankenia salina- alkali heath
Gnaphalium sp.- everlasting
Heliotropium curassavicum var. oculatum - alkali heliotrope
Heterotheca grandiflora- telegraph weed
Heterotheca sessiliflora - sessileflower goldenaster
Brassica nigra - black mustard
Isocoma menziesii - goldenbush
Acmispon glaber [Lotus scoparius] - deerweed
Mesembryanthemum crystallinum - crystalline iceplant
Myoporum laetum - myoporum
Nicotiana glauca- tree tobacco
Oenothera elata ssp. *hirsutissima* - great marsh evening primrose
Pluchea sericea - arrowweed
Pulicaria paludosa - Spanish sunflower
Salicornia pacifica [virginica] - common woody pickleweed
Salix gooddingii – Goodding's black willow
Schismus barbatus - Mediterranean schismus

Orcutt's Pincushion (Chaenactis glabriuscula var. orcuttiana)

Orcutt's pincushion is a CNPS List 1B.1 species. It typically blooms between January and August (CNPS 2011). This annual herb occurs in coastal dunes and bluffs below 330 feet above msl (Hickman 1993). It occurs along the southern coast of California down to Baja California, Mexico. In the vicinity of the Project site, Orcutt's pincushion has been historically reported from Laguna Beach (CDFG 2010a; 1924 record). No suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009, and Orcutt's pincushion was not observed on the Project site.

San Fernando Valley Spineflower (Chorizanthe parryi var. fernandina)

San Fernando Valley spineflower is a USFWS federal Candidate for listing, a State-listed Endangered species, and a CNPS List 1B.1 species. This annual herb grows in sandy soils in coastal sage scrub in relatively undisturbed habitat types. Typically blooming from April through June, it is currently known from two occurrences: one in Los Angeles County and one in Ventura County (CNPS 2011). This species was historically present in "coastal plains near Santa Ana" (CDFG 2010a). No suitable habitat for this species is present on the Project site because the coastal sage scrub with openings on the mesa has been mowed or disturbed by oilfield activities, or the coastal sage scrub is too dense. Focused surveys for special status plant species were conducted in spring/summer 2009; San Fernando Valley spineflower was not observed on the Project site.

Summer Holly (Comarostaphylis diversifolia ssp. diversifolia)

Summer holly is a CNPS List 1B.2 species. It typically blooms between April and June (CNPS 2011). This evergreen shrub occurs in chaparral along the Southern California coast and Peninsular Ranges to northern Baja California, Mexico (Hickman 1993). In the vicinity of the Project site, summer holly has been reported from upper Hobo Canyon in Laguna Beach (CDFG 2010a). No suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; summer holly was not observed on the Project site.

Salt Marsh Bird's-Beak (Cordylanthus maritimus ssp. maritimus)

Salt marsh bird's-beak is a federally and State-listed Endangered species and a CNPS List 1B.2 species. It typically blooms between May and October (Munz 1974). This annual herb occurs in coastal salt marshes below approximately 30 feet above msl (Hickman 1993). In California, this species is known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties (CNPS 2011). In the vicinity of the Project site, this species occurs in Newport Back Bay (CDFG 2010a). Limited suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; salt marsh bird's-beak was not observed on the Project site.

Western Dichondra (Dichondra occidentalis)

Western dichondra is a CNPS List 4.2 species. It typically blooms between March and July, and uncommonly in January and February (CNPS 2011). This perennial herb occurs on slopes and headlands, generally growing under shrubs (Hickman 1993). It occurs along the southern coast to Baja California, Mexico, and on the southern Channel Islands (Hickman 1993). In the vicinity of the Project site, this species has been reported from Pelican Hill (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant

species were conducted in spring/summer 2009; western dichondra was not observed on the Project site.

Blochman's Dudleya (Dudleya blochmaniae ssp. blochmaniae)

Blochman's dudleya is a CNPS List 1B.1 species. It typically blooms between April and June (CNPS 2011). This perennial herb occurs on open, rocky slopes, often in serpentine or clay-dominated soils (Hickman 1993). It is found from the southern central coast south to northern Baja California, Mexico (Hickman 1993). In the vicinity of the Project site, this species has been reported from the Dana Point Headlands (CDFG 2010a). Limited suitable habitat for this species occurs on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Blochman's dudleya was not observed on the Project site.

Santa Monica Dudleya (Dudleya cymosa ssp. ovatifolia)

Santa Monica dudleya is a federally listed Threatened species and a CNPS List 1B.2 species. It typically blooms between March and June (CNPS 2011). This perennial herb occurs on shaded, rocky slopes in the Santa Monica Mountains (Hickman 1993) and in the Santa Ana Mountains (Jepson Flora Project 2010) of Los Angeles and Orange Counties (CNPS 2011). No suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Santa Monica dudleya was not observed on the Project site.

Many-stemmed Dudleya (Dudleya multicaulis)

Many-stemmed dudleya is a CNPS List 1B.2 species. It typically blooms between April and July (CNPS 2011). This perennial herb, from a corm, occurs in heavy, often clayey soils in coastal sage scrub, chaparral, and coastal plains at elevations between sea level and 2,000 feet above msl (Hickman 1993; Munz 1974). It occurs in Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties (CNPS 2011). In the vicinity of the Project site, this species has been historically reported from Newport Back Bay (Jepson Flora Project 2010). There have also been verbal reports of this species on the Project site, but the locations were not confirmed and a map of these locations was not available (Bomkamp 2009). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; many-stemmed dudleya was not observed on the Project site.

Laguna Beach Dudleya (Dudleya stolonifera)

Laguna Beach dudleya is a federally and State-listed Threatened species and a CNPS List 1B.1 species. It typically blooms between May and July (CNPS 2011). This fleshy perennial occurs on north-facing cliffs and outcrops in the San Joaquin Hills of Orange County (Hickman 1993). In the vicinity of the Project site, this species has been reported from Laguna Canyon (Jepson Flora Project 2010). No suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Laguna Beach dudleya was not observed on the Project site.

San Diego button-celery (Eryngium aristulatum var. parishii)

San Diego button-celery is a CNPS List 1B.1 species. It typically blooms between April and June (CNPS 2011). This species occurs in coastal scrub, valley and foothill grasslands, and vernal pools, within Riverside and Orange Counties. It was recently found in Fairview Park, north of the Project site. Suitable habitat for this species is present on the Project site. Focused

surveys for special status plant species were conducted in spring/summer 2009; San Diego button-celery was not observed on the Project site.

Cliff Spurge (Euphorbia misera)

Cliff spurge is a CNPS List 2.2 species. It typically blooms between December and August (CNPS 2011). This deciduous shrub occurs on rocky slopes and coastal bluffs in coastal sage scrub. It occurs from Corona del Mar to Baja California, Mexico, on the southern Channel Islands, and in the western Sonoran Desert (Hickman 1993). In the vicinity of the Project site, this species has been reported from Corona del Mar State Beach (Jepson Flora Project 2010). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; cliff spurge was not observed on the Project site.

Palmer's Grapplinghook (Harpagonella palmeri)

Palmer's grapplinghook is a CNPS List 4.2 species. It typically blooms between March and May (CNPS 2011). This annual herb occurs occurs in dry sites in chaparral, coastal scrub, and grassland (Hickman 1993). This species occurs along the southern Coast and Peninsular Ranges, in Arizona, and in northwestern Mexico (Hickman 1993). In the vicinity of the Project site, this species has been reported from Crystal Cove State Park (Jepson Flora Project 2010). Suitable habitat for this species occurs on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Palmer's grapplinghook was not observed on the Project site.

Los Angeles Sunflower (Helianthus nuttallii ssp. parishii)

Los Angeles Sunflower is a CNPS List 1A species. It typically blooms between August and October (CNPS 2011). This perennial herb occurs in marshes. It historically occurred in Los Angeles, San Bernardino, and Orange Counties (Munz 1974). This subspecies was reported from Newport Lagoon in 1933 (Jepson Flora Project 2010) and was last seen in 1937 (Hickman 1993). It is now presumed to be extinct. The marsh habitat on the Project site has been disturbed by oilfield activities; therefore, only limited suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Los Angeles sunflower was not observed on the Project site.

Vernal Barley (Hordeum intercedens)

Vernal barley (*Hordeum intercedens*) is a CNPS List 3.2 species. It typically blooms between March and June and occurs in vernal pools; dry, saline streambeds; alkaline flats; and valley and foothill grasslands (CNPS 2011). This species is known from Fairview Park north of the project site. Focused surveys for special status plant species were conducted in spring/summer 2009; vernal barley was not observed on the Project site within the vernal pool and ephemeral pond area. In addition, it was not observed in the grassland and ruderal communities that are subject to mowing. However, this species may not have been identifiable in these grassland/ruderal areas since the Project site was mowed at the time of the 2009 special status plant survey. It should be noted that mowing activities have been conducted since the beginning of oilfield operations in order to reduce fuel proximate to pipelines, wells, and associated infrastructure, as well as fuel reduction for on-site and adjacent development.

Mesa Horkelia (Horkelia cuneata ssp. puberula)

Mesa horkelia is a CNPS List 1B.1 species. It typically blooms between February and July (CNPS 2011). This perennial herb occurs in dry, sandy chaparral from approximately 250 to 2,300 feet above msl (Munz 1974; Hickman 1993). In California, this species is known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Luis Obispo, and Ventura Counties, and possibly Riverside and San Diego Counties (CNPS 2011). In the vicinity of the Project site, this species has been reported from Pelican Hill (CDFG 2010a). No suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; mesa horkelia was not observed on the Project site.

Decumbent Goldenbush (Isocoma menziesii var. decumbens)

Decumbent goldenbush is a CNPS List 1B.2 species. It typically blooms between April and November (CNPS 2011). This shrub occurs in sandy, often disturbed areas and in chaparral and coastal scrub. This species occurs in Orange and San Diego Counties and in Baja California, Mexico. This species is historically known in the Corona Del Mar area (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; decumbent goldenbush was not observed on the Project site.

Southwestern Spiny Rush (Juncus acutus ssp. leopoldii)

Southwestern spiny rush is a CNPS List 4.2 species. It typically blooms between May and June (CNPS 2011). This perennial occurs in moist saline places like salt marshes and alkaline seeps (Hickman 1993). In California, it occurs along the central and southern coast, in the Sonoran Desert, and on the southern Channel Islands (Hickman 1993). This subspecies also occurs in Arizona; Baja California, Mexico; South America; and South Africa (Hickman 1993). In the vicinity of the Project site, this species has been reported from Upper Newport Bay (Jepson Flora Project 2010) and is known to occur on adjacent sites. Southwestern spiny rush was observed in the southeastern portion of the Project site during the 2009 special status plant surveys.

Coulter's Goldfields (Lasthenia glabrata ssp. coulteri)

Coulter's goldfields is a CNPS List 1B.1 species. It typically blooms between February and June (CNPS 2011). This annual herb occurs in salt marshes, vernal pools, and wet places at elevations below approximately 3,300 feet above msl (Munz 1974; Hickman 1993). It is found from southern San Diego County to Kern County and on Santa Rosa Island (Munz 1974). In the vicinity of the Project site, this species has been reported from Costa Mesa (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Coulter's goldfields was not observed on the Project site.

Robinson's Pepper-grass (Lepidium virginicum var. robinsonii)

Robinson's pepper-grass is a CNPS List 1B.2 species. It typically blooms between January and July (CNPS 2011). This annual herb occurs in dry soils in shrublands of southwestern California and Baja California, Mexico (Hickman 1993). In the vicinity of the Project site, this species has been reported from the Santa Ana Mountains (Jepson Flora Project 2010). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species

were conducted in spring/summer 2009; Robinson's pepper-grass was not observed on the Project site.

Santa Catalina Island Desert-thorn (Lycium brevipes var. hassei)

Santa Catalina Island desert-thorn is a CNPS List 1B.1 species. It typically blooms in June (CNPS 2011). This perennial shrub is presumed extinct (Hickman 1993). It occurred on Santa Catalina and San Clemente Islands on coastal bluffs and slopes (Hickman 1993). Reports of this variety from the southern coast are considered to be cultivated plants (Hickman 1993). The Project site is outside the known range of Santa Catalina Island desert-thorn. Focused surveys for special status plant species were conducted in spring/summer 2009; Santa Catalina Island desert-thorn was not observed on the Project site.

California box-thorn (Lycium californicum)

California box-thorn is a CNPS List 4.2 species. It typically blooms between March and August, though uncommonly as early as December (CNPS 2011). This perennial shrub occurs on coastal bluffs in coastal sage scrub (Hickman 1993). It is found along the southern coast and on the Channel Islands south to Baja California, Mexico (Hickman 1993). This species is known to occur on the Project site (GLA 2009b). This species was observed on the cliffs in southern coastal bluff scrub and Encelia scrub located on the southern and western edge of the Project site during the 2009 special status plant surveys.

Mud Nama (Nama stenocarpum)

Mud nama is a CNPS List 2.2 species. It typically blooms between January and July (CNPS 2011). This species occurs in intermittently wet areas in the southwestern U.S. from Los Angeles County to San Diego County, east to Texas, and in Mexico (Hickman 1993). This species has been reported just north of the Project site in Fairview Regional Park (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; mud nama was not observed on the Project site.

Gambel's water cress (Nasturtium gambelii)

Gambel's water cress is a federally listed Endangered species, a State-listed Threatened species, and a CNPS List 1B.1 species. It typically blooms between April and October (CNPS 2011). This perennial herb occurs in marshes, streambanks, and lake margins (Hickman 1993). It is found from the southern central coast south to Mexico (Hickman 1993). In the vicinity of the Project site, this species has been historically reported from the Huntington Beach Area (CDFG 2010a; 1908 record). The marsh habitat on the Project site has been disturbed by oilfield activities; therefore, only limited suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Gambel's water cress was not observed on the Project site.

Prostrate Vernal Pool Navarretia (Navarretia prostrata)

Prostrate vernal pool navarretia is a CNPS List 1B.1 species. It typically blooms between April and July (CNPS 2011). This annual herb occurs on alkaline floodplains and in vernal pools below approximately 2,000 feet above msl (Munz 1974; Hickman 1993). In California, this species is known from Alameda, Los Angeles, Merced, Monterey, Orange, Riverside, San Diego, and San Luis Obispo Counties and possibly San Bernardino County (CNPS 2011). In the

vicinity of the Project site, this species has been reported from Fairview Regional Park (CDFG 2010a). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; prostrate vernal pool navarretia was not observed on the Project site.

Coast Woolly-heads (Nemacaulis denudata var. denudata)

Coast woolly-heads is a CNPS List 1B.2 species. It typically blooms between April and September (CNPS 2011). This annual herb occurs on coastal beaches and dunes below approximately 330 feet above msl (Hickman 1993). It is found along the Southern California coast from Los Angeles County to northwestern Mexico (Hickman 1993; Munz 1974). In the vicinity of the Project site, this species has been reported from Newport Back Bay (CDFG 2010a). No suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009, and coast woolly-heads was not observed on the Project site.

Allen's Pentachaeta (Pentachaeta aurea ssp. allenii)

Allen's pentachaeta is a CNPS List 1B.1 species. It typically blooms between March and June (CNPS 2011). This annual herb occurs in openings of coastal sage scrub and in grasslands. It is known only from Orange County from fewer than 20 occurrences (CNPS 2011). In the vicinity of the Project site, this species has been reported from upper Limestone Canyon, approximately three miles north-northwest of El Toro (Jepson Flora Project 2010). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Allen's pentachaeta was not observed on the Project site.

Gairdner's Yampah (Perideridia gairdneri ssp. gairdneri)

Gairdner's yampah is a CNPS List 4.2 species. It typically blooms between June and October (CNPS 2011). This perennial herb occurs in coastal flats, grassland, and pine groves below approximately 1,150 feet above msl (Hickman 1993). It occurs along the California coast from Sonoma County south to San Diego County, though is scarce south of Monterey County (Hickman 1993). This subspecies was last seen in Orange County at the Bolsa Chica Ecological Reserve (1932 record). It is presumed extirpated from Orange County (Roberts 2008). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Gairdner's yampah was not observed on the Project site.

Nuttall's Scrub Oak (Quercus dumosa)

Nuttall's scrub oak is a CNPS List 1B.1 species. It typically blooms between February and April (CNPS 2011). This evergreen shrub generally occurs in sandy soils near the coast in chaparral or coastal sage scrub, is known to hybridize with scrub oak (*Quercus berberidifolia*), and occurs along the southern coast of California to Baja California, Mexico (Hickman 1993). It is known to occur in the San Joaquin Hills in the vicinity of the Project site and also on the Dana Point Headlands (Jepson Flora Project 2010; CNPS 2009). Limited suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; Nuttall's scrub oak was not observed on the Project site.

Sanford's Arrowhead (Sagittaria sanfordii)

Sanford's arrowhead is a CNPS List 1B.2 species. It typically blooms between May and October (CNPS 2011). This perennial occurs in ponds and ditches in the Central Valley from Del Norte County to Ventura County (Hickman 1993). According to the CNPS, this species is extirpated from Southern California and mostly extirpated from the Central Valley (CNPS 2011). No suitable habitat for this species is present on the Project site. Two historical collections are known from Orange County, but are thought to be mis-identifications of a more common species (Roberts 2008). Focused surveys for special status plant species were conducted in spring/summer 2009; Sanford's arrowhead was not observed on the Project site.

Chaparral Ragwort (Senecio aphanactis)

Chaparral ragwort is a CNPS List 2.2 species. It typically blooms between January and April (CNPS 2011). This annual herb occurs in drying alkaline flats in coastal sage scrub and chaparral. It occurs from central western California to Baja California, Mexico (Hickman 1993). It is considered to be rare in Los Angeles, Orange, and Riverside Counties (CNPS 2011). In the vicinity of the Project site, this species has been reported from Dana Point Harbor, the University of California, the Irvine Ecological Reserve, Loma Ridge, and San Clemente State Beach (Jepson Flora Project 2010). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; chaparral ragwort was not observed on the Project site.

Salt Spring Checkerbloom (Sidalcea neomexicana)

Salt spring checkerbloom is a CNPS List 2.2 species. It typically blooms between March and June (CNPS 2011). This annual is found on the south coast of southwestern California, in the Peninsular Ranges, San Gabriel Mountains, and San Bernardino Mountains east to New Mexico and south to northern Mexico (Hickman 1993). It is associated with alkaline springs and marshes and is uncommon (Hickman 1993). This species has been reported approximately 0.3 mile north-northeast of the intersection of Canada Chiquita Road and San Juan Creek Road in the City of San Juan Capistrano (CDFG 2010a). Suitable habitat for this species is present on the Project site; however, focused surveys for special status plant species were conducted in spring/summer 2009; checkerbloom was not observed on the Project site.

Estuary Seablite (Suaeda esteroa)

Estuary seablite is a CNPS List 1B.2 species. It typically blooms between May and October, but uncommonly through to January (CNPS 2011). This species occurs in marshes and swamps (coastal salt), occurring from Goleta Slough in Santa Barbara County south to Bahia Almejas in Baja California, Mexico (Ferren and Whitmore 1983). Most populations occur in ecological preserves. In Orange County, it occurs in Anaheim Bay, the Bolsa Chica Ecological Reserve, Newport Back Bay, and Corona del Mar (Roberts 2008). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; estuary seablite was not observed on the Project site.

Woolly Seablite (Suaeda taxifolia)

Woolly seablite is a CNPS List 4.2 species. It typically blooms between January and December (CNPS 2011). This evergreen shrub occurs on coastal bluffs and margins of salt marshes (Jepson Flora Project 2010). It is found along the southern coast and the Channel Islands from San Luis Obispo County south to Baja California, Mexico (CNPS 2011; Jepson Flora Project

2010). It is known from Newport Back Bay (Roberts 2008) and the Project site (GLA 2009b). This species was observed in the salt marsh and disturbed salt marsh as well as on the slopes overlooking the City of Newport Beach oil facilities at the southwest corner of the Project site during 2009 special status plant surveys.

San Bernardino Aster (Symphyotrichum defoliatum)

San Bernardino aster is a CNPS List 1B.2 species. It typically blooms between July and November (Munz 1974). This perennial rhizomatous herb occurs in grasslands, disturbed places, damp meadows, freshwater marshes, and coastal sage scrub below approximately 4,900 feet above msl (Munz 1974; Hickman 1993). In California, this species is known from Los Angeles, Orange, Riverside, San Bernardino, Kern, and San Diego Counties and possibly San Luis Obispo County (CNPS 2011). In the vicinity of the Project site, this species has been historically reported from Buena Park (1896), east Garden Grove (1932), and Anaheim Marsh (1933) (Jepson Flora Project 2010). Suitable habitat for this species is present on the Project site. Focused surveys for special status plant species were conducted in spring/summer 2009; San Bernardino aster was not observed on the Project site.

Big-leaved Crownbeard (Verbesina dissita)

Big-leaved crownbeard is a federally and State-listed Threatened species and CNPS List 1B.1 species. It typically blooms between April and July (CNPS 2011). It occurs on shrubby coastal slopes below approximately 330 feet above msl (Hickman 1993). In California, this species is known from only four occurrences near southern Laguna Beach (CNPS 2011). It is also known from Baja California, Mexico. No suitable habitat for this species is present on the Project site due to the lack of shrubby coastal slopes. Focused surveys for special status plant species were conducted in spring/summer 2009; big-leaved crownbeard was not observed on the Project site.

3.3.4 Special Status Wildlife

Table 5 provides a summary of each special status wildlife species known to occur in the Project region, and includes information on the status, likelihood for occurrence, and definitions for the various status designations. Note that they are grouped by type and listed in taxonomic order.

TABLE 5
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR
IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Invertebrates			
Branchinecta sandiegonensis San Diego fairy shrimp	FE	–	Suitable habitat; **observed during focused surveys conducted by GLA.**
Streptocephalus woottoni Riverside fairy shrimp	FE	–	Marginally suitable habitat; not observed during focused surveys conducted by GLA.
Fish			
Eucyclogobius newberryi tidewater goby	FE	SSC	No suitable habitat on the Project site; not expected to occur on the Project site; potentially suitable habitat adjacent to the Project site; limited potential to occur adjacent to the Project site.

TABLE 5 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Amphibians			
Spea [*Scaphiopus*] *hammondii* western spadefoot	–	SSC	Suitable habitat; low potential to occur based on survey results.
Anaxyrus [*Bufo*] *californicus* arroyo toad	FE	SSC	No suitable habitat; not expected to occur.
Rana draytonii California red-legged frog	FT	SSC	No suitable habitat; not expected to occur.
Reptiles			
Actinemys [Clemmys] *marmorata pallida* southwestern pond turtle	–	SSC	No suitable habitat; not expected to occur.
Phrynosoma coronatum [*blainvillii* population] coast [San Diego] horned lizard	–	SSC	Limited potentially suitable habitat; not expected to occur due to high levels of disturbance on site.
Aspidoscelis [*Cnemidophorus*] *hyperythra* [*beldingi*] [Belding's] orange-throated whiptail	–	SSC	Limited potentially suitable habitat; not expected to occur due to high levels of disturbance on site.
Anniella pulchra pulchra silvery legless lizard	–	SSC	Potentially suitable habitat; may occur.
Salvadora hexalepis virgultea coast patch-nosed snake	–	SSC	Limited potentially suitable habitat; not expected to occur due to high levels of disturbance on site.
Thamnophis hammondii two-striped garter snake	–	SSC	No suitable habitat; not expected to occur.
Crotalus ruber ruber northern red-diamond rattlesnake	–	SSC	Potentially suitable habitat, but outside current known range; not expected to occur.
Birds			
Pelecanus erythrorhynchos American white pelican (nesting colony)	–	SSC	No suitable foraging or roosting habitat on the Project site; suitable foraging habitat adjacent; not expected to occur on the Project site for foraging or roosting; nests outside Project region; not expected to occur for nesting.
Pelecanus occidentalis californicus California brown pelican (nesting colony, communal roosts)	FE	SE	No suitable foraging, roosting, or nesting habitat on the Project site; suitable foraging habitat adjacent; not expected to occur on the Project site for foraging, roosting, or nesting.
Phalacrocorax auritus double-crested cormorant (rookery sites)	–	WL	No suitable foraging or nesting habitat (rookery) on the Project site; suitable foraging habitat adjacent; not expected to occur on the Project site for foraging or nesting.
Ixobrychus exilis least bittern (nesting)	–	SSC	No suitable foraging or nesting habitat; during wetter years limited marginally suitable habitat may be present; generally not expected to occur for foraging or nesting; limited potential to occur in wetter years.
Plegadis chihi white-faced ibis (rookery sites)	–	WL	Limited potentially suitable foraging habitat; may occur for foraging; no suitable nesting habitat (rookery); not expected to occur for nesting; observed during 2009 surveys flying along the Santa Ana River channel adjacent to the Project site.
Dendrocygna bicolor fulvous whistling duck (nesting)	–	SSC	Limited potentially suitable habitat, but outside current range; not expected to occur.

TABLE 5 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Accipiter cooperii Cooper's hawk (nesting)	–	WL	Suitable foraging and nesting habitat; **observed foraging on the Project site;** may occur for nesting.
Accipiter striatus sharp-shinned hawk (nesting)	–	WL	Suitable foraging habitat, but outside breeding range; **observed foraging on the Project site;** not expected to occur for nesting.
Aquila chrysaetos golden eagle (nesting, non-breeding/wintering)	–	WL FP	Limited potentially suitable foraging habitat, but no suitable nesting habitat due to surrounding development; not expected to occur for foraging or nesting as this raptor is very rare in coastal lowlands of the region.
Buteo regalis ferruginous hawk (non-breeding wintering)	–	WL	Suitable foraging habitat, but outside breeding range; may occur for foraging during winter; not expected to occur for nesting.
Buteo swainsoni Swainson's hawk (nesting)	–	ST	Potentially suitable foraging habitat but outside breeding range; not expected to occur except as a very rare migrant.
Circus cyaneus northern harrier (nesting)	–	SSC	Suitable foraging and nesting habitat; **pair observed on the Project site, nest was suspected off site;** may occur for nesting on the Project site.
Elanus leucurus white-tailed kite (nesting)	–	FP	Suitable foraging and nesting habitat; **observed foraging on the Project site;** may occur for nesting on the Project site.
Haliaeetus leucocephalus bald eagle (nesting, non-breeding/wintering)	–	SE FP	No suitable foraging or nesting habitat; not expected to occur for foraging or nesting.
Pandion haliaetus osprey (nesting)	–	WL	No suitable foraging habitat on the Project site, but suitable foraging habitat adjacent to Project site; **observed perching on the Project site following foraging off site;** limited potentially suitable nesting habitat but not expected to occur for nesting due to high level of disturbance on site.
Falco columbarius Merlin (non-breeding/wintering)	–	WL	Suitable foraging habitat, but outside breeding range; **observed foraging on the Project site during previous surveys by GLA;** not expected to occur for nesting.
Falco mexicanus prairie falcon (nesting)	–	WL	Suitable foraging habitat, but no suitable nesting habitat; may occur for foraging; not expected to occur for nesting.
Falco peregrinus anatum American peregrine falcon (nesting)	–	SCD FP	Suitable foraging habitat, but no suitable nesting habitat; may occur for foraging; not expected to occur for nesting.
Laterallus jamaicensis coturniculus California black rail	–	ST FP	Limited potentially suitable habitat for wintering; no suitable nesting habitat; not expected to occur as likely extirpated from the region.
Rallus longirostris levipes light-footed clapper rail	FE	SE FP	Suitable foraging habitat, but no suitable nesting habitat; may occur for foraging; not expected to occur for nesting; observed during 2009 surveys in suitable habitat next to Project site.
Charadrius alexandrinus nivosus western snowy plover (nesting)	FT[a]	SSC[b]	Limited potentially suitable foraging and nesting habitat; may occur for foraging, but not expected to occur for nesting due to disturbance from oilfield activities.

TABLE 5 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Numenius americanus long-billed curlew (nesting)	–	WL	Limited suitable foraging habitat, but outside breeding range; may occur for foraging; not expected to occur for nesting.
Larus californicus California gull (nesting colony)	–	WL	Potentially suitable roosting and foraging habitat, but outside breeding range; **observed on the Project site;** not expected to occur for nesting.
Geochelidon nilotica gull-billed tern (nesting colony)	–	SSC	Limited potentially suitable foraging and nesting habitat; may occur for foraging and nesting.
Rynchops niger black skimmer (nesting colony)	–	SSC	No suitable foraging habitat on the Project site, but suitable foraging habitat adjacent to the Project site; no suitable nesting habitat on the Project site; not expected to occur for foraging or nesting.
Sternula [*Sterna*] *antillarum browni* California least tern (nesting colony)	FE	SE FP	No suitable foraging on the Project site, but suitable foraging habitat adjacent to the Project site; limited potentially suitable nesting habitat; not expected to occur for foraging or nesting due to high level of disturbance on the Project site.
Coccyzus americanus occidentalis western yellow-billed cuckoo (nesting)	FC	SE	Potentially suitable habitat, but outside current known breeding range; not expected to occur for foraging or nesting; may occur on the Project site as a very rare migrant.
Asio flammeus short-eared owl (nesting)	–	SSC	Potentially suitable foraging and nesting habitat; may occur for foraging; not expected to occur for nesting due to high level of disturbance on the Project site.
Asio otus long-eared owl (nesting)	–	SSC	Potentially suitable foraging and nesting habitat, but outside current known range; not expected to occur.
Athene cunicularia burrowing owl (burrow sites, some wintering sites)	–	SSC	Suitable foraging and nesting habitat; **observed wintering in 2008, 2009, and 2010;** absent during breeding surveys in 2008, 2009 and 2010.
Chaetura vauxi Vaux's swift (nesting)	–	SSC	Potentially suitable foraging habitat, but outside breeding range; expected to occur during migration; not expected to occur for nesting.
Cypseloides niger black swift (nesting)	–	SSC	Potentially suitable foraging habitat, but outside known breeding range; may occur as very rare migrant; not expected to occur for nesting.
Empidonax traillii extimus southwestern willow flycatcher (nesting)	FE	SE	Potentially suitable foraging and nesting habitat; not expected to occur because not observed during focused surveys in 2006, 2007, or 2009.
Lanius ludovicianus loggerhead shrike (nesting)	–	SSC	Suitable foraging and nesting habitat; **observed during previous surveys by GLA.**
Vireo bellii pusillus least Bell's vireo (nesting)	FE	SE	Suitable foraging and nesting habitat; **observed on the Project site during 2006, 2007, and 2009 focused surveys.**
Eremophila alpestris actia California horned lark	–	WL	Suitable foraging and nesting habitat; **observed during previous surveys by GLA.**
Progne subis purple martin (nesting)	–	SSC	Potentially suitable foraging, but outside known breeding range; may occur as very rare migrant.

TABLE 5 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Riparia riparia bank swallow (nesting)	–	ST	Potentially suitable foraging habitat, but outside known breeding range; may occur as a rare migrant.
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	–	SSC[c]	Suitable habitat; **observed on the Project site.**
Cistothorus palustris clarkae Clark's marsh wren	–	SSC	No suitable foraging or nesting habitat; during wetter years limited potentially suitable habitat may be present; limited potential to occur in wetter years.
Polioptila californica californica coastal California gnatcatcher	FT	SSC	Suitable habitat; **observed during 2006 and 2007 focused surveys conducted by GLA and 2009 focused surveys conducted by BonTerra Consulting.**
Dendroica petechia brewsteri yellow warbler (nesting)	–	SSC	Suitable foraging and nesting habitat; **observed on the Project site;** may occur for nesting.
Icteria virens yellow-breasted chat (nesting)	–	SSC	Suitable foraging and nesting habitat; **observed on the Project site.**
Aimophila ruficeps canescens southern California rufous-crowned sparrow	–	WL	Potentially suitable habitat, but outside current known range; not expected to occur.
Ammodramus savannarum grasshopper sparrow (nesting)	–	SSC	Potentially suitable habitat; not expected to occur due to high level of disturbance on the Project site.
Amphispiza belli belli Bell's sage sparrow (nesting)	–	WL	Potentially suitable habitat, but outside current known range; not expected to occur.
Passerculus sandwichensis beldingi Belding's savannah sparrow	–	SE	Limited suitable habitat; **observed during previous surveys by GLA and during 2009 surveys.**
Passerculus sandwichensis rostratus large-billed savannah sparrow (non-breeding/wintering)	–	SSC	Potentially suitable foraging habitat, but outside breeding range; may occur for foraging; not expected to occur for nesting.
Agelaius tricolor tricolored blackbird (nesting colony)	–	SSC	Potentially suitable foraging and marginally suitable nesting habitat; may occur for foraging; not expected to occur for nesting.
Mammals			
Sorex ornatus salicornicus Southern California saltmarsh shrew	–	SSC	Limited potentially suitable habitat; may occur.
Choeronycteris mexicana Mexican long-tongued bat	–	SSC	Outside current known range; not expected to occur.
Antrozous pallidus pallid bat	–	SSC	Potentially suitable foraging habitat, but no suitable roosting habitat; may occur for foraging; not expected to occur for roosting.
Corynorhinus townsendii Townsend's big-eared bat	–	SSC	Potentially suitable foraging, but no suitable roosting habitat; not expected to occur due to general lack of potential roost sites in coastal lowlands of the region and the high level of disturbance on the Project site.

TABLE 5 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR
IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Lasiurus cinereus hoary bat	–	SA	Suitable foraging and roosting habitat; may occur for foraging and roosting.
Lasiurus xanthinus western yellow bat	–	SSC	Potentially suitable foraging habitat, but no suitable roosting habitat; may occur for foraging; not expected to occur for roosting.
Eumops perotis californicus western mastiff bat	–	SSC	Potentially suitable foraging, but no suitable roosting habitat; not expected to occur due to lack of potential roost sites in coastal lowlands of the region and the high level of disturbance on the Project site.
Nyctinomops fermorosaccus pocketed free-tailed bat	–	SSC	Potentially suitable foraging habitat and limited suitable roosting habitat; may occur for foraging and roosting.
Nyctinomops macrotis big free-tailed bat	–	SSC	Limited potentially suitable foraging habitat and limited suitable roosting habitat; may occur for foraging and roosting.
Perognathus longimembris pacificus Pacific pocket mouse	FE	SSC	Limited suitable habitat; not expected to occur because not detected during previous trapping effort.
Microtus californicus stephensi south coast marsh vole	–	SSC	Limited potentially suitable habitat; may occur.
Neotoma lepida intermedia San Diego desert woodrat	–	SSC	Potentially suitable habitat; may occur.
Onychomys torridus ramona southern grasshopper mouse	–	SSC	Potentially suitable habitat; may occur.
Taxidea taxus American badger	–	SSC	Potentially suitable habitat; not expected to occur due to high level of disturbance on site and this specie's general absence from urban areas in the region.

LEGEND:

Federal (USFWS)		**State (CDFG)**	
FE	Endangered	SA	Special Animal
FT	Threatened	SE	Endangered
FC	Candidate	ST	Threatened
		SCD	State Candidate for Delisting
		SSC	Species of Special Concern
		WL	Watch List
		FP	Fully Protected

[a] Designation refers to Pacific coastal population only
[b] Designation refers to coastal and interior populations
[c] Designation refers to San Diego and Orange counties only
Source: BonTerra Consulting 2011.

Invertebrates

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)

San Diego fairy shrimp is a federally listed Endangered species. This species is restricted to vernal pools in coastal Southern California from Santa Barbara County south to extreme northwestern Baja California, Mexico. No individuals have been found in riverine waters, marine waters, or other permanent bodies of water (USFWS 1997b). This species typically occupies shallow pools (at depths of 2 to 12 inches) on chaparral-covered mesas (USFWS 1997b; Fugate 1993). In Orange County, this species has been observed in Fairview Park in Costa Mesa and near Antonio Parkway in Rancho Mission Viejo (USFWS 1997b).

Suitable ponding habitat for this species is present on the Project site, and this species was observed in two vernal pools (VP1 and VP2) and five temporary pool features (AD3, and pools E, G, I, and J) during focused surveys conducted by GLA. The vernal pools occur on the mesa near the eastern-central portion of the Project site and cover 0.32 acre (Exhibits 8a and 8b). The larger of the vernal pools is an artificial feature that formed in an abandoned baseball field. The pool supports a mix of herbaceous perennial hydrophytes, including creeping spikerush and saltgrass along with annuals including woolly marbles and waterfern (*Marsilea vestita*) that are indicative of vernal pool habitats in Southern California. Mule fat has colonized the pool and now accounts for a substantial component of the vegetative cover. The smaller vernal pool is very shallow and does not support a predominance of hydrophytes, but was identified as a vernal pool based on the presence of San Diego fairy shrimp adults (GLA 2009). In addition, a single individual San Diego fairy shrimp was detected in feature AD3, which covers 0.007 acre; however, even during the above-average rainfall years of 2009/2010 and 2010/2011 this feature failed to pond water for 14 days and does not represent viable habitat for the San Diego fairy shrimp.

The 2010/2011 rainfall season resulted in some additional man-made depressions on site that are capable of supporting San Diego fairy shrimp. These temporary pool features primarily occur within areas dominated by non-native grassland, ruderal, mulefat scrub, and disturbed areas. These pools are summarized below:

Feature E – Approximately 0.05 acre in size/old oilfield sump.

Feature G – Approximately 0.003 acre in size/oilfield excavation area.

Feature I – Approximately 0.03 acre in size/grassland formed by roadside berm.

Feature J – Approximately 0.09 acre in size/ grassland formed by roadside berm.

In total 0.500 acre of vernal pool and ponded areas support San Diego fairy shrimp on the project site (Table 6).

TABLE 6
POOLS/PONDED AREAS SUPPORTING SAN DIEGO FAIRY SHRIMP ON THE PROJECT SITE

Pool	Size (Acre)	Vegetation Type/Indicator
VP1	0.30	Disturbed Mulefat/San Diego Fairy Shrimp
VP2	0.02	Disturbed – Developed/San Diego Fairy Shrimp
AD3	0.007	Non-native, Upland grassland/San Diego Fairy Shrimp
E	0.05	Disturbed Mulefat/San Diego Fairy Shrimp
G	0.003	Non-native grassland/San Diego Fairy Shrimp
I	0.03	Non-native grassland/San Diego Fairy Shrimp
J	0.09	Non-native grassland/San Diego Fairy Shrimp
Total	0.500	

On December 12, 2007, the USFWS published a final rule designating 3,082 acres of land as critical habitat for the San Diego fairy shrimp in San Diego and Orange Counties (USFWS 2007b). The Project site is located in final critical habitat Unit 1, Subunit C for San Diego fairy shrimp.

Riverside Fairy Shrimp (*Streptocephalus woottoni*)

Riverside fairy shrimp is a federally listed Endangered species. This species occurs in vernal pools and ephemeral ponds in coastal Southern California from Ventura County south to northwestern Baja California, Mexico (USFWS 2005c). Riverside fairy shrimp typically occur in deep vernal pools on coastal plateaus and terraces that have emergent vegetation (USFWS 2005c). In Orange County, this species has been reported near Chiquita Ridge, the confluence of Aliso Creek and Oso Creek, south of Ortega Highway near Radio Tower Road, O'Neill Regional Park, and Cristianitos Creek; a population was extirpated near the confluence of Cañada Gobernadora and San Juan Creek (CDFG 2010a). Marginally suitable ponding areas are present on the Project site; however, Riverside fairy shrimp was not observed during focused surveys conducted on the Project site. Therefore, Riverside fairy shrimp is not expected to occur on the Project site.

On April 12, 2005, the USFWS published a rule designating 306 acres of land as critical habitat for the Riverside fairy shrimp in Orange, San Diego, and Ventura Counties (USFWS 2005c). The Project site is not located in final critical habitat for Riverside fairy shrimp.

Tidewater Goby (*Eucyclogobius newberryi*)

Tidewater goby is a federally listed Endangered species and a California Species of Special Concern. This species occurs in the upper end of lagoons where there is a mix of fresh and salt water. It also occurs in pure fresh water above lagoons (Harmsworth Associates 1998b). Although the range of this species extends from three miles south of the California-Oregon border (Tillas Slough in Del Norte County) south to Agua Hedionda Lagoon in San Diego County (USFWS 2008b), its range has been reduced by a variety of factors including channelization, pollution, and the introduction of exotic species (Swift et al. 1993). In the vicinity of the Project site, this species has been reported from Aliso Creek in Laguna Beach (CDFG 2010a). There is no suitable habitat for this species on the Project site; therefore, it is not expected to occur. This species has not been reported from the Newport Bay Ecological Reserve or the Santa Ana River (CDFG 2010a; UCDANR 2009); therefore, its potential to occur adjacent to the Project site is considered limited.

On January 31, 2008, the USFWS published a final rule revising critical habitat for the tidewater goby. The revised critical habitat designates 10,003 acres in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties (USFWS 2008b). The Project site is not located in the revised critical habitat for the tidewater goby.

Amphibians

Western Spadefoot (*Spea* [*Scaphiopus*] *hammondii*)

Western spadefoot is a California Species of Special Concern. This species inhabits grassland, coastal sage scrub, and other habitats with open sandy, gravelly soils. The western spadefoot is primarily a species of the lowlands, and frequents washes, river floodplains, alluvial fans, and alkali flats (Stebbins 2003) and breeds in quiet streams, vernal pools, and temporary ponds. This species is rarely observed outside the breeding season. This species occurs in the Great Valley and bordering foothills and in the Coast Ranges from Monterey Bay south to Baja California, Mexico (Stebbins 2003). From the Santa Clara River Valley in Los Angeles and Ventura Counties southward, an estimated 80 percent of habitat for this species has been lost (Stebbins 2003). In the vicinity of the Project site, this species has been reported from the San Joaquin Hills (near Moro Canyon and Shady Canyon) north of Laguna Beach (CDFG 2010a).

Suitable habitat for this species occurs on the Project site; however, however, this species has not been observed during focused fairy shrimp surveys and during hydrological monitoring on site from 2000, and 2007 through 2011 (Bomkamp 2009). Therefore, the potential for western spadefoot to occur on the Project site is considered low.

Arroyo Toad (*Anaxyrus* [*Bufo*] *californicus*)

Arroyo toad is a federally listed Endangered species and a California Species of Special Concern. This toad only occurs in streams of southwestern California and northwestern Baja California, Mexico (USFWS 1994a). In California, it primarily occurs along the Coast Ranges from San Luis Obispo County south to San Diego County, but also occurs at a few locations on the western edge of the desert (Jennings and Hayes 1994). The arroyo toad is generally found in semi-arid regions near washes or intermittent streams (Zeiner et al*.* 1988). However, this species' requires highly specialized habitat that has breeding pools within approximately 300 feet of juvenile and adult habitat consisting of streams with stable, sandy terraces (Jennings and Hayes 1994). Streams must be of low velocity with sand or gravel substrate; silt interferes with the development of tadpoles and is avoided (Harmsworth Associates 1998a). Within the Santa Ana River Watershed in Orange County, the arroyo toad was historically reported from Santiago Creek upstream of Irvine Lake, but it may now be extirpated (USFWS 1999b). No suitable habitat for this species is present on the Project site. Therefore, arroyo toad is not expected to occur on the Project site.

On February 9, 2011, the USFWS published a revised final rule designating critical habitat for arroyo toad (USFWS 2011). This revised final rule designated 98,366 acres of habitat in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties as critical habitat. The Project site is not located in designated critical habitat for this species.

California Red-legged Frog (*Rana draytonii*)

California red-legged frog is a federally Threatened species and a California Species of Special Concern. This frog has been extirpated from approximately 70 percent of its historic range and now primarily occurs only in the wetlands and streams of Central California (USFWS 2006c). This species prefers areas with deep ponds near streams that have slow water flow with emergent vegetation at the edge of the banks (Jennings and Hayes 1994). Adults feed primarily on aquatic and terrestrial invertebrates. In Orange County, red-legged frog is considered extirpated, although the recovery plan identifies the Santa Ana Mountains in the Cleveland National Forest as a potential area for species re-establishment (USFWS 2002). No suitable habitat is present for this species on the Project site. Therefore, the red-legged frog is not expected to occur on the Project site.

On March 17, 2010, the USFWS published a revised final rule designating 1,636,609 acres of critical habitat for the California red-legged frog in 27 California counties (USFWS 20010). The Project site is not located within the critical habitat for this species.

Reptiles

Southwestern Pond Turtle (*Actinemys* [*Clemmys*] *marmorata pallida*)

Southwestern pond turtle is a California Species of Special Concern. The southwestern pond turtle occurs primarily in freshwater rivers, streams, lakes, ponds, vernal pools, and seasonal wetlands and requires basking sites such as logs, banks, or other suitable areas above water level. This subspecies of the western pond turtle occurs from approximately the San Francisco Bay area south through the Coast Ranges into northern Baja California, Mexico

(Stebbins 2003). The western pond turtle is estimated to be in decline throughout 75 to 80 percent of its range (Stebbins 2003). The current range is similar to the historic range, but populations have become fragmented by agriculture and urban development. In addition to loss of habitat, this subspecies is also threatened by grazing, non-native species, and disease (Jennings and Hayes 1994). In the vicinity of the Project site, this subspecies has been reported from multiple locations; however, the location information is supressed (CDFG 2010a). No perennial streams or ponds suitable for this subspecies are present on the Project site. Therefore, southwestern pond turtle is not expected to occur on the Project site.

Coast [San Diego] Horned Lizard (*Phrynosoma coronatum* [*blainvillii* population])

Coast [San Diego] horned lizard (*blainvillii* population) is a California Species of Special Concern. The two former subspecies of the coast horned lizard, (*P. c. blainvillei* and *P. c. frontale*) have recently been eliminated in scientific literature, such as Stebbins (2003), based on current scientific studies on this species. Coast horned lizard is a small, spiny, somewhat rounded lizard that occurs in scrubland, grassland, coniferous forests, and broadleaf woodland vegetation types. The coast horned lizard prefers open areas for basking and loose, friable soil for burrowing (Stebbins 2003). The coast horned lizard occurs throughout much of California, west of the desert and Cascade-Sierra highlands south to Baja California, Mexico (Stebbins 2003). However, many of the populations in lowland areas have been reduced or eliminated due to urbanization and agricultural expansion (Stebbins 2003). Three factors have contributed to its decline: loss of habitat, overcollecting, and the introduction of exotic ants. In the vicinity of the Project site, this species has been reported from Pelican Hill (CDFG 2010a). Soils on the Project site were mapped as sandy loams or loamy sands; these soils may be suitable for coast horned lizard (Exhibit 3). Limited potentially suitable habitat for this species occurs on the Project site; however, due to the high levels of disturbance from oilfield activities, this species is not expected to occur on the Project site.

[Belding's] Orange-throated Whiptail (*Aspidoscelis* [*Cnemidophorus*] *hyperytha beldingi*])

[Belding's] orange-throated whiptail is a California Species of Special Concern. The two former subspecies of the orange-throated whiptail (*C. c. hyperythrus* and *C. c. beldingi*) have recently been eliminated in scientific literature, such as Stebbins (2003), based on current scientific studies on this species. The orange-throated whiptail occurs in washes and in open areas of sage scrub and chaparral with gravelly soils, often with rocks. It prefers the well drained, friable soil on slopes that are barren or only sparsely covered with vegetation and that have a southern exposure. This species occurs between sea level and 2,000 feet above msl in the western Peninsular Ranges from Orange and San Bernardino Counties south to Baja California, Mexico (Stebbins 2003). Approximately 75 percent of its former range has been lost to development, and remaining populations are highly fragmented (Stebbins 2003). In the vicinity of the Project site, this species has been reported on a bluff near Corona del Mar and in Laguna Canyon (CDFG 2010a). Limited potentially suitable habitat for this species occurs on the Project site; however, due to the high levels of disturbance from oilfield activities, this species is not expected to occur on the Project site.

