Section 3.3
Biological Resources

SECTION SUMMARY

This section identifies the existing conditions of biological resources in the Project area and analyzes the effects of the proposed Project on biological resources at, and adjacent to, the Project site. The primary features of the proposed Project that could affect these resources include: dredging and excavation of sediments and soils; reuse of the dredged material by creation of two CDFs; upland construction and improvements; construction of new piers to accommodate two new boat hoists; and operation of the site following completion of construction. An analysis of potential impacts on biological resources associated with the alternatives is detailed in Chapter 6, Analysis of Alternatives.

Section 3.3, Biological Resources, provides the following:

- A description of the existing environmental setting in the Port area;
- A description of the existing terrestrial habitats and biological communities;
- A description of the existing aquatic habitats and biological communities;
- A description of vessel collisions with marine mammals and sea turtles;
- A description of Essential Fish Habitat (EFH) and managed species found in the proposed Project vicinity;
- A description of applicable local, state, and federal regulations and policies regarding biological resources that could be affected by construction or operation of the proposed Project;
- A discussion on the methodology used to determine whether the proposed Project adversely affects biological resources in the Project area;
- An impact analysis of the proposed Project; and,
- A description of any mitigation measures proposed to reduce any potential impacts, if applicable.

Key Points of Section 3.3:

While disturbance to biological communities is expected during project construction and operation, most impacts are limited in scope and duration. The construction of the proposed Project would not cause a loss of individuals or habitat of a state- or federally-listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally listed critical habitat.

The proposed Project would result in a permanent loss of approximately 0.9 acres of marine habitat. The following mitigation measure would reduce potentially significant impacts to less than significant levels:

- **MM BIO-1: Apply Habitat Mitigation Credits.** The LAHD shall apply 0.45 credits available in the Bolsa Chica or Outer Harbor mitigation banks to compensate for loss of 0.9 acres of fish and wildlife habitat in the Inner Harbor due to construction of fill in Fish Harbor. This mitigation measure would also offset the impacts to Essential Fish Habitat.

3.3.1 Introduction

This section identifies the existing conditions of biological resources in the proposed Project area and analyzes the effects of the proposed Project on biological resources at, and adjacent to, the proposed Project site, in particular the redevelopment area. The primary features of the proposed Project that could affect these resources include:

- Demolition of existing wharf and creosote-treated piles;
- Removal of finger piers;
- Installation of two finger piers and 126 concrete piles;
- Dredging of approximately 19,000 cy;
- Construction of sheet pile walls and two CDFs;
- Landside demolition and improvements; and
- Operation of the ALBS through 2042.

3.3.2 Environmental Setting

The Port of Los Angeles is the number one port by container volume and cargo value in the U.S. In addition, the Port provides berthing for cruise ships, sportfishing vessels, commercial fishing vessels, pleasure boaters, and Port support vessels. The physical size of the Port, diversity of uses, and ongoing upgrade and development projects result in continuous modifications within the Port. Thus, harbor waters are subjected to continuous vessel traffic and periodic construction or modification, such as dredging and filling. Commercial vessels and recreational boats produce high levels of underwater noise; ambient noise in San Francisco Bay/Oakland Harbor has been estimated at 120 to 155 dB_{PEAK} (or the peak sound pressure level in decibels) (ICF and Illingworth and Rodkin, 2009). By comparison, ambient noise in the open ocean has been estimated at 74 to 100 dB_{PEAK} on the central California coast (ICF and Illingworth and Rodkin, 2009). (Underwater noise levels from Los Angeles and Long Beach Harbors have not been measured.).

Biological resources in the Los Angeles-Long Beach Harbor (the Port Complex) have been described in several environmental documents, including the Deep Draft Navigation Improvement EIS/EIR (USACE and LAHD, 1992), West Basin Entrance Widening Project EIR (LAHD, 1991), Pier 400 (LAHD, 1999), Channel Deepening Project (USACE and LAHD, 2009), and biological surveys (MEC, 1988; MBC et al. 2007; MEC and Associates, 2002; MBC, 2009a, b; SAIC, 2010). The following description of biological resources incorporates information from these previous environmental documents, including information from the recent 2008 biological surveys. Biological resource sampling throughout the Port is not undertaken on an annual basis, and the most recent comprehensive surveys were completed in 2008. The *2008 Biological Surveys of Los Angeles and Long Beach Harbors* (SAIC, 2010) is incorporated by reference. Relevant parts of this document are summarized where used throughout this section.

Over the years, the Port of Los Angeles and the Port of Long Beach have worked with the state and federal resource agencies to conduct periodic evaluations of Port conditions, which then serve to define baseline conditions for habitat assessments associated with

Port development projects. Based on these assessments, the resource agencies and the LAHD further characterize and update the habitats associated with the Port and establish appropriate habitat mitigation values. The major assessment conducted in 2000 resulted in modification of the mitigation values in the Port (LAHD, 2004). These modifications were indicative of a gradual increase in habitat value in the Port and resulted in an increase in mitigation requirements in the Main Channel from lower value Inner Harbor habitat to higher value Outer Harbor habitat. While still valuable, the remainder of the Inner Harbor was identified as having lower habitat values relative to the deep and shallow waters of the Outer Harbor (see MEC and Associates, 2002; LAHD, 2004). The waters off ALBS (within Fish Harbor) are classified as Inner Harbor (LAHD, 2004).

In general, marine resource fluctuations along the California Coast and in the Port can occur seasonally and annually based on general fluctuations in the environment including, but not limited to, amount of rainfall and El Niño events. However, in general, substantial improvements in habitat quality associated with improved water quality in the Port occurred in the period between the 1970s and the mid 1980s. For example, little or no dissolved oxygen was present in Inner Harbor areas in the early 1950s, including in Fish Harbor (MEC and Associates, 2002). During quarterly sampling in 2000, however, dissolved oxygen in Fish Harbor ranged between 4.6 and 7.6 mg/l (MEC and Associates, 2002). Further improvements in marine resources have occurred since the 1980s, though at a slower pace than in the previous 10-year period (MEC and Associates, 2002). The types of habitats (shallow and deep pelagic, benthic, riprap, and piling in the Inner Harbor and Outer Harbor) and the species associated with them have remained fairly predictable as described for each habitat below.

Based on the information summarized above, data from the mid 1980s to 2008 accurately reflect current environmental conditions in the Harbor because those conditions have remained about the same or even improved. The 2002 MEC report was the first survey that included an enumeration and identification of what species constitute non-native taxa that have been introduced over time to the Port Complex.

The aquatic habitats offshore the ALBS are shallow water habitats (approximately -15 to -29 feet Mean Lower Low Water [MLLW] throughout Fish Harbor). Closer to shore, waters are shallower and concrete slipways used to transport vessels in and out of the water provide intertidal habitat. Where possible, site-specific data from sampling locations (stations) within and adjacent to Fish Harbor were used to characterize the biological communities.

3.3.2.1 Terrestrial Habