

3.3 BIOLOGICAL RESOURCES

This section describes the biological resources present from a regional context and at the site-specific level for the Otay River Estuary Restoration Project (proposed action). Descriptions are provided of the vegetation communities, plants, wildlife (e.g., birds, mammals, reptiles, and terrestrial and marine invertebrates), fish, and listed and sensitive species supported within the San Diego Bay National Wildlife Refuge (NWR). The information presented in this section of the environmental impact study (EIS) is based on surveys conducted between February 2011 and July 2011 for the Otay River Floodplain Site and in March 2013 for the Pond 15 Site. An additional survey was conducted in May 2014 to review existing conditions within project features. Focused surveys were conducted in spring and summer 2011 for coastal California gnatcatcher (*Polioptila californica californica*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), northern harrier (*Circus cyaneus*), light-footed Ridgway's rail (*Rallus obsoletus levipes*), and rare plants (Biological Resources Existing Conditions Technical Report (BTR) for the proposed action, provided in Appendix J to this EIS). This section incorporates by reference the relevant biological resources information from the following three documents:

- *Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project South Bay Unit of the San Diego Bay National Wildlife Refuge*, prepared by Dudek in September 2016 (Appendix J).
- *Results of Preliminary Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP), South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge*, prepared by Dudek in March 2015 (Appendix B to the BTR).
- *San Diego Bay National Wildlife Refuge Final Comprehensive Conservation Plan (CCP) and Environmental Impact Statement (EIS)*, prepared by the U.S. Fish and Wildlife Service (USFWS 2006a).

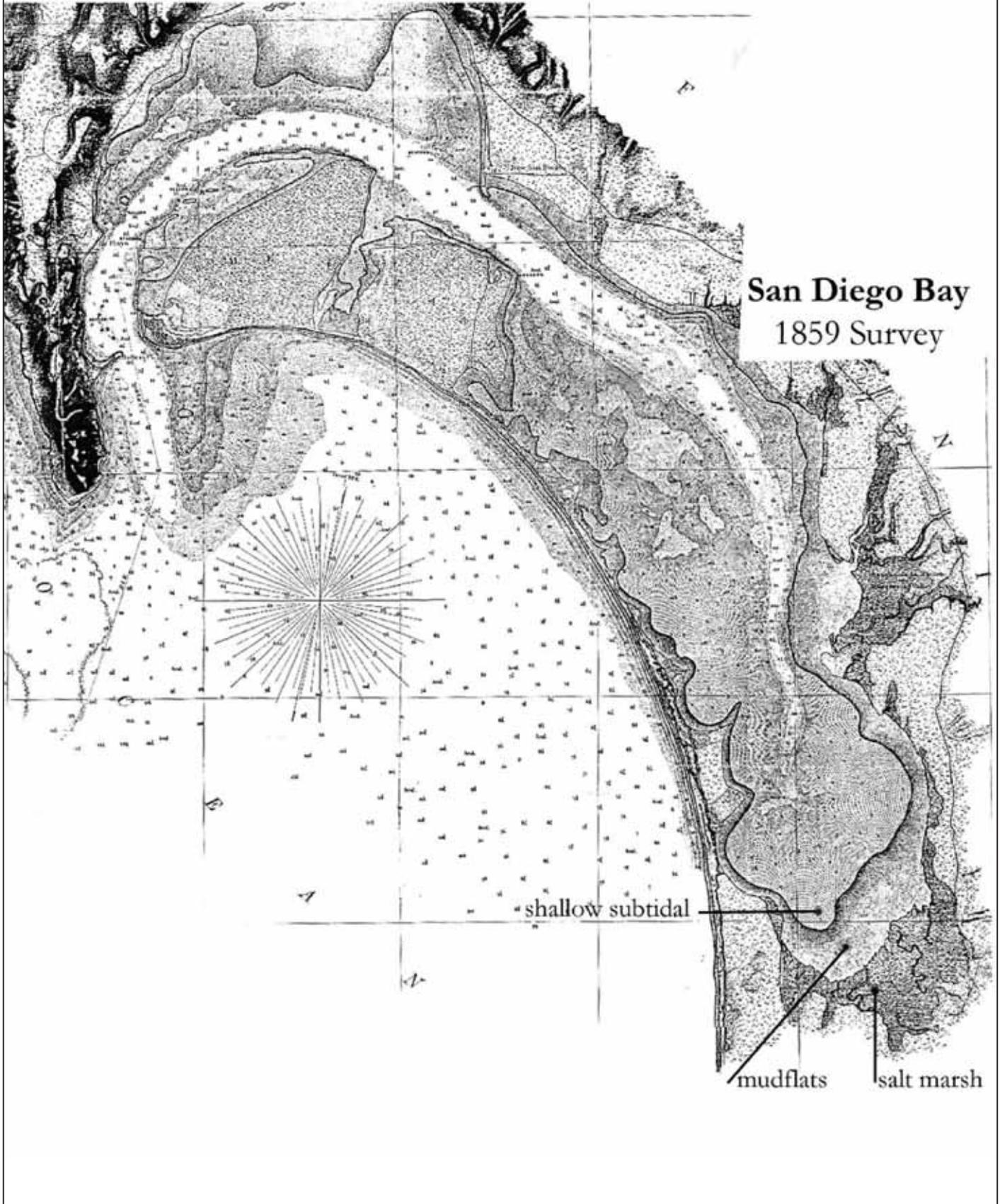
3.3.1 Habitat and Vegetation

The approximately 2,300-acre South San Diego Bay Unit of San Diego Bay NWR, which lies at the southern end of San Diego Bay, is managed by the U.S. Fish and Wildlife Service (Service) in accordance with the guidance provided in the San Diego Bay NWR Comprehensive Conservation Plan (USFWS 2006a). The South San Diego Bay Unit consists of portions of San Diego Bay; active solar salt evaporation ponds (South Bay Salt Works), which includes the Pond 15 Site; and the western end of the Otay River drainage basin, which includes the Otay River Floodplain Site. The San Diego Bay NWR provides protection for and management of a large number of endangered, threatened, migratory, and native species and their habitats. Nesting, foraging, and resting sites are managed for a number of species of shorebirds, colonial seabirds, and wintering waterfowl. Waterfowl and shorebirds over-winter or pass through, using the area

for foraging and resting as they migrate along the Pacific Flyway. Enhanced and restored wetlands, including the San Diego Bay NWR Ponds 10, 10a, and 11 Wetland Restoration Project completed in December 2011, provide high-quality habitat for fish, birds, and plants. Salt marsh vegetation provides habitat to support federally and State-listed endangered species such as light-footed Ridgway's rail and Belding's Savannah sparrow. Suitable protected nesting areas, primarily on the levees of the existing salt ponds, are used by the federally threatened western snowy plover (*Charadrius nivosus nivosus*), endangered California least tern (*Sternula antillarum browni*), and a number of other ground-nesting seabirds and shorebirds. Within the Otay River Floodplain Site, non-native weeds and exotic grasses dominate the upland portions of the site. The freshwater wetland habitat in the upstream portions of the Otay River contains components of southern willow scrub habitat and a variety of exotic, invasive wetland species such as giant reed (*Arundo donax*), salt cedar (*Tamarix ramosissima*), and castor bean (*Ricinus communis*). This freshwater wetland habitat transitions into salt marsh habitat approximately 1,300 feet upstream of the point where Nestor Creek empties into the Otay River channel.

Prior to the 1900s and human disturbance, survey mapping indicated that the region consisted of coastal salt marsh, intertidal mudflats, and shallow subtidal habitats, as illustrated in Figure 3.3-1, Historical Condition of San Diego Bay (1859) (USFWS 2006a). San Diego Bay was a fertile, shallow, flat-bottomed bay surrounded by extensive mudflats and salt marshes. A narrow channel was present from the mouth of the San Diego Bay to the southern end of Sweetwater Marsh (USFWS 2006a).

Over the past 100 years, significant portions of San Diego Bay, particularly the northern two-thirds of the Bay, have been dredged to support ship movement or were filled to accommodate port development. The channel is deeper and wider than it was originally, with the dredged material used to fill adjacent tidelands. At the southernmost end of San Diego Bay, much of the original salt marsh and intertidal mudflat habitat was diked to create solar evaporation ponds for producing salt. South Bay Salt Works, which represents a significant change to the natural habitats of San Diego Bay, is located within the southern end of the historical condition of San Diego Bay. South Bay Salt Works consists of diked open water cells with differing levels of salinity. These cells provide roosting habitat for migratory birds, foraging habitat for various shorebirds, and nesting habitat for a number of ground-nesting seabirds (USFWS 2006a). Today, a small percentage of the original salt marsh and intertidal habitat remains. Most of this remaining native habitat is located within the San Diego Bay NWR. The coastal wetlands that remain provide habitat for several federally listed endangered and threatened species, and also represent a vital link in the Pacific Flyway. An important byproduct of the commercial salt-making operation is the presence of dense populations of invertebrates (e.g., brine flies, brine shrimp) used as prey items by many species of waterbirds (USFWS 2006a). These conditions continue to be present within the boundaries of the ongoing solar salt operation.



**San Diego Bay
1859 Survey**

shallow subtidal

mudflats

salt marsh

SOURCE: USFWS 2006

**FIGURE 3.3-1
Historical Condition of San Diego Bay (1859)**

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Vegetation community classifications for the project site were based on the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), as modified by Oberbauer et al. (2008) in the *Draft Vegetation Communities of San Diego County*. The vegetation community descriptions provided by Holland (1986) were used to describe vegetation communities, with modifications, as necessary, to account for site-specific differences between the dominant species in the observed communities compared to the dominant species described by Holland (1986) and classified by Oberbauer et al. (2008).

3.3.1.1 Otay River Floodplain Site

The approximately 33.5-acre Otay River Floodplain Site consists mostly of upland habitat and land covers. Historically, some of these upland areas within the Otay River Floodplain Site supported either freshwater or riparian habitat, but appear to have been predominantly composed of coastal salt marsh habitat (USFWS 2006a). Over time, these wetland areas were converted to upland due to the channelization of the Otay River, the construction of solar salt ponds, and past agricultural activities.

The Otay River Floodplain Site consists of five vegetation communities or land covers, as listed in Table 3.3-1 and shown in Figure 3.3-2, Otay River Floodplain Restoration Site and Project Features Vegetation. Each vegetation community on the project site is described in greater detail below.

**Table 3.3-1
Vegetation Communities and Land Cover Types for the Otay River Floodplain Site**

Vegetation Community/Land Cover Type	Acreage
Brackish water	0.77
Disturbed habitat	8.68
Former salt pond bottom and borrow area	10.83
Isocoma scrub	11.97
Southern coastal salt marsh	1.26
Total	33.51

Source: Appendix J.

Isocoma Scrub

Isocoma scrub is dominated by Menzies' goldenbush (*Isocoma menziesii*). The stands of Isocoma scrub vegetation on the site, which occur to the west of Nestor Creek, form a sparse to open shrub layer. The overall height of these shrubs varies from 0 to 3 feet, and overall vegetation shrub cover is approximately 50%. There are a few patches of coastal cholla (*Cylindropuntia prolifera*) in the community, but the community lacks diversity and is composed of a nearly monotypic stand of Menzies' goldenbush in the shrub layer. The understory is predominantly composed of non-native annual weeds such as stork's bill (*Erodium* spp.), black

mustard (*Brassica nigra*), shortpod mustard (*Hirschfeldia incana*), Maltese star-thistle (*Centaurea melitensis*), brome grass (*Bromus* spp.), and wild oats (*Avena* spp.).

Southern Coastal Salt Marsh

Southern coastal salt marsh typically occurs in bays, lagoons, and estuaries along the coast and is subject to tidal inundation. Dominant species include alkali heath (*Frankenia grandifolia*), seablite (*Suaeda* sp.), and Parish's glasswort (*Arthrocnemum subterminale*) along the drier upper edges of the marshes; Pacific pickleweed (*Sarcocornia [Salicornia] pacifica*), Bigelow's pickleweed (*Salicornia bigelovii*), and saltwort (*Batis maritima*) at middle elevations; and California cordgrass (*Spartina foliosa*) at the lowest elevations.

On site, southern coastal salt marsh generally occurs along the banks of the Otay River along the northern edge of the project site, within Nestor Creek, and at the convergence of the Otay River and Nestor Creek. The southern coastal salt marsh on site includes plant species such as seablite, Pacific pickleweed, Parish's glasswort, and California cordgrass.

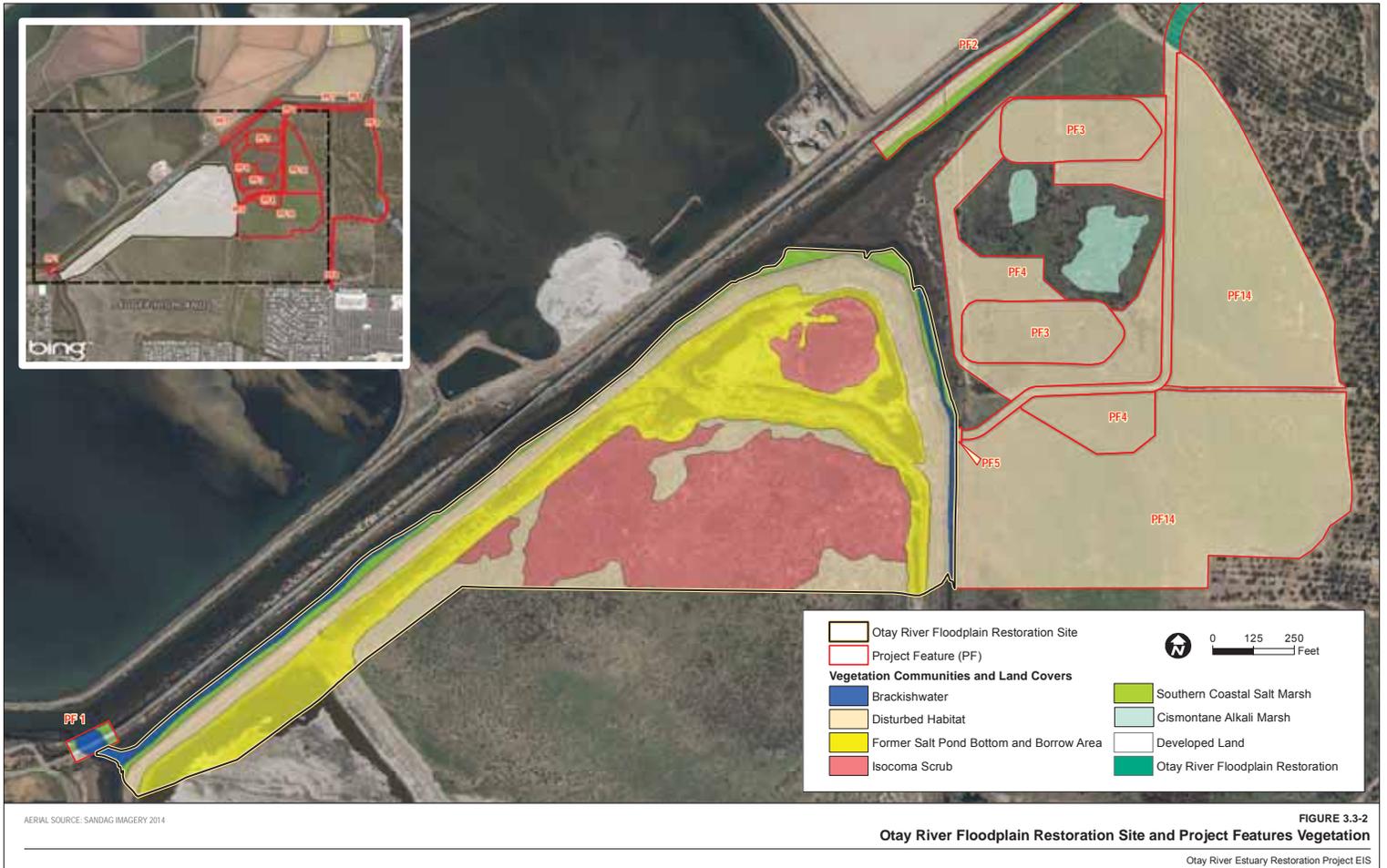
Brackish Water

Brackish water refers to tidal channels that are unvegetated and thus do not fit into other wetland habitat categories. The lack of vegetation may be due to the depth of water; scouring impacts of floods or regular tidal inundation; or human-caused vegetation removal for flood control, access, sand mining, or other purposes.