Silvery Legless Lizard (*Anniella pulchra pulchra*)

Silvery legless lizard is a California Species of Special Concern. It is a small, secretive lizard that spends most of its life beneath the soil; under stones, logs, or debris; or in leaf litter. The silvery legless lizard requires areas with loose, sandy soil, moisture, warmth, and plant cover. It occurs in chaparral, pine-oak woodland, beach, and riparian vegetation types at elevations ranging from sea level to approximately 5,100 feet above msl (Stebbins 2003). The silvery legless lizard occurs in the Coast, Transverse, and Peninsular Ranges from Contra Costa County south to Baja

California, Mexico (Stebbins 2003). This subspecies is naturally rare since it specializes in substrates with a high sand content, but is also threatened by grazing, off-road vehicle activity, sand mining, beach erosion, excessive recreational use of coastal dunes, and the introduction of exotic plants (Jennings and Hayes 1994). Soils on the Project site were mapped as sandy loams or loamy sands; these soils may be suitable for silvery legless lizard (Exhibit 3). Potentially suitable habitat for this species occurs on the Project site; therefore, silvery legless lizard may occur.

Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*)

Coast patch-nosed snake is a California Species of Special Concern. It inhabits open sandy areas and rocky outcrops in scrub, chaparral, grassland, and woodland vegetation types. It occurs from sea level to approximately 7,000 feet above msl (Stebbins 2003). The coast patch-nosed snake ranges along the coast of California from San Luis Obispo County south into Baja California, Mexico. This subspecies is threatened by development, grazing, and fire control activities (Jennings and Hayes 1994). Limited potentially suitable habitat for this species occurs on the Project site; however, due to the high levels of disturbance from oilfield activities, this species is not expected to occur on the Project site.

Two-striped Garter Snake (*Thamnophis hammondii*)

Two-striped garter snake is a California Species of Special Concern. It occurs primarily in wetlands and is found in freshwater marsh and riparian habitats with perennial water. The two-striped garter snake feeds on small fishes, frogs, and tadpoles. The two-striped garter snake occurs from Monterey County south to Rio Rosario in Baja California, Mexico. It is considered locally rare in southwestern California. The freshwater marsh does not contain year-round water, and there are no perennial streams suitable for this species present on the Project site. Therefore, the two-striped garter snake is not expected to occur on the Project site.

Northern Red-Diamond Rattlesnake (*Crotalus ruber ruber*)

Northern red-diamond rattlesnake is a California Species of Special Concern. It inhabits open scrub, chaparral, woodland, and grassland vegetation types. This species ranges from approximately eastern Orange County and Riverside County south to Baja California, Mexico at elevations from sea level to about 5,000 feet above msl (Stebbins 2003; Zeiner et al. 1988). This species is threatened by development and human disturbance (Jennings and Hayes 1994). In the vicinity of the Project site, this species has been reported near Coyote Canyon near the Bonita Reservoir (CDFG 2010a). Potentially suitable habitat for this species occurs on the Project site; however, the Project site is outside the currently known range for this subspecies. Therefore, the northern red-diamond rattlesnake is not expected to occur on the Project site.

Birds

American White Pelican (*Pelecanus erythrorhynchos*)

American white pelican is a California Species of Special Concern. In Orange County, this species is a common winter visitor. Breeding occurs at large freshwater or saltwater lakes, usually on small islands or remote dikes, primarily in the Klamath Basin of Northern California (Zeiner et al. 1990a). American white pelicans occur in ponds, lakes, and estuaries where they dive for fish from the surface of the water rather than from the air like the California brown pelican (*Pelecanus occidentalis californicus*). Their diet consists almost entirely of fish although they may also prey upon amphibians and crustaceans. In the Project vicinity, the American

white pelican is known to winter at the mouth of the Santa Ana River and at the Bolsa Chica Ecological Reserve, Upper Newport Bay, and the San Joaquin Marsh (Hamilton and Willick 1996). Suitable foraging habitat is not present on the Project site; however, suitable foraging habitat is present immediately adjacent to the Project site in the USACE salt marsh restoration site and Santa Ana River mouth. Communal roost areas are not present on the Project site, and this species does not breed in the region. Therefore, American white pelican is not expected to occur on the Project site for foraging, roosting, or nesting.

California Brown Pelican (*Pelecanus occidentalis californicus*)

California brown pelican is a federally and State-listed Endangered species. The brown pelican was delisted by the USFWS along the Atlantic Coast, and in Florida and Alabama in 1985 (USFWS 2006b); however, the California population remains listed. A recently completed five-year review recommended the delisting of the California brown pelican (USFWS 2007d); the proposed rule to delist the California brown pelican was issued in February 2008 but has not yet been finalized (USFWS 2008c). The brown pelican is found in estuarine, marine subtidal, and marine pelagic waters along the California coast (Zeiner et al. 1990a). It breeds on the Channel Islands and on islands off the coast of Mexico (Zeiner et al. 1990a). The species feeds almost entirely on fish, caught by diving from 20 to 40 feet in the air, but it may occasionally also feed on crustaceans (Cogswell 1977; Zeiner et al. 1990a). It roosts on sandbars, pilings, jetties, breakwaters, mangrove islets, and offshore rocks and islands (Shields 2002). The brown pelican population, including all subspecies, declined dramatically due to the widespread use of dichlorodiphenyltrichloroethane (DDT); however, the population has increased substantially following the ban of this pesticide and other contaminants. The California brown pelican is known to occur in Upper Newport Bay. Suitable foraging habitat is not present on the Project site; however, suitable foraging habitat is present immediately adjacent to the Project site in the USACE salt marsh restoration site and Santa Ana River mouth. Communal roost areas are not present on the Project site, and the nearest breeding colonies to the Project site are located on the Channel Islands. Therefore, the California brown pelican is not expected to occur on the Project site for foraging, roosting, or nesting.

No critical habitat has been proposed for this species.

Double-crested Cormorant (*Phalacrocorax auritus*)

Double-crested cormorant is a CDFG Watch List species. The double-crested cormorant is a year-long resident along the entire coast of California near inland lakes and in salt, fresh, and estuarine waters (Zeiner et al. 1990a). This species primarily eats fish, which it catches by swimming after them underwater; it may also eat crustaceans and amphibians occasionally (Zeiner et al. 1990a). Cormorants roost beside water on offshore rocks, islands, steep cliffs, tree branches, wharfs, jetties, and/or transmission lines; perching sites must be free of vegetation (Bartholomew 1943; Zeiner et al. 1990a). Rookery sites are typically on wide rock ledges on cliffs, on rugged slopes beside water, or in tall live or dead trees. In California, many nesting colonies have been abandoned after human disturbance (Remsen 1978). In Orange County, there is a rookery at Anaheim Lake (Gallagher 1997). Suitable foraging habitat is not present on the Project site; however, suitable foraging habitat is present immediately adjacent to the Project site in the USACE salt marsh restoration site and Santa Ana River mouth. No suitable rookery sites occur on the Project site. Therefore, double-crested cormorant is not expected to occur on the Project site for foraging or nesting.

Least Bittern (*Ixobrychus exilis*)

Least bittern is a California Species of Special Concern. This species is a common summer visitor of the Salton Sea, but is rare to coastal Southern California (Garrett and Dunn 1981). The least bittern breeds in freshwater and brackish marshes with dense, tall growth of aquatic or semi-aquatic vegetation interspersed with clumps of woody vegetation and open water (Gibbs et al. 1992). This species eats mainly small fish, aquatic and terrestrial insects, and crayfish; they may also eat amphibians and small mammals (Zeiner et al. 1990a). Least bitterns rarely venture out of the dense marsh vegetation; because of this behavior, it is likely that many escape detection (Gallagher 1997). This species breeds locally in Orange County including at the San Joaquin Marsh and the Santa Ana River at the Victoria/Hamilton Bridge (Shuford and Gardali 2008). The freshwater marsh habitat on the Project site is limited in extent and is not associated with areas of open water where this species would forage. However, during a wetter year, the Project site would provide limited, marginally suitable habitat for this species. Therefore, least bittern is generally not expected to occur on the Project site, but it has a limited potential to occur in wetter years.

White-faced Ibis (*Plegadis chihi*)

White-faced ibis is a CDFG Watch List species. This former California Species of Special Concern has increased substantially in the region since the 1980s (Shuford and Gardali 2008) and now nests locally in the region (Unitt 2004). This species nests in extensive marshes with tall marsh plants (Garrett and Dunn 1981). The ibis feeds in fresh emergent wetland, shallow ponds or lakes, and the muddy ground of wet meadows of irrigated pastures and croplands (Zeiner et al. 1990a). It feeds by probing into the mud or in shallow water, consuming earthworms, insects, crustaceans, amphibians, small fish, and other miscellaneous invertebrates (Zeiner et al. 1990a). This species is known to occur at the San Joaquin Marsh and along lower San Diego Creek to Upper Newport Bay; the species may also nest at San Joaquin Marsh. During the 2009 surveys of the Project site, this species was observed flying over the Santa Ana River channel adjacent to the Project site. Limited, potentially suitable foraging habitat, but no suitable nesting habitat, occurs on the Project site. Therefore, white-faced ibis may occur on the Project site for foraging but is not expected to nest on the Project site.

Fulvous Whistling Duck (*Dendrocygna bicolor*)

Fulvous whistling duck is a California Species of Special Concern. During the first half of the century, this species was a locally common summer resident in California, mainly in the San Joaquin Valley and coastal Southern California, with active or historic breeding locations south to San Diego County (Grinnell and Miller 1944). Although there are no specific records of this species nesting in Orange County (Hamilton and Willick 1996), Orange County is considered to be within the historic range of this species (Shuford and Gardali 2008). Currently, this species is only regularly seen in Califoria at the southern end of the Salton Sea where it is a rare summer breeder (Patten et al. 2003; Shuford and Gardali 2008). This species occurs in freshwater and coastal marshes (Shuford and Gardali 2008). Limited potentially suitable habitat for this species occurs on the Project site; however, the Project site is outside the current range of the species. Therefore, fulvous whistling duck is not expected to occur on the Project site.

Cooper's Hawk (*Accipiter cooperi*)

Cooper's hawk is a CDFG Watch List species. Breeding populations of this former California Species of Special Concern have increased in recent years as they have expanded into urban areas (Shuford and Gardali 2008). Both resident and migratory populations exist in Orange

County. Wintering Cooper's hawks are often seen in wooded urban areas and native woodland vegetation types. Preferred nesting habitats are oak and riparian woodlands dominated by sycamores (*Platanus* sp.) and willows (*Salix* spp.). Cooper's hawks prey on small birds and rodents that live in woodland, scrub, and chaparral vegetation types. This species is relatively tolerant of man-altered landscapes; however, threats to this species include the loss of appropriate woodlands for breeding and foraging, collisions with man-made objects, and possibly pesticides (Curtis et al. 2006). Suitable foraging and nesting habitats for Cooper's hawk occur on the Project site, and the species was observed foraging during the surveys. Therefore, Cooper's hawk does forage and may also nest on the Project site.

Sharp-shinned Hawk (*Accipiter striatus*)

Sharp-shinned hawk is a CDFG Watch List species. It is considered to be a fairly common migrant and winter visitor in Orange County (Hamilton and Willick 1996). This raptor prefers forests and woodland habitats and generally avoids open habitats. The primary breeding range for this species is high-elevation forests in the western U.S., and boreal forests in Canada and Alaska. Although suitable foraging habitat for sharp-sinned hawk occurs on the Project site and the species was observed during the surveys, the Project site is outside the known breeding range of this species. Therefore, sharp-shinned hawk does forage but is not expected to nest on the Project site.

Golden Eagle (*Aquila chrysaetos*)

Golden eagle is a California Fully Protected species, a CDFG Watch List species, and is also protected by the Federal Bald Eagle Act. Habitat for this species generally consists of grasslands, deserts, savannas, and early successional stages of forest and shrub habitats. Broad expanses of open country are required for foraging while nesting is primarily restricted to rugged mountainous areas with large trees or on cliffs (Johnsgard 2001). The golden eagle is an uncommon resident throughout Southern California, except in the Colorado Desert and Colorado River where it is a casual winter visitor (Garrett and Dunn 1981). In Orange County, this species nests in the Santa Ana Mountains and Chino Hills (Hamilton and Willick 1996). Limited, potentially suitable foraging habitat, but no suitable nesting habitat, occurs on the Project site, and this raptor is very rare in the coastal lowlands of the region. Therefore, golden eagle is not expected to occur on the Project site for foraging or nesting.

Ferruginous Hawk (*Buteo regalis*)

Ferruginous hawk is a CDFG Watch List species. It occupies open, dry habitats such as grasslands, shrublands, rangelands, and plowed agricultural fields. This raptor only occurs as a winter resident in California (Bechard and Schmutz 1995). Along the coast of Southern California, it is rare to uncommon during the winter season (Garrett and Dunn 1981). Suitable foraging habitat for this species occurs on the Project site, but the Project site is outside the known breeding range of this species. Therefore, ferruginous hawk may forage but is not expected to nest on the Project site.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a State-listed Threatened species. This gregarious raptor migrates and forages in flocks that sometimes number in the thousands (England et al. 1997). It breeds over grassland-dominated habitats in North America where its prey generally consists of small rodents, birds, and reptiles. During winter and migration or for non-breeding individuals in summer, this raptor forages primarily on insects (England et al. 1997). It is a very rare migrant along the coast of Southern California (Garrett and Dunn 1981). This raptor forages at only a

few favored locations during migration (e.g., Borrego Valley of Anza Borrego State Park), or perhaps opportunistically, but generally appears to fast through much of migration. This species formerly bred along the Southern California coast, but breeding is now mostly limited to the Sacramento and San Joaquin Valleys, the extreme northeast of California, and Mono and Inyo Counties (England et al. 1997). This species is threatened by loss of habitat, habitat deterioration on the South American wintering grounds, human disturbance at nest sites, shooting, and possibly pesticides (Remsen 1978). The Project site is outside the known breeding range of this species and, although potentially suitable foraging habitat is present on the Project site, this species only occurs in the region as a rare migrant. Therefore, the Swainson's hawk may occur on the Project site as a very rare migrant, but it is not expected to forage or nest on the Project site.

Northern Harrier (*Circus cyaneus*)

Northern harrier is a California Species of Special Concern. It is a regular winter migrant in marshes and fields throughout Southern California, but is very scarce as a local breeder (Garrett and Dunn 1981). Some breeding populations may be resident, though the species appears to be nomadic, both between years and within the breeding season (Shuford and Gardali 2008). This raptor occurs year-round over open habitats, nesting on the ground within dense vegetation (Shuford and Gardali 2008). While once a relatively common species during fall, winter, and spring in undeveloped areas of the County, the northern harrier population is now greatly reduced and localized in distribution. This species is threatened by loss of habitat, pesticides (Ehrlich et al. 1988), and loss of suitable breeding habitat (Macwhirter and Bildstein 1996). Suitable foraging and nesting habitats for the Northern harrier occur on the Project site, and a potential breeding pair was observed during the surveys. However, the nest was suspected to have been off site in Talbert Regional Park.

White-tailed Kite (*Elanus leucurus*)

White-tailed kite is a California Fully Protected species. Kites nest primarily in oaks (*Quercus* sp.), willows, and sycamores and forage in grassland and scrub habitats. White-tailed kites show strong site fidelity to nest groves and trees. This species is an uncommon to locally fairly common resident in coastal Southern California, and a rare visitor and local nester on the western edge of the deserts (Garrett and Dunn 1981). Many populations in North America have declined in the 1980s and 1990s, including those in Southern California (Dunk 1995). This species has been reported nesting southeast of Newport Beach at the Bonita Canyon Reservoir (CDFG 2010a). Suitable foraging and nesting habitats for this species occur on the Project site, and this species was observed during the surveys. Therefore, white-tailed kite is expected to forage and may nest on the Project site.

Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagle is a State-listed Endangered species and a CDFG Fully Protected species, and is protected by the Federal Bald Eagle Act. This species was recently delisted by the USFWS and will be monitored for the next 20 years as part of the Post-delisting Monitoring Plan for the species, which is currently in draft form (USFWS 2007c). This species requires large bodies of water or free-flowing rivers with abundant fish and adjacent snags or perches, and nests in large, old-growth trees or snags in remote stands near water (Zeiner et al. 1990a). Through the 1970s, the bald eagle was very rare in fall and winter along the coast, with most records from Upper Newport Bay (Hamilton and Willick 1996). No suitable foraging or nesting habitat is present on the Project site. Therefore, bald eagle is not expected to occur on the Project site for foraging or nesting.

Osprey (*Pandion haliaetus*)

Osprey is a CDFG Watch List species. A former California Species of Special Concern, numbers of this raptor in California have increased in recent decades (Shuford and Gardali 2008). This species occurs near large bodies of water including rivers, lakes, reservoirs, bays, estuaries, and surf zones (Zeiner et al. 1990a). Along the coast, ospreys occur most commonly through the fall and winter although a few birds remain throughout the summer (Garrett and Dunn 1981). This species nests on platforms of sticks at the top of large snags, dead-topped trees, cliffs, or man-made structures (Zeiner et al. 1990a). For a period of time, ospreys did not breed in Orange County, with only one recorded incident from 1895 in Laguna Beach (Hamilton and Willick 1996). However, in 2006, ospreys nested successfully at Upper Newport Bay for the first time in recent years (CDFG 2010a). Although no suitable foraging habitat is present on the Project site, suitable foraging habitat is immediately adjacent to the Project site in the USACE salt marsh restoration site and the Santa Ana River. This species was observed perched on power poles on the Project site during the surveys. Limited, potentially suitable nesting habitat for this species is present on the Project site; however, due to the ongoing disturbance from oilfield activities, this species is not expected to nest on the Project site.

Merlin (*Falco columbarius*)

Merlin is a CDFG Watch List species. A former California Species of Special Concern, numbers of this raptor in California have increased in recent decades (Shuford and Gardali 2008). This species is generally a rare to uncommon migrant and winter visitor to California. It prefers vast open space areas such as estuaries, grasslands, and deserts where it hunts small flocking birds such as sandpipers, larks, sparrows, and pipits. This raptor is considered to be a rare but regular winter visitor in Orange County (Hamilton and Willick 1996). Suitable foraging habitat for the merlin occurs on the Project site, and the species was observed during the previous surveys conducted by GLA (2009). The Project site is outside the breeding range of this species; therefore, merlin is not expected to nest on the Project site.

Prairie Falcon (*Falco mexicanus*)

Prairie falcon is a CDFG Watch List species. Preferred foraging habitats include grassland and scrub vegetation types. Prairie falcons nest almost exclusively on cliffs (Clark and Wheeler 2001). It is an uncommon, year-round resident in the interior of Southern California (Garrett and Dunn 1981). The prairie falcon is an increasingly scarce winter resident and very rare summer resident along the Southern California coast (Unitt 1984; Lehman 1994; Hamilton and Willick 1996). In Orange County, the only place this species has been reported to potentially nest was in upper Gypsum Canyon, and nesting was not confirmed (Hamilton and Willick 1996; Harmsworth Associates 1999). Suitable foraging habitat is present on the Project site, but no suitable nesting habitat is present. Therefore, prairie falcon may forage on the Project site, but it is not expected to nest on the Project site.

American Peregrine Falcon (*Falco peregrinus anatum*)

American peregrine falcon is a California Fully Protected species that, due to recent population gains, was delisted from the federal list of Endangered species by the USFWS (1999a), and the California Fish and Game Commission voted for its removal on December 12, 2008, from the California list of Endangered species by the CDFG. As a delisted species, the peregrine falcon will continue to be periodically monitored until 2015 (USFWS 2006a). Peregrine falcons prey almost exclusively on birds and use a variety of habitats, particularly wetlands and coastal areas. This falcon is a rare summer resident in Southern California although it is more common during migration and the winter season. For nesting, this falcon prefers inaccessible areas such

as those provided by cliffs, high building ledges, bridges, or other such structures. Suitable foraging habitat is present on the Project site, but no suitable nesting habitat is present. Therefore, American peregrine falcon may forage on the Project site, but it is not expected to nest on the Project site.

California Black Rail (*Laterallus jamaicensis coturniculus*)

California black rail is a State-listed Threatened species and a California Fully Protected species. Black rails nest in salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation (Eddleman et al. 1994). This subspecies is a year-round resident of a few coastal bays from Bodega Bay to northwestern Baja California, Mexico. The largest population is present in northern San Francisco Bay (Eddleman et al. 1994). It is also found inland at the Salton Sea and the lower Colorado River (Garrett and Dunn 1981; Eddleman et al. 1994). In Orange County, this subspecies formerly occurred in Upper Newport Bay (CDFG 2010a, 1970 record), but since 1980 there have been only two accepted records from that location (Hamilton and Willick 1996). Although the marsh vegetation on the Project site may provide limited potentially suitable wintering habitat, it is not considered extensive or undisturbed enough to support nesting by this subspecies. Additionally, California black rail has likely been extirpated from the region. Therefore, California black rail is not expected to occur on the Project site.

Light-footed Clapper Rail (*Rallus longirostris levipes*)

Light-footed clapper rail is a federally and State-listed Endangered species and a California Fully Protected species. This rail is a secretive resident of coastal salt marshes of pickleweed and Pacific cordgrass (*Spartinia foliosa*) (Eddleman and Conway 1998). This subspecies occurs along the Pacific Coast from Bahia de San Quintin in Baja California, Mexico north to the Carpinteria Marsh in Santa Barbara County (Zembal and Massey 1981). There are between 8 and 19 marshes in California and 2 marshes in Baja California, Mexico that support this species (Zembal and Massey 1981; Zembal 1991). Although this subspecies has been observed at other localities in Orange County, Upper Newport Bay and the Seal Beach National Wildlife Refuge support the only substantial populations (Hamilton and Willick 1996). In addition to the localities listed above, this species has been observed at the Bolsa Chica and San Joaquin Marshes and in the restored cordgrass habitat at the mouth of the Santa Ana River (CDFG 2010a; GLA 2009b). This species could be heard calling from the USACE salt marsh restoration site adjacent to the Project site. Tidal marsh areas on the Project site are very limited in extent, with a chain-link fence separating the USACE salt marsh restoration site from the Project site. As a result, the Project site provides potentially suitable foraging habitat but not suitable nesting habitat for this subspecies. Therefore, the light-footed clapper rail may occur on the Project site for foraging, but not for nesting.

No critical habitat has been proposed for this species.

Western Snowy Plover (*Charadrius alexandrinus nivosus*)

Western snowy plover is a federally listed Threatened species and a California Species of Special Concern. The USFWS states that “The Pacific coast population of the western snowy plover is defined as those individuals that nest adjacent to or near tidal waters, and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays, and estuaries” (USFWS 1993). In California, this subspecies nests primarily on dune-backed beaches, barrier beaches, and salt-evaporation ponds; on the coast, it forages on beaches, tide flats, salt flats, and salt ponds (Page et al. 1995). The Pacific coast populations of the western snowy plover breed from southern Washington south through Baja California, Mexico

(USFWS 2005b). Historically this species nested along the beaches in Huntington Beach, but in Orange County, breeding is currently limited to the Bolsa Chica Ecological Reserve and the mouth of the Santa Ana River (Hamilton and Willick 1996). Migrants have been observed at the San Joaquin Marsh in the late summer and early fall, and this species can be observed in moderate numbers along the coast in winter (Hamilton and Willick 1996). The Project site provides limited potentially suitable foraging and nesting habitat for this species; however, due to the ongoing disturbance from oilfield activities, it is not expected to occur for nesting but may occur for foraging.

On September 29, 2005, the USFWS published a final critical habitat for the western snowy plover. This final rule designated 12,145 acres along the coasts of Washington, Oregon, and California. Within California, critical habitat was designated in San Diego, Orange, Los Angeles, Ventura, Santa Barbara, San Luis Obispo, Monterey, Santa Cruz, San Mateo, Marin, Mendocino, Humboldt, and Del Norte Counties (USFWS 2005b). Proposed critical habitat in Orange County includes the Bolsa Chica Ecological Reserve (Unit 22A) and the mouth of the Santa Ana River (Unit 23). The Project site is not located in areas proposed as critical habitat for the western snowy plover.

Long-billed Curlew (*Numenius americanus*)

Long-billed curlew is a CDFG Watch List species. This species is an uncommon to locally common winter visitor along most of the California coast and in the Central and Imperial Valleys where the largest flocks occur (Garrett and Dunn 1981; Zeiner et al. 1990a). In California, this species breeds in interior grasslands and wet meadows at higher elevations, usually adjacent to lakes or marshes (Grinnell and Miller 1944). A small population breeds in the Modoc and Klamath Basins of northeastern California (Shuford and Gardali 2008). Preferred wintering habitats consist of large coastal estuaries, upland herbaceous areas, and croplands (Zeiner et al. 1990a). This shorebird is a fairly common winter visitor along the coast of Orange County, favoring the Bolsa Chica Ecological Reserve and Upper Newport Bay but also using coastal estuaries such as the Santa Ana River mouth. Limited potentially suitable foraging habitat for this species is present on the Project site, but the Project site is outside the known breeding range for this species. Therefore, long-billed curlew may forage on the Project site, but it is not expected to nest on the Project site.

California Gull (*Larus californicus*)

California gull is a CDFG Watch List species. Formerly a California Species of Special Concern, the main threat to the species was eliminated with the political agreement in 1994 that stabilized water levels protecting the Mono Lake nesting colony (Shuford and Gardali 2008). This species nests in alkali and freshwater lakes east of the Sierra Nevada and the Cascades, with the largest colony nesting at Mono Lake (Zeiner et al. 1990a). Recently, however, one coastal colony developed in San Francisco Bay (Shuford and Gardali 2008). This species is an abundant visitor to coastal and interior lowlands in the non-breeding season (Grinnell and Miller 1944) where it prefers sandy beaches, mudflats, and rocky intertidal and pelagic areas of marine and estuarine habitats, as well as freshwater and salt marsh habitats (Zeiner et al. 1990a). California gulls are opportunistic, with a varied diet including small mammals, fish, birds, and invertebrates (Winkler 1996). In Orange County, this gull is abundant from fall to spring (Hamilton and Willick 1996). The Project site provides potentially suitable roosting and foraging habitats, and the California gull was observed during the surveys. This species does not nest in the Project region; therefore, it is not expected to nest on the Project site.

Gull-billed Tern (*Geochelidon nilotica*)

Gull-billed tern is a California Species of Special Concern. This species forages along inshore marine habitats such as the edges of shallow embayments; exposed or shallowly flooded mudflats; the surf line of sandy beaches; beach strands and dunes; tidal flats; freshwater drainages and canals; and over agricultural fields and scrub habitats (Shuford and Gardali 2008). The Salton Sea was the only known nesting location for this species in the western U.S. for many decades until nesting began in San Diego Bay in 1987 (Patten et al. 2003; Unitt 2004). It appears to be expanding its range northward along the Southern California coastline with multiple recent sightings in Orange County, including the Santa Ana River mouth in 2008 (Willick 2008). Nesting has occurred on earthen levees adjacent to saline ponds at both locations in California, but this species mostly nests on sandy beaches in the eastern U.S. (Parnell et al. 1995; Unitt 2004). Limited potentially suitable foraging and nesting habitat for this species occurs on the Project site. Therefore, gull-billed tern has the potential to occur on the Project site on rare occasions for foraging and nesting.

Black Skimmer (*Rynchops niger*)

Black skimmer is a California Species of Special Concern. This species forages over calm, shallow water, frequently at the mouths of rivers and channels that enter the sea (Garrett and Dunn 1981). This species is known for flying low over the water and using its lower mandible to cut the water's surface, thereby creating a small wake that may attract fish, which it then grabs with a sideways swing of its head or in later flights over the same location (Cogswell 1977). This species nests on gravel bars, low islets, and dikes (Garrett and Dunn 1981). In Orange County, this species nests regularly at the Bolsa Chica Ecological Reserve and Upper Newport Bay on man-made islands of dredged fill that were created for the California least tern (*Sterna antillarum browni*) (Gallagher 1997; CDFG 2010a). Suitable foraging habitat is not present on the Project site; however, suitable foraging habitat is immediately adjacent to the Project site in the USACE salt marsh restoration site and the Santa Ana River. Suitable nesting habitat is not present on the Project site. Therefore, black skimmer is not expected to occur on the Project site for foraging or nesting.

California Least Tern (*Sternula* [*Sterna*] *antillarum browni*)

California least tern is a federally and State-listed Endangered species and a California Fully Protected species. This migratory tern nests on sandy beaches from April through August along the coast of California from San Francisco south to Baja California, Mexico (Thompson et al. 1997). Although little is known of the least tern's winter distribution, it primarily winters in South America (Thompson et al. 1997; AOU 2010). In recent years, terns have colonized islands created from dredged fill such as those at the Bolsa Chica Ecological Reserve, Upper Newport Bay, and the Los Angeles Harbor. Breeding colonies in Orange County are at the Bolsa Chica Ecological Reserve, the Seal Beach National Wildlife Refuge, Upper Newport Bay, and the mouth of the Santa Ana River (Hamilton and Willick 1996; CDFG 2010a). Suitable foraging habitat is not present on the Project site; however, suitable foraging habitat is immediately adjacent to the Project site in the USACE salt marsh restoration site and along the Santa Ana River. Although limited potentially suitable nesting habitat for this subspecies is present on the Project site, California least tern is not expected to occur for foraging or nesting due to the high level of disturbance from ongoing oilfield activities on the Project site.

No critical habitat has been designated for this species.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Western yellow-billed cuckoo is a State-listed Endangered species and a federal Candidate for listing by the USFWS. The western yellow-billed cuckoo requires broad areas of old-growth riparian habitats dominated by willows and cottonwoods (*Populus* sp.) with dense understory vegetation. California's population was once estimated to be over 15,000 pairs, but in less than 100 years, it has declined to less than 30 pairs (Hughes 1999). Breeding cuckoos currently persist along the Santa Ana River in Riverside County, and perhaps along the San Luis Rey River in San Diego County (Zeiner et al. 1990a). Transients are rarely observed away from known breeding populations (Garrett and Dunn 1981). The Santa Ana River, specifically Prado Basin, is the only area in the region with riparian woodlands extensive enough to support breeding western yellow-billed cuckoos, and a few birds have persisted there. Potentially suitable habitat for this species is present on the Project site; however, the Project site is outside of the currently known breeding range for this species. Therefore, western yellow-billed cuckoo is not expected to occur on the Project site, though it may occur as a very rare migrant.

Short-eared Owl (*Asio flammeus*)

Short-eared owl is a California Species of Special Concern. This owl is an uncommon and local winter resident of coastal habitats in Southern California (Garrett and Dunn 1981). This species is considered to be a rare fall transient and winter resident of areas with extensive grassland and marsh habitats; it is less common in agricultural habitats (Lehman 1994). This owl hunts during day or night in open habitats such as marshes, grasslands, and tundra (Holt and Leasure 1993). In Orange County, this owl is most common at the San Joaquin Marsh, Upper Newport Bay, the Seal Beach National Wildlife Refuge, and the Bolsa Chica Ecological Reserve (Hamilton and Willick 1996). The Project site provides potentially suitable foraging and nesting habitat, and the short-eared owl may occur for foraging; however, the short-eared owl is not expected to occur for nesting due to the high level of disturbance from ongoing oilfield activities on the Project site.

Long-eared Owl (*Asio otus*)

Long-eared owl is a California Species of Special Concern. This owl hunts mostly at night over grasslands and other open habitats (Marks et al. 1994). Nesting occurs in dense trees such as oaks and willows where it occupies stick nests of other species, particularly raptors and corvids (Marks et al. 1994; Bloom 1994). This species is an uncommon resident in the deserts, and is quite rare coastally (Garrett and Dunn 1981). Long-eared owls have declined in Southern California due to the loss of riparian and grassland habitats to development (Marks et al. 1994). In Orange County, long-eared owls nest in the lower canyons of the Santa Ana Mountains and southern foothills (Hamilton and Willick 1996). The Project site provides potentially suitable habitat but is outside the long-eared owl's current range; this species is not expected to occur.

Burrowing Owl (*Athene cunicularia*)

Burrowing owl is a California Species of Special Concern. Although the burrowing owl was recently proposed as a State Candidate for listing, the CDFG determined that the species did not warrant listing in consideration of its population throughout the State. However, this species is considered a species of local concern because it is much less common in Southern California than in the Central Valley. In Southern California, burrowing owls breed and forage in grasslands and prefer flat to low, rolling hills in treeless terrain. They are small owls that nest in burrows, typically in open habitats most often along banks and roadsides. In the vicinity of the Project site, this species has been reported from Fairview Park in Costa Mesa, the Bolsa Chica Ecological Reserve, the Newport Ecological Reserve, and the University of California, Irvine

(CDFG 2010a). Suitable foraging habitat and burrow sites for this species are present on the Project site.

GLA observed one wintering burrowing owl along a linear earthen berm located near the eastern Project site boundary during the winter 2010 focused surveys (Exhibit 8a). This location is proximate to where a burrowing owl was detected in winter 2009 by BonTerra Consulting (Exhibit 8a). The owl was detected during three of four wintering season focused surveys conducted by GLA (January 14, 25, and 29, 2010) (GLA 2010a). GLA observed two wintering owls on the Project site during previous surveys in winter 2008 (GLA 2009b). No breeding owls were observed on the Project site during the spring–summer 2009 focused surveys or during previous breeding season surveys conducted by GLA (GLA 2009b). Breeding season surveys in 2010 by GLA also did not detect burrowing owls on the site (GLA 2010b).

Vaux's Swift (*Chaetura vauxi*)

Vaux's swift is a California Species of Special Concern. This species is a fairly common spring and fall transient and a rare and irregular visitor along the coast (Garrett and Dunn 1981). This species forages over most terrains and habitats while feeding exclusively on flying insects; it shows an apparent preference for foraging over rivers and lakes (Zeiner et al. 1990a). This species nests in large hollow trees within redwood (*Sequoia* sp.), Douglas fir (*Pseudotsuga menziesii*), and other coniferous forests in the Coast Ranges, the Sierra Nevada Mountains, and possibly the Cascade Range (Zeiner et al. 1990a). They occasionally nest in chimneys and buildings, and are often in large flocks (Bent 1940). Potentially suitable foraging habitat for this species is present on the Project site; however, this species does not nest in the Project region. The Vaux's swift is a common migrant in the region and is expected to fly over the Project site during spring and fall migrations.

Black Swift (*Cypseloides niger*)

Black swift is a California Species of Special Concern. This species is generally a rare and irregular transient in the coastal region (Garrett and Dunn 1981). This species nests in the Sierra Nevada, Cascade Range, San Gabriel, San Bernardino, and San Jacinto Mountains as well as in coastal bluffs and mountains from San Mateo County south to San Luis Obispo County (Zeiner et al. 1990a). Nesting typically occurs in a moist crevice or cave on a sea cliff above the surf or on cliffs behind or adjacent to waterfalls in deep canyons (Zeiner et al. 1990a). This species feeds exclusively on flying insects caught during foraging flights high in the air (Zeiner et al. 1990a). In Orange County, a few transients during spring and fall migrations have been reported (Hamilton and Willick 1996). Potentially suitable foraging habitat for this species is present on the Project site; however, this species does not nest in the Project region but may occur as a rare migrant over the Project site.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Southwestern willow flycatcher is a federally and State-listed Endangered species. This subspecies was once considered a common breeder in coastal Southern California. However, this subspecies has declined drastically due to loss of breeding habitat and nest parasitism by the brown-headed cowbird (*Molothrus ater*). This species occurs in riparian habitats along rivers, streams, or other wetlands where dense growths of willows, baccharis (*Baccharis* sp.), arrowweed (*Pluchea* sp.), tamarisk (*Tamarix* sp.), or other plants are present, often with a scattered overstory of cottonwood (USFWS 2005a). Potentially suitable willow riparian habitat for this subspecies is present on the Project site. However, southwestern willow flycatchers were not observed during the 2009 focused surveys or during previous focused surveys

conducted by GLA (GLA 2009b). Therefore, southwestern willow flycatcher is not expected to occur on the Project site because it was not observed during focused surveys.

On October 19, 2005, the USFWS published a final rule designating critical habitat for the southwestern willow flycatcher (USFWS 2005a). This final rule designated 120,824 acres in Arizona, California, Nevada, New Mexico, and Utah as critical habitat. Of that, 17,212 acres were designated in Kern, Santa Barbara, San Bernardino, and San Diego Counties. The Project site is not located in designated critical habitat for this species.

Loggerhead Shrike (*Lanius ludovicianus*)

Loggerhead shrike is a California Species of Special Concern. Shrikes inhabit open habitats with short vegetation such as pastures, agricultural fields, riparian areas, and open woodlands (Yosef 1996). They can often be found perched on fences and posts from which prey items (e.g., large insects, small mammals, and lizards) can be seen. This species was widely distributed across North America but has declined throughout most of its range in recent decades (Yosef 1996). It was considered to be a fairly common year-round resident in Southern California (Garrett and Dunn 1981), but has recently shown declines in its California population (Small 1994; Hamilton and Willick 1996). Suitable foraging and nesting habitat for loggerhead shrike is present, and the species was observed on the Project site during previous surveys conducted by GLA (2009).

Least Bell's Vireo (*Vireo bellii pusillus*)

Least Bell's vireo is a federally and State-listed Endangered species. This subspecies was formerly considered to be a common breeder in riparian habitats throughout the Central Valley and other low-elevation river systems in California and Baja California, Mexico (Franzreb 1989). It is now a rare and local summer resident of Southern California's lowland riparian woodlands. The least Bell's vireo breeds primarily in riparian habitats dominated by willows with dense understory vegetation (USFWS 1986). A dense shrub layer two to ten feet above ground is the most important habitat characteristic for this subspecies (Goldwasser 1981; Franzreb 1989). While destruction of lowland riparian habitats has played a large role in driving this subspecies to its present precarious situation, brood parasitism by brown-headed cowbirds is the most important factor in its decline (Garrett and Dunn 1981). Since local cowbird control programs have been very effective in maintaining some populations (Small 1994), the subspecies has begun to recover. In the vicinity of the Project site, this subspecies has been reported from Sand Canyon Wash/Reservoir, the Bonita Canyon Reservoir, Muddy Canyon in Crystal Cove State Park, and the University of California, Irvine (CDFG 2010a).

Suitable foraging and nesting habitat for this species is present on the Project site. Two solitary male least Bell's vireo were observed in the willow riparian habitats of the lowlands on the Project site during the 2009 focused surveys (Exhibit 8a). Two least Bell's vireo territories were also present in the same locations during previous focused surveys conducted by GLA in 2006 and 2007 (GLA 2009b).

On February 2, 1994, the USFWS published a Final Critical Habitat for the least Bell's vireo, designating approximately 37,560 acres of land in California's Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties (USFWS 1994c). The Project site is not located in designated critical habitat for this species.

California Horned Lark (*Eremophila alpestris actia*)

California horned lark is a CDFG Watch List species. This subspecies requires open habitats such as grasslands or agricultural fields that support little to no vegetation or short vegetation. It is found along the coast of Northern California, in the San Joaquin Valley, in the Coast Ranges south of San Francisco Bay, and in Southern California west of the deserts (Grinnell and Miller 1944). The horned lark occurs from Alaska and the Canadian arctic south to Mexico; the northern populations are strongly migratory and the southern populations are primarily year-round residents (Beason 1995). Along the Southern California coast, Garrett and Dunn (1981) found this species to be a common migrant and winter resident that remains to breed locally. In the vicinity of the Project site, this subspecies has been reported near the Laguna Reservoir and the Bonita Canyon Reservoir (CDFG 2010a). Suitable foraging and nesting habitat for this subspecies is present on the Project site, and California horned lark was observed during previous surveys conducted by GLA (2009).

Purple Martin (*Progne subis*)

Purple martin is a California Species of Special Concern. This species is an uncommon to rare local summer resident in a variety of woodland and low-elevation habitats in the State, where it is a rare migrant in spring and fall. This species feeds on flying insects as it forages over riparian areas, forests, and woodland; it is found in a variety of habitats during migration (Zeiner et al. 1990a). Purple martins are secondary cavity nesters, usually selecting a nest site in a conifer or sycamore (Gallagher 1997). This species has declined because of the loss of riparian habitat, removal of snags, and competition for nest cavities from European starlings and house sparrows (*Passer domesticus*) (Remsen 1978). In Orange County, this species nested at O'Neill Regional Park through 1981 and Upper Trabuco Canyon through 1988 (Hamilton and Wilick 1996; Gallagher 1997), but it has not been confirmed to breed in these areas in recent years and appears to now be extirpated as a breeder from Orange County. Potentially suitable foraging habitat is present on the Project site; however, the Project site is outside the purple martin's known breeding range. Therefore, purple martin may occur on the Project site as a rare migrant, but is not expected to occur for nesting.

Bank Swallow (*Riparia riparia*)

Bank swallow is a State-listed Threatened species. This species breeds in riparian areas with vertical cliffs and banks with fine-textured sandy soil in which it digs nesting holes (Zeiner et al. 1990a). Formerly more common as a breeder, it is estimated that only 110–120 colonies of this species remain within the State, primarily along the Sacramento and Feather Rivers in the northern Central Valley (CDFG BDB 2011). Other colonies persist along the central coast from Monterey to San Mateo Counties and at several counties in Northern California (Remsen 1978; CDFG 1989). Historically, this species nested at Huntington Beach, Newport Beach, and San Juan Capistrano, but no longer breeds in Orange County (Garrett and Dunn 1981; Hamilton and Willick 1996). It has been observed as a migrant in Upper Newport Bay and the San Joaquin Marsh (Hamilton and Willick 1996). Potentially suitable foraging habitat for this species is present on the Project site; however, the Project site is outside the known breeding range of the species. Therefore, the bank swallow may occur as a rare migrant, but is not expected to nest on the Project site.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)

Coastal cactus wren is a California Species of Special Concern. Some authorities consider the taxonomic status of cactus wrens in the southwestern U.S. to be uncertain (Proudfoot et al. 2000). Coastal populations of the cactus wren are found in Southern California from San

Diego County north to Ventura County (Garrett and Dunn 1981), and are declining due to loss of habitat. Except for the Banning Pass area west of Palm Springs, the coastal populations of cactus wren appear to be isolated from interior populations. On the coastal slope of Southern California, cactus wrens inhabit coastal sage scrub and alluvial sage scrub habitats that have sufficient amounts of prickly pear cactus and/or cholla. Suitable habitat for this subspecies is present on the Project site. Two cactus wren territories were incidentally observed during focused surveys for the coastal California gnatcatcher in spring 2009(Exhibits 8a and 8b). A breeding pair had an active nest in a large clump of prickly pear. The first nesting attempt failed, apparently due to an infestation of Argentine ants (*Linepithema humile*); however, a subsequent nesting attempt produced at least one fledgling. In addition, a solitary male was observed in the northeastern portion of the Project site.

Clark's Marsh Wren (*Cistothorus palustris clarkae*)

Clark's marsh wren is a California Species of Special Concern. This subspecies is restricted to freshwater and brackish marshes dominated by bulrushes (*Scirpus* sp.) or cattails (Shuford and Gardali 2008). This subspecies occurs along the coast of Southern California from the Los Angeles basin south to the Mexican border (Shuford and Gardali 2008). In Orange County it has been reported from Upper Newport Bay, the San Joaquin Marsh, and Huntington Central Park; in restored wetlands along the Santa Ana River in Anaheim; and possibly in the Seal Beach National Wildlife Refuge (Shuford and Gardali 2008). The freshwater marsh habitat in the lowland portion of the Project site is limited in extent and provides potentially suitable habitat for this species only during wetter years. Therefore, the Clark's marsh wren has a limited potential to occur on the Project site during wetter years.

Coastal California Gnatcatcher (*Polioptila californica californica*)

Coastal California gnatcatcher is a federally listed Threatened species and a California Species of Special Concern. This subspecies occurs in most of Baja California and Mexico's arid regions, but this subspecies is extremely localized in the U.S. where it predominantly occurs in coastal regions of highly urbanized Los Angeles, Orange, Riverside, and San Diego Counties (Atwood 1992). In California, this subspecies is an obligate resident of coastal sage scrub vegetation types. Brood parasitism by brown-headed cowbirds and loss of habitat to urban development have been cited as causes of the coastal California gnatcatcher population decline (Unitt 1984; Atwood 1990).

Suitable habitat for this subspecies occurs on the Project site. Focused surveys for the coastal California gnatcatcher were conducted in spring/summer 2009; this species was observed nesting on the Project site. A total of 17 coastal California gnatcatcher territories consisting of 16 breeding pairs and 1 solitary male were present on the Project site (Exhibits 8a and 8b) during the 2009 BonTerra Consulting surveys. During previous focused surveys, GLA observed a total of 15 pairs and 6 "single" individual gnatcatchers in 2006, and a total of 12 pairs and 6 "unpaired" male gnatcatchers in 2007 (GLA 2009b). During GLA's previous focused surveys, the surveyors noted that "most of the unpaired individuals were detected in highly fragmented areas of coastal sage scrub that contained a large percentage of non-native vegetation" (GLA 2009b).

On December 19, 2007, the USFWS published a Final Rule revising critical habitat for the coastal California gnatcatcher. The revised critical habitat designates 197,303 acres of land in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties (USFWS 2007a). The Project site is within the revised critical habitat (Unit 7) for this species.

Yellow Warbler (*Dendroica petechia brewsteri*)

Yellow warbler is a California Species of Special Concern. This subspecies breeds in Southern California (Dunn and Garrett 1997); most yellow warblers that occur in the Project region are migrants. This subspecies occurs in coastal areas from northwestern Washington south to western Baja California, Mexico (Dunn and Garrett 1997). In Southern California, yellow warblers breed locally in riparian woodlands, but during migration they can forage in a variety of different habitat types. This species is threatened by loss of habitat and nest parasitism by brown-headed cowbirds (Remsen 1978). Suitable foraging and nesting habitat for this subspecies is present on the Project site. Yellow warbler was observed on the Project site and may occur for nesting.

Yellow-breasted Chat (*Icteria virens*)

Yellow-breasted chat is a California Species of Special Concern. For nesting, this species requires dense, brushy tangles near water and riparian woodlands that support a thick understory. This species occurs as an uncommon and local summer resident in Southern California along the coast and in the deserts (Garrett and Dunn 1981). This large warbler was once a fairly common summer resident in riparian woodlands throughout California, but is now much reduced in numbers, especially in Southern California (Remsen 1978). This species is threatened by loss of habitat and possibly nest parasitism by the brown-headed cowbird (Remsen 1978). In the vicinity of the Project site, this species has been reported from Bonita Canyon Reservoir (CDFG 2010a). Suitable foraging and nesting habitat for this species is present on the Project site, and the yellow-breasted chat was incidentally observed during the 2009 focused surveys for the least Bell's vireo. A total of 17 individuals were observed with 10 to 12 territories in the lowlands and 1 terrotory in the large drainage on the mesa (Drainage C).

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Southern California rufous-crowned sparrow is a CDFG Watch List species. In coastal Southern California, rufous-crowned sparrows are considered fairly common in scrub vegetation types and other habitats with grasses and widely spaced, low shrubs. They also prefer slopes with rock outcroppings. This subspecies is present throughout the year in Southern California, but is threatened by loss of habitat due to development. In the vicinity of the Project site, this species has been reported from several locations in Laguna Beach (CDFG 2010a). Potentially suitable habitat for this subspecies is present on the Project site; however, the Project site is outside of the currently known range for this species. Therefore, the Southern California rufous-crowned sparrow is not expected to occur on the Project site.

Grasshopper Sparrow (*Ammodramus savannarum*)

Grasshopper sparrow is a California Species of Special Concern. It breeds in moderately open grasslands and prairies with patchy bare ground, generally avoiding grasslands with extensive shrub cover (Vickery 1996). This species forages exclusively on the ground, and exposed bare ground is critical. In California, this species breeds in most coastal counties, the western Sacramento Valley, and along the western edge of the Sierra Nevada (Vickery 1996). In the vicinity of the Project site, this species has been reported near San Diego Creek in Newport Beach (CDFG 2010a). Potentially suitable foraging and nesting habitat for this species occurs on the Project site; however, due to the high level of disturbance due to ongoing oilfield activities, this species is not expected to occur on the Project site.

Bell's Sage Sparrow (*Amphispiza belli belli*)

Bell's sage sparrow is a CDFG Watch List species. This coastal subspecies is an uncommon to fairly common local resident in the interior foothills of coastal Southern California. Bell's sage sparrow breeds in low, dense chamise chaparral and in dry scrub vegetation types, often with stands of cactus (Garrett and Dunn 1981). This species is threatened by loss of habitat due to development and likely nest parasitism by the brown-headed cowbird (Ehrlich et al. 1988). Potentially suitable foraging and nesting habitat for this subspecies occurs on the Project site; however, the Project site is outside of the current known range for this subspecies. Therefore, the Bell's sage sparrow is not expected to occur on the Project site.

Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)

Belding's savannah sparrow is a State-listed Endangered species. The Belding's subspecies of the savannah sparrow is a resident of salt marshes from Goleta in Santa Barbara County south to El Rosario in Baja California, Mexico (Unitt 1984). Nesting habitat is usually dominated by pickleweed, with foraging often occurring far out into the marsh (Zembal et al. 1988). This species prefers the upper littoral zone of tidal marshes (i.e., areas flooded only by high spring or storm tides) (Unitt 1984). In the vicinity of the Project site, this species has been reported from the mouth of the Santa Ana River (CDFG 2010a). Limited suitable habitat for this species occurs on the Project site. Belding's savannah sparrow was incidentally observed during the 2009 focused surveys and during previous surveys conducted by GLA (2009).

Large-billed Savannah Sparrow (*Passerculus sandwichensis rostratus*)

Large-billed savannah sparrow is a California Species of Special Concern. This subspecies breeds in the Colorado River Delta and was once common during winter from Santa Barbara south along beaches and coastal estuaries (Grinnell and Miller 1944; Garrett and Dunn 1981). It is now a rare to uncommon winter visitor in the region (Garrett and Dunn 1981; Hamilton and Willick 1996). Its decline is thought to be due to the drying up of marshes at the mouth of the Colorado River (Garrett and Dunn 1981) since this subspecies occurs in saline emergent wetlands (Zeiner et al. 1990a). Small numbers have been regularly detected at the Seal Beach National Wildlife Refuge, with several records from the Bolsa Chica Ecological Reserve and Upper Newport Bay, and one record at the San Joaquin Marsh (Hamilton and Willick 1996). Potentially suitable foraging habitat for this subspecies is present on the Project site; however, it does not nest in the Project region. Therefore, the large-billed savannah sparrow may occur on the Project site for foraging, but is not expected to nest on the Project site.

Tricolored Blackbird (*Agelaius tricolor*)

Tricolored blackbird is a California Species of Special Concern. These colonially nesting birds prefer to breed in marsh vegetation of bulrushes and cattails and have also been recorded nesting in willows, blackberries, and mustard (Beedy et al. 1991). During winter months, they are often found foraging in wet pastures, agricultural fields, and seasonal wetlands. Tricolored blackbirds are nomadic, wandering during the nonbreeding season and occupying colony sites intermittently (Unitt 1984). Potentially suitable foraging and marginally suitable nesting habitat for this species is present on the Project site. Therefore, the tricolored blackbird may occur on the Project site for foraging, but it is not expected to nest on the Project site.

Mammals

Southern California Saltmarsh Shrew (*Sorex ornatus salicornicus*)

Southern California saltmarsh shrew is a California Species of Special Concern. The saltmarsh shrew occurs in fresh and saltwater marshes; in dense vegetation adjacent to rivers, lakes, and streams; and also in grassland, chaparral, and woodland vegetation types (Wilson and Ruff 1999). In the vicinity of the Project site, this subspecies has been historically reported from Seal Beach (1968 record) and Newport Lagoon (1933 record) (CDFG 2010a). Potentially suitable habitat for this subspecies is associated with the saltmarsh areas of the lowland portion of the Project site. Therefore, Southern California saltmarsh shrew may occur on the Project site.

Mexican Long-tongued Bat (*Choeronycteris mexicana*)

Mexican long-tongued bat is a California Species of Special Concern. It occurs in deep mountain canyons with dense riparian vegetation, and ranges from the lower edge of the oak zone to the pine-fir belt in Arizona (NatureServe 2007) and feeds on nectar (CDFG BDB 2011). This bat species roosts in caves, rock fissures, old mines, and occasionally in buildings (NatureServe 2007). It occurs from San Diego County, California east to Arizona and throughout the mainland of Mexico (NatureServe 2007). In the vicinity of the survey area, this species has been reported from Tustin (CDFG 2010a). The Project site is outside of the current known range for this species; therefore, the Mexican long-tongued bat is not expected to occur on the Project site.

Pallid Bat (*Antrozous pallidus*)

Pallid bat is a California Species of Special Concern. It occurs in a wide variety of habitats including grasslands, shrublands and woodlands, but is most common in open habitats with rocky areas for roosting (Zeiner et al. 1990b). Roosting habitat consists of caves, crevices, mines, and occasionally hollow trees and buildings (Whitaker 1980; Zeiner et al. 1990b). This species occurs throughout California except for in the high Sierra Nevadas from Shasta to Kern Counties and in the northwestern portion of the state (Zeiner et al. 1990b). The Project site provides potentially suitable foraging habitat but no suitable roosting habitat for this species. Therefore, the pallid bat may forage but is not expected to roost on the Project site.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)

Townsend's big-eared bat is a California Species of Special Concern. The pale big-eared bat (*C. t. pallescens*) is one of two subspecies of the Townsend's big-eared bat that occurs throughout most of California (Williams 1986). The Townsend's big-eared bat, including both subspecies, is considered an uncommon year-round resident throughout much of California (Zeiner et al. 1990b). The Townsend's big-eared bat occupies a variety of habitats including oak woodlands, arid deserts, grasslands, and high-elevation forests and meadows (Hall 1981). Known roosting sites in California include mine tunnels, limestone caves, lava tubes, buildings, and other man-made structures (Williams 1986). The roosts, especially of larger breeding colonies, are especially susceptible to disturbance (Williams 1986). The Project site provides potentially suitable foraging but no suitable roosting habitat for this species. However, Townsend's big-eared bat is not expected to occur on the Project site due to the general lack of potential roost sites in coastal lowlands of the region and the high level of disturbance on the Project site.

Hoary Bat (*Lasiurus cinereus*)

Hoary bat is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. This species is considered the most widespread North American bat. Most occurrence records in Orange County are from the winter months with some recorded in the spring and fall; no occurences have been recorded in the summer so there is no evidence that it breeds in Orange County (Remington 2000). It occurs in open habitats or habitat mosaics with access to trees for cover (Zeiner et al. 1990b) and roosts in dense foliage of medium to large trees (Zeiner et al. 1990b). However, hoary bats still use trees in urban areas several miles away from undeveloped habitat (Remington 2000). In the vicinity of the Project site, this species has been reported from Newport Beach (CDFG 2010a). Suitable foraging and roosting habitat for this species is present on the Project site, and hoary bat may occur for foraging and roosting.

Western Yellow Bat (*Lasiurus xanthinus*)

Western yellow bat is a California Species of Special Concern. Little is known about its habitat, but it is known to roost in leafy vegetation (Best et al. 1998). This species is associated with dry thorny vegetation of the Mexican Plateau, coastal western Mexico, and the deserts of the southwestern U.S. (Best et al. 1998). The Project site provides potentially suitable foraging, but no suitable roosting habitat for this species; therefore, the western yellow bat may occur on the Project site for foraging.

Western Mastiff Bat (*Eumops perotis californicus*)

Western mastiff bat is a California Species of Special Concern. It is found in many open semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban areas (Zeiner et al. 1990b). The western mastiff bat is a very wide-ranging and high-flying insectivore that typically forages in open areas with high cliffs. It roosts in small colonies in crevices on cliff faces. It occurs in the southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through Southern California, and from the coast eastward to the Colorado Desert (Zeiner et al. 1990b). Threats to this subspecies include loss of habitat due to development, drainage of marshes, and conversion of land to agriculture (Williams 1986). In the vicinity of the Project site, this species has been reported from the San Joaquin Reserve and Huntington Central Park (CDFG 2010a). The Project site provides potentially suitable foraging but no suitable roosting habitat for this species. However, the western mastiff bat is not expected to occur on the Project site due to the lack of potential roost sites in coastal lowlands of the region and the high level of disturbance on the Project site.

Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*)

Pocketed free-tailed bat is a California Species of Special Concern. This species is known to occur in areas with ponds or streams or in arid deserts that provide suitable foraging habitats. It primarily roosts in crevices in rugged cliffs, slopes, and tall rocky outcrops (Best et al. 1998). This bat occurs in the southwestern U.S. to southern-central Mexico (Best et al. 1998). The Project site provides potentially suitable foraging and limited suitable roosting habitat (coastal bluffs) for this species; therefore, the pocketed free-tailed bat may occur on the Project site for foraging and roosting.

Big Free-tailed Bat (*Nyctinomops macrotis*)

Big free-tailed bat is a California Species of Special Concern. This species feeds primarily on moths caught while flying over water sources in suitable habitat in the southwestern U.S. This species prefers rugged, rocky terrain and roosts in crevices in high cliffs or rocky outcrops (Zeiner et al. 1990b). In the vicinity of the Project site, this species has been reported from Corona del Mar (CDFG 2010a). The Project site provides limited suitable foraging and limited suitable roosting habitat (coastal bluffs) for this species; therefore, the big free-tailed bat may occur on the Project site for foraging and roosting.

Pacific Pocket Mouse (*Perognathus longimembris pacificus*)

Pacific pocket mouse is a federally Endangered species and a California Species of Special Concern. This subspecies historically occurred coastally from Los Angeles County south to San Diego County (USFWS 1994b). This subspecies prefers coastal dune, coastal strand, and coastal sage scrub vegetation types with alluvial sands near the immediate coast (USFWS 1994b). All locations of this subspecies are known to occur within 2.5 miles of the coast. Currently, this species is only known to occur in four locations: one population in the Dana Point Headlands, two near San Mateo Creek in Camp Pendleton, and one north of the Santa Margarita River (USFWS 1998). This species was also reported from Spyglass Hill in the San Joaquin Hills (1971); however, a trapping effort in 1993 resulted in no detection of this species (USFWS 1998). Limited suitable habitat is present on the Project site; however, the Pacific pocket mouse is not expected to occur on the Project site because the species was not detected during a previous trapping effort on the Project site (LSA 1995).

No critical habitat has been designated for this species.

South Coast Marsh Vole (*Microtus californicus stephensi*)

South coast marsh vole is a California Species of Special Concern. This subspecies of the California vole has been reported from tidal marshes at Point Mugo in Ventura County and Playa del Rey and Sunset Beach in Los Angeles County (Williams 1986). Williams (1986) reports that human development in the region may have more severely restricted voles to the extant marshes, and catastrophic episodes of flooding or epidemics may pose a greater threat to this subspecies than to other California voles. In the vicinity of the Project site, this subspecies has been reported from Seal Beach and historically from Sunset Beach (CDFG 2010a; 1916 record). The Project site provides limited potentially suitable habitat for this species; therefore, south coast marsh vole may occur on the Project site.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)

San Diego desert woodrat is a California Species of Special Concern. This subspecies occupies arid areas with sparse vegetation, especially those comprised of cactus and other thorny plants. The San Diego subspecies is restricted to the Pacific slope in a range that stretches from San Luis Obispo south to northwestern Baja California, Mexico (Hall and Kelson 1959). Threats to this species involve the loss of habitat due to development. The Project site provides limited suitable habitat for this species; therefore, the San Diego desert woodrat may occur on the Project site.

Southern Grasshopper Mouse (*Onychomys torridus ramona*)

Southern grasshopper mouse is a California Species of Special Concern. It is a territorial, predatory rodent of grassland and sparse scrub vegetation types and prefers sandy soils. It occurs along the coast of Southern California from Los Angeles County south through San Diego County (Hall and Kelson 1959). The primary threat to this subspecies is the loss of habitat due to development. The Project site provides potentially suitable habitat for this subspecies; therefore, the southern grasshopper mouse may occur on the Project site.

American Badger (*Taxidea taxus*)

American badger is a California Species of Special Concern. This species occupies a wide variety of habitats and ranges throughout the State except for the coastal redwood forests of the extreme northwest. In Southern California, this species is most commonly associated with grasslands and other relatively open habitats with friable, uncultivated soils. In the vicinity of the Project site, this species has been reported as a road kill immediately adjacent to the Project site (CDFG 2010a). The Project site provides potentially suitable habitat for this species. However, due to the high level of disturbance due to ongoing oilfield activities and the general absence of this species from urban areas in the region, American badger is not expected to occur on the Project site.

4.0 PROJECT IMPACTS

This section presents a discussion of the impacts to biological resources as a result of implementation of the Proposed project. Impact assessments are based on an analysis that considers/evaluates the project design features, CEQA thresholds of significance, and Proposed project direct and indirect impacts on biological resources. All direct and indirect areas are assumed to be within the boundaries identified on Exhibit 9.

4.1 PROJECT DESIGN FEATURES

PDF 1 The Master Development Plan designates a minimum of 220 gross acres of the Project site as wetland restoration/water quality areas, habitat conservation, and restoration mitigation areas.

PDF 2 The Master Development Plan shall include a Habitat Restoration Plan (HRP) for the Habitat Areas. The HRP shall include provisions for the preservation and long−term maintenance of existing sensitive habitat and habitat created and restored by the Project.

PDF 3 As identified in the Master Development Plan, the Habitat Areas to be restored as project design features will be subject to the same five-year Maintenance and Monitoring Program implemented for areas restored as mitigation.

PDF 4 The Master Development Plan requires that street lights be utilized only in key intersections and safety areas. The Planned Community Development Plan requires that a “dark sky” lighting concept be implemented within areas of the Project that adjoin habitat areas. Light fixtures within these areas will be designed for “dark sky” applications and adjusted to direct/reflect light downward and away from adjacent habitat areas. The Newport Banning Ranch Planned Community Development Plan will restrict exterior house lighting to minimize light spillage into adjacent habitat areas.

4.2 THRESHOLDS OF SIGNIFICANCE

The environmental impacts relative to biological resources are assessed using impact significance criteria that mirror the policy in CEQA Section 21001(c) of the *California Public Resources Code.* Accordingly, the State Legislature has established it to be the policy of the State to:

> Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities.

Determining whether a project may have a significant effect or impact plays a critical role in the CEQA process. According to Section 15064.7 of the CEQA Guidelines (Thresholds of Significance), each public agency is encouraged to develop and adopt, by ordinance, resolution, rule or regulation, their own significance thresholds to determine the impact of environmental effects. A significance threshold defines the quantitative, qualitative, or performance limits of a particular environmental effect. If these thresholds are exceeded, the agency would consider it to be significant.

In the development of significance thresholds for impacts to biological resources, the CEQA Guidelines provide guidance primarily in Section 15065, Mandatory Findings of Significance, and Attachment G, Environmental Checklist Form. Section 15065(a) of the CEQA Guidelines states that a Project may have a significant effect if it:

> …has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species.

Appendix G of the CEQA Guidelines is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including Candidate, Sensitive, or Special Status Species; riparian habitat or other special status natural communities; federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and adopted habitat conservation plans. These factors are typically considered through the checklist of questions answered to determine a project's appropriate environmental documentation (i.e., Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report [EIR]). Because these questions are derived from standards employed in other laws, regulations and commonly used thresholds, it is reasonable to use these standards as a basis for defining significance thresholds. For the purpose of this analysis, impacts to biological resources are considered significant (before calculating the offsetting impacts of mitigation measures) if the proposed Project would:

Threshold 1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.

Threshold 2 Have a substantial adverse effect on any riparian habitat or other special status natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.

Threshold 3 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Threshold 4 Interfere substantially with the movement of any native or migratory fish or wildlife species; inhibits established native resident or migratory fish or wildlife corridors; or impedes the use of native wildlife nursery sites.

Threshold 5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Conflict with any applicable plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

In order to evaluate whether an impact on biological resources would result in a "substantial adverse effect", both the resource itself and how that resource fits into a regional context must be considered. The proposed Project's regional setting includes the Central/Coastal Subregion NCCP/HCP. This subregion is bound by State Route (SR) 55 and SR-91 to the north; the Santa Ana River and Pacific Ocean to the west; El Toro Road and Interstate (I) 5 to the east; and the Pacific Ocean to the south.

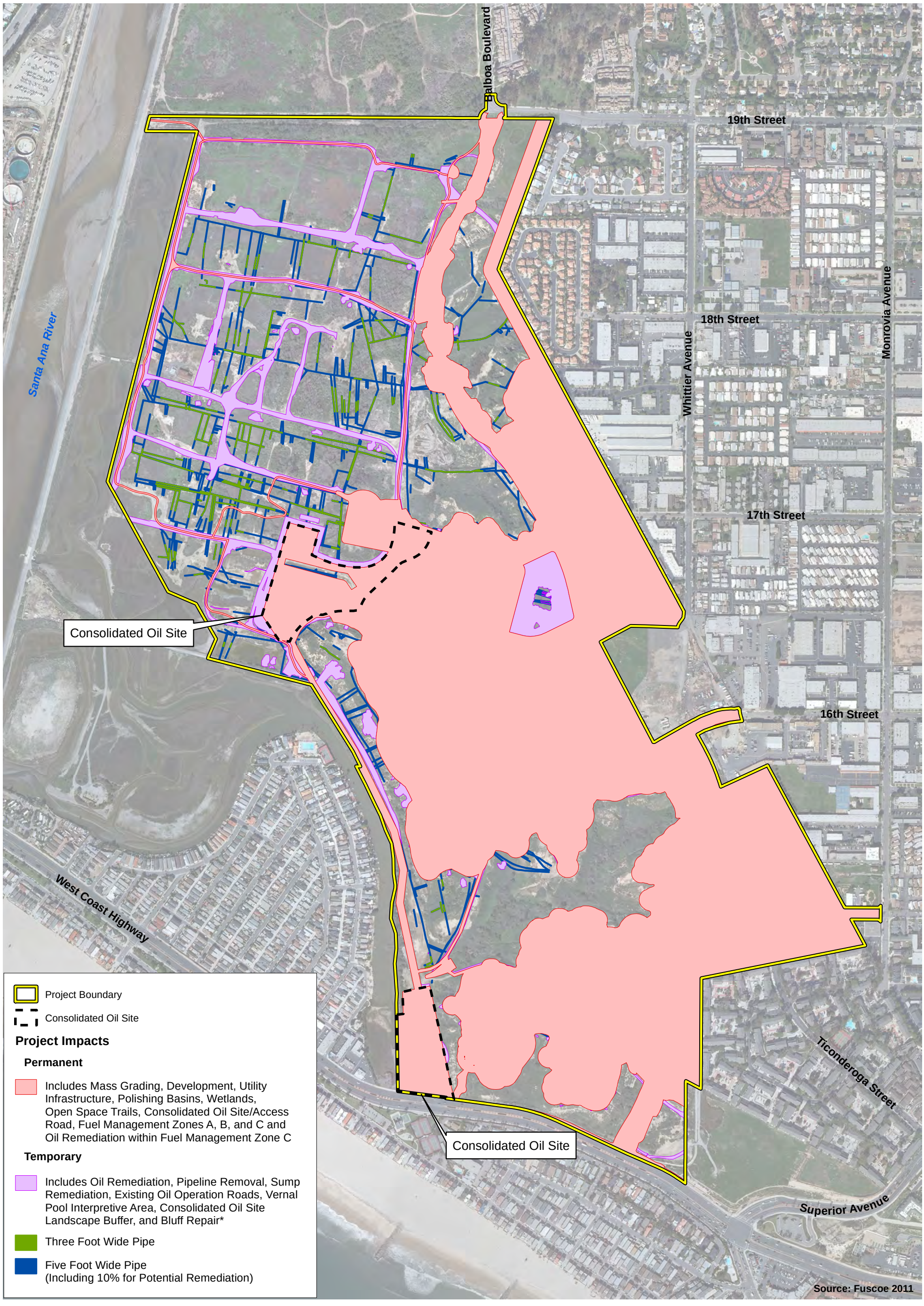
For impact analysis purposes, a "substantial adverse effect" is defined as the loss or harm of a magnitude which, based on current scientific data and knowledge, would (1) substantially diminish population numbers of a species or distribution of a habitat type within the region or (2) eliminate the functions and values of a biological resource in the region.

For each impact found to be significant, mitigation measures for the proposed Project have been developed that avoid, minimize, or compensate for the significant impact. Following each finding of significance, the mitigation measures that address the impact have been provided. In this impact section, a brief determination that the measures have reduced the impacts to a less than significant level has been identified. The Mitigation Program is provided in Section 4.4.

4.3 PROJECT IMPACTS

The determination of impacts is based on a comparison of Project maps depicting permanent and temporary impact areas and maps of biological resources on the Project site. All construction activities, including staging and equipment areas, are assumed to be within the impact areas identified on Exhibit 9. In order to evaluate the entire extent of potential impacts on biological resources located within the proposed Project, it is necessary to understand the various Project impact areas. The following is a summary of these areas:

- ***Rough and Precise Grading/Development:*** These areas include the limit of grading for housing, retail, resort inn, roads, parks, and other development areas. These are considered permanent impacts.
- ***Utility Infrastructure:*** These are select locations where utility easements cross open space areas and are considered a permanent impact. Utility easements allow for existing infrastructure lines to be maintained and future infrastructure lines to be installed underground. If utilities are required to be uncovered for maintenance within the Open



Project Boundary

Consolidated Oil Site

Project Impacts

Permanent

Includes Mass Grading, Development, Utility Infrastructure, Polishing Basins, Wetlands, Open Space Trails, Consolidated Oil Site/Access Road, Fuel Management Zones A, B, and C and Oil Remediation within Fuel Management Zone C

Temporary

Includes Oil Remediation, Pipeline Removal, Sump Remediation, Existing Oil Operation Roads, Vernal Pool Interpretive Area, Consolidated Oil Site Landscape Buffer, and Bluff Repair*

Three Foot Wide Pipe

Five Foot Wide Pipe
(Including 10% for Potential Remediation)

Path: D:\Projects\Newport\J015\MXD\BioTech\impacts_master_v005.mxd

Project Impacts

Newport Banning Ranch

Exhibit 9

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

(REV: 090111 sje) R:\Projects\Newport\J015\Graphics\Bio\Ex9_impacts.pdf

Space Preserve, vegetation would be replanted over easements after the completion of maintenance.

- ***Water Quality Basins:*** These areas are considered permanent impact areas, although it should be noted they would be designed such that they would contribute to the overall function of the open space. This constructed basin(s) would use native wetland habitat for treatment function within the limits of the basin. These basins would also require long-term Safe Harbor maintenance agreements with the resource agencies within the physical limits of the basin to ensure maintenance activities are performed on a routine basis to maximize water quality treatment and energy dissipation functions.
- ***Open Space Trails:*** The public trails would be located within existing oilfield roads, avoiding biological resources. These trails would be permanent. The Project proposes that the roads would be scraped to remove oil and other substances and be periodically maintained.
- ***Bluff Repair:*** These areas are considered a temporary impact; the bluffs and slopes would be restored and revegetated.
- ***Vernal Pool Interpretive Area:*** These areas are considered a temporary impact; the terrain outside the protected vernal pools would be modified to hydrologically support the pool and to establish an interpretive staging area. The area would be restored and revegetated.
- ***Consolidated Oil Sites:*** Two areas of existing oilfield operations within the proposed Open Space Preserve are designated for the continuation of oilfield operations. These areas would be deed restricted to open space and upon the cessation of oil operations would revert to an open space use. These areas are considered permanent impacts. The access road would be located on an existing oilfield road, thereby avoiding direct impacts to biological resources. A public trail (Bluff Toe Trail) is proposed adjacent to the existing oilfield road.
- ***Planting Buffers around the Consolidated Oil Sites:*** Planting buffers located around the consolidated oil well sites could include plantings and fencing as permitted in the Habitat Restoration Plan. These areas are considered to be temporary impacts.
- ***Oilfield Remediation (Pipeline Removal and Sump and Oil Contaminant Remediation Areas):*** The pipeline removal impacts assume a three-foot-wide and a five-foot-wide vegetation impact corridor. These areas are considered to be temporary impacts and would be restored and revegetated.
- ***Pipe Remediation:*** It is estimated that a maximum of ten percent of the soil would require remediation due to pipeline removal impacts associated with the five-foot-wide pipe removal areas. These activities are considered to be temporary impacts and would be restored and revegetated.
- ***Existing Oil Operation Roads:*** Portions of the oil roads would require the top several inches of soil to be removed and remediated. These areas are considered to be a temporary impact and would be restored and revegetated.
- ***Fuel Management Zones:*** Zones A, B, and C are considered permanent impacts. Zone C areas are part of the Open Space Preserve and are intended to provide additional habitat and, as noted in the Habitat Restoration Plan, shall contain non-irrigated low grasses, succulents, cactus, and other low height and low fuel volume native plants that require minimal, if any, maintenance; these areas would retain some habitat functions and would also provide buffer functions. Any native vegetation plantings within Fuel Management Zone C would not count towards the habitat

mitigation requirements identified in Section 4.4 with the exception of raptor foraging habitat.