The brackish water on site receives water from the San Diego Bay with regular tidal inundation, and has a freshwater influence from upstream sources. One channel is located along the northern edge of the site (Otay River channel), and a second is oriented north/south along the eastern edge of the site (Nestor Creek). Within the Otay River Floodplain Site, both channels are subject to regular tidal inundation.

Former Salt Pond Bottom and Borrow Area

The former salt pond bottom and borrow areas consist of a series of low-lying areas that are remnants of former industrial salt evaporation pond construction and operations. The bottom and borrow areas are surrounded by a levee that separates them from the adjacent tidal channels. The levee was constructed, in part, using soil excavated from within the basin (borrow area). Because of this area's historical long-term use as an industrial salt evaporation pond, the soil conditions are hypersaline, and the land mapped as former salt pond bottom and borrow area does not support vegetation. The former salt pond bottom and borrow areas are located to the south and west of the Otay River and Nestor Creek channels.



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Disturbed Habitat

Disturbed habitat refers to areas that are not developed but lack vegetation, and generally are the result of severe or repeated mechanical perturbation. The disturbed habitat on site includes a berm along the northern portion of the site and areas located within the central portion.

3.3.1.2 Pond 15 Site

The Pond 15 Site consists of approximately 91 acres of predominantly open water, including the brines contained in the salt ponds; areas mapped as disturbed habitat such as the salt pond levees and small areas of San Diego Bay; beach; and the native southern coastal salt marsh vegetation community. Prior to diking for salt production, the entire area within the Pond 15 Site was composed of intertidal mudflat.

The Pond 15 Site is part of a larger South Bay Salt Works operation that currently produces salt for commercial purposes using solar radiation to evaporate water from seawater and eventually crystallize the salts through a sequential evaporation technique. The salt evaporation ponds are separated from the adjacent San Diego Bay and tidal channels by levees that surround the ponds. These levees reach a maximum elevation of approximately 8 feet, slightly greater than the highest observed water level (7.71 feet; North American Vertical Datum (NAVD88)). The Pond 15 Site includes the vegetation communities and land covers listed in Table 3.3-2 and shown in Figure 3.3-3, Pond 15 Restoration Site and Project Features Vegetation. Each vegetation community within the project site is described in greater detail below.

**Table 3.3-2
Vegetation Communities and Land Cover Types for the Pond 15 Site**

Vegetation Community/Land Cover Type	San Diego Bay NWR (acres)	San Diego Unified Port District Lands (acres)	Total Acreage
Bay	—	1.15	1.15
Beach	0.01	—	0.01
Disturbed habitat	2.77	—	2.77
Open water	82.33	—	82.33
Salt pond levee	3.67	—	3.67
Southern coastal salt marsh	0.72	0.15	0.87
Disturbed southern coastal salt marsh	0.10	—	0.10
Total	89.60	1.30	90.90

Source: Appendix J.

Bay

Areas mapped as bay are located outside the salt pond levees and refer to the open water located within San Diego Bay. The Pond 15 Site includes a 1.30-acre portion of San Diego Bay located immediately to the north of the area proposed for the Pond 15 levee breach (Figure 3.3-3). Approximately 1.15 acres of the 1.30 acres is designated as “Bay”. This portion of San Diego Bay is managed by the San Diego Unified Port District.

Beach

Beach refers to areas that are on the Bay side of the levees and that are subject to tidal inundation but consist generally of exposed sand. Areas that are mapped as beach are lacking vegetation. Beach areas are infrequently tidally inundated, whereas tidal flat and mudflat areas are inundated on a daily basis.

Disturbed Habitat

Disturbed land refers to areas that are not developed but lack vegetation and generally are the result of severe or repeated mechanical perturbation. The disturbed habitat on site includes the top surface of the levees surrounding the Pond 15 Site. These areas are used for vehicular access and do not support vegetation.

Open Water

Open water consists of concentrated brines found within the South Bay Salt Works and includes all areas within the salt pond complex that are perennially inundated, including Pond 15. The salt pond brines are hypersaline and vary in salinity from pond to pond, depending on each pond’s position in the sequential evaporative water process. The salinity level in each pond also varies throughout the year in response to rainfall, temperature, and other climatic factors.

Overall salinities of the active salt ponds within the South San Diego Bay Unit, which can range from 32 parts per thousand (ppt) to 356 ppt, are substantially higher than salinity levels at the south end of San Diego Bay. Allen (1999) observed that salinities in San Diego Bay varied depending on the location in the Bay and the time of year, with salinities typically higher than 34 ppt, the average value for seawater. As a matter of reference, ocean water salinity varies from 32 to 37 ppt (ONR 2014). In the mid-1990s, recorded salinities in south San Diego Bay varied from 39.8 ppt to 33.4 ppt (Allen 1999). The salinity level in Pond 15 varies from 71.3 to 128.5 ppt (USFWS 2006a).



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FIGURE 3.3-3
Pond 15 Restoration Site and Project Features Vegetation

Otay River Estuary Restoration Project EIS

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Salt Pond Levee

The salt pond levees consist of internal levees that separate the individual salt ponds within the South Bay Salt Works and external levees that separate the solar salt evaporation pond system from the adjacent San Diego Bay. The levees vary in the degree to which they are compacted, with the lower and outer edges less compacted and the surfaces intended for vehicle access more compacted. Areas with less compaction occasionally support disjunct patches of vegetation, and compacted areas are devoid of vegetation. Areas intended for driving access that are devoid of vegetation were classified as disturbed habitat (see above) to distinguish them in the context of regulated versus non-regulated jurisdictional areas. Patchy vegetation occurring on the salt pond levees consists of a combination of native and non-native species. Native species that occur on the levees are typical of middle and upper salt marsh habitat such as salt grass (*Distichlis spicata*), glasswort, and seablite species (*Suaeda* spp.). Non-native species occurring on the levees consist of ice plant (*Mesembryanthemum* spp.), annual grasses (e.g., *Bromus*), and patches of Australian saltbush (*Atriplex semibaccata*).

Southern Coastal Salt Marsh and Disturbed Southern Coastal Salt Marsh

Southern coastal salt marsh typically occurs in bays, lagoons, and estuaries along the coast, and is subject to tidal inundation. Dominant species include seablite species and Parish's glasswort along the drier upper edges of the marshes; Virginia glasswort (*Salicornia depressa*), dwarf saltwort (*Salicornia bigelovii*), and saltwort at middle elevations; and cordgrass closest to the water.

Within the Pond 15 Site, southern coastal salt marsh occurs as small patches of vegetation along the outer levee that separates the salt pond from the San Diego Bay. The Pond 15 Site includes a 0.15-acre patch of southern coastal salt marsh located immediately to the north of the area proposed for the Pond 15 levee breach (Figure 3.3-3). This area is managed by the San Diego Unified Port District. It is classified as a disturbed form of the habitat in areas where there is overall low vegetative cover of the community. The southern coastal salt marsh on site includes seablite species, Virginia glasswort, Parish's glasswort, and cordgrass.

3.3.1.3 Project Features

The proposed restoration activities would focus on the Otay River Floodplain Site and Pond 15 Site. However, several additional project features are required to facilitate the proposed action's restoration activities, including the following (described in detail in Chapter 2):

1. **Otay Channel Protection under Bikeway Bridge.**
2. **Otay Channel Protection.**
3. **Stockpiles.** Within the proposed staging area, two areas encompassing a total of 4.07 acres would be used for stockpiling excavated material.

4. **Staging Area.** Implementation of the proposed action would require a site where the logistics of mobilization and demobilization can occur, and where other activities related to the proposed action can be coordinated.
5. **Crossing at Nestor Creek.** To access the western portion of the Otay River Floodplain Site from the staging area east of Nestor Creek, the contractor would install a crossing across Nestor Creek composed of fill material and associated culverts.
6. **Truck Route Connecting Nestor Creek.** The truck construction access route would be used under any one of the three construction material transfer alternatives.
7. **Crossing at Otay River.** To access the construction staging area and western portion of the Otay River Floodplain Site from the end of Main Street, the contractor would install a crossing at the Otay River channel.
8. **Bike Path Reroute.** An existing bike path that extends north/south between Saturn Boulevard to the south and Main Street to the north would be rerouted during construction to minimize conflicts between bicyclists and construction vehicles and to ensure user safety.
9. **Crossing at Palomar Channel.** The crossing would be composed of fill material and associated culverts to ensure that the crossing would not create impediments to water flow.
10. **Truck Crossing at Salt Pond Levee.**
11. **Pond 13 and Pond 14 Levee Modifications.** Modifications in the northern areas of these ponds would occur.
12. **Pond 13 and Pond 14 Levee Modifications.** Modifications in the southern areas of these ponds would occur.
13. **Raised Levee between Pond 22 and Pond 23.** The elevation of the levee that extends for approximately 14,000 feet between Ponds 22 and 23 would be raised by 2 feet to a new crest elevation of +13 feet NAVD 88.
14. **Revegetation Area East of Nestor Creek.** The area east of Nestor Creek would be revegetated to native vegetation following completion of the proposed action. Stockpiled material on the staging area would partially be used for this revegetation effort.

Similar to the Otay River Floodplain Site and Pond 15 Site, most of the project features would occur on disturbed sites that have limited habitat quality, as shown in Table 3.3-3 and Figures 3.3-2, 3.3-3, 3.3-4 (Project Features Vegetation – Otay River Floodplain Site), and Figure 3.3-5 (Project Features Vegetation – Pond 15 Site).

Table 3.3-3 provides a summary of the existing vegetation communities and land cover types associated with the project features.

**Table 3.3-3
Vegetation Communities and Land Cover Types for the Project Features**

Vegetation Community/Land Cover Type	Project Features (acres)														Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Brackish water	0.13	0.08	–	–	–	–	–	–	0.01	–	–	–	–	–	0.21
Developed land	0.02	–	–	–	–	0.12	0.01	0.74	0.04	0.49	–	–	–	–	1.42
Disturbed habitat	0.03	0.68	4.07	6.06	0.02	1.87	0.07	0.02	0.04	0.30	0.02	0.02	0.41	21.50	35.11
Salt flat	–	–	–	–	–	–	–	–	–	0.06	–	–	–	–	0.06
Open water	–	–	–	–	–	–	–	–	–	0.40	0.79	0.08	0.03	–	1.30
Salt pond levee	–	–	–	–	–	–	–	–	0.01	0.45	0.19	0.08	0.31	–	1.04
Otay River floodplain restoration	–	–	–	–	–	0.56	–	0.03	–	–	–	–	–	–	0.59
Freshwater marsh	–	–	–	–	–	–	0.08	–	–	–	–	–	–	–	0.08
<i>Isocoma</i> scrub	–	0.06	–	–	–	–	–	–	–	–	–	–	–	–	0.06
Mulefat scrub	–	–	–	–	–	0.06	–	–	–	–	–	–	–	–	0.06
Southern coastal salt marsh	0.06	0.47	–	–	–	0.02	0.02	–	0.06	0.19	–	–	–	–	0.82
Total	0.24	1.29	4.07	6.06	0.02	2.63	0.18	0.79	0.16	1.89	1.00	0.18	0.75	21.50	40.76

Project Features

- 1 Otay Channel Protection under Bikeway Bridge (temporary and permanent)
- 2 Otay Channel Protection (permanent)
- 3 Stockpiles (permanent)
- 4 Staging Area (temporary)
- 5 Crossing at Nestor Creek (temporary)
- 6 Two-Lane Truck Route Connecting Nestor Creek (temporary)
- 7 Crossing at Otay River (temporary)
- 8 Bike Path Reroute (temporary)
- 9 Crossing at Palomar Channel (temporary)
- 10 Two-Lane Truck Crossing at Salt Pond Levee (temporary)
- 11 Levee Modification of Ponds 13 and 14 – North (temporary and permanent)
- 12 Levee Modification of Ponds 13 and 14 – South (temporary and permanent)
- 13 Raised Levee between Ponds 22 and 23 (permanent)
- 14 Revegetation Area East of Nestor Creek (permanent)

3.3.1.4 Jurisdictional Waters

The U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (Regional Board), and California Coastal Commission (Commission) regulate certain activities within streams, wetlands, riparian areas, and the coastal zone in California.

U.S. Army Corps of Engineers

The Corps regulates “discharge of dredged or fill material” into waters of the United States, which includes tidal waters, interstate waters, and all other waters that are part of a tributary system to interstate waters or to navigable waters of the United States, the use, degradation, or destruction of which could affect interstate or foreign commerce or that are tributaries to waters subject to the ebb and flow of the tide (33 Code of Federal Regulations 328.3(a)), pursuant to the provisions of Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Corps jurisdiction within rivers and streams extends to the ordinary high water mark. The Corps defines jurisdictional wetlands as areas supporting a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with the procedures established in the Corps’ Wetland Delineation Manual (ACOE 1987). However, the United States Supreme Court ruling in the *Solid Waste Agency of Northern Cook County vs. United States Army Corps of Engineers*, No. 99-1178 (January 9, 2001) (the SWANCC case) held that the CWA does not give the Federal government regulatory authority over non-navigable, isolated, intrastate waters. Because of this decision, some previously regulated depressional areas such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools, which lack a hydrologic connection to other intra- or interstate waters of the United States, are no longer regulated by the Corps. However, some of these areas (e.g., isolated streams, lakes, or ponds) may still be regulated by CDFW under Section 1600 of the Fish and Game Code, the Regional Board under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), or the Commission under the California Coastal Act.

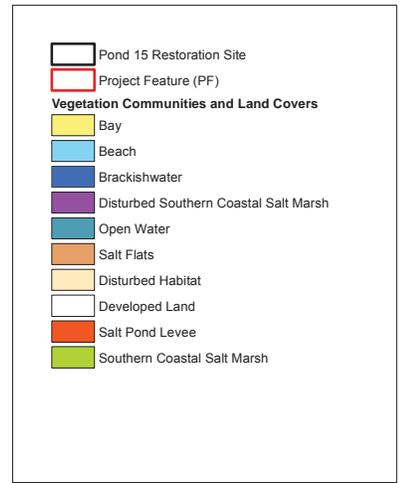
For tidally influenced waters, the Corps has two limits to jurisdiction: one for Section 10 and one for Section 404. The shoreward limit to the Corps’ regulatory jurisdiction under the Section 10 authorities of the Rivers and Harbors Act in coastal areas extends to the line on the shore reached by the plane of the mean high water, which is 5 feet above mean lower low water (MLLW = 0 datum). The shoreward limit for the regulatory program’s jurisdiction under the Corps Section 404 authorities is based on the high tide line, which, in the San Diego Bay, is 7.79 feet above MLLW. If there are wetlands meeting the Corps’ criteria abutting or adjacent to the high tide line, then the Corps’ jurisdiction under Section 404 extends to the limit of those wetlands.



AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 3.3-4
Project Features Vegetation
Otay River Estuary Restoration Project EIS

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AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 3.3-5
Project Features Vegetation

Otay River Estuary Restoration Project EIS

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California Department of Fish and Wildlife

Section 1600 et seq. of the California Fish and Game Code (Streambed Alteration) authorizes CDFW to regulate activities that “will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank, of any river, stream, or lake designated by [CDFW] in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit.” Typically, CDFW takes jurisdiction to the top of bank of a stream or the limit of the adjacent riparian vegetation, referred to in this report as “streambed and associated riparian habitats.” Within estuary environments, a “preponderance of evidence” standard is used where it is not readily apparent where Section 1600 jurisdiction ends. Under this standard, the geometry of the water feature, predominant salinity of the waters, composition of vegetation, and predominant fauna are used to determine the limits of CDFW jurisdiction under Section 1600.

Activities are not regulated under Section 1600 of the Fish and Game Code where waters are principally marine, aquatic shorelines are shaped principally by tidal current and wave action rather than by fluvial processes, vegetation is saline marsh and not brackish water or freshwater, and marine fish and invertebrate communities are prevalent. However, CDFW has participated and will continue to participate with the Service in development and review of wetland restoration projects in the San Diego Bay NWR.

Regional Water Quality Control Board

The Regional Board regulates discharging waste, or proposing to discharge waste, within any region that could affect waters of the State (SWRCB 2014), pursuant to provisions of the Porter-Cologne Act. “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the State” (SWRCB 2014). Although the Porter-Cologne Act definition of waters of the State may not apply on federally owned land, the Regional Board may still assert jurisdiction over qualifying aquatic resources on land owned by the United States where CWA Section 401 applies. Before the Corps will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the Regional Board.

California Coastal Commission

Under the California Coastal Act, the Commission regulates impacts to designated sensitive coastal areas and wetlands in the “coastal zone,” and requires a coastal development permit for almost all development within this zone. From 3 miles seaward, the coastal zone extends inland anywhere from several hundred feet up to 5 miles from the mean high tide line.

Section 30240(b) of the California Coastal Act states that development in and adjacent to environmentally sensitive habitat areas be sited and designed to prevent impacts that would significantly degrade those areas. The California Coastal Act also protects wetland areas. Section

30121 of the California Coastal Act defines wetlands as “lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, swamps, mudflats, and fens.” The California Coastal Act only allows impacts to wetlands if the three tests of Coastal Act Section 30233(a) are met. The first test requires that the proposed activity fit into one of seven categories of uses, including wetland restoration. The second test requires that there be no feasible, less environmentally damaging alternative. The third test mandates that feasible mitigation measures be provided to minimize a project’s adverse environmental effects. In contrast to the Corps, which uses a three-parameter definition to delineate wetlands, the Commission essentially uses the Cowardin method of wetland classification, which defines wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

The Commission’s wetland definition is generally more encompassing than either the Corps or CDFW definition in most respects. However, Section 13577(b) of the Commission’s Administrative Regulations suggests that where conditions are not capable of supporting hydric soils or hydrophytic vegetation, hydrologic indicators of saturation or surface waters should be expressed on an annual basis (“at some time during each year”) rather than under ordinary high water conditions, as is the case under the Federal regulatory standard.

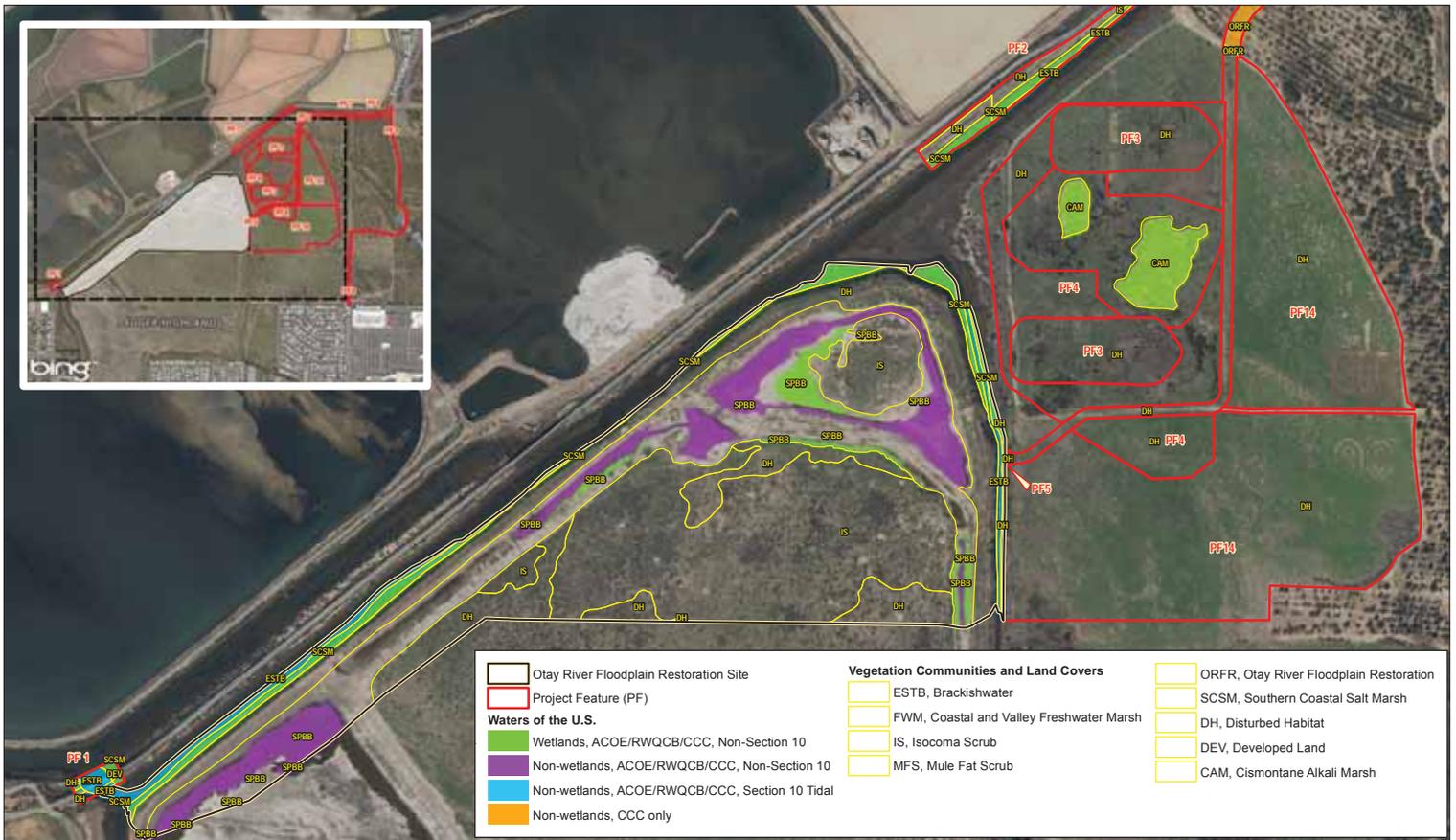
3.3.1.4.1 Otay River Floodplain Site

The jurisdictional delineation identified 6.43 acres of wetlands and non-wetland waters under the joint jurisdiction of the Corps (under the Preliminary Jurisdictional Determination procedures), Regional Board, and Commission (see Table 3.3-4 and Figure 3.3-6, Otay River Floodplain Restoration Site and Project Features Jurisdictional Delineation). No areas are under the jurisdiction of the Commission only as determined by a single parameter.

**Table 3.3-4
Wetland Delineation Existing Acreage Summary for the Otay River Floodplain Site**

Vegetation Community	Jurisdiction
	<i>Corps, Regional Board, Commission</i>
<i>Non-Wetlands</i>	
Brackish water	0.77 acre
Former salt pond bottom and borrow area	3.52 acres
<i>Wetlands</i>	
Southern coastal salt marsh	1.26 acres
Former salt pond bottom and borrow area	0.87 acre
Total	6.43 acres

Source: Appendix J.



AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 3.3-6
Otay River Floodplain Restoration Site and Project Features Jurisdictional Delineation

Otay River Estuary Restoration Project EIS

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In general, the predominant native vegetation communities associated with the wetlands are adjacent to tidal channels and support southern coastal salt marsh. Soils in these areas are characterized by variable textures (i.e., clay loam, sand, loam, clay, loamy sand, loamy clay, and sandy clay loam) with redox dark surfaces or a loamy gleyed matrix. Wetland hydrology indicators present are surface water, high water table, and saturation. Areas supporting all three wetland indicators were mapped as Corps, Regional Board, and Commission wetlands. Additionally, some locations along the tidal channels had a narrow strip along the outer perimeter of the salt marsh habitat where hydrology indicators were not apparent and soils did not have hydric indicators. In these instances, Corps jurisdiction was assumed because they are tidally influenced areas that are below the elevation of the high tide line (7.79 feet above MLLW).

The Otay River Floodplain Site contains a series of low-lying areas that are remnants from the construction and operation of the former industrial salt evaporation pond, as described above. The functions and values of these areas are considered degraded and low due to extensive disturbance, lack of vegetation, lack of surface water hydrologic connectivity, and excessive salinity.

Portions of the former salt pond bottom and borrow area can occasionally become inundated from precipitation, as was the case during the February 2011 site visit. However, with the exception of a few small areas in the southwestern corner, the areas were completely dry during the July 2011 site visit. A review of aerial photographs shows that ponding does not occur every year and varies in location and extent. Although the borrow areas may exhibit periods of ponding during the rainy season, the surface water evaporates quickly.

Although the borrow areas are not physically connected to tidal channels or freshwater channels due to the presence of perimeter berms, the Corps classified them as jurisdictional for the Preliminary Jurisdictional Delineation. The portions of these areas that support hydrophytic vegetation were classified as wetlands, and the remaining areas below the ordinary high water mark were classified as non-wetland waters of the United States. All the borrow areas met the Commission's definition of a wetland (Appendix J).

3.3.1.4.2 *Pond 15 Site*

Based on the wetland delineation conducted by Dudek in March 2013, approximately 88 acres of wetland and non-wetland waters of the United States is under the joint jurisdiction of the Corps, Regional Board, and Commission within the Pond 15 Site. Of this, 1.30 acres is San Diego Unified Port District Lands. The jurisdictional features identified on site are listed in Table 3.3-5 and shown in Figure 3.3-7, Pond 15 Restoration Site and Project Features Jurisdictional Delineation. The jurisdictional features identified are primarily unvegetated, with the exception of one patch along the salt pond levee. Coastal salt marsh is the dominant native vegetation

community associated with wetlands on site. When present, vegetation consisted of species typical of southern coastal salt marsh habitat, including estuary seablite (*Suaeda esteroa*), alkali heath, Pacific pickleweed, sea lavender (*Limonium californicum*), and saltwort. Also observed in the southern coastal salt marsh habitat were coast weed (*Amblyopappus pusillus*), non-native slenderleaf iceplant (*Mesembryanthemum nodiflorum*), non-native crystalline iceplant (*Mesembryanthemum crystallinum*), and arrowgrass (*Triglochin maritima*).

Although not present within the Pond 15 Site, an eelgrass (*Zostera*) survey conducted in San Diego Bay in 2014 indicated that eelgrass occurs along the southern edge of the Chula Vista Wildlife Reserve, approximately 850 feet to the west of the northern portion of Pond 15 (NAVFAC and Port 2014). Although the distribution of eelgrass may vary from year to year, the survey indicated a relatively large population within south San Diego Bay (Figure 3.3-8, San Diego Bay 2014 Eelgrass Survey).

The portions of the Pond 15 Site that met all three parameters were classified as wetlands, and the remaining areas below the high tide line (7.79 feet above MLLW) were classified as non-wetland waters of the United States. The top of the salt pond levees is above the high tide line and did not meet the three parameters. Therefore, these areas were mapped as disturbed habitat and were classified as non-jurisdictional.

**Table 3.3-5
Pond 15 Site Wetland Delineation Existing Acreage Summary**

Vegetation Community	San Diego Bay NWR	San Diego Unified Port District Lands	Total Acres
<i>Non-Wetlands</i>			
Bay	—	1.15	1.15
Beach	0.01	—	0.01
Open water	82.33	—	82.33
Salt pond levee	3.67	—	3.67
<i>Wetlands</i>			
Southern coastal salt marsh	0.72	0.15	0.87
Disturbed southern coastal salt marsh	0.10	—	0.10
Total	86.84	1.30	88.14

Source: Appendix J.

Note: All areas are under the jurisdiction of the Corps, Regional Board, and Commission.

Pond 15 Restoration Site
 Project Feature (PF)
 San Diego Unified Port District Jurisdiction

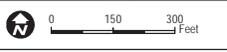
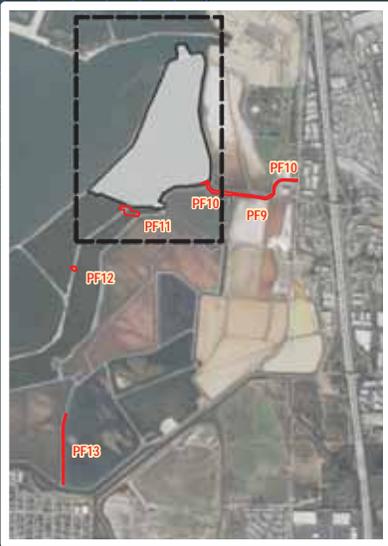
Waters of the U.S.

Wetlands (ACOE/RWQCB/CCC) (Non-Section 10)
 Non-wetlands (ACOE/RWQCB/CCC) (Non-Section 10)
 Non-wetlands (ACOE/RWQCB/CCC) (Section 10 Tidal)

Data Station

Vegetation Communities and Land Covers

BAY, Bay
 BCH, Beach
 DH, Disturbed Habitat
 SCSM, Southern Coastal Salt Marsh
 SPL, Salt Pond Levee
 WAT, Open Water
 dSCSM, Disturbed Southern Coastal Salt Marsh



AERIAL SOURCE: SANGIS IMAGERY 2014

FIGURE 3.3-7
Pond 15 Restoration Site and Project Features Jurisdictional Delineation

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SAN DIEGO BAY

2014 EELGRASS SURVEY

SOURCE: Merkel & Associates, Inc., Naval Facilities Engineering Command Southwest, Port of San Diego, 2014.

FIGURE 3.3-8
San Diego Bay 2014 Eelgrass Survey

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3.3.1.4.3 Project Features

Implementation of the project features associated with habitat restoration activities at the Otay River Floodplain Site and Pond 15 Site would affect approximately 3.04 acres of jurisdictional waters. The jurisdictional features identified on site are listed in Table 3.3-6 and shown in Figures 3.3-6, 3.3-7, 3.3-9 (Project Features Jurisdictional Delineation – Otay River Floodplain Site), and 3.3-10 (Project Features Jurisdictional Delineation – Pond 15 Site).

**Table 3.3-6
Project Features Wetland Delineation Existing Acreage Summary**

Vegetation Community/ Land Cover Type	Project Features under Corps, Regional Board, and Commission Jurisdiction, Except Where Noted as Commission-Only* (acres)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Brackish water	0.13	0.08	—	—	—	—	—	—	0.01	—	—	—	—	—	0.21
Open water	—	—	—	—	—	—	—	—	—	0.40	0.79	0.08	0.03	—	1.30
Otay River floodplain restoration – Commission only	—	—	—	—	—	0.56	—	—	—	—	—	—	—	—	0.56
Freshwater marsh	—	—	—	—	—	—	0.08	—	—	—	—	—	—	—	0.08
Mulefat scrub – Commission only	—	—	—	—	—	0.06	—	—	—	—	—	—	—	—	0.06
Southern coastal salt marsh	0.06	0.47	—	—	—	0.02	0.02	—	0.06	0.19	—	—	—	—	0.82
Total**	0.19	0.55	—	—	—	0.65	0.10	—	0.07	0.59	0.79	0.08	0.03	—	3.04

* Commission wetlands define wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).