Oilfield activities occur throughout the Project site, especially in the lowland. In order to construct the proposed Project, all oilfield infrastructure (i.e., oil wells, pads, pipelines, utility poles, historic pumps, and related facilities) within the development footprint would be removed and/or decommissioned and the underlying soil would be remediated as needed. Therefore, this analysis assumes there would be no additional impacts resulting from oilfield remediation within the development footprint. Outside the development footprint within the open space areas, oilfield remediation would occur as well. Pipelines within the open space areas would be removed and could potentially impact an area either three feet wide or five feet wide. The width of the pipe removal area is based on the anticipated maximum acreage of temporary impacts. Pipeline impact areas would be minimized to the greatest extent practicable by selectively cutting pipelines and pulling the pipes straight out of the vegetation (GLA 2009b). After pipelines are removed, contaminated soil, if detected, would be remediated. Since the extent of required remediation is not known prior to pipeline removal, the biological resources analysis assumed that remediation would be required on approximately ten percent of the five-foot-wide pipe removal area (GLA 2009b). Impacts from oilfield remediation would result in temporary impacts to biological resources. Following oilfield remediation, the areas outside the proposed development area would be revegetated with native habitat and would remain as permanent open space.

Both direct and indirect impacts on biological resources have been evaluated. Direct impacts are those that involve the initial loss of habitats associated with grading, construction, construction-related activities, and oilfield remediation. Indirect impacts are those that would be related to impacts on the adjacent open space areas due to construction activities (e.g., noise, dust) or Project operation (e.g., human activity related to the development of trails and oilfield operations). Biological impacts associated with the proposed Project are evaluated with respect to the following special status biological issues:

- Federally or State-listed Endangered or Threatened plant or wildlife species;
- Non-listed species that meet the criteria in the definition of “Rare” or “Endangered” in the CEQA Guidelines (14 CCR 15380);
- Species designated as California Species of Special Concern;
- Streambeds, wetlands, and their associated vegetation;
- Habitats suitable to support federally or State-listed Endangered or Threatened plant or wildlife species;
- Habitat, other than wetlands, considered special status by regulatory agencies (e.g., the USFWS, the CDFG) or resource conservation organizations;
- Other species or issues of concern to regulatory agencies or organizations; and
- Criteria in the Central/Coastal NCCP/HCP.

The actual and potential occurrence of these resources on the Project site was correlated with the CEQA significance criteria to determine whether the proposed Project’s impacts on these resources would be considered significant. The CEQA significance criteria thresholds and the project’s impact relative to these thresholds is presented below.

4.3.1 Threshold 1

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?

Implementation of the proposed Project could potentially result in impacts on special status plant and wildlife species if they occur on the Project site. Potential impacts on these species were evaluated by determining the impacts on habitat that the species is known or expected to occupy and their known or expected occurrence based on the results of focused survey efforts.

Plant and Vegetation Type Impacts

Approximately 236.32 acres of native and non-native vegetation types and other areas would be impacted by the proposed Project. These impacts are discussed below, summarized in Table 7, and depicted in Exhibits 10a and 10b.

TABLE 7
VEGETATION TYPES AND OTHER AREAS IMPACTED BY THE PROPOSED PROJECT

Vegetation Type	Existing (Acres)	Permanent Impacts (Acres)	Temporary Impacts: Non-Oilfield Remediation Operations (Acres)	Temporary Impacts: Pipe Removal (Acres)	Total Temporary Impacts (Acres)	Total Impacts (Acres)	Area Not Affected (Acreage)
Coastal Sage Scrub	***37.63***	***10.89***	***0.41***	***0.62***	***1.03***	***11.92***	***25.71***
Southern Coastal Bluff Scrub	9.21	3.02	0.02	0.04	0.06	***3.08***	*6.13*
California Sagebrush Scrub	0.29	0.29	0.00	0.00	0.00	***0.29***	*0.00*
Encelia Scrub	15.73	6.18	0.17	0.33	0.50	***6.68***	*9.05*
Coyote Brush Scrub	0.33	0.04	0.01	0.00	0.01	***0.05***	*0.28*
Coyote Brush Scrub/Mule Fat Scrub	0.06	0.06	0.00	0.00	0.00	***0.06***	*0.00*
Goldenbush Scrub	0.87	0.01	0.12	0.01	0.13	***0.14***	*0.73*
Southern Cactus Scrub	8.91	1.20	0.03	0.21	0.24	***1.44***	*7.47*
Southern Cactus Scrub/Encelia Scrub	2.17	0.03	0.06	0.03	0.09	***0.12***	*2.05*
Saltbush Scrub	0.06	0.06	0.00	0.00	0.00	***0.06***	*0.00*
Disturbed Coastal Sage Scrub	***20.64***	***9.64***	***1.08***	***0.47***	***1.55***	***11.19***	***9.45***
Disturbed Southern Coastal Bluff Scrub	5.66	1.43	0.68	0.21	0.89	***2.32***	*3.34*
Disturbed Sage Scrub	0.30	0.23	0.00	0.00	0.00	***0.23***	*0.07*
Disturbed Encelia Scrub/Mule Fat Scrub	0.49	0.04	0.03	0.01	0.04	***0.08***	*0.41*
Disturbed Encelia Scrub	4.33	2.97	0.04	0.02	0.06	***3.03***	*1.30*
Disturbed Goldenbush Scrub	1.19	0.00	0.07	0.12	0.19	***0.19***	*1.00*
Disturbed Goldenbush Scrub/Mule Fat Scrub/ Salt Marsh	1.06	0.01	0.21	0.00	0.21	***0.22***	*0.84*
Disturbed Southern Cactus Scrub	1.04	1.00	0.00	0.00	0.00	***1.00***	*0.04*
Disturbed Southern Cactus Scrub/Encelia Scrub	0.78	0.36	0.00	0.00	0.00	***0.36***	*0.42*
Ruderal/Disturbed Encelia Scrub	0.80	0.80	0.00	0.00	0.00	***0.80***	*0.00*
Ruderal/Disturbed Encelia Scrub/Disturbed Mule Fat Scrub	2.74	2.74	0.00	0.00	0.00	***2.74***	*0.00*
Ornamental/Disturbed Southern Coastal Bluff Scrub	2.25	0.06	0.05	0.11	0.16	***0.22***	*2.03*

TABLE 7 (Cont.)
VEGETATION TYPES AND OTHER AREAS IMPACTED BY THE PROPOSED PROJECT

Vegetation Type	Existing (Acres)	Permanent Impacts (Acres)	Temporary Impacts: Non-Oilfield Remediation Operations (Acres)	Temporary Impacts: Pipe Removal (Acres)	Total Temporary Impacts (Acres)	Total Impacts (Acres)	Area Not Affected (Acreage)
Grassland and Ruderal	***120.40***	***97.26***	***2.16***	***0.71***	***2.87***	***100.13***	***20.27***
Non-Native Grassland	85.76	79.60	0.36	0.13	0.49	***80.09***	*5.67*
Non-Native Grassland/Ruderal	6.51	6.07	0.44	0.00	0.44	***6.51***	*0.00*
Ruderal	28.13	11.59	1.36	0.58	1.94	***13.53***	*14.60*
Grassland Depression Features	***0.40***	***0.07***	***0.02***	***0.04***	***0.06***	***0.13***	***0.27***
Vernal Pool	0.33	0.00	0.02	0.04	0.06	***0.06***	*0.27*
Ephemeral Pool	0.07	0.07	0.00	0.00	0.00	***0.07***	*0.00*
Marshes and Mudflats	***31.45***	***0.10***	***0.82***	***1.53***	***2.35***	***2.45***	***29.00***
Freshwater Marsh	0.50	0.00	0.00	0.00	0.00	***0.00***	*0.50*
Alkali Meadow	20.39	0.07	0.36	1.07	1.43	***1.50***	*18.89*
Disturbed Alkali Meadow	2.42	0.00	0.06	0.13	0.19	***0.19***	*2.23*
Salt Marsh	6.01	0.03	0.29	0.32	0.61	***0.64***	*5.37*
Disturbed Salt Marsh	0.26	0.00	0.03	0.00	0.03	***0.03***	*0.23*
Mudflat	0.43	0.00	0.00	0.00	0.00	***0.00***	*0.43*
Open Water	1.44	0.00	0.08	0.01	0.09	***0.09***	*1.35*
Riparian Scrub/Forest	***21.71***	***1.89***	***0.25***	***0.54***	***0.79***	***2.68***	***19.03***
Mule Fat Scrub	3.32	0.47	0.10	0.10	0.20	***0.67***	*2.65*
Willow Scrub	1.14	0.08	0.01	0.10	0.11	***0.19***	*0.95*
Willow Riparian Forest	17.25	1.34	0.14	0.34	0.48	***1.82***	*15.43*
Disturbed Riparian Scrub/Forest	***38.87***	***4.98***	***2.94***	***2.33***	***5.27***	***10.25***	***28.62***
Disturbed Mule Fat Scrub	28.87	4.60	2.51	1.56	4.07	***8.67***	*20.20*
Disturbed Mule Fat Scrub/Ruderal	0.88	0.00	0.10	0.09	0.19	***0.19***	*0.69*
Disturbed Mule Fat Scrub/Goldenbush Scrub	2.03	0.35	0.21	0.10	0.31	***0.66***	*1.37*
Disturbed Willow Scrub	1.03	0.03	0.00	0.08	0.08	***0.11***	*0.92*
Disturbed Willow Riparian Forest	6.06	0.00	0.12	0.50	0.62	***0.62***	*5.44*

TABLE 7 (Cont.)
VEGETATION TYPES AND OTHER AREAS IMPACTED BY THE PROPOSED PROJECT

Vegetation Type	Existing (Acres)	Permanent Impacts (Acres)	Temporary Impacts: Non-Oilfield Remediation Operations (Acres)	Temporary Impacts: Pipe Removal (Acres)	Total Temporary Impacts (Acres)	Total Impacts (Acres)	Area Not Affected (Acreage)
Other Areas	***133.15***	***81.00***	***14.49***	***2.08***	***16.57***	***97.57***	***35.58***
Giant Reed	0.39	0.00	0.00	0.02	0.02	***0.02***	*0.37*
Cliff	0.10	0.03	0.00	0.05	0.05	***0.08***	*0.02*
Ornamental	23.05	15.08	0.30	0.40	0.70	***15.78***	*7.27*
Disturbed	85.59	48.10	13.65	1.26	14.91	***63.01***	*22.58*
Disturbed/Developed	24.02	17.79	0.54	0.35	0.89	***18.68***	*5.34*
TOTAL	***404.25***	***205.83***	***22.17***	***8.32***	***30.49***	***236.32***	***167.93***

Source: BonTerra Consulting 2011.

Coastal Sage Scrub

The proposed Project would impact approximately 11.92 acres (10.89 acres permanent, 1.03 acres temporary) of coastal sage scrub vegetation, including areas mapped as southern coastal bluff scrub, California sagebrush scrub, Encelia scrub, coyote brush scrub, coyote brush/mule fat scrub, goldenbush scrub, southern cactus scrub, southern cactus scrub/Encelia scrub, and saltbush scrub. In addition, the proposed Project would impact approximately 11.19 acres (9.64 acres permanent, 1.55 acres temporary) of disturbed coastal sage scrub vegetation, including areas mapped as disturbed southern coastal bluff scrub, disturbed sage scrub, disturbed Encelia scrub/mule fat scrub, disturbed Encelia scrub, disturbed goldenbush scrub, disturbed goldenbush scrub/mule fat scrub/salt marsh, disturbed southern cactus scrub, disturbed southern cactus scrub/Encelia scrub, ruderal/disturbed Encelia scrub, ruderal/disturbed Encelia scrub/disturbed mule fat scrub, and ornamental/disturbed southern coastal bluff scrub.

Much of the scrub habitat on the site occurs in small fragments and in many cases is highly degraded by invasive species. However, impacts on coastal sage scrub (disturbed and undisturbed) vegetation types are considered significant because (1) the loss of these vegetation types in the Project region would be considered a substantial adverse effect on the coastal sage scrub community[7] and (2) impacts to these areas would reduce the habitat for the coastal California gnatcatcher and other wildlife species. Implementation of Mitigation Measure (MM) 1 and PDFs 1 through 4 would reduce this impact to a less than significant level. MM 1 requires habitat restoration of permanent impacts to coastal sage scrub (including disturbed southern coastal bluff scrub) at a 3:1 ratio and disturbed coastal sage scrub (excluding disturbed southern coastal bluff scrub) at a 1:1 ratio either onsite or offsite. In addition, all temporarily impacted coastal sage scrub would be restored at a 1:1 ratio onsite. The proposed Project would also preserve approximately 35.16 acres on site. The combined restoration and preservation of coastal sage scrub on site would total approximately 82.91 acres. MM 1 also requires the Applicant to follow the Construction Minimization Measures, which would provide conservation and avoidance actions to reduce the adverse impact to the habitat and associated wildlife species. PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures. These features also provide conservation and avoidance value to the habitat and associated wildlife species.

Grassland and Ruderal

The proposed Project would impact approximately 100.13 acres (97.26 permanent, 2.87 temporary) of grassland and ruderal vegetation, including areas mapped as non-native grassland, non-native grassland/ruderal, and ruderal. These areas generally have low biological value for most species because they are vegetated with non-native species. However, these areas may provide suitable foraging habitat for a variety of raptor species, including wintering burrowing owls. Additionally, the non-native grassland includes localized areas with low densities of native bunch grasses that could not be delineated separately due to a variety of factors including the scattered distribution, low densities, and mowing operations on the Project site. The loss of grassland function for foraging raptors in the region is considered significant because of its decline in the Project region. Therefore, the proposed Project would have a potentially substantial impact on raptor foraging habitat without mitigation. Implementation of MM 2, which requires the restoration of 50.07 acres of grassland (ratio of 0.5:1), either onsite (including native grassland areas within Zone C of the fuel modification areas) or offsite, and the preservation of an additional 20.27 acres, would reduce this impact to a less than significant

[7] Impacts to individual subcommunities may not have been considered significant if evaluated separately; however, all subtypes of coastal sage scrub were considered cumulatively for this analysis.

level. In addition, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the grassland habitat and associated wildlife species.

Grassland Depression Features

The proposed Project is designed to avoid the two vernal pools (VP1 and VP2) that are occupied by San Diego fairy shrimp. In addition to avoidance of these areas, the vernal pool watershed that supports VP1 and VP2 would be enlarged and the entire pool complex would be restored (GLA 2010b). A 0.35-acre portion of the eastern edge of the watershed area would be impacted by the Project; however, the western edge of the existing watershed would be expanded by 1.03 acres for a net increase of 0.68 acre in the vernal pool watershed (GLA 2010b). The proposed Project would also temporarily impact approximately 0.06 acre of vernal pool habitat occupied by San Diego fairy shrimp associated with topographic remediation and pipeline removal. Because the pipelines are located on top of the soil surface, their removal would be conducted with the minimum possible soil disturbance and would occur outside the rainy season to reduce direct impacts to this species. However, pipe removal activities would disrupt the soils within the vernal pool potentially containing the fairy shrimp cysts. Therefore, these pipe removal activities would be considered a potentially significant temporary impact because it would have a substantial adverse effect on the vernal pool and San Diego fairy shrimp. Implementation of MM 3, which requires the restoration and preservation of a 3.58-acre vernal pool complex, would reduce this impact to a less than significant level. In addition, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the grassland vernal pool areas and associated wildlife species.

The proposed Project would permanently impact the 0.07-acre ephemeral pond located on the Project site. This pond is also identified as Pool A (mapped as 0.04 acre in size during the 2010–2011 surveys). This pool supports a single vernal pool indicator species but lacks wetland hydrology[8] and is therefore considered of relatively low biological value. Therefore, the proposed Project's impact on the ephemeral pond would be considered less than significant, and no mitigation is required.

Marshes and Mudflats

The proposed Project would impact approximately 2.45 acres of marsh habitat and open water (0.10 acre permanent, 2.35 acres temporary), including areas mapped as alkali meadow, disturbed alkali meadow, salt marsh, disturbed salt marsh, and open water. Freshwater marsh and mudflats would not be directly impacted by the proposed Project. Although the permanent impact area is small, both permanent and temporary impacts would be considered potentially significant because these resources are regulated by the USACE and the California Coastal Commission; although it is important to note that all of the temporary impacts are associated with oilfield remediation activities, including pipeline removal and soil remediation (as necessary). None of the temporary impacts involve placement of fill material for purposes of converting areas to upland but in all cases would be the first stage of work leading to restoration to higher quality habitat. Implementation of MM 4 would reduce the impact on this resource to a less than significant level, as it requires the restoration of approximately 2.65 acres either onsite or offsite, and the preservation of approximately 7.25 acres of marsh habitat either on site or immediately off site. In addition, PDFs 1 through 4 require the designation and methodology of

[8] This feature failed to pond for 14 days even during the higher than average rainfall (153% of normal) associated with the 2009–2010 rainfall season.

habitat restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the marsh areas and associated wildlife species.

Riparian Scrub/Forest

The proposed Project would impact approximately 2.68 acres of riparian scrub/forest vegetation (1.89 acres permanent, 0.79 acre temporary), including areas mapped as mule fat scrub,[9] willow scrub, and willow riparian forest. In addition, the proposed Project would impact approximately 10.25 acres (4.98 acres permanent, 5.27 acres temporary) of disturbed riparian scrub/forest vegetation, including areas mapped as disturbed mule fat scrub, disturbed mule fat scrub/ruderal, disturbed mule fat scrub/goldenbush scrub, disturbed willow scrub, and disturbed willow riparian forest.

The loss of approximately 2.68 acres of riparian scrub/forest habitats and approximately 10.25 acres of disturbed riparian scrub/forest habitats would be considered significant because of these vegetation types' decline in the Project region[10] and also because these habitats potentially support special status wildlife species. Implementation of MM 5 and PDFs 1 through 4 would reduce impacts on these resources to less than significant levels. MM 5 requires habitat restoration of permanent impacts to willow scrub/willow riparian forest at a 3:1 ratio either onsite or offsite. In addition, all permanently impacted disturbed riparian habitats and mule fat scrub and all temporarily impacted riparian habitats would be restored at a 1:1 ratio, for a total of approximately 15.77 acres of restored riparian habitat. In addition, the proposed Project would preserve approximately 23.03 acres of riparian habitat on site. PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures. These features also provide conservation and avoidance value to the habitat and associated wildlife species.

Other Areas

The proposed Project would impact approximately 97.57 acres (81.00 acres permanent, 16.57 acres temporary) of giant reed, cliff, ornamental, disturbed, and disturbed/developed areas. These areas generally provide limited habitat for native plant and wildlife species; however, they may be used by native species, especially in ornamental areas that form habitat mosaics within native vegetation types. Compared to native habitat types, these areas are considered to have a relatively low biological value because they are either vegetated with non-native species or are composed of unvegetated areas. Therefore, impacts on these areas would not be considered significant, and no mitigation is required.

Wildlife Impacts

General Habitat Loss and Wildlife Loss

To assess impacts on wildlife, the total impacts on particular vegetation types that provide habitat for wildlife were assessed. The following discussion of wildlife impacts focuses on the common species occurring on the Project site.

[9] Although mule fat scrub typically occurs in riparian areas (relating to or located on the banks of a river or stream), the majority (96%) of the mule fat scrub impacted on the Project site occurs in upland areas, outside of the riparian areas. Therefore, there would be differences between the acreage calculation for riparian scrub/forest habitats and those resources identified as jurisdictional by the USACE, the CDFG, and/or the Coastal Commission.

[10] The proposed Project's regional setting includes the Central/Coastal Subregion NCCP/HCP.

Construction activities for oilfield remediation would result in the loss of approximately 38.70 acres of native habitat (coastal sage scrub, disturbed coastal sage scrub, grassland depression features, marshes and mudflats, riparian scrub/forest, disturbed riparian scrub/forest, and cliff) that provide valuable nesting, foraging, roosting, and denning opportunities for a wide variety of wildlife species. In addition, implementation of the proposed Project would result in the loss of approximately 197.62 acres of non-native habitat or non-habitat cover types (non-native grassland, non-native grassland/ruderal, ruderal, giant reed, ornamental, disturbed, and disturbed/developed) that provide lower-quality or no wildlife habitat. The Project would impact substantially more non-native/disturbed or non-habitat types (84 percent) compared to native habitat types (16 percent). However, some of these non-native habitats may provide nesting, foraging, roosting, and denning opportunities for some species.

Removing or altering habitats on the Project site would result in the loss of small mammals, reptiles, amphibians, and other slow-moving animals that live within the Project's direct impact area. More mobile wildlife species that are now using the Project site would be forced to move into the remaining areas of open space, which would consequently increase competition for available resources in those areas. This situation would result in the loss of individuals that cannot successfully compete.

The proposed Project would result in impacts to approximately 236.32 acres (205.83 acres permanent/30.49 acres temporary) of non-native and native habitats that provide low to high value habitat for a suite of both common and special status species. Of the 236.32 acres impacted, approximately 97.49 acres contain ornamental, disturbed, and disturbed/developed areas that provide low value wildlife habitat. These impacts are considered adverse but not significant in terms of habitat loss for general wildlife species on a regional basis. The loss of wildlife habitat would not be expected to reduce wildlife populations below self-sustaining levels in the region.

Prior to the consideration of mitigation, the Project would contribute to the historical loss of habitats in the coastal areas of the region and may contribute to local extirpation of some wildlife species from the Project site. Unmitigated impacts to habitats in the coastal area would be considered significant. However, with implementation of MM 1 (Coastal Sage Scrub Habitat Preservation and Restoration), MM 2 (Grassland Habitat Preservation and Restoration), MM 3 (Grassland Depression Feature and Fairy Shrimp Habitat Preservation and Restoration), MM 4 (Marsh Habitat Preservation and Restoration), and MM 5 (Jurisdictional Resources/Riparian Habitat Preservation and Restoration), this impact would be reduced to a less than significant level.

Impacts to Nesting Birds

Nesting birds are protected under the provisions of the Migratory Bird Treaty Act (MBTA) and are identified by the List of Migratory Birds (50 CFR 10.13). Suitable habitat for birds protected by the MBTA occurs throughout the Project site. The intentional loss of any active nest through Project implementation would be considered significant. Impact on active nests would be reduced to a less than significant level with the implementation of MM 6, which establishes protocols for vegetation removal during the migratory bird nesting season.

Special Status Plants

Focused surveys for special status plant species were conducted in spring–summer 2009. Additional surveys for southern tarplant were conducted in 2006, 2007, and 2008. Four special status plant species were observed during the surveys: southern tarplant (CNPS List 1B.1),

southwestern spiny rush (CNPS List 4.2), California box-thorn (CNPS List 4.2), and woolly seablite (CNPS List 4.2).

The remaining 42 special status plant species listed in Table 3 were not observed during the focused special status plant surveys. Vernal barley may not have been observed during focused surveys due to mowing activities within the grasslands; however, this species is a CNPS List 3.2 species (plant species for which additional information is needed – a review list) and potential impacts are not expected to threaten regional populations of this species. Therefore, there would be no impact on the remaining 42 species, and no mitigation would be required.

A total of 24,747 southern tarplant individuals were observed during 2009 focused surveys. Approximately 500 of the tarplant individuals occur within the permanent impact area and approximately 4,590 occur within the temporary impact (oilfield remediation) area (Exhibits 8a and 8b). Impacts to southern tarplant are considered temporary in nature because seed would be collected and the species would be replanted through broadcast seeding within the open space areas of the Project site. This temporary impact is considered significant because the loss of these individuals would represent a substantial adverse effect to the regional population of this species until the new population has been established. Implementation of MM 7, which requires implementation of a southern tarplant restoration program, would reduce this impact to a less than significant level.