** Totals may not sum precisely due to rounding.

Project Features

- 1 Otay Channel Protection under Bikeway Bridge (temporary and permanent)
- 2 Otay Channel Protection (permanent)
- 3 Stockpiles (permanent)
- 4 Staging Area (temporary)
- 5 Crossing at Nestor Creek (temporary)
- 6 Two-Lane Truck Route Connecting Nestor Creek (temporary)
- 7 Crossing at Otay River (temporary)
- 8 Bike Path Reroute (temporary)
- 9 Crossing at Palomar Channel (temporary)
- 10 Two-Lane Truck Crossing at Salt Pond Levee (temporary)
- 11 Levee Modification of Ponds 13 and 14 – North (temporary and permanent)
- 12 Levee Modification of Ponds 13 and 14 – South (temporary and permanent)
- 13 Raised Levee between Ponds 22 and 23 (permanent)
- 14 Revegetation Area East of Nestor Creek (permanent)

3.3.2 Wildlife and Fisheries

3.3.2.1 Otay River Floodplain Site

The Otay River Floodplain Site offers moderate habitat value for wildlife, primarily for migratory birds and common upland species, but it also provides foraging habitat for raptor species. The habitat supports a number of upland species prevalent in disturbed and urbanized areas. Habitat on the project site lacks cover and structural diversity and is dominated by non-native species on the eastern side, providing relatively few resources for wildlife. A total of 83 species of wildlife (79 birds and 4 mammals) were observed on the project site (Appendix J). Species commonly observed on site included house finch (*Carpodacus mexicanus*) and lesser goldfinch (*Spinus psaltria*). Several swallow species (family Hirundinidae) were observed during the surveys, and many individuals were observed foraging over the site. A number of raptor species were observed foraging on small mammals in the vegetation. Coastal shorebirds and gulls were periodically observed flying over the site.

No reptile or amphibian species were observed on site. Some species that are likely to occur include western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), and gopher snake (*Pituophis melanoleucus*). Common species of mammals observed in upland parts of the site included brush rabbit (*Sylvilagus bachmani*), coyote (*Canis latrans*), and California ground squirrel (*Spermophilus (Otospermophilus) beecheyi*). Other mammals adapted to living in areas near human disturbance, such as striped skunk (*Mephitis mephitis*) and Virginia opossum (*Didelphis virginiana*), may also occur on the site. Special-status wildlife species observed in the Otay River Floodplain Site are discussed in Section 3.3.3.

3.3.2.2 Pond 15 Site

The Pond 15 Site offers moderate habitat value for wildlife species, primarily for migratory birds and waterbirds, with some support for common upland species that typically inhabit a wide range of sites. During a visit to the site, it was noted that although the number of birds on the Pond 15 Site was high, the species richness was low. In comparison, immediately adjacent to the Pond 15 Site in the San Diego Bay, species richness was very high, as species respond to the tidal influence cycles and the foraging opportunities in the periodically exposed mudflat. Habitat on the project site consists mostly of saline brines, with a narrow upland perimeter formed by the levee system. The pond environment provides habitat for a variety of bird species. The open water in the ponds supports bird rafting and loafing; the brine flies and brine shrimp that can be abundant in the ponds provide foraging opportunities; and various levees surrounding the ponds provide nesting habitat for seabirds, shorebirds, and waterfowl.



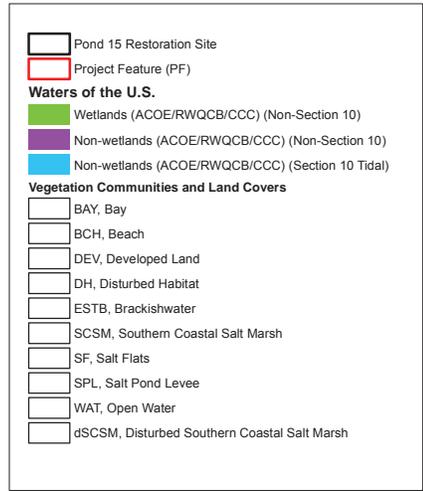
	Otay River Floodplain Restoration Site		Vegetation Communities and Land Covers
	Project Feature (PF)		ESTB, Brackishwater
	Waters of the U.S.		FWM, Coastal and Valley Freshwater Marsh
	Wetlands, ACOE/RWQCB/CCC, Non-Section 10		IS, Isocoma Scrub
	Non-wetlands, ACOE/RWQCB/CCC, Section 10 Tidal		MFS, Mule Fat Scrub
	Non-wetlands, CCC only		ORFR, Otay River Floodplain Restoration
			SCSM, Southern Coastal Salt Marsh
			DH, Disturbed Habitat
			DEV, Developed Land
			CAM, Cismontane Alkali Marsh

AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 3.3-9
Project Features Jurisdictional Delineation

Otay River Estuary Restoration Project EIS

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AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 3.3-10
Project Features Jurisdictional

Otay River Estuary Restoration Project EIS

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Within the shorebird group, per surveys conducted between 1999 and the present (SDNHM and ARA 2011), the most common species include red-necked phalarope (*Phalaropus lobatus*), Wilson’s phalarope (*P. tricolor*), western sandpiper (*Calidris mauri*), marbled godwit (*Limosa fedoa*), willet (*Tringa semipalmata*), American avocet (*Recurvirostra americana*), and black-necked stilt (*Himantopus mexicanus*). Eared grebe (*Podiceps nigricollis*) represents the largest population of any species occurring at the Pond 15 Site. These species, as well as California brown pelican (*Pelecanus occidentalis californicus*), California gull (*Larus californicus*), double-crested cormorant (*Phalacrocorax auritus*), and elegant tern (*Thalasseus elegans*), are also abundant throughout the salt pond complex. Many of the levees within the salt pond complex provide nesting habitat for a diverse and abundant array of colonial nesting seabirds, including the federally endangered California least tern, Caspian tern (*Hydroprogne caspia*), elegant tern, royal tern (*Thalasseus maximus*), western gull-billed tern (*Gelochelidon nilotica vanrossemi*), Forster’s tern (*Sterna forsteri*), and black skimmer (*Rynchops niger*). California least terns, western snowy plovers, gull-billed terns, Caspian terns, Forster’s terns, black skimmers, black-necked stilts, and double-crested cormorants have been documented nesting within or in proximity to the Pond 15 Site in various years between 1999 and the present (SDNHM and ARA 2011).

3.3.3 Endangered and Threatened Species and Other Species of Concern

Special-status species are those species that have been afforded special recognition by Federal, State, or local resource agencies or organizations and are of relatively limited distribution; they typically require unique habitat conditions. Special-status species are defined as meeting one or more of the following criteria: listed as threatened or endangered or candidates for future listing as threatened or endangered under the Federal Endangered Species Act or California Endangered Species Act; listed as species of concern by CDFW; bird species identified by the Service as Birds of Conservation Concern (USFWS 2008); plant species considered by the California Native Plant Society to be “rare, threatened, or endangered in California” (California Rare Plant Rank 1A, 1B, and 2, as well as California Rare Plant Rank 3 and 4¹); a plant listed as rare under the California Native Plant Protection Act;² or a plant considered locally significant (a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as

¹ California Rare Plant Ranks 3 and 4 are included in the California Natural Diversity Database (CNDDDB) *Special Vascular Plants, Bryophytes, and Lichens List* (refer to the current online published list available at http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp) (CDFW 2014a).

² As defined by the California Native Plant Protection Act, a plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (California Fish and Game Code, Section 1901) (CDFW 2014a).

within a county or region, or is so designated in local or regional plans, policies, or ordinances, including Multiple Species Conservation Programs (MSCPs)).

Special-status plant species that were observed or have potential to occur on site are presented in Table 3.3-7. Special-status plants with low or no potential to occur, based on the location and conditions, are shown in Table 3.3-8. Results of surveys are provided in Section 3.3.3.1 and are shown on Figure 3.3-11, Otay River Floodplain Restoration Site Special-Status Plant Species, Figure 3.3-12, Pond 15 Restoration Site Special-Status Plant Species, and Figure 3.3-13, Ponds 22 and 23 Special-Status Plant Species.

**Table 3.3-7
Special-Status Plant Species Detected or Potentially Occurring on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Corethrogyne filaginifolia</i> var. <i>incana</i>	San Diego sand aster	None/ None/ None	1B.1	Chaparral, coastal bluff scrub, coastal scrub/perennial herb/ June–September/10–380	Moderate potential to occur but not detected. Although the plant may not have been flowering during the May focused survey, the vegetative form of the species would have been observed and none were detected. There is suitable habitat, and the project site is located within the elevation range for this species.
<i>Lycium californicum</i>	California box-thorn	None/ None/ None	4.2	Costal bluff scrub, coastal scrub/perennial shrub/ December–August/15–590	Observed on the Otay River Floodplain Site during focused plant survey.
<i>Suaeda esteroa</i>	Estuary seablite	None/ None/ None	1B.2	Coastal salt marshes and swamps/perennial herb/May–October (Jan)/<20	Observed during focused plant surveys at Otay River Floodplain Site and Pond 15 Site.
<i>Suaeda taxifolia</i>	Woolly seablite	None/ None/ None	4.2	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/ perennial evergreen shrub/ January–December/0–165	Observed during focused plant survey on Otay River Floodplain Site.

NCCP = Natural Communities Conservation Plan; ft amsl = feet above mean sea level.

CRPR: California Rare Plant Rank

1B: Plants rare, threatened, or endangered in California and elsewhere

4: Plants of limited distribution – a watch list

Threat Rank

.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Abronia maritima</i>	Red sand-verbena	None/None/None	4.2	Coastal dunes/perennial herb/ February–November/ 10–330	No potential to occur. Although the project site is located within the elevation range for this species, there is no suitable habitat on site.
<i>Acanthomintha ilicifolia</i>	San Diego thorn-mint	FT/SE/ MSCP NE	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/ April–June/30–3,150	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Agave shawii</i> var. <i>shawii</i>	Shaw's agave	None/None/ MSCP	2B.1	Coastal bluff scrub, coastal scrub/leaf succulent/ September–May/30–250	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Ambrosia pumila</i>	San Diego ambrosia	FE/ None/ MSCP NE	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; often disturbed, sometimes alkaline/ rhizomatous herb/ May–October/60–1,360	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Aphanisma blitoides</i>	Aphanisma	None/None/None	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/ annual herb/March–June/ <1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	FE/ None/ MSCP	1B.1	Maritime chaparral; sandy/ evergreen shrub/December–June/<1,200	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Artemisia palmeri</i>	San Diego sagewort	None/None/None	4.2	Chaparral, coastal scrub, riparian forest, scrub, and woodland; sandy, mesic/ deciduous shrub/May–September/50–3,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Astragalus tener</i> var. <i>titi</i>	Coastal dunes milk-vetch	FE/SE/ MSCP	1B.1	Coastal bluff scrub, coastal dunes, coastal prairie; mesic, often vernal mesic/annual herb/March–May/<170	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Atriplex coulteri</i>	Coulter's saltbush	None/ None/ None	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/March–October/10–1,500	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Atriplex pacifica</i>	South Coast saltscale	None/ None/ None	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas/ annual herb/March–October/ <500	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Atriplex parishii</i>	Parish's brittlescale	None/ None/ None	1B.1	Chenopod scrub, playas, vernal pools/annual herb/ June–October/80–6,300	Low potential to occur. There is suitable habitat within the playa on site and the project site is located within the elevation range for this species. However, the species tends to be associated with a claypan soil and vernal pools, which are not present.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None/ None/ None	1B.2	Coastal bluff scrub, coastal scrub; alkaline/annual herb/ April–October/30–650	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Bergerocactus emoryi</i>	Golden-spined cereus	None/ None/ None	2B.2	Closed-cone conifer forest, chaparral, coastal scrub; sandy/shrub/May–June/ 10–1,300	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Calandrinia breweri</i>	Brewer's calandrinia	None/ None/ None	4.2	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/March–June/30–4,000	Absent. There is suitable habitat on site and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>California (=Erodium) macrophylla</i>	Round-leaved filaree	None/ None/ None	1B.1	Cismontane woodland, valley and foothill grassland; clay/ annual herb/March–May/50–4,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species, but this species would have been observed during the focused plant survey.
<i>Camissoniopsis lewisii</i>	Lewis's evening primrose	None/ None/ None	3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/March–May (June)/<1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Ceanothus verrucosus</i>	Wart-stemmed ceanothus	None/ None/ MSCP	2B.2	Chaparral/evergreen shrub/ December–May/<1,250	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Centromadia (=Hemizonia) parryi</i> spp. <i>australis</i>	Southern tarplant	None/ None/ None	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–November/<400	Low potential to occur. There is suitable habitat on site and the project site is located within the elevation range for this species. However, the site is too disturbed for the species, and the soils required for the species need to have a clay pan.
<i>Centromadia (=Hemizonia) pungens</i> ssp. <i>laevis</i>	Smooth tarplant	None/ None/ None	1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/April–September/<1,580	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None/ None/ None	1B.1	Coastal bluff scrub, coastal dunes/annual herb/January–August/10–330	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	FE/SE	1B.1	Maritime chaparral, closed-cone conifer forest, coastal scrub/annual herb/March–May/<400	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Cistanthe maritima</i>	Seaside cistanthe	None/ None/ None	4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland/annual herb/ February–August/6–984	Absent. There is suitable habitat and the project site is located within the elevation range for this species, but the species would have been observed during the focused plant survey.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	Salt marsh bird's-beak	FE/SE/ MSCP	1B.2	Coastal dunes, coastal saltwater marshes and swamps/annual herb; hemiparasitic/May–October/ <100	Absent. There is suitable habitat and the project site is located within the elevation range for this species, but the species would have been observed during the focused plant survey.
<i>Dicranostegia orcuttiana</i>	Orcutt's bird's-beak	None/ None/ MSCP	2B.1	Coastal scrub/annual herb/ (Mar) April–July (Sept)/ 30–1,150	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar Mesa sand aster	None/ None/ None	1B.1	Coastal bluff scrub, maritime chaparral (openings), coastal scrub; sandy/perennial herb/ May–September/10–380	Low potential to occur. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would likely have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Deinandra</i> [=Hemizonia] <i>paniculata</i>	Paniculate tarplant	None/ None/ None	4.2	Coastal scrub, valley and foothill grassland, vernal pools; usually vernal mesic/annual herb/April–November/80–3,100	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Dudleya blochmaniae</i> spp. <i>blochmaniae</i>	Blochman's dudleya	None/ None/ None	1B.1	Chaparral, coastal bluff scrub, coastal scrub, valley and foothill grassland, rocky; often clay or serpentine/perennial herb/April–June/15–1,500	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Dudleya variegata</i>	Variiegated dudleya	None/ None/ MSCP NE	1B.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/ April–June/<1,900	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Dudleya viscida</i>	Sticky dudleya	None/ None/ MSCP	1B.2	Coastal bluff scrub, chaparral, coastal scrub; gabbroic soils/ rocky/perennial herb/May–June/30–1,800	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Eryngium aristulatum</i> var. <i>hooveri</i>	Hoover's button-celery	None/ None/ None/ None	1B.1	Vernal pools/annual-perennial herb/July/10–150	Absent. Although the project site is located within the elevation range for this species, there are no vernal pools on site.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	FE/SE/ MSCP NE	1B.1	Coastal scrub, valley and foothill grassland, vernal pools, mesic/annual-perennial herb/ April–June/60–2,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Eryngium pendletonense</i>	Pendleton button-celery	None/ None/ None	1B.1	Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernal mesic/perennial herb/April–June/50–360	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Erysimum ammophilum</i>	Sand-loving wallflower	None/ None/ MSCP	1B.2	Maritime chaparral, coastal dunes, coastal scrub; sandy, openings/perennial herb/ February–June/<200	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Euphorbia misera</i>	Cliff spurge	None/ None/ None	2B.2	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/shrub/December–August/ 30–1,650	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Ferocactus viridescens</i>	San Diego barrel cactus	None/ None/ MSCP	2B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/ May–June/<1,500	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Geothallus tuberosus</i>	Campbell's liverwort	None/ None/ None	1B.1	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/ NA/30–2,000	Low potential to occur. There is marginal habitat and the project site is located within the elevation range for this species. However, this species is only known from four locations.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	None/ None/ None	4.2	Chaparral, coastal scrub, valley and foothill grassland; clay/ annual herb/March–May/ 60–3,100	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	Beach goldenaster	None/ None/ None/	1B.1	Coastal dunes, coastal scrub, coastal chaparral/annual herb/ July–November/<35	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Isocoma menziesii</i> var. <i>decumbens</i>	Decumbent goldenbush	None/ None/ None	1B.2	Chaparral, coastal scrub (sandy, often disturbed areas)/ shrub/April–November/ 30–450	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Iva hayesiana</i>	San Diego marsh-elder	None/ None/ None	2B.2	Marshes and swamps, playas/ perennial herb/April–November/30–1,650	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Juncus acutus</i> spp. <i>leopoldii</i>	Southwestern spiny rush	None/ None/ None	4.2	Coastal dunes (mesic), meadows and alkaline seeps, coastal saltwater marshes and swamps/rhizomatous herb/ May–June/<3,000	Absent within the project site; however, the species was observed during the focused plant survey just off site to the northeast of the Otay River Floodplain Site.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None/ None/ None	1B.1	Saltwater marsh and swamps, playas, vernal pools/annual herb/February–June/<4,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	None/ None/ None	4.3	Chaparral, coastal scrub/ annual herb/January–July/ <2,900	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Leptosyne maritima</i>	Sea dahlia	None/ None/ None	2B.2	Coastal bluff scrub, coastal scrub/perennial herb/March–May/16–492	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Microseris douglasii</i> ssp. <i>platycarpha</i>	Small-flowered microseris	None/ None/ None	4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/ annual herb/March–May/ 50–3,500	Absent. There are no suitable clay soils within the project area and this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Myosurus minimus</i> ssp. <i>apus</i>	Little mousetail	None/ None/ None	3.1	Vernal pools, valley and foothill grassland; alkaline/annual herb/March–June/60–2,100	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Nama stenocarpum</i>	Mud nama	None/ None/ None	2B.2	Marshes and swamps, lake margins, riverbanks/annual-perennial herb/ January–July/ 15–1,650	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	Coast woolly-heads	None/ None/ None	1B.2	Coastal dunes/annual herb/ April–September/<330	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Orcuttia californica</i>	California Orcutt grass	FE/SE/ MSCP NE	1B.1	Vernal pools/annual herb/ April–August/50–2,200	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Orobanche parishii</i> ssp. <i>brachyloba</i>	Short-lobed broom-rape	None/ None/ None	4.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/ perennial herb parasitic/ April – October/<1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Phacelia ramosissima</i> var. <i>austrolitoralis</i>	South coast branching phacelia	None/ None/ None	3.2	Chaparral, coastal dunes, coastal scrub, coastal salt marshes and swamps; sandy, sometimes rocky/perennial herb/March–August/20–1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

**Table 3.3-8
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site**

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
<i>Phacelia stellaris</i>	Brand's star phacelia	FC/ None	1B.1	Coastal dunes, coastal scrub/ annual herb/March–June/ <1,300	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Piperia cooperi</i>	Chaparral rein orchid	None/ None/ None	4.2	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/ March–June/50–5,200	Absent. No suitable habitat exists on site and this species would have been observed during the focused plant survey.
<i>Psilocarphus brevissimus</i> var. <i>multiflorus</i>	Delta woolly-marbles	None/ None/ None	4.2	Vernal pools/annual herb/ May–June/30–1,650	Absent. Although the project site is located within the elevation range for this species, there are no vernal pools on site.
<i>Quercus dumosa</i>	Nuttall's scrub oak	None/ None/ None	1B.1	Chaparral, coastal scrub, closed-cone coniferous forest; sandy, clay loam/evergreen shrub/February–April/50–1,300	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Senecio aphanactis</i>	Chaparral ragwort	None/ None/ None	2B.2	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/January–April/50–2,630	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
<i>Triquetrella californica</i>	Coastal triquetrella	None/ None/ None	1B.2	Coastal bluff scrub, coastal scrub; soil/moss/NA/30–330	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

NCCP = Natural Communities Conservation Plan; ft amsl = feet above mean sea level; NA = not applicable

FC: Federal candidate
 FE: Federally listed as endangered
 FT: Federally listed as threatened
 SE: State-listed as endangered
 MSCP Covered species
 MSCP NE Narrow endemic species

CRPR: California Rare Plant Rank

1B: Plants rare, threatened, or endangered in California and elsewhere

2B: Plants rare, threatened, or endangered in California, but more common elsewhere

3: Plants about which we need more information – a review list

4: Plants of limited distribution – a watch list

Threat Rank

.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

.3 – Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

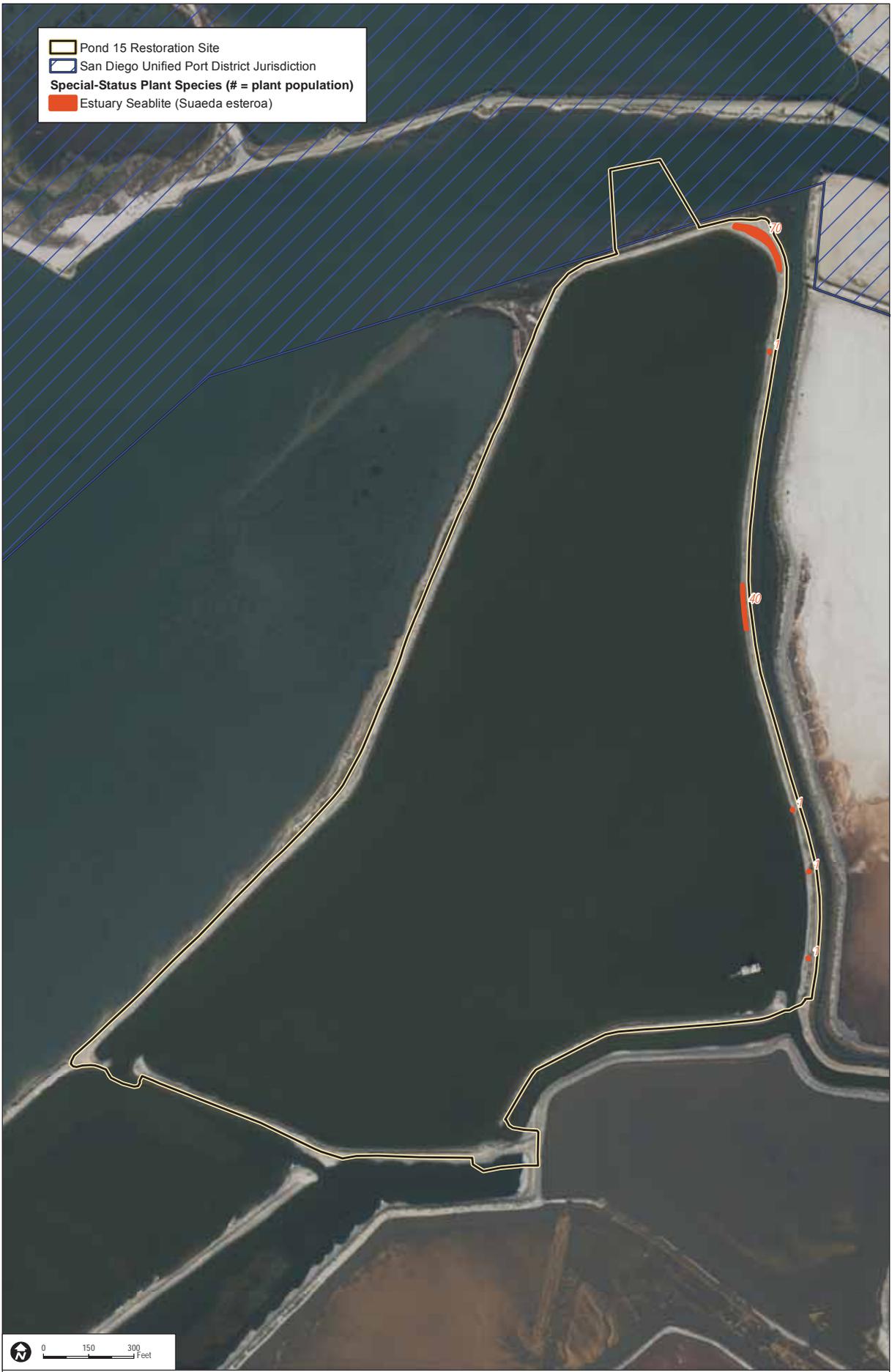
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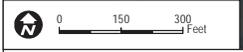
Figure 3.3-11
Otay River Floodplain Restoration Site Special-Status Plant Species

Otay River Estuary Restoration Project EIS

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AERIAL SOURCE: SANDAG IMAGERY 2014

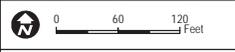
FIGURE 3.3-12
Pond 15 Restoration Site Special-Status Plant Species

Otay River Estuary Restoration Project EIS

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 Project Site
Special-Status Plant Species (# = plant population)
 Woolly Seablite, *Suaeda taxifolia*



AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 3.3-13
Ponds 22 and 23 Site Special-Status Plant Species

Otay River Estuary Restoration Project EIS

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Special-status wildlife species that were observed or have potential to occur on site are presented in Table 3.3-9 and Table 3.3-11. Special-status wildlife species with low or no potential to occur, based on the location and conditions, are provided in Table 3.3-10 and Table 3.3-12. Separate analysis was conducted for the Otay River Floodplain Site and the Pond 15 Site due to the different habitats present and the different survey results available. Focused surveys based on the most recent protocols were conducted within the Otay River Floodplain Site for a number of special-status species, and the results are provided in Tables 3.3-9 and 3.3-10. Locations of special-status species are shown in Figure 3.3-14, Otay River Floodplain Restoration Site Special-Status Wildlife Species.

Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Reptiles</i>					
<i>Phrynosoma blainvillii</i>	Coast (San Diego) horned lizard	None/SSC/ MSCP	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest.	Moderate potential to occur within the sandy soils and in the <i>Isocoma</i> scrub areas.	Appendix J
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	None/SSC/ MSCP	Coastal sage scrub, chaparral, grassland, juniper and oak woodland.	Moderate potential to occur within the sandy soils and in the <i>Isocoma</i> scrub areas.	Appendix J
<i>Thamnophis hammondi</i>	Two-striped gartersnake	None/SSC/ Not Covered	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools.	Moderate potential. Suitable habitat is present within the freshwater portion of the Otay River channel and Nestor Creek.	Appendix J
<i>Birds</i>					
<i>Athene cunicularia</i> (burrow sites and some wintering sites)	Burrowing owl	BCC/SSC/ MSCP	Grassland, lowland scrub, agriculture, coastal dunes, and other artificial open areas.	Observed. Has been recorded in the region. Numerous holes for their use and soils are sandy. However, vegetation grows so tall there is little vantage point for them to use. One owl observed once at the beginning of the breeding season about 1,000 feet to the east. It did not stay to breed. Three were observed nearby in off-site surveys conducted in 2011 (Southwest Wetlands Interpretive Association data).	Appendix J

**Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Asio flammeus</i>	Short-eared owl	None/SSC/ Not Covered	Open areas with few trees, such as grasslands, prairies, dunes, meadows, irrigated lands, saline and fresh emergent wetlands. Breeds in coastal areas in Del Norte and Humboldt Counties, San Francisco Bay Delta, northeastern Modoc plateau, east side of Sierra Nevada from Lake Tahoe south to Inyo County, and San Joaquin Valley. Uncommon winter migrant in Southern California, and widespread during winter in Central Valley and coastline.	Observed. The species was observed once during other focused surveys, resting under a shrub, in March 2011. It was only observed the one time.	Appendix J
<i>Circus cyaneus</i> (nesting)	Northern harrier	None/SSC/ MSCP	Open wetlands (nesting), pasture, fields, dry uplands, grasslands, rangelands, coastal sage scrub.	Observed. Suitable foraging areas are present on site. Nesting could occur within the <i>Isocoma</i> scrub or possibly the disturbed habitat. One to three harriers were detected during almost every site visit. Observed foraging. In surveys conducted nearby from 2010–2012, west of the site, 42 observations were recorded (SDNHM and ARA 2011). No nesting was detected, but a nesting attempt was observed in 2012 off site near the dirt access road for the sewer pump station.	Appendix J
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	None/SSC/ Not Covered	Narrowly distributed along the coast of Southern California. Restricted to freshwater and brackish marshes dominated by bulrushes or cattails.	Observed. Eleven individuals detected within the Otay River channel and San Diego Bay coastline immediately off site to the west. Other individuals could be	Appendix J

**Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
				present within suitable habitat in the channel.	
<i>Dendroica petechia brewsteri</i> (nesting)	Yellow warbler	None/SSC/ Not Covered	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders, and willows; winters in a variety of habitats.	Detected within the eucalyptus on site, and within the willow habitat off site to the east within the Otay River.	Appendix J
<i>Egretta rufescens</i>	Reddish egret	None/None/ MSCP	Saltmarsh, mudflats, coastal lagoons.	High potential to occur on site due to suitable saltmarsh, mudflat, and salt pan present on site.	Appendix J
<i>Elanus leucurus</i> (nesting)	White-tailed kite	None/FP/Not Covered	Open grasslands, savannah-like habitats, agriculture, wetlands, oak woodlands, riparian.	Observed. Suitable foraging areas are present on site. Nesting could occur within the eucalyptus trees on site or the riparian habitat adjacent to the site. Detected during a number of site visits and in nearby areas. Observed foraging; no nesting was detected.	Appendix J
<i>Icteria virens</i> (nesting)	Yellow-breasted chat	None/SSC/ Not Covered	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush.	Detected within the riparian habitat off site to the east within the Otay River.	Appendix J
<i>Rallus obsoletus levipes</i>	Light-footed Ridgway's rail	FE/SE, FP/ MSCP	Coastal saltmarsh.	Observed. Suitable marsh habitat within the channel of the Otay River. One bird was detected in an area just off site of the Otay River Floodplain Site during focused surveys.	Appendix J
<i>Falco columbarius</i>	Merlin	None/WL/ Not Covered	Coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, montane hardwood-conifer habitats, ponderosa pine. Found throughout western half of California below 4,920 feet.	Observed. Observed perched just off site on a post at the western end of the site. It was only observed once.	Appendix J

**Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Falco peregrinus anatum</i>	American peregrine falcon	BCC/DL/ MSCP	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, and croplands, especially where waterfowl are present.	High potential to occur on site for foraging. Species is well known to forage on shorebirds during the winter.	Appendix J ; USFWS 2006a
<i>Gelochelidon nilotica vanrossemei</i>	Western gull-billed tern	BCC/SSC/ Not Covered	Nests on protected spits, berms, and islands composed of sand or other small material. Forages primarily in freshwater ponds and flooded agricultural fields. Forages for small fish, crayfish, lizards, butterflies, beetles, crickets, weevils, and occasionally the young chicks of other shorebirds.	Observed. A number of individuals of the species were observed possibly foraging over or flying over the site during focused surveys for other species. Because the species was observed briefly in flight over the site, it was not mapped.	Appendix J
<i>Passerculus sandwichensis beldingi</i>	Belding's Savannah sparrow	None/SE/ MSCP	Saltmarsh, Pacific pickleweed.	Observed. Approximately 18 birds were observed on site or within 500 feet, and many were observed nearby off site within the San Diego Bay NWR from 2010 to 2012 (SDNHM and ARA 2011).	Appendix J
<i>Haliaeetus leucocephalus</i> (nesting and nonbreeding/ wintering)	Bald eagle	(FD)/SE/ MSCP	Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains.	Could winter or occur on site in transit for foraging; a juvenile was photographed on site in 2013 (Collins, pers. comm. 2014).	Appendix J
<i>Rynchops niger</i>	Black skimmer	BCC/SSC/ Not Covered	Nests on barrier beaches, shell banks, spoil islands, and salt marsh; forages over open water; roosts on sandy beaches and gravel bars.	High potential to occur. Has been observed nearby during 2010 to 2012 surveys, and suitable foraging habitat is present within the lower reaches of the Otay River channel.	SDNHM and ARA 2011; USFWS 2006a
<i>Chlidonias niger</i>	Black tern	None/SSC/ Not Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily breed and forage in rice fields and other flooded agricultural fields with weeds and other residual	Moderate potential to occur. Four individuals were observed nearby in off-site areas during 2012 focused surveys (Southwest Wetlands Interpretive Association	SDNHM and ARA 2011

**Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
			aquatic vegetation.	data). Limited foraging habitat on the project site.	
<i>Branta bernicla</i>	Brant	None/SSC/ Not Covered	Breeding habitat includes the edges of salt marshes in the low Arctic Region. Migratory habitats include shallow marine lakes. Winter range includes intertidal mudflats in shallow marine alters with abundant eelgrass and/or green algae.	Moderate potential to occur. Could occur in the area during winter months, and was observed nearby during surveys conducted from 2010 to 2012. Limited habitat occurs on site.	SDNHM and ARA 2011; USFWS 2006a
<i>Larus californicus</i>	California gull	None/WL/ Not Covered	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during nonbreeding period.	High potential to occur. Suitable habitat occurs on the north and west portions of the site. Species also observed during surveys conducted nearby off site in 2011 and 2012.	SDNHM and ARA 2011; USFWS 2006a
<i>Eremophila alpestris actia</i>	California horned lark	None/WL/ Not Covered	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields.	High potential to occur on site, especially during winter. Could breed on site.	Appendix J; USFWS 2006a
<i>Sternula</i> [= <i>Sterna</i>] <i>antillarum browni</i> (nesting colony)	California least tern	FE/SE/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats; nests on sandy beaches.	High potential. Suitable flat areas are present and the species is known in the area. Salt pans are present. Known to forage in lower portions of the Otay River channel.	Appendix J ; SDNHM and ARA 2011; USFWS 2006a
<i>Thalasseus</i> [= <i>Sterna</i>] <i>elegans</i> (nesting colony)	Elegant tern	BCC/WL/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats.	Observed. Suitable flat areas are present and the species is known in the area (salt pans are present). Observed flying over the site a number of times but did not forage on site.	Appendix J
<i>Hydroprogne caspia</i>	Caspian tern	BCC/None/ Not Covered	Coastal estuarine, salt marsh, and barrier islands; nests on islands in rivers and salt lakes.	High potential to occur. Known to reside year-round in coastal San Diego County. Suitable marsh habitat occurs on the north	SDNHM and ARA 2011; USFWS 2006a

**Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
				and west portions of the site. Was observed nearby during surveys in 2011 and 2012. Known to forage in the lower portions of the Otay River channel.	
<i>Accipiter cooperii</i> (nesting)	Cooper's hawk	None/WL/ MSCP	Riparian and oak woodlands, montane canyons.	High potential to occur within the willows that are adjacent to the site. Frequently roost and forage in neighboring suburban areas (Collins, pers. comm. 2014). High potential to forage on site and nest in adjacent riparian areas to the east. One was observed flying over the area but did not land or pause on site. It may have been hunting or may have been in transit.	Appendix J; USFWS 2006a
<i>Passerculus sandwichensis rostratus</i> (nonbreeding/ wintering)	Large-billed Savannah sparrow	None/SSC/ MSCP	Saltmarsh, pickleweed.	High potential to occur on site during winter due to presence of suitable habitat.	Appendix J
<i>Numenius americanus</i> (nesting)	Long-billed curlew	BCC/WL/ MSCP	Nests in upland shortgrass prairies and wet meadows in northeast California; winters in coastal estuaries, open grasslands, and croplands.	High potential to occur on site during the winter for foraging within the marsh areas along the Otay River channel.	Appendix J; USFWS 2006a
<i>Charadrius alexandrinus nivosus</i> (nesting)	Western snowy plover (coastal population)	FT,BCC/ SSC/MSCP	Nests primarily on coastal beaches, in flat open areas, with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds, and levees.	High potential. Suitable flat areas are present and the species is known for the area. Salt pans are present.	Appendix J; USFWS 2006a
<i>Plegadis chihi</i> (rookery site)	White-faced ibis	None/WL/ MSCP	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries.	High potential to occur on site during the winter for foraging within the salt pond bottom.	Appendix J; USFWS 2006a

**Table 3.3-9
Special-Status Wildlife Observed or Potentially Occurring
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Mammals</i>					
<i>Taxidea taxus</i>	American badger	None/SSC/ MSCP	Dry, open, treeless areas; grasslands; coastal sage scrub.	Moderate potential due to sandy soils. No signs of digging were observed.	Appendix J
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None/SSC/ Not Covered	Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas.	Moderate potential due to presence of sandy soils and <i>Isocoma</i> scrub habitat.	Appendix J
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	None/SSC/ Not Covered	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams, and sandy loams.	Moderate potential due to presence of sandy soils and <i>Isocoma</i> scrub habitat.	Appendix J
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE/SSC/ Not Covered	Grassland, coastal sage scrub with sandy soils; along immediate coast.	Moderate potential due to presence of sandy soils and <i>Isocoma</i> scrub habitat. Known locations are a long distance from the site (Camp Pendleton and southern Orange County).	Appendix J
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None/SSC/ Not Covered	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth.	Moderate potential due to presence of sandy soils and <i>Isocoma</i> scrub habitat.	Appendix J
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None/SSC/ Not Covered	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands.	Observed. Several jackrabbits were detected on site during surveys.	Appendix J

Federal Designations:

BCC Fish and Wildlife Service: Birds of Conservation Concern
 (FD) Federally delisted: monitored for 5 years
 FE Federally listed as endangered
 FT Federally listed as threatened

State Designations:

SSC California Species of Special Concern
 FP California Department of Fish and Wildlife Protected and Fully Protected Species
 DL State delisted
 SE State listed as endangered
 WL California Department of Fish and Wildlife Watch List

Multiple Species Conservation Program (MSCP):

MSCP Covered by the MSCP
 Not Covered Not covered by the MSCP

Table 3.3-10
Special-Status Wildlife with Low Potential or No Potential to Occur
on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Amphibians</i>					
<i>Spea</i> [= <i>Scaphiopus</i>] <i>hammondi</i>	Western spadefoot	None/SSC/ Not Covered	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats.	Low potential. Small amount of suitable habitat is present within the cismontane alkali marsh habitat.	Appendix J
<i>Reptiles</i>					
<i>Salvadora</i> <i>hexalepis</i> <i>virgulata</i>	Coast patch-nosed snake	None/SSC/ Not Covered	Chaparral, washes, sandy flats, rocky areas.	Low potential. Small amount of suitable habitat is present within the <i>Isocoma</i> scrub, but there are no rocky areas within the habitat.	Appendix J
<i>Plestiodon</i> <i>skiltonianus</i> <i>interparietalis</i>	Coronado Island skink	None/SSC/ Not Covered	Grassland, woodlands, pine forests, chaparral. Prefers rocky areas near streams with lots of vegetation but is also found away from water.	Low potential. Small amount of suitable habitat is present within the <i>Isocoma</i> scrub, but there are no rocky areas within the habitat.	Appendix J
<i>Crotalus</i> <i>ruber</i>	Northern red-diamond rattlesnake	None/SSC/ Not Covered	Variety of shrub habitats where there is heavy brush, large rocks, or boulders.	Low potential. Small amount of suitable habitat is present within the <i>Isocoma</i> scrub, but there are no rocky areas within the habitat.	Appendix J
<i>Birds</i>					
<i>Pelecanus</i> <i>erythrorhynchos</i>	American white pelican	None/SSC/ Not Covered	Nests colonially on isolated islands in freshwater lakes with sandy, earthen, or rocky substrates; minimal disturbance from humans or mammalian predators required, as is close access to productive foraging areas; forages on inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries.	Low potential to occur due to lack of freshwater habitat and the site's proximity to urbanization.	USFWS 2006a
<i>Laterallus</i> <i>jamaicensis</i> <i>coturniculus</i>	California black rail	BCC/ST/ Not Covered	Saline, brackish, and fresh emergent wetlands.	Low potential due to lack of extensive emergent habitat. Species was recorded in the region but is assumed to be extirpated from San Diego County.	Appendix J

Table 3.3-10
Special-Status Wildlife with Low Potential or No Potential to Occur
on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Pelecanus occidentalis californicus</i> (nesting colony and communal roosts)	California brown pelican	FD/DL/ MSCP	Open sea, large water bodies, coastal bays, and harbors.	Low potential due to lack of extensive open water. Species could perch on posts located within the site or could occur within the Otay River channel, but the channel is relatively narrow. Species does occur within the region, and was observed nearby in surveys conducted in 2011 and 2012.	Appendix J; SDNHM and ARA 2011; USFWS 2006a
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	FT/SSC/ MSCP	Coastal sage scrub, coastal sage scrub–chaparral mix, coastal sage scrub–grassland ecotone, riparian in late summer.	Low potential due to lack of suitable habitat. Focused survey conducted nearby in 2006 was negative. Species was detected off site within suitable habitat. It was observed at the southern portion of the area adjacent to the parking lot near Home Depot.	Appendix J
<i>Gavia immer</i>	Common loon	None/SSC/ Not Covered	Extirpated as a breeder from California; winters in coastal waters such as bays, channels, coves, and inlets; also winters inland at large, deep lakes and reservoirs.	Low potential to occur. Range has been limited in California from anthropogenic activities. Known to visit San Diego coastal areas during winter, but lacks habitat on the project site.	USFWS 2006a
<i>Phalacrocorax auritus</i>	Double-crested cormorant	None/WL/ Not Covered	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas.	Low potential to occur. Was observed during surveys nearby off site from 2010 to 2012. Limited suitable habitat on site.	SDNHM and ARA 2011; USFWS 2006a
<i>Buteo regalis</i> (nonbreeding/ wintering)	Ferruginous hawk	BCC/WL/ MSCP	Open, dry country; grasslands; open fields; agriculture.	May forage on site during migration or for wintering. Does not breed in the region.	Appendix J
<i>Aquila chrysaetos</i>	Golden eagle	BCC/WL/ MSCP	Open country, especially hilly and mountainous	Low potential. May forage over the site but no nesting	Appendix J

Table 3.3-10
Special-Status Wildlife with Low Potential or No Potential to Occur
on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
(nesting and nonbreeding/ wintering)			regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest.	habitat is present.	
<i>Ammodramus savannarum</i> (nesting)	Grasshopper sparrow	None/SSC/ Not Covered	Open grassland and prairie, especially native grassland with a mix of grasses and forbs.	Low potential due to lack of suitable grassland habitat.	Appendix J
<i>Vireo bellii pusillus</i> (nesting)	Least Bell's vireo	FE, BCC/SE/ MSCP	Nests in southern willow scrub with dense cover within 1–2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry, or mesquite on desert areas.	Low potential due to lack of suitable habitat. Suitable habitat is located off site to the east within the channel of the Otay River, but this habitat is limited. Focused surveys were negative.	Appendix J
<i>Lanius ludovicianus</i>	Loggerhead shrike	BCC/SSC/ Not Covered	Nests and forages in open habitats with scattered shrubs, trees, or other perches.	Low potential to occur. Limited perching structures and suitable habitat occur across the project site.	USFWS 2006a
<i>Charadrius montanus</i> (nonbreeding/ wintering)	Mountain plover	BCC/SSC/ MSCP	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts.	Low potential. Does not nest within the region but may forage on site during winter.	Appendix J
<i>Aythya americana</i>	Redhead	None/SSC/ Not Covered	Breeds in relatively deep (>3 feet) permanent or semi-permanent wetlands of at least 1 acre, with about 75% open water and emergent tules, bulrushes (<i>Scirpus</i> spp.), and cattails (<i>Typha</i> spp.) up to about 3 feet in height; winters in coastal estuaries and large, deep ponds, lakes, and reservoirs of the interior.	Low potential to occur. Limited suitable habitat occurs on the site. Seven individuals were observed nearby off site in surveys conducted from 2011 to 2012, but none were detected in surveys covering the same area in 2010.	SDNHM and ARA 2011; USFWS 2006a
<i>Accipiter striatus</i>	Sharp-shinned hawk	None/WL/ Not Covered	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats.	Low potential to occur due to lack of suitable habitat on the project site or nearby areas. Could forage on site during migration or winter.	USFWS 2006a

**Table 3.3-10
Special-Status Wildlife with Low Potential or No Potential to Occur
on the Otay River Floodplain Site**

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	None/WL/ MSCP	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops.	Low potential due to small amount of habitat in the <i>Isocoma</i> scrub area.	Appendix J
<i>Buteo swainsoni</i> (nesting)	Swainson's hawk	BCC/ST/ MSCP	Open grassland, shrublands, croplands.	May forage on site during migration. Does not breed in the region.	Appendix J
<i>Agelaius tricolor</i> (nesting colony)	Tricolored blackbird	BCC/SSC/ MSCP	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, and agriculture.	Low potential. Small amount of suitable habitat is present.	Appendix J
<i>Mammals</i>					
<i>Nyctinomops macrotis</i>	Big free-tailed bat	None/SSC/ Not Covered	Rugged, rocky canyons.	No roost habitat is present but could forage on site or overhead.	Appendix J
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	None/SSC/ Not Covered	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings.	No roost habitat is present but could forage on site or overhead.	Appendix J
<i>Felis concolor</i>	Mountain lion	None/None/ MSCP	Occupies a wide variety of habitats: swamps, riparian woodlands, broken country with good cover of brush or woodland.	Low potential due to location in an urbanized area. Cover is limited on site.	Appendix J
<i>Antrozous pallidus</i>	Pallid bat	None/SSC/ Not Covered	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	No roost habitat is present but could forage on site or overhead.	Appendix J
<i>Nyctinomops femorosaccus</i>	Pocketed free-tailed bat	None/SSC	Rocky desert areas with high cliffs or rock outcrops.	No roost habitat is present but could forage on site or overhead.	Appendix J
<i>Euderma maculatum</i>	Spotted bat	None/SSC/ Not Covered	Arid deserts and grasslands through mixed conifer forests; roosts in cliffs, feeds over water and along washes.	No roost habitat is present but could forage on site or overhead.	Appendix J
<i>Eumops perotis californicus</i>	Western mastiff bat	None/SSC/ Not Covered	Roosts in small colonies in cracks and small holes, seeming to prefer artificial structures.	No roost habitat is present but could forage on site or overhead.	Appendix J

Table 3.3-10
Special-Status Wildlife with Low Potential or No Potential to Occur
on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur	Source
<i>Lasiurus blossevillii</i>	Western red bat	None/SSC/ Not Covered	Roosts in forests and woodlands from sea level up through mixed conifer forests. Feeding habitat variable and includes grasslands, shrublands, open woodlands and forests, and croplands. Not found in desert areas.	No roost habitat is present but could forage on site or overhead.	Appendix J
<i>Invertebrates</i>					
<i>Panoquina errans</i>	Wandering (saltmarsh) skipper	None/None/ MSCP	Occurs strictly in coastal salt marsh habitat where salt grass (<i>Distichlis spicata</i>) occurs and functions as the host plant. Marshes with tidal flow are the more likely occupied areas.	Low potential. Some limited areas of the host plant present within the edges of the saltmarsh habitat. In general, salt grass is mixed in with other plant species and does not exist as an isolated stand. Locations where observed as a component species are around the margins of the salt marsh vegetation that line the Otay River and Nestor Creek channels.	Appendix J

Federal Designations:

BCC	U.S. Fish and Wildlife Service: Birds of Conservation Concern
(FD)	Federally delisted; monitored for 5 years
FE	Federally listed as endangered
FT	Federally listed as threatened

State Designations:

SSC	California Species of Special Concern
DL	State delisted
SE	State listed as endangered
ST	State listed as threatened
WL	California Department of Fish and Wildlife Watch List

Multiple Species Conservation Program (MSCP):

MSCP	Covered by the MSCP
Not Covered	Not covered by the MSCP

Focused surveys were not conducted within the Pond 15 Site due to limited access to the site, but comprehensive bird surveys have been conducted by the Service, as summarized in Tables 3.3-11 and 3.3-12. Nesting locations of birds are shown on Figure 3.3-15, Otay River Floodplain Site Bird Nesting Locations, and Figure 3.3-16, Pond 15 Site Bird Nesting Locations.