California box-thorn was observed during 2009 focused surveys and this species may be permanently impacted by the Project. In addition, this species would be temporarily impacted during oilfield remediation activities. The southwestern spiny rush and woolly seablite are also located within the area proposed as open space that would be temporarily impacted during oilfield remediation activities, and therefore, could also be impacted. At this time, it is unknown whether all southwestern spiny rush and woolly seablite could be avoided during the remediation activities. All these species are CNPS List 4 species. CNPS List 4 species are "Plants of Limited Distribution – A Watch List", and impacts on these species are not typically considered significant by lead agencies. Project impacts are not expected to have a substantial adverse effect on these species, and no mitigation is required

Special Status Wildlife

Invertebrates

Riverside fairy shrimp was not observed during focused surveys of the Project site. Therefore, there would be no impact on this species, and no mitigation would be required.

San Diego fairy shrimp was observed on the Project site during surveys conducted by GLA in areas described as VP1, VP2, AD3, and pools E, G, I, and J (GLA 2009b, GLA 2010, GLA 2011). The proposed Project will permanently protect VP1 and VP2. The proposed Project would temporarily impact the 0.007 acre Feature AD3. Two oilfield sumps that support San Diego fairy shrimp would also be impacted (Features E and G, covering 0.05 and 0.003 acre, respectively). The final two areas, Features I and J, are artificial grassland features, covering 0.03 and 0.09 acre, respectively that support the San Diego fairy shrimp and would be impacted by Project construction. In total, the proposed Project would result in permanent impacts to 0.173 acre of habitat occupied by San Diego Fairy Shrimp. In addition, the proposed Project would temporarily impact 0.06 acre of vernal pool habitat through pipelines removal activities. The pipes are located on top of the soil surface, and their removal could disrupt the soils within the vernal pools potentially containing the cysts of the fairy shrimp. Therefore, these pipe removal activities could result in a "take" of a small number of San Diego fairy shrimp cysts, which would be considered a significant impact, even though the actual effects on the fairy

shrimp population would be minimal. Combined permanent and temporary impacts to San Diego fairy shrimp habitat (0.24 acre) is considered significant because the loss of this resource would represent a substantial adverse effect to this species distribution in the region.

These impacts shall be mitigated to a less than significant level through the development and implementation of a 3.58-acre vernal pool conservation/restoration area that supports the San Diego fairy shrimp (MM 3). The vernal pool conservation/restoration area will provide for the long-term preservation of VP1 and VP2 within a 1.85-acre vernal pool basin conservation area. A 1.85-acre restoration area shall be provided in the vernal pool watershed area that encompasses VP1 and VP2 and their upland watershed. The project shall also set aside an additional 1.73-acre upland area north and west of the 1.85-acre vernal pool conservation area which shall be used for future enhancement to expand the vernal pool conservation area to a total of 3.58 acres. Expansion of the watershed by 1.73 acres would increase hydrological input by creating hydrological conditions for additional pools, which would promote more and higher quality habitat created as mitigation for features E, G, I, and J that support the San Diego fairy shrimp. Establishment of the 3.85-acre vernal pool conservation area and remediation and restoration of the vernal pools and the upland watershed/drainage area (MM 3) will reduce any impacts to the San Diego fairy shrimp to less than significant.

Fish

Tidewater goby is not expected to occur on the Project site due to the lack of suitable habitat, although it may occur in the USACE salt marsh restoration site and the Santa Ana River adjacent to the Project site. There would be no direct impact on this species, and no mitigation would be required.

Amphibians

Arroyo toad and red-legged frog are not expected to occur on the Project site due to the lack of suitable habitat. Therefore, there would be no impact on these species, and no mitigation would be required.

Western spadefoot has a low potential to occur on the Project site. The proposed Project would have only minimal impacts to the vernal pools (associated with restoration activities and the large vernal pool); these pools are the only features that provide suitable breeding habitat (due to the length of ponding) and would be preserved and enhanced. Oilfield remediation activities within the lowland areas have the potential to impact this species, should it occur. However, given that the lowland areas would be preserved as open space, there would be potentially minimal and non-significant impacts. Therefore, no mitigation would be required.

Reptiles

Southwestern pond turtle, coast [San Diego] horned lizard, [Belding's] orange-throated whiptail, coast patch-nosed snake, two-striped garter snake, and northern red-diamond rattlesnake are not expected to occur on the Project site due to a lack of suitable habitat, the high levels of disturbance on the Project site, and/or because the Project site is outside the known range of these species. Therefore, there would be no impact on these species, and no mitigation would be required.

Silvery legless lizard has potential to occur within the soft bottom of the southern arroyo and other areas of the lowland on the Project site. The proposed Project would result in a minimal loss of suitable habitat for this species, since the majority of the southern arroyo and areas within the lowland would be preserved as open space following oilfield remediation activities.

Therefore, the Project impact on this species would be considered adverse, but not significant, and no mitigation is required.

Birds

American white pelican, California brown pelican, double-crested cormorant, black skimmer, and California least tern are not expected to occur on the Project site for foraging due to a lack of suitable foraging habitat. However, they may forage in the adjacent USACE salt marsh restoration site and the Santa Ana River. Additionally, they are not expected to occur on the Project site for nesting due to (1) a lack of suitable nesting habitat; (2) the Project site being outside the known breeding range; and/or (3) the high levels of disturbance on the Project site. The proposed Project would not impact these species, and no mitigation would be required.

Suitable or potentially suitable roosting and/or foraging habitat is present for the white-faced ibis, California gull, and gull-billed tern. Additionally, the gull-billed tern could nest on the Project site. Although the Project may temporarily impact habitat for these species, areas within the lowland would be preserved as open space following oilfield remediation activities. Project impacts on these species would be less than significant in consideration of other habitat available in the region, and no mitigation would be required.

Although limited suitable habitat is present for fulvous whistling duck, long-eared owl, and California black rail, these species are considered either extirpated from the region or the Project site is outside current range. Therefore, these species would not be expected to occur on the Project site; there would be no impact on these species and no mitigation would be required.

Potentially suitable foraging and/or nesting habitat for light-footed clapper rail, western snowy plover, Belding's savannah sparrow, and tricolored blackbird is present primarily in the salt and freshwater marsh areas on the Project site, and these species may occur. The Project site provides only potentially suitable foraging habitat for the long-billed curlew and large-billed savannah sparrow. The limited tidal marsh habitat on the Project site is separated by a chain-link fence from the adjacent restored USACE salt marsh habitat that supports the light-footed clapper rail. This fence generally precludes the light-footed clapper rail's use of the tidal marsh habitats on the Project site, especially for nesting, but not the Belding's savannah sparrow's use of these habitats on the Project site. The western snowy plover is not expected to nest on the Project site due to the high levels of existing disturbance. The least bittern and Clark's marsh wren may also forage and/or nest on the Project site in wet years when ponding and freshwater marsh vegetation is extensive. Of these species with potential to occur, only the Belding's savannah sparrow may nest on the Project site.

The permanent Project impacts on foraging and/or nesting habitat for all species listed above is expected to be limited, and the habitat for all these species, except the tricolored blackbird, would remain as open space following oilfield remediation activities. However, oilfield remediation activities could temporarily impact marsh habitats used by these species. The light-footed clapper rail, western snowy plover, and Belding's savannah sparrow are listed as federally and/or State-Endangered and/or Threatened species. These species have potential to nest on or immediately adjacent to the Project site and could be impacted by oilfield remediation activities. Any impact on these species would be considered significant. Implementation of MMs 4 and 8 would reduce the potential impact on these species to a less than significant level. These measures require the restoration and/or preservation of approximately 9.90 acres of marsh habitat either on site or immediately off site and avoidance measures during construction. In addition, PDFs 1 through 4 require the designation and methodology of habitat

restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the marsh areas and associated wildlife species.

Suitable or potentially suitable foraging habitat is present on the Project site for western yellow-billed cuckoo, Vaux's swift, black swift, purple martin, and bank swallow. These species would only be expected to occur during migration because the Project site is outside their currently known breeding range. Permanent Project impacts on foraging habitat for these species is expected to be limited, and most of the habitat for these species would remain as open space following oilfield remediation activities; however, these activities could temporarily impact habitats used by these species. Project impacts on these species would be considered less than significant in consideration of other habitat available in the region, and no mitigation would be required.

A total of 17 territories (16 pairs and 1 solitary male) of the federally listed Threatened coastal California gnatcatcher were observed during the 2009 focused surveys (impacts shown on Exhibits 8a and 8b, Newport Banning Ranch Project Impacts – Special Status Species Locations). The proposed Project would impact approximately 23.11 acres (20.53 acres permanent, 2.58 acres temporary) of coastal sage scrub and disturbed coastal sage scrub vegetation types that provide potential habitat for this species (Exhibits 4.5-5a and 4.5-5b, Newport Banning Ranch Project Impacts – Vegetation Types and Other Areas). Coastal sage scrub habitat on the Project site is primarily limited to slopes and areas surrounding the drainages that transverse the mesa, is fragmented, and is disturbed by oilfield operations and invaded by non-native species. Revegetation following oilfield remediation activities has the potential to result in higher long-term habitat quality (i.e., invasive species removed, human activity and disturbance related to oilfield operations removed, and larger blocks of contiguous native habitat) available for this species in the open space area. However, Project impacts on this species would be considered significant because of the location and size of the impacted population. Although this species is covered by the NCCP/HCP, the Project site is located within an Existing Use Area, and the NCCP/HCP does not authorize Incidental Take as a result of the conversion of coastal California gnatcatcher-occupied habitat in Existing Use Areas. Implementation of MMs 1 and 9 would be required to reduce this impact to a less than significant level. These measures require the onsite of offsite restoration of 47.75 acres of coastal sage scrub habitat at a ratio of 3:1 for coastal sage scrub (including disturbed southern coastal bluff scrub) and 1:1 for disturbed coastal sage scrub (excluding disturbed southern coastal bluff scrub). In addition, approximately 35.16 acres of coastal sage scrub or disturbed coastal sage scrub would be preserved on site. Mitigation also includes the required approval from the USFWS to impact the species, and construction avoidance measures to minimize the impacts to the greatest extent practicable. In addition, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures, which would provide conservation and avoidance value to the coastal sage scrub and associated wildlife species, including, but not limited to the coastal California gnatcatcher.

Two coastal cactus wren territories were observed during the 2009 focused surveys for coastal California gnatcatcher (impacts shown on Exhibits 8a and 8b). The proposed Project would impact approximately 2.92 acres (2.59 acres permanent, 0.33 acre temporary) of southern cactus scrub, southern cactus scrub/Encelia scrub, disturbed southern cactus scrub, and disturbed southern cactus scrub/Encelia scrub (Exhibits 10a and 10b). This species has declined in Orange County following the loss of habitat because of two large wildfires in 2007 and 2008, and other areas of cactus scrub that burned in the mid-1990s still have not been re-occupied by cactus wren. Therefore, impacts on this species would be considered potentially significant. Implementation of MMs 1 and 10 would be required to reduce this impact to a less than significant level. These measures require the restoration of coastal sage scrub dominated by native cactus species habitat at a ratio of no less that 1:1 and construction avoidance

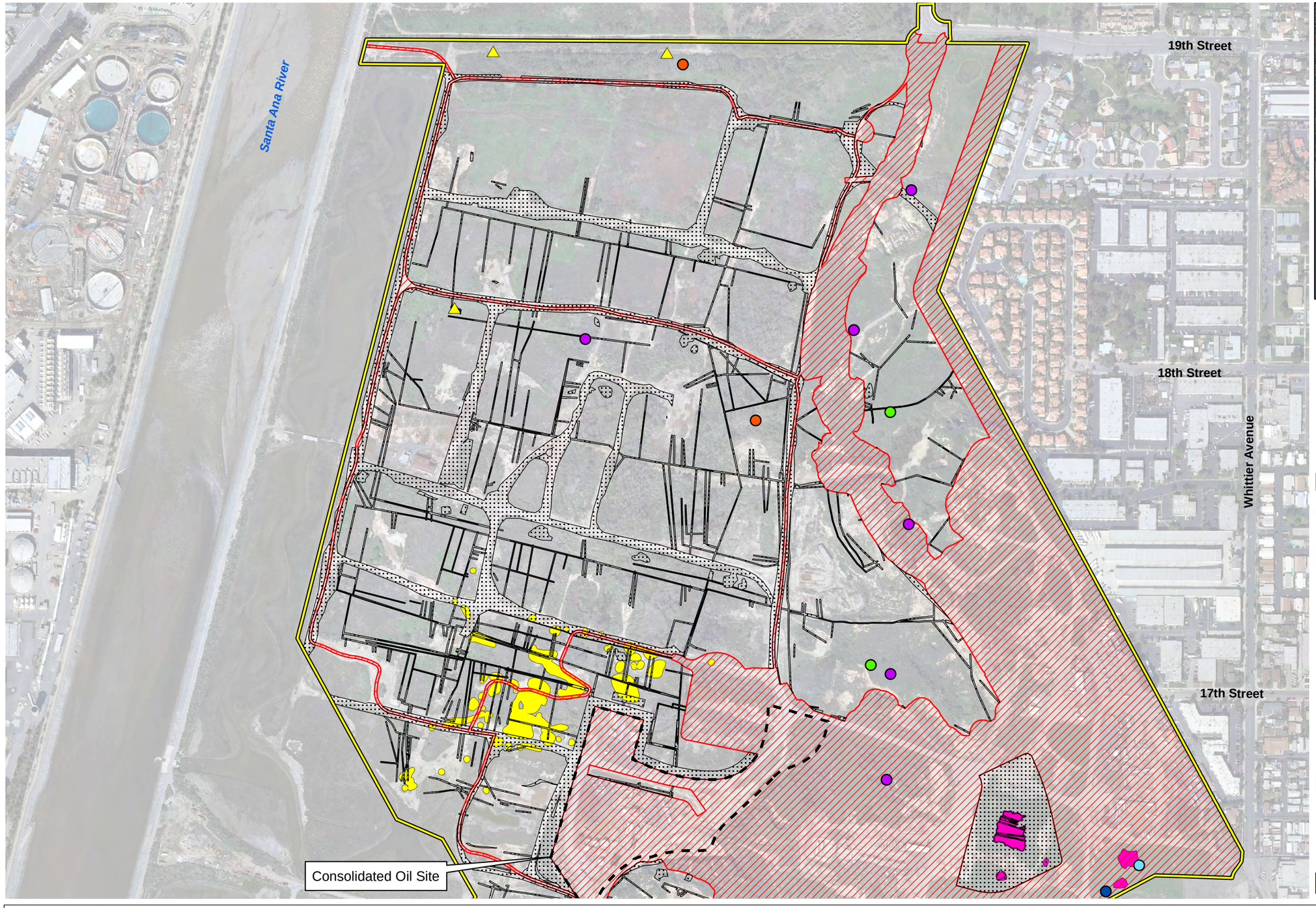
measures to minimize the impacts to the greatest extent practicable. In addition, approximately 35.16 acres of coastal sage scrub, which includes approximately 10 acres of coastal sage scrub dominated by cactus, would be preserved on site as part of MM 1. In addition, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures, which would provide conservation and avoidance value to the cacti-dominated coastal sage scrub and associated wildlife species, including, but not limited to the cactus wren.

Suitable foraging and nesting habitat for the loggerhead shrike is present throughout the Project site. Project implementation would result in the loss of suitable foraging and breeding habitat for the loggerhead shrike, but would not be expected to affect this species' current status. Suitable foraging and nesting habitat for the California horned lark is found primarily in the upland habitats of the Project site. Project implementation would result in the loss of the majority of suitable habitat for the California horned lark on the Project site. Project impacts on these species would be considered less than significant because of the amount of habitat available elsewhere in the region, and no mitigation would be required.

Potentially suitable habitat for the Southern California rufous-crowned sparrow, grasshopper sparrow, and Bell's sage sparrow is present on the Project site. However, these species are not expected to occur on the Project site because the property is outside the species' known range and/or due to the high levels of disturbance present as a result of oilfield activities. Therefore, there would be no impact on these species, and no mitigation would be required.

Two least Bell's vireo territories (both solitary males) were observed during the 2009 focused surveys (impacts shown on Exhibits 11a and 11b). The proposed Project would impact approximately 2.74 acres (1.45 acres permanent, 1.29 acres temporary) of undisturbed and disturbed willow riparian scrub and willow riparian forest habitats (Exhibits 10a and 10b). The permanent Project impacts on this species' habitat is expected to be limited, and most of the habitat for this species would remain as open space following oilfield remediation activities; however, these activities could temporarily impact riparian habitats used by this species. Currently, much of the native riparian scrub and forest habitat on the Project site is fragmented by roads and is heavily invaded by non-native species. Revegetation following oilfield remediation activities would result in a higher long-term habitat quality due to invasive species removal; removal of human activity and disturbance related to oilfield operations; and availability of larger blocks of contiguous native habitat for this species in the open space area within the Project site. However, any impact on this species would be considered significant. Implementation of MMs 5 and 11 would reduce impacts on this species to less than significant levels. These measures require the onsite of offsite restoration of riparian habitat at a ratio from 3:1 to 1:1 depending on the habitat value impacted. A total of 15.77 acres of riparian habitat will be restored by the proposed Project. The Project also requires approval from the USFWS to impact the species and its habitat. In addition, the Project would preserve approximately 23.03 acres of riparian habitats. MM 1 includes construction avoidance measures to minimize the impact to the greatest extent practicable to the vireo and the riparian habitat. In addition, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures, which would provide conservation and avoidance value to the riparian habitat and associated wildlife species including, but not limited to, the least Bell's vireo.

Suitable foraging and nesting habitat for the southwestern willow flycatcher is present in the riparian scrub and riparian forest vegetation types on the Project site. The southwestern willow flycatcher was not observed during the 2006, 2007, or 2009 focused surveys of the Project site, and is considered absent. Therefore, no impact to the species is anticipated; no mitigation would be required.



Project Boundary

Consolidated Oil Site

Project Impacts

Permanent

Temporary

2010 Surveys

Burrowing Owl

2009 Surveys

Coastal California Gnatcatcher

Coastal Cactus Wren

Least Bell's Vireo

Burrowing Owl

San Diego Fairy Shrimp

Southern Tarplant

Tarplant Location
(Area too small to be accurately represented by polygon)

Tarplant Population

Path: D:\Projects\Newport\J015\MXD\BioTech\ex_impacted_special_Status.mxd

Project Impacts: Special Status Species Locations

Exhibit 11a

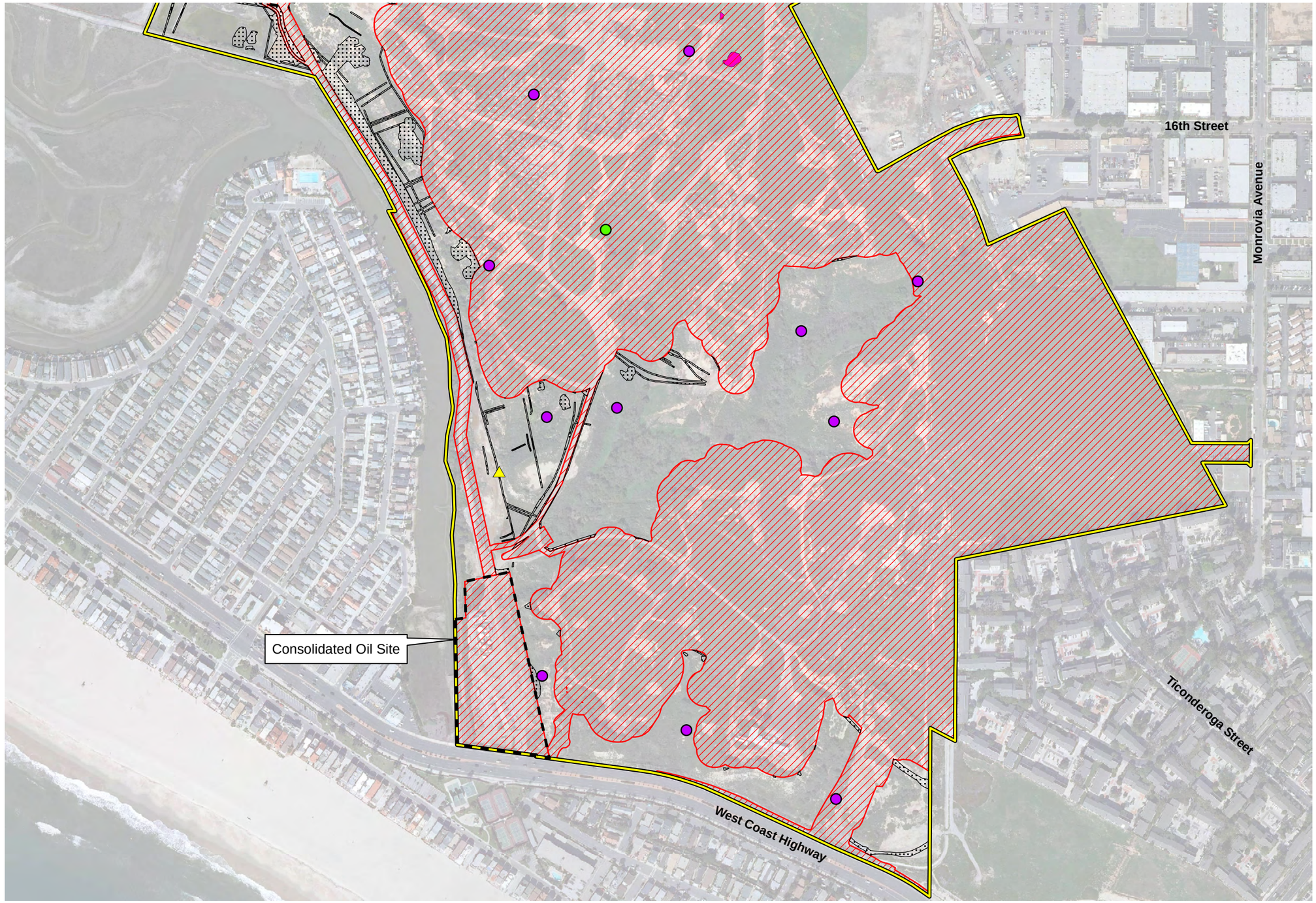
Newport Banning Ranch

N W E S

400 200 0 400 Feet

BonTerra CONSULTING

(REV: 082411 JFG) R:\Projects\Newport\J015\Graphics\Bio\Ex11_Impacts_Spec_Status.pdf



Project Boundary

Consolidated Oil Site

Project Impacts

Permanent

Temporary

2010 Surveys

Burrowing Owl

2009 Surveys

Coastal California Gnatcatcher

Coastal Cactus Wren

Least Bell's Vireo

Burrowing Owl

San Diego Fairy Shrimp

Southern Tarplant

Tarplant Location
(Area too small to be accurately represented by polygon)

Tarplant Population

Path: D:\Projects\Newport\J015\MXD\BioTech\ex_Impacted_special_Status.mxd

Project Impacts: Special Status Species Locations

Exhibit 11b

Newport Banning Ranch

N W E S

400 200 0 400

Feet

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Suitable foraging and nesting habitat for the yellow warbler and yellow-breasted chat is present in the willow scrub and willow riparian forest vegetation types on the Project site. The permanent Project impacts on habitat for these species is expected to be limited, and most of the habitat for these species would remain as open space following oilfield remediation activities. However, these activities could temporarily impact riparian habitats used by these species. Currently, much of the willow scrub and willow riparian forest habitat on the Project site is fragmented by roads and is heavily invaded by non-native species. Revegetation following oilfield remediation activities has the potential to result in a higher long-term habitat quality due to invasive species removal; removal of human activity and disturbance related to oilfield operations; and availability of larger blocks of contiguous native habitat for these species in the open space area within the Project site. Project impacts on these species would be less than significant in consideration of these species populations within the region and other habitat available for these species in the region; no mitigation would be required.