**Table 3.3-11
Special-Status Wildlife Documented as Present or
Potentially Occurring on the Pond 15 Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
<i>Reptiles</i>					
<i>Chelonia mydas</i>	Eastern Pacific green sea turtle	FT/None/None	Shallow waters of bays, reefs, inlets, and undisturbed sandy beaches for egg laying.	Has been documented within San Diego Bay.	Appendix J
<i>Birds</i>					
<i>Falco peregrinus anatum</i>	American peregrine falcon	BCC/DL/MSCP	Nests on cliffs, buildings, bridges; forages in wetlands, riparian, meadows, and croplands, especially where waterfowl are present.	High potential to occur on site for foraging. Species is well known to forage on shorebirds during the winter. Individuals observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a
<i>Pelecanus erythrorhynchos</i>	American white pelican	None/SSC/Not Covered	Nests colonially on isolated islands in freshwater lakes with sandy, earthen, or rocky substrates; minimal disturbance from humans or mammalian predators required, as is close access to productive foraging areas; forages around inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries.	Historically observed roosting on the levees of the salt pond complex. Moderate potential to roost on the levees of the Pond 15 Site.	USFWS 2006a
<i>Passerculus sandwichensis beldingi</i>	Belding's Savannah sparrow	None/SE/MSCP	Nests and forages in coastal salt marsh dominated by Pacific pickleweed.	Documented as occurring within Pond 15 Site; suitable salt marsh habitat occurs in a small area on site. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011). 211 birds were recorded in 2012. 2015 territory locations are shown on Figure 3.3-16.	SDNHM and ARA 2011; USFWS 2006a
<i>Rynchops niger</i>	Black skimmer	BCC/SSC/Not Covered	Nests on barrier beaches, shell banks, spoil islands, and salt marsh; forages over open water; roosts on sandy beaches and	High potential to occur. Observed during surveys conducted from 2010 to 2012 (Southwest Wetlands Interpretive	SDNHM and ARA 2011; USFWS 2006a

**Table 3.3-11
Special-Status Wildlife Documented as Present or
Potentially Occurring on the Pond 15 Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
			gravel bars.	Association data); some suitable nesting areas occur on the southwestern end of the project site, and foraging occurs within the open water areas of the salt pond complex. 2015 nesting locations are shown on Figures 3.3-15 and 3.3-16.	
<i>Chlidonias niger</i>	Black tern	None/SSC/ Not Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily breeds and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation.	Moderate potential to occur. Four individuals were observed flying over the area during 2012 focused surveys (Appendix J). Some foraging habitat occurs on the project site. Was not recorded during surveys of the site in 2010–2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a
<i>Branta bernicla</i>	Brant	None/SSC/ Not Covered	Breeding habitat includes the edges of salt marshes in the low Arctic region. Migratory habitats include shallow marine lakes. Winter range includes intertidal mudflats in shallow marine alters with abundant eelgrass and/or green algae.	Moderate potential to occur. Could occur in the area during winter and was observed adjacent to the salt ponds during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011). Suitable migratory habitat occurs within project site.	SDNHM and ARA 2011; USFWS 2006a
<i>Pelecanus occidentalis californicus</i> (nesting colony and communal roosts)	California brown pelican	FD/DL/ MSCP	Open sea, large water bodies, coastal bays, and harbors.	High potential to occur over open water areas on the project site; has been observed roosting on the salt pond levees. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a

**Table 3.3-11
Special-Status Wildlife Documented as Present or
Potentially Occurring on the Pond 15 Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
<i>Larus californicus</i>	California gull	None/WL/ Not Covered	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during nonbreeding period.	High potential to occur. Suitable habitat occurs on the north and west portions of the site. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a
<i>Eremophila alpestris actia</i>	California horned lark	None/WL/ Not Covered	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields.	High potential to occur on site, especially during winter. Individuals observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a
<i>Sternula</i> [= <i>Sterna</i>] <i>antillarum browni</i> (nesting colony)	California least tern	FE/SE/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats; nests on sandy beaches.	High potential. Suitable flat areas are present and the species is known to nest in the general area. Individuals were observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011). 2015 nesting locations are shown on Figures 3.3-15 and 3.3-16.	SDNHM and ARA 2011; USFWS 2006a
<i>Hydroprogne caspia</i>	Caspian tern	BCC/None/ Not Covered	Coastal estuarine, salt marsh, and barrier islands; nests on islands in rivers and salt lakes.	High potential to occur. Known to reside year-round in coastal San Diego County. Suitable foraging and nesting habitat occurs on the north and western portions of the site. Was observed nearby during surveys in 2011 and 2012 (SDNHM and ARA 2011). 2015 nesting locations are shown on Figure 3.3-16.	SDNHM and ARA 2011; USFWS 2006a
<i>Gelochelidon nilotica vanrossemei</i>	Western gull-billed tern	BCC/SSC/Not Covered	Nests on protected spits, berms, and islands composed of sand or other small material. Forages primarily in freshwater ponds and	High potential to occur. Suitable foraging and nesting habitat occurs on the north and western portions of the site. Was observed nearby during	SDNHM and ARA 2011; USFWS 2006a

**Table 3.3-11
Special-Status Wildlife Documented as Present or
Potentially Occurring on the Pond 15 Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
			flooded agricultural fields. Forages for small fish, crayfish, lizards, butterflies, beetles, crickets, weevils, and occasionally the young chicks of other shorebirds.	surveys in 2011 and 2012 (SDNHM and ARA 2011). 2015 nesting locations are shown on Figure 3.3-16.	
<i>Phalacrocorax auritus</i>	Double-crested cormorant	None/WL/ Not Covered	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas.	High potential to occur. Large numbers of individuals were observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011), and suitable habitat occurs on the project site. 2015 nesting locations are shown on Figure 3.3-16.	SDNHM and ARA 2011; USFWS 2006a
<i>Thalasseus</i> [=Sterna] <i>elegans</i> (nesting colony)	Elegant tern	BCC/WL/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats.	High potential to occur. Large numbers of individuals were observed during surveys conducted from 2010 to 2012 (Southwest Wetlands Interpretive Association data), and suitable habitat occurs on the project site. 2015 nesting locations are shown on Figure 3.3-16.	SDNHM and ARA 2011; USFWS 2006a
<i>Passerculus sandwichensis rostratus</i> (nonbreeding/ wintering)	Large-billed Savannah sparrow	None/SSC/ MSCP	Saltmarsh, pickleweed.	Moderate potential to occur on site during winter due to presence of some suitable habitat on site. Not recorded for the site in 2010–2012.	SDNHM and ARA 2011
<i>Numenius americanus</i> (nesting)	Long-billed curlew	BCC/WL/ MSCP	Nests in upland shortgrass prairies and wet meadows in northeast California; winters in coastal estuaries, open grasslands, and croplands.	High potential to occur on site during winter for foraging within marsh areas. Individuals were observed during focused surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a
<i>Aythya americana</i>	Redhead	None/SSC/ Not Covered	Breeds in relatively deep (>3 feet) permanent or semi-permanent wetlands	Moderate potential to occur. Limited suitable habitat occurs on site.	SDNHM and ARA 2011; USFWS 2006a

**Table 3.3-11
Special-Status Wildlife Documented as Present or
Potentially Occurring on the Pond 15 Site**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
			of at least 1 acre with about 75% open water and emergent tules, bulrushes (<i>Scirpus</i> spp.), and cattails (<i>Typha</i> spp.) up to about 3 feet in height; winters in coastal estuaries and large, deep ponds, lakes, and reservoirs of the interior.	Seven individuals were observed during surveys conducted in 2012 (SDNHM and ARA 2011), but none were detected in surveys covering the same area in 2010.	
<i>Charadrius alexandrinus nivosus</i> (nesting)	Western snowy plover (coastal population)	FT, BCC/SSC/ MSCP	Nests primarily on coastal beaches in flat, open areas with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds, and levees.	High potential. Suitable flat areas are present and the species is known to nest and forage near the site, but has not been recorded on the site. 2015 nesting locations are shown on Figures 3..3-15 and 3.3-16.	USFWS 2006a

Federal Designations:

BCC	Fish and Wildlife Service: Birds of Conservation Concern
(FD)	Federally delisted; monitored for 5 years
FE	Federally listed as endangered
FT	Federally listed as threatened

State Designations:

SSC	California Species of Special Concern
DL	State delisted
SE	State listed as endangered
WL	California Department of Fish and Wildlife Watch List

Multiple Species Conservation Program (MSCP):

MSCP	Covered by the MSCP
Not Covered	Not covered by the MSCP

**Table 3.3-12
Special-Status Wildlife with Low Potential or No Potential to Occur on the
Pond 15 Site but That Have Been Recorded at the South Bay Salt Works**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
<i>Birds</i>					
<i>Gavia immer</i>	Common loon	None/SSC/ Not Covered	Extirpated as a breeder from California; winters in coastal waters such as bays, channels, coves,	Low potential to occur. Range has been limited in California from anthropogenic activities.	USFWS 2006a

**Table 3.3-12
Special-Status Wildlife with Low Potential or No Potential to Occur on the
Pond 15 Site but That Have Been Recorded at the South Bay Salt Works**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
			and inlets; also winters inland at large, deep lakes and reservoirs.	Known to visit San Diego coastal areas during winter, but lacks significant suitable habitat on the project site.	
<i>Accipiter cooperii</i> (nesting)	Cooper's hawk	None/WL/ MSCP	Riparian and oak woodlands, montane canyons.	No potential to occur on site for breeding. Could forage on site and nest in nearby woodland areas to the east.	SDNHM and ARA 2011; USFWS 2006a
<i>Plegadis chihi</i> (rookery site)	White-faced ibis	None/WL/ MSCP	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries.	Low potential to occur on site during the winter for foraging within the marsh areas due to the small size of the area. Was not observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).	SDNHM and ARA 2011; USFWS 2006a
<i>Athene cunicularia</i> (burrow sites and some wintering sites)	Burrowing owl	BCC/SSC/ MSCP	Grassland, lowland scrub, agriculture, coastal dunes, and other artificial open areas.	Low potential to occur within Pond 15 Site, but has been recorded in the region. Three were observed nearby in off-site surveys conducted in 2011.	SDNHM and ARA 2011
<i>Circus cyaneus</i> (nesting)	Northern harrier	None/SSC/ MSCP	Open wetlands (nesting), pasture, fields, dry uplands, grasslands, rangelands, coastal sage scrub.	Low potential to nest within Pond 15 Site, however might forage near or over the site.	SDNHM and ARA 2011
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	None/SSC/ Not Covered	Narrowly distributed along the coast of Southern California. Restricted to freshwater and brackish marshes dominated by bulrushes or cattails.	Low potential to nest within Pond 15 Site, but might forage near the site.	SDNHM and ARA 2011
<i>Elanus leucurus</i> (nesting)	White-tailed kite	None/FP/Not Covered	Open grasslands, savannah-like habitats, agriculture, wetlands, oak woodlands, riparian.	Low potential to nest within Pond 15 Site, but might forage near the site.	SDNHM and ARA 2011
<i>Rallus obsoletus levipes</i>	Light-footed Ridgway's rail	FE/SE, FP/ MSCP	Coastal saltmarsh.	Low potential to nest within Pond 15 Site, but might forage near the site.	SDNHM and ARA 2011

**Table 3.3-12
Special-Status Wildlife with Low Potential or No Potential to Occur on the
Pond 15 Site but That Have Been Recorded at the South Bay Salt Works**

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur	Source
<i>Invertebrates</i>					
<i>Panoquina errans</i>	Wandering (saltmarsh) skipper	None/None/ MSCP	Occurs strictly in coastal salt marsh habitat where salt grass (<i>Distichlis spicata</i>) occurs and functions as the host plant. Marshes with tidal flow are the more likely occupied areas.	Low potential. There are some limited areas of the host plant present mixed in with other plant species, but it does not exist as an isolated stand.	Appendix J

Federal Designations:

BCC Fish and Wildlife Service: Birds of Conservation Concern
 FE Federally listed as endangered

State Designations:

SSC California Species of Special Concern
 FP California Department of Fish and Wildlife Protected and Fully Protected Species
 SE State listed as endangered
 WL California Department of Fish and Wildlife Watch List

Multiple Species Conservation Program (MSCP):

MSCP Covered by the MSCP
 Not Covered Not covered by the MSCP

3.3.3.1 Plants**Otay River Floodplain Site**

Dudek biologists Andy Thomson and Katie Dayton surveyed the Otay River Floodplain Site for special-status plant species on May 19, 2011. No federally or State-listed plant species were observed on the Otay River Floodplain Site. Three special-status plant species were observed in the Otay River Floodplain Site, as listed in Table 3.3-7, Special-Status Plants Detected or Potentially Occurring on the Project Site: California box-thorn (*Lycium californicum*), estuary seablite, and woolly seablite (*Suaeda taxifolia*). The locations of these plants are shown on Figure 3.3-11.

Pond 15 Site

Dudek biologists Andy Thomson and Katie Dayton surveyed the Pond 15 Site for special-status plant species on March 13, 2013. No federally or State-listed plant species were observed on the Pond 15 Site. One special-status plant species was observed in the Pond 15 Site, as listed in Table 3.3-7: estuary seablite. The locations of the plant species are shown in Figure 3.3-12.

3.3.3.2 Wildlife

Otay River Floodplain Site

Dudek biologists Anita Hayworth, Stuart Fraser, Kevin Shaw, and Thomas Liddicoat, and subconsultant John Konecny surveyed the Otay River Floodplain Site for special-status wildlife species February through July 2011 (Appendix J). A total of 23 visits were made to the site to conduct protocol surveys for Belding's Savannah sparrow, burrowing owl, least Bell's vireo, California gnatcatcher, northern harrier, and light-footed Ridgway's rail. During these visits, two federally or State-listed species were observed on or adjacent to the site: light-footed Ridgway's rail and Belding's Savannah sparrow. Additionally, two other special-status wildlife species were observed on the site and five species were observed within 500 feet of the site (Table 3.3-9, Special-Status Wildlife Detected or Potentially Occurring on the Otay River Floodplain Site). Figure 3.3-14, Otay River Floodplain Site Special-Status Wildlife Species, indicates where the special-status wildlife species were observed. Special-status species that were not observed during focused surveys or for which there is no suitable habitat are listed in Table 3.3-10, Special-Status Wildlife with Low Potential to Occur on the Otay River Floodplain Site (USFWS 2006a).

A brief discussion of the natural history of the federally or State-listed species is provided in this section.

Light-Footed Ridgway's Rail

Light-footed Ridgway's rail inhabits coastal salt marshes in Southern California and northern Baja California, Mexico. In California, its range includes coastal Ventura County, Orange County, and San Diego County. Although historically present in Los Angeles County, this rail has not been observed there since 1983 (Zembal et al. 2009). Distribution within its range is discontinuous because salt marsh habitats occur sporadically along the coastline.

This rail relies on coastal salt marshes, lagoons, and estuaries for nesting and foraging habitat year-round. It prefers nesting habitats located in the zone below the high water mark that have thick cordgrass that can be used for cover (USFWS 2009). It is also known to nest in coastal marshland dominated by pickleweed and saltwort. Typically these birds forage for crustaceans and other invertebrates in shallow water areas and mudflats that are regularly inundated with flooding water, usually tidal, and they do not stray far from their nesting territories (USFWS 2006a, 2009).



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Figure 3.3-14
Otoy River Floodplain Restoration Site Special Status Wildlife Species

Otoy River Estuary Restoration Project EIS

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Figure 3.3-15
Otay River Floodplain Site Bird Nesting Locations

Otay River Estuary Restoration Project EIS

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Figure 3.3-16
Pond 15 Site Bird Nesting Locations

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Light-footed Ridgway's rail was listed as federally endangered on October 13, 1970, and as endangered in California on June 27, 1971. This rail is also a covered species under the San Diego MSCP. In the 1980s, the population was estimated at fewer than 200 breeding pairs, with these low numbers attributed primarily to coastal wetlands destruction and degradation. In 2015, a total of 633 pairs of light-footed Ridgway's rails exhibited breeding behavior in 22 marshes throughout its known range (Zembal et al. 2015). This is the first time in 40 years that the total number of breeding pairs has exceeded 600, but this is still below 800 pairs, which the Light-Footed Clapper Rail [now referred to as Light-Footed Ridgway's Rail] Recovery Plan (USFWS 1985) suggests is the level at which downlisting from endangered to threatened status could be considered.