Although suitable foraging and nesting habitat is present on the Project site for the burrowing owl, it is only expected to winter on the Project site based on the results of focused surveys conducted in 2008, 2009, and 2010. Two owls were observed wintering in 2008, and one owl was observed wintering in 2009 and 2010 (GLA 2010a, 2009) (impacts shown on Exhibits 11a and 11b). The burrowing owl is a species of local concern because its occurrences are limited in the County. The proposed Project would impact approximately 100.13 acres (97.26 acres permanent, 2.87 acres temporary) of grasslands and ruderal habitat on the Project site. Impacts on occupied and potential habitat for this species would be considered significant. Implementation of MMs 2 and 12 would reduce the impact on this species to a less than significant level. These measures require the restoration of grassland habitat at a ratio of 0.5:1 (totaling approximately 50.07 acres). In addition, the Project would preserve approximately 20.27 acres of grassland areas and include construction avoidance measures to minimize grassland impacts to the greatest extent practicable. Moreover, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the grassland areas and associated wildlife species including, but not limited to, the burrowing owl.

Although potentially suitable foraging habitat is present on the Project site for golden eagle and Swainson's hawk, these species are not expected to occur on the Project site because (1) the site is outside the currently known range for these species and (2) of the extensive urbanization in the Project region. The bald eagle is not expected to occur on the Project site because of the lack of suitable foraging and breeding habitat. Therefore, there would be no impact on these species, and no mitigation would be required.

Suitable foraging habitat is present for a variety of raptor species including Cooper's hawk, sharp-shinned hawk, ferruginous hawk, northern harrier, white-tailed kite, merlin, prairie falcon, American peregrine falcon, and short-eared owl. While there is no suitable foraging habitat for the osprey on the Project site, there is foraging habitat adjacent to the Project site within the USACE salt marsh restoration site and the Santa Ana River; the osprey was observed perching on the Project site following foraging. The permanent loss of approximately 124.83 acres of foraging habitat for these raptor species would contribute to the ongoing regional and local loss of foraging habitat. This impact would be considered significant. However, revegetation following oilfield remediation activities would result in higher-quality habitat due to invasive species removal; removal of human activity and disturbance related to oilfield operations (oil activities would be consolidated into two on-site locations); and availability of larger blocks of contiguous native habitat for these species in the open space area. Therefore, with implementation of MMs 1, 2, 4, and 5, this impact would be reduced to a less than significant level. These measures require the restoration of coastal sage scrub, grassland habitat, marsh habitat, and riparian areas at a ratio from 0.5:1 to 3:1 for approximately 119.56 acres of

restoration. In addition, the Project would preserve approximately 85.97 acres of additional habitat on site. The Project also includes PDFs 1 through 4, which require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the raptor foraging areas.

Cooper's hawk, northern harrier, and white-tailed kite have the potential to nest on the Project site. The loss of an active nest of these species, or any common raptor species, would be considered a violation of Sections 3503, 3503.5, and 3513 of the *California Fish and Game Code*. Therefore, the loss of any active raptor nest would be considered significant. Impacts on active raptor nests would be reduced to less than significant levels with implementation of MM 13, which provides for construction avoidance measures to minimize the impact to the greatest extent practicable.

Mammals

Limited potentially suitable habitat for the Southern California saltmarsh shrew and south coast marsh vole is present in the marsh areas in the lowland. Permanent Project impacts on habitat for these species would be limited, and most of the habitat for these species would remain as open space following oilfield remediation activities. However, these activities could temporarily impact marsh habitats used by these species. Much of the marsh habitat on the Project site is currently fragmented by roads and is invaded to varying degrees by non-native species. Revegetation following oilfield remediation activities has the potential to result in a higher long-term habitat quality due to invasive species removal, removal of human activity and disturbance related to oilfield operations, and availability of larger blocks of contiguous native habitat for these species in the open space area. Project impacts on these species would be considered less than significant in consideration of other habitat available for these species in the region; no mitigation would be required.

Potentially suitable habitat for the Mexican long-tongued bat, Townsend's big-eared bat, and western mastiff bat occurs on the Project site. However, these species are not expected to occur on the Project site because they are outside their currently known range or because of the disturbance related to oilfield activities. Therefore, there would be no significant impact on these species, and no mitigation would be required.

Suitable or potentially suitable foraging habitat is present for the pallid bat, hoary bat, western yellow bat, pocketed free-tailed bat, and big free-tailed bat. Hoary bat, pocketed free-tailed bat, and big free-tailed bat also have potential to roost on the Project site. The permanent loss of approximately 124.86 acres of foraging and roosting habitat for these bat species would contribute to the ongoing regional and local loss of foraging and roosting habitat. This impact would be considered significant. However, revegetation following oilfield remediation activities would result in a higher-quality habitat associated with invasive species removal; removal of human activity and disturbance related to oilfield operations; and availability of larger blocks of contiguous native habitat for these species in the open space area. Therefore, with implementation of MMs 1, 2, 4, and 5, this impact would be reduced to a less than significant level. These measures require the restoration of coastal sage scrub, grassland habitat, marsh habitat, and riparian areas at a ratio from 0.5:1 to 3:1 (for approximately 119.56 acres of restoration). In addition, the Project would preserve approximately 85.97 acres of additional habitat on site. The Project also includes PDFs 1 through 4, which requires the designation and methodology of habitat restoration/preservation and indirect effect minimization measures. These PDFs would provide conservation and avoidance value to the potential bat foraging and roosting areas.

Limited suitable habitat for the Pacific pocket mouse is present on the Project site. However, this species is not expected to occur on the Project site because it was not detected during a previous trapping effort conducted for this species on the Project site. Therefore, there would be no impact on this species, and no mitigation would be required.

Suitable habitat for the San Diego desert woodrat and southern grasshopper mouse is present in the upland habitats. The proposed Project would impact habitat for these species. Currently, much of the native upland habitat is fragmented and scattered throughout the Project site and is invaded by non-native species. However, revegetation following oilfield remediation activities has the potential to result in a higher long-term habitat quality due to invasive species removal; removal of human activity and disturbance related to oilfield operations; and availability of larger blocks of contiguous native habitat for these species in the open space area. Project impacts on these species would be considered less than significant in consideration of other habitat available in the region, and no mitigation would be required.

Potentially suitable habitat for the American badger is present on the Project site. However, this species is not expected to occur on the Project site due to the disturbance related to oilfield activities. Therefore, there would be no impact on this species, and no mitigation would be required.

Indirect Impacts

Indirect impacts are impacts related to disturbance from construction (such as noise, dust, and urban pollutants), and long-term use of the Project site and its effect on the adjacent habitat areas. The indirect impact discussion below includes a general assessment of the potential indirect effects of the proposed Project's construction and operation.

Noise Impacts

The increase in human activity would also be expected to raise noise levels with Project implementation due to residential, retail, resort inn, and park development; the public use of trails in the open space areas; and ongoing oilfield operations in the two oil consolidation sites.[11] The noise associated with the development would occur primarily in the mesa, and would therefore be naturally separated by the topographic change from the open space in the lowland. The increase in noise associated with use of the public trails would occur in an area that is currently exposed to oilfield activities and therefore, wildlife may be somewhat habituated to human activity. Additionally, the trail system would keep the public limited to the boardwalks, and the noise would be localized to these areas and would not occur throughout the lowland, unlike existing conditions. The non-transportation noise impacts from human activity in the residential, retail, resort inn, park, and trail areas would dissipate rapidly with distance and would not cause significant noise impacts to wildlife on the Project site open space and lowland areas. There would be no significant impact related to non-transportation activity; therefore, no mitigation would be required.

Vehicular traffic on North Bluff Road (north of 17th Street) is expected to result in noise impacts within the lowland and upland open space areas. These areas contain coastal sage scrub and riparian scrub/forest vegetation types that provide suitable habitat for the coastal California gnatcatcher and the least Bell's vireo. Increased noise levels have been shown to affect some wildlife species when those species rely on sound to communicate, navigate, avoid danger, and

[11] The Project proposes the consolidation of surface oil production facilities into 2 sites on approximately 17 acres located along the westerly and southwesterly boundary of the Project site.

find food. Reijnen et al. (1995) notes that vehicular traffic has been correlated with a reduction in the density of breeding bird populations adjacent to roads (Spellerberg 1998).

The North Bluff Road future traffic noise contours identified a worst-case Community Noise Equivalent Level (CNEL) contour of 60 A-weighted decibels (dBA) that extends approximately 220 feet from the road centerline in each direction. This 440-foot-wide permanent noise impact area would include approximately 65 feet of roadway surface and road shoulder that is not expected to provide habitat for wildlife species. The habitats outside the roadway surface/shoulder but within the 60 dBA CNEL contour are expected to have a decreased biological value because of the long-term noise impacts from vehicular traffic on Bluff Road. While vireos/gnatcatchers can often continue to occupy areas subject to noise levels above 60 dBA, other studies have documented significantly reduced reproductive success. The Bluff Road future traffic noise impacts are considered significant. MMs 1, 2, 4 through 6, and 8 through 13 would reduce this impact to a less than significant level by increasing the biological value of the site for wildlife species. Short-term construction impacts to active least Bell's vireo nests are considered potentially significant. Implementation of MM 11 would reduce this impact to a less than significant level.

Invasive Exotic Plant Species

Oilfield remediation would include the removal of habitat within the lowland and the upland portions of the Project site. Currently, native habitat types in the lowland are heavily invaded by non-native species, especially pampas grass and mustard. Any activities in the native habitat areas that facilitate the expansion of invasive species in the area would be considered potentially significant.

In addition, landscaped areas are proposed within the development area, and residents of the development will also be expected to landscape their individual yards. The landscaping could include planting of ornamental species that are known to be particularly invasive (e.g., Japanese honeysuckle [*Lonicera japonica*] and fan palm [*Washingtonia* spp.]). Seeds from invasive species may escape to natural areas and degrade the native vegetation. Since the Project contains open space that includes high habitat value, this impact is considered potentially significant.

Implementation of MM 14, which requires monitoring in the oilfield remediation areas and prohibits invasive, exotic plant species to be planted within the areas adjacent to open space, would reduce these impacts to less than significant.

Water Quality

Impacts on biological resources in the area could occur as a result of changes in water quality. Runoff of silt from the Project site or improper disposal of petroleum and chemical products from temporary construction equipment could adversely affect water quality during construction. Urban runoff from Project infrastructure or landscaping could permanently impact water quality following construction. Adverse effects on water quality could affect populations of aquatic species, including species that occur just off site in the USACE salt marsh restoration site or the Santa Ana River. Runoff of silt from the construction site could reduce the amount of available habitat, smother the eggs of an aquatic species, and could result in direct mortality of plant and wildlife species. Adverse water quality effects during construction or operation of the Project could (1) affect populations of insects, tadpoles, and other aquatic prey, which would affect food web interactions related to species that forage in aquatic or riparian areas or (2) cause adverse effects through biomagnification (i.e., the buildup of pesticides to toxic levels in higher trophic levels). Although indirect impacts associated with adverse water quality conditions can result in

significant impacts to biological resources, the Project Design Features and Standard Conditions identified in the EIR Section 4.4, Hydrology and Water Quality would preclude significant water quality impacts.

Night Lighting

Lighting could inadvertently result in an indirect impact on the behavioral patterns of nocturnal and crepuscular (i.e., active at dawn and dusk) wildlife remaining in the lowland or adjacent areas such as in the USACE salt marsh restoration site or along the Santa Ana River. Wildlife present in these areas may already be somewhat acclimated to current lighting associated with traffic from the adjacent roadways (e.g., West Coast Highway and 19th Street). However, the uses that are proposed (i.e., residential, retail, parks and recreational areas, resort inn, and trails) would introduce new sources of ambient light on the Project site, which could affect small, ground-dwelling animals that use the darkness to hide from predators, owls, and other specialized night foragers and wildlife that primarily move at night. These impacts are potentially significant.

As a part of the Project, no permanent night lighting would be permitted within the Open Space Preserve with the exception of safety lighting in the two Oil Consolidation sites. Temporary lighting would be required associated with drilling operations on the Project site, which requires some periods of 24-hour activity. PDF 4 requires that street lights be used only in key intersections and safety areas. A “dark sky” lighting concept will be implemented within areas of the Project that adjoin habitat areas. This “dark sky” lighting concept would be implemented for homeowners’ association (HOA) properties and businesses (e.g., resort inn, retail center) within 100 feet of the Open Space Preserve and Bluff Parks. Light fixtures within these areas would be designed for “dark sky” applications and adjusted to direct/reflect light downward and away from adjacent habitat areas. As indicated in PDF 4, the Project would restrict exterior house lighting to minimize light spillage into adjacent habitat areas. Implementation of PDF 4 would reduce this impact to less than significant.

Human Activity

The upland area, where the residential and mixed use/residential uses are proposed, would result in an increase in human activity (i.e., vehicle and foot traffic) that may disrupt normal foraging and breeding behavior of wildlife in these natural/urban interface areas, thereby diminishing the habitat value. However, in the open space areas of the southern arroyo and the lowland, human activity is expected to decrease due to the consolidation of oilfield activities. Human activity in the lowland area would be limited to the trails; however, the overall increase in human activity across the entire Project site could be potentially significant. Implementation of MM 15, which requires a fencing and signage plan, would reduce this impact to a less than significant level.

Development and park uses built adjacent to natural open space, particularly near the lowland, may create urban-wildlands interface issues. Coyotes may attack cats and small dogs from residences. Outdoor cats may attack native birds, lizards, and small mammals, which is especially of concern in habitat potentially supporting Endangered, Threatened, or other special status wildlife species. These urban-wildlands interface impacts would be considered potentially significant. Implementation of MM 16, which requires development and implementation of an urban-wildlands interface brochure and public education program, would reduce this impact to a less than significant level.

Dust

During remediation and construction, the dust within the development footprint and adjacent areas is expected to increase. The accumulation of dust on the leaves of trees and shrubs could interfere with photosynthesis and could cause mortality of plant species covered with dust. This impact would be considered adverse but not significant. The habitats within the lowland on the Project site are currently covered in a fine layer of dust, which is a result of oilfield activities, especially vehicular traffic along dirt roads that fragment habitat throughout the lowland. The removal of the roads and vehicular traffic associated with oilfield activities and subsequent revegetation of the lowland with native habitat may result in an increased habitat value. This would be considered a potentially beneficial operational impact of the proposed Project.

Greenhouse Gas Emissions

The California Attorney General (AG) has filed numerous comment letters with agencies discussing their analysis of climate change in CEQA documents. As part of the AG's efforts to work with agencies to address climate change in their CEQA documents, the AG publishes and updates *The California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level,* which is a document with "information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming". The AG document includes a comprehensive list of suggested project-level measures for the reduction of GHG emissions. With respect to biological resources, one suggested measure is "Preserve and create open space and parks. Preserve existing trees and plant replacement trees at a set ratio".

The Project is consistent with this measure. As noted in PDF 1, the Project would preserve and enhance approximately 220 acres of native habitat. The Project would also provide approximately 51.4 gross (42.1 net) acres for active and passive park uses. Community landscaping improvements for streets, parks, common areas, open space areas, and habitat areas would be enhanced, restored, and improved with major supplemental plantings that would increase the biomass of Newport Banning Ranch, providing for on-site carbon sequestration. This would be a beneficial impact for GHG emissions.

The predicted long-term environmental effects of global climate change relative to biological resources include potential sea level rise, drought or excessive rainfall, and temperature increases affecting ecosystems. There are no Project elements that would substantially increase the risks to local, regional, or global biological resources from increased GHG emissions. Therefore, there would be no significant impacts from Project-specific GHG emissions on biological resources and no additional mitigation for biological resources is required.

Cultural Resources

Section 4.13 of the Project EIR, Cultural and Paleontological Resources, identifies significant impacts to archaeological and paleontological resources that would occur associated with the proposed Project. A portion of one archaeological site, CA-ORA-844B, overlaps the area of biological disturbance assumed as a part of the Biological Resources analysis. The Mitigation Program set forth in Section 4.13 requires this site to be either capped or data recovery to be performed. Either capping or data recovery of the deposit could result in temporary impacts to approximately 0.92 acre of coastal sage scrub (0.29 acre of Encelia scrub and 0.63 acre of cactus scrub). This potential impact to additional coastal sage scrub would require the same level of mitigation (restoration at a ratio of 1:1) as outlined in MM 1 and PDFs 1 through 3 would reduce this impact to a less than significant level.

Impact Summary: ***Less Than Significant With Mitigation.*** The Project would have direct and indirect impacts on habitat that supports special status species. This impact would be mitigated to a level considered less than significant with implementation of MMs 1 through 16.

Threshold 2 ***Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS?***

In addition to providing an inventory of special status plant and wildlife species, the CNDDB also provides an inventory of vegetation types that are considered special status by State and federal resource agencies, academic institutions, and various conservation groups. Determination of the sensitivity level is based on the Nature Conservancy Heritage Program Status Ranks, which ranks both species and vegetation types on a global and statewide basis according to (1) the number and size of remaining occurrences; (2) recognized threats (e.g., proposed developments, habitat degradation, and non-native species invasion); and (3) the Central/Coastal NCCP/HCP. All vegetation types below are considered a high priority for preservation by agencies and conservation groups.

Coastal Sage Scrub

Special status coastal sage scrub vegetation types on the Project site include southern coastal bluff scrub, disturbed southern coastal bluff scrub, California sagebrush scrub, Encelia scrub, coyote brush scrub, coyote brush scrub/mule fat scrub, goldenbush scrub, southern cactus scrub, and southern cactus scrub/Encelia scrub. The proposed Project would impact approximately 14.18 acres (12.26 acres permanent, 1.92 acres temporary) of special status coastal sage scrub vegetation. Impacts on these coastal sage scrub vegetation types are considered significant because (1) the loss of these vegetation types in the Project region would be considered a substantial adverse effect on the coastal sage scrub community and (2) impacts to these areas would reduce the habitat for the coastal California gnatcatcher and other wildlife species. Implementation of MM 1 and PDFs 1 through 4 would reduce this impact to a less than significant level. MM 1 requires habitat restoration of permanent impacts to coastal sage scrub (including southern coastal bluff scrub) at a 3:1 ratio and disturbed coastal sage scrub (excluding southern coastal bluff scrub) at a 1:1 ratio either onsite or offiste. In addition, all temporarily impacted coastal sage scrub would be restored at a 1:1 ratio. In total, 47.75 acres of coastal sage scrub restoration and an additional 35.16 acres of coastal sage scrub would be preserved through project implementation. MM 1 also requires the Applicant to follow the Construction Minimization Measures that would provide conservation and avoidance actions to reduce the adverse impact to the habitat and associated wildlife species. PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures. These features also provide conservation and avoidance value to the habitat and associated wildlife species.

Riparian

Special status riparian vegetation types on the Project site include freshwater marsh, alkali meadow, salt marsh, willow scrub, and willow riparian forest. The following communities are not considered to be a CDFG special status vegetation type: disturbed alkali meadow, disturbed salt marsh, mule fat scrub, disturbed willow scrub, and disturbed willow riparian forest. These vegetation types are biologically important, however, because they are (1) riparian and/or (2) they have a small component of a CDFG special status vegetation type interspersed with primarily non-native vegetation.

The proposed Project would impact approximately 14.44 acres of special status riparian habitats (including the disturbed forms described above) (6.62 acres permanent, 7.82 acres temporary). These impacts would be considered significant because of these vegetation types' decline in the region and also because these habitats potentially support special status wildlife species. Implementation of MMs 4 and 5 and PDFs 1 through 4 would reduce impacts on these resources to less than significant levels. MMs 4 and 5 require the restoration and preservation of 48.70 acres of riparian habitat. PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures. These features also provide conservation and avoidance value to the habitat and associated wildlife species.

Vernal Pools

Vernal pools are a wetland ecosystem characterized by the temporary ponding of water, typically during the winter and spring. They are found in a variety of landscapes, usually underlain by an impermeable layer such as a hardpan, claypan, or basalt (USACE 2008). In California, extensive areas of vernal pool habitat developed over a long geological timeframe, and unique ecosystems of plants and animals evolved to survive the ephemeral nature of vernal pools (USFWS 2005c). The prolonged annual dry phase has excluded fish and other predators and has prevented the establishment of plant species typical of more permanent wetlands (USFWS 2005c).

Habitat loss and fragmentation is the largest threat to vernal pool species. It is estimated that 95 to nearly 100 percent of vernal pool habitat in Southern California has been lost (USFWS 2005c). In addition to direct habitat loss, vernal pool hydrology can be altered by changes in hydrology, invasive species, contaminants, and climate change (USFWS 2005c).

The proposed Project is designed to protect the two areas previously described as vernal pools that are occupied by San Diego fairy shrimp. The proposed Project would permanently impact 0.07 acre of ephemeral pool and 0.06 acre of vernal pool habitat in order to remediate the soil and remove the pipelines in these areas. Once the remediation and pipeline removal are completed, the vernal pool areas would be restored and protected. Because oilfield pipelines are located on top of the soil surface in the pooled areas, their removal would be conducted with the minimum possible soil disturbance and would occur outside the rainy season to reduce direct impacts to this species. However, pipe removal activities would disrupt the soils within the vernal pools in which the San Diego fairy shrimp has been observed and which potentially contain fairy shrimp cysts. Therefore, these pipe removal activities would be considered a potentially significant temporary impact. This impact would be mitigated through preservation and restoration of a 3.58-acre conservation area. This includes enlarging and protecting the pools watershed.

During Project grading, a small area of the surrounding upland portion of the watershed would be impacted, but the Project proposes to replace this portion of the watershed so that the protected pools and 1.49 acre of contributing watershed would be permanently protected within a 1.85-acre vernal pool conservation area. Remediation, restoration and permanent protection of the two pools and protection of its watershed would ensure that Project impacts to these two pools are less than significant. In addition, the Project has identified an additional 1.73 acres of upland area, adjacent to the 1.85-acre area, which would be available for future vernal pool creation, restoration, and/or enhancement.

The 1.85-acre area would provide sufficient area for mitigating impacts to Features E and G at a 1:1 ratio and Features I and J at a 2:1 ratio using the pool to watershed ratio of the exiting 0.32-acre of vernal pool habitat within the vernal pool complex.

Implementation of MM 3, which requires the restoration and preservation of a 3.58-acre vernal pool complex, would reduce this impact to a less than significant level. In addition, PDFs 1 through 4 require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures which would provide conservation and avoidance value to the grassland vernal pool areas and associated wildlife species.

Impact Summary: ***Less Than Significant With Mitigation.*** Grading activities could impact several sensitive natural communities. This impact would be reduced to a level considered less than significant with implementation of MMs 1, 3, 4, and 5.

4.3.2 Threshold 3

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Jurisdictional Features

Typically, riparian resources and jurisdictional areas are addressed concurrently because the resources overlap; however, delineation of jurisdictional areas on the Project site is complex because portions of many of the vegetation types are located outside resource agency jurisdiction. Impacts to jurisdictional features are summarized in Table 8.

TABLE 8
JURISDICTIONAL FEATURES[a] IMPACT SUMMARY

Jurisdictional Features	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Total Impacts (Acres)
USACE (Waters and Wetlands)	0.32	3.93	**4.25**
CDFG	1.87	0.05	**1.92**
California Coastal Commission	2.52	6.48	**9.00**

a It is important to note that riparian vegetation types and jurisdictional areas should not be considered as identical resources. Although these resources often overlap, there are many areas on site where the riparian vegetation types are located outside resource agency jurisdiction. As an example, mule fat scrub typically occurs in riparian areas (relating to or located on the banks of a river or stream); however, the majority (96%) of the mule fat scrub impacted on the Project site occurs in upland areas or areas outside jurisdictional boundaries.

Note: USACE jurisdictional resource base data was provided by GLA and verified by BonTerra Consulting. CDFG and California Coastal Commission jurisdictional resource base data was provided by BonTerra Consulting.

The Project would permanently impact 0.32 acre of "Waters of the U.S." and USACE wetlands, 1.87 acres under the jurisdiction of the CDFG, and 2.52 acres under the jurisdiction of the California Coastal Commission. A total of 3.93 acres of "Waters of the U.S." and USACE wetlands, 0.05 acre under the jurisdiction of the CDFG, and 6.48 acres under the jurisdiction of the California Coastal Commission would be temporarily impacted by the proposed Project (Exhibits 12a, 12b, and 12c). Implementation of MMs 3, 4, and 5, and PDFs 1 through 4 would reduce impacts on jurisdictional resources to less than significant levels through habitat restoration and preservation (totaling approximately 52.28 acres). PDFs 1 through 4 also require the designation and methodology of habitat restoration/preservation and indirect effect minimization measures. These features also provide conservation and avoidance value to the habitat and associated wildlife species.