The 5-year review of this species conducted by the Service in 2009 indicated that progress has been made to increase the number of light-footed Ridgway's rails since listing, and regulatory mechanisms have been successful for stopping destruction and adverse modification of marsh lands (USFWS 2009). Conservation efforts, including habitat restoration such as the restoration of 223 acres of salt marsh habitat in the western salt ponds on the South San Diego Bay Unit of the San Diego Bay NWR, have been implemented to support the recovery of this species.

Of the 22 marshes in which rails were encountered in 2015, nine supported five or fewer pairs, seven supports six to 15 pairs, and six supported between 33 and 234 pairs (Zembal et al. 2015).

Isolated subpopulations occur within the San Diego Bay NWR, including along the Otay River. Single pairs of rails were detected along portions of the Otay River channel in the vicinity of the Otay River Floodplain Site in 2011, 2012, 2014, and 2015, and during many previous years (Zembal et al. 2015). Rail calling has also been documented in past years from the vicinity of the Bayshore Bikeway overcrossing of the river channel, just south of the South Bay Salt Works. Light-footed Ridgway's rail activity along the Otay River channel where it flows between the restored western ponds and the eastern ponds has also occurred annually in recent years, and in 2015, a single rail chick was observed in the general vicinity (Collins, pers. comm. 2015). There is also a breeding population in the South Bay Biological Study Area, located just to the north of the restored western salt ponds on the South San Diego Bay Unit (typically two to five breeding pairs were identified each year from 1999 through 2004) (USFWS 2006a). At least one breeding was present in the area from 2005 through 2007 and 2009 through 2011. Three pairs were vocal in 2012, and there were two pairs in 2013, 2014, and 2015 (Zembal et al. 2015).

Belding's Savannah Sparrow

Belding's Savannah sparrow is one of only two wetland-dependent avian species that reside year-round in the coastal salt marshes of Southern California (Powell and Collier 1998). This subspecies of Savannah sparrow is a salt marsh endemic that ranges along the Southern

California coast from Santa Barbara County (Goleta Slough) in the north to El Rosario, Baja California, Mexico, in the south (James and Stadtlander 1991).

Belding's Savannah sparrow prefers to nest in the mid- to upper-littoral zones of coastal salt marshes (Powell and Collier 1998), generally within dense stands of pickleweed. Breeding territories can be very small, with the birds nesting semi-colonially or locally concentrated within a larger block of habitat (Zembal and Hoffman 2002). The breeding season for this subspecies is generally defined as March 1 through September 1. Their secretive nature and the fact that they forage throughout a marsh, often well away from nesting sites, makes counting individuals and breeding territories somewhat difficult (Zembal and Hoffman 2010).

Based on a dramatic decrease in the Belding's Savannah sparrow population in the 1970s, this subspecies was listed as endangered by California in 1974 (Zembal et al. 1988). The population decrease was attributed to the development, degradation, and fragmentation of coastal salt marsh habitat. The subspecies has no status under the Federal Endangered Species Act, but is a covered species under the San Diego MSCP.

Statewide, the number of Belding's Savannah sparrows has increased since 1973 from only 1,084 territories to 3,372 territories in 2010 (Zembal and Hoffman 2010). During the 2010 survey, 169 Belding's Savannah sparrow territories, representing the seventh largest subpopulation in California, were identified within the portion of the South San Diego Bay Unit that includes the Otay River channel from just east of Nestor Creek to the north end of Ponds 11 and 12, and in the salt marsh vegetation that abuts the salt pond levees (Zembal and Hoffman 2010). This is a 141% increase over the 2006 count. Within this area, this subspecies was concentrated along the Otay River channel and the Palomar drainage channel that abuts Pond 15. The habitat along the outer edge of the South Bay Salt Works has supported numerous territories in the past, but the habitat was very sparse, with isolated *Salicornia* and shrubby weeds scattered widely (Zembal and Hoffman 2010). Figure 3.3-15 indicates where Belding's Savannah sparrows were identified on and adjacent to the Otay River Floodplain Site.

Pond 15 Site

Due to limited accessibility to the Pond 15 Site, focused wildlife surveys were not conducted by Dudek staff. However, observation data was available through State and Federal agencies (San Diego Natural History Museum and Avian Research Associates (SDNHM and ARA 2011)) and through California Natural Diversity Database records (CDFW 2014b), and nesting location records were obtained from the San Diego Bay NWR (Patten, pers. comm. 2014) (Figure 3.3-16). Three federally or State-listed species have been observed within the Pond 15 Site (California least tern, western snowy plover, and Belding's Savannah sparrow), and one federally listed

threatened species, East Pacific green turtle (*Chelonia mydas*), has been recorded adjacent to the Pond 15 Site. These species are discussed below.

Species that have been recorded at the Pond 15 Site or that have potential to occur are summarized in Table 3.3-11. Those species that have not been recorded at the Pond 15 Site or for which there is no potential to occur are summarized in Table 3.3-12.

In addition to the listed species that occur in and around the Pond 15 Site, nine special-status wildlife species were observed on site during the surveys conducted in 2010–2012, as listed in Table 3.3-11, Special-Status Wildlife Documented as Present or Potentially Occurring on the Pond 15 Site. Special-status species within the salt pond complex that have high potential to occur within the Pond 15 Site are based on previous observations: American peregrine falcon (*Falco peregrinus anatum*), black skimmer, California brown pelican, California gull, California horned lark (*Eremophila alpestris actia*), Caspian tern, western gull-billed tern, double-crested cormorant, elegant tern, and long-billed curlew (*Numenius americanus*). Species that are not special status but that have been recorded nesting within the Pond 15 Site or in proximity include royal tern and Forster's tern. Nesting locations of special-status and non-special-status species have been documented by the San Diego Bay NWR and are shown in Figure 3.3-16. This figure shows the importance of the South Bay Salt Works and the levee system within it for the nesting of a number of special-status and common bird species. Species for which the levee system provides nesting habitat include the ground nesting endangered California least tern and the threatened western snowy plover.

California Least Tern

California least tern is a migratory tern species that breeds in the United States only along the immediate coast of California from San Francisco Bay south to the Mexican border. It usually arrives at its breeding areas in April (although monitoring efforts for this species begin in March), and generally departs in August for the coast of Central or South America (Thompson et al. 1997). Least terns are colonial but do not nest in as dense a concentration as many other tern species. The nest is a simple scrape or depression in the sand, and birds lay one to four eggs, usually two.

The smallest of the tern species, California least tern, is an exclusive fish-eater that relies on a number of fish species (e.g., topsmelt [*Atherinops affinis*], northern anchovy [*Engraulis mordax*], jacksmelt [*Atherinopsis californiensis*], gobies) in a variety of sizes as its primary food source (Atwood and Kelly 1984; Massey 1974). When they are juveniles, California least terns require a source of smaller fish as they learn to hunt for themselves. The need to locate smaller fish appears to result in the increased use of freshwater marsh systems, lagoons, and estuarine areas

during the post-breeding dispersal phase, suggesting the importance of such habitats when juveniles are learning to fish (USFWS 2006a).

California least terns are known to nest along sandbanks, in dried mudflats, in gravel, and in sand pits in flat areas clear of significant vegetation in bay and inlet areas along the coast of California. They are social birds that forage, roost, and nest in colonies, typically consisting of approximately 25 pairs, but varying widely from a low of 3 to a high of 64 pairs (USFWS 2006b). Because of the movements of the individual birds, the actual colony size is somewhat arbitrary and difficult to define; thus, nesting sites are described in terms of geographic clusters of sites (USFWS 2006b). California least terns require both secure nesting habitat and open foraging habitat for juveniles and adults to congregate and disperse (USFWS 2006b).

Historically, the species is known to have nested discontinuously throughout the California coastal zone, including in relatively undisturbed sandy beaches near estuaries, bays, and inlets, with the majority of the numbers occurring between Santa Barbara and San Diego Counties (USFWS 2006a). Statewide, numbers were in the tens of thousands before the 1960s. Beginning in the 1960s, suitable nesting areas were lost to coastal development and intense human recreational use of beaches. As a result, the tern's numbers diminished from uncountable thousands to several hundred by 1970, when California least tern was added to the Federal Endangered Species List. It is also listed as endangered by California and is a covered species under the San Diego MSCP. Today, the species is known to occur in limited areas along the Central and Southern California coastline.

Prior to the establishment of the San Diego Bay NWR, 60 pairs of least terns were recorded nesting on the levees of South Bay Salt Works in 1968. However, when surveyed again in 1970, only two breeding pairs were seen. These numbers have fluctuated over the years (between 1999 and 2014), with the lowest number of nests, 25, recorded in 1999, and the highest number of nests, 102, recorded in 2008. Only 35 nests were documented in 2014 (Patten, pers. comm. 2014).

California least tern monitoring is conducted annually at South Bay Salt Works from March through September. In 2013, least terns were first observed at South Bay Salt Works on April 21, 2013, and were observed each visit after that through August 7, 2013, then reported over the western ponds on August 23, 2013. California least terns have also been observed foraging in the Otay River channel to the north of the Otay River Floodplain Site by Dudek biologists during surveys for other species.

California least tern has been documented nesting in the immediate vicinity of the Pond 15 Site between 1999 and the present. In 2013, 18 nests were established near the wooden bridge/sluice on the southeast edge of Pond 25, which is located directly south of the Pond 15 Site; on the east

edges of Ponds 26 and 27; and on the western edge of Pond 30. Nesting locations from 2015 are provided in Figure 3.3-16.

Western Snowy Plover

The Pacific Coast population of western snowy plover breeds from Damon Point, Washington, south to Bahia Magdalena, Baja California, Mexico (including on both the Pacific and Gulf of California coasts), and winters mainly in coastal areas from southern Washington to Central America (USFWS 2007a). Its breeding season can generally be described as occurring from March 1 through September 15 in any given year, with the earliest nests on the California coast occurring during the first week of March in some years, and by the third week of March in most years (USFWS 2007a).

Nests occur primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitats include bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars. In winter, western snowy plovers are found on many of the beaches used for nesting, as well as on beaches where they do not nest, in artificially created salt ponds, and on estuarine sand and mud flats.

In Southern California, western snowy plovers nest in areas with 6% to 18% vegetative cover and 1% to 14% inorganic cover; vegetation height is usually less than 6 centimeters (2.3 inches) (USFWS 2007a). Nests consist of a shallow scrape or depression, sometimes lined with beach debris (e.g., small pebbles, shell fragments, plant debris, and mud chips); nest lining increases as incubation progresses. Driftwood, kelp, and dune plants provide cover for chicks that crouch near objects to hide from predators. The species forages in coastal areas using a run-and-glean strategy for preying on invertebrates. Their young are precocial and begin foraging within hours of hatching under the direction and supervision of adults (USFWS 2007a).

Human disturbance, predation, and inclement weather, combined with the loss of nesting habitat to urban development and the encroachment of introduced beachgrass (*Ammophila arenaria*), led to a decline in the breeding and wintering populations of western snowy plover along the Pacific Coast. In Southern California, the very large human population and resulting recreation activities have precluded western snowy plover from breeding on historic beach strand nesting habitat. As a result, the Pacific Coast population of western snowy plover was federally listed as threatened in 1993, and remains listed today as both federally threatened and as a California Species of Special Concern (Shuford and Gardali 2008). Western snowy plover is also a covered species under the San Diego MSCP.

Western snowy plover has nested on the salt pond levees within the San Diego Bay NWR during most years between 1999 and 2014. Between 1999 and 2010, the number of nests never

exceeded nine in any given year. However, beginning in 2011, the number of nests has steadily increased from 25 in 2011 to 61 in 2014 (Patten, pers. comm. 2014).

Based on the maximum number of concurrently active nests and broods, at least 14 female and 24 male snowy plovers bred within the South Bay Salt Works in 2013. At least 45 nests were initiated from late March to mid-July 2013. The densest nesting was on the expanse of waste salt deposited at the south-southwest edge of Pond 20, located just to the north of the Otay River Floodplain Site (Figure 3.3-16), where 16 nests were established. The color, pattern, and texture of the substrate in this area made eggs and chicks exceedingly difficult to detect and likely contributed to the season's success. At least 101 chicks hatched from 38 nests, and at least 21 to 22 young of 14 to 15 broods are estimated to have fledged in 2013. The reason for failure of several nests may have been predation, noted based on either direct or indirect observation or sign such as coyote tracks. The maximum number of plovers observed early in the season before nests were established was 7 on March 22, 2013; late-season maximum numbers were at least 46 to 49, with 9 fledglings on July 17, 2013 (Patten, pers. comm. 2014).

Western snowy plover has also established nests in the vicinity of the Pond 15 Site. In 2013, plover nests were established in the vicinity of the bridge, including on the road shoulders of north Pond 41 and south Pond 30, on the road northeast of the bridge/sluice and east of Pond 25, on the northwestern levee of Pond 30, and on the southeast shore of and on salt crust in southeastern Pond 27 (Patten, pers. comm. 2014). Another nest was established near the southwest corner of Pond 15. Nesting locations from 2015 are shown in Figure 3.3-16.

Belding's Savannah Sparrow

Belding's Savannah sparrow forages and nests in the salt marsh vegetation supported within the Palomar channel that extends along the eastern edge of Pond 15, and also along the salt pond levee within salt marsh vegetation within Pond 15. Belding's Savannah sparrow territories have also been documented throughout the South Bay Salt Works where appropriate habitat is present. Nesting locations from 2015 are shown in Figure 3.3-16.

East Pacific Green Turtle

East Pacific green turtle was listed as endangered throughout its range (NMFS and USFWS 1998; USFWS 2007b) until April 6, 2016, when the Service and the National Oceanic and Atmospheric Administration issued a final listing rule for 11 Distinct Population Segments (DPS) of green sea turtle. As a result of analysis conducted prior to issuing this Final Rule, the East Pacific DPS is now listed as threatened under the Federal Endangered Species Act (81 FR 20057).

In the past, this regionally important population has exhibited an extreme decline in population as a result of severe overharvest of wintering turtles in the Sea of Cortez between 1950 and

1970, intense collection of eggs between 1960 and early 1980 on mainland beaches of Mexico, nesting habitat destruction, and incidental capture in commercial fisheries. However, recent conservation efforts have led to increasing abundance at numerous nesting sites throughout the range of the East Pacific DPS. In addition to the increasing trends at Michoacán, stable to slightly increasing nesting trends have been observed at Galápagos nesting beaches, which host the second largest nesting aggregation of the East Pacific DPS (81 FR 20057). Presently, the East Pacific DPS is not considered in danger of extinction; however, it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range due to habitat loss and degradation, overexploitation, disease and predation, inadequate regulatory mechanisms, fisheries bycatch, marine debris, boat strikes, red tide poisoning, and climate change. For these reasons, the East Pacific DPS is now considered a federally listed threatened species (81 FR 20057).

Although they do not nest as far north as the California coast, the East Pacific DPS of green sea turtles are often found during the summer in waters off the coast of California, Oregon, and sometimes as far north as Alaska (Southwest Fisheries Science Center 2007). Adults feed almost exclusively on sea grasses (e.g., eelgrass) and marine algae that is abundant in these areas. Stinson (1984) reviewed sea turtle sighting records from northern Baja California to Alaska and determined that the East Pacific DPS was the most commonly observed hard-shelled sea turtle on the U.S. Pacific Coast. Most of the sightings (62%) were reported from northern Baja California and Southern California. As of 2006, the northernmost reported resident (nonbreeding) population occurred in the San Diego Bay.

Although there is a consistent population of turtles that reside in the San Diego Bay, these turtles have been documented as migrating in and out of the Bay at different times. Researchers believe that these individuals return to this location due to the abundance of eelgrass available in San Diego Bay, as well as the relief from predation and poaching that the Bay provides (USFWS 2006a). Turtles have been observed in the open waters of San Diego Bay to the north of Pond 15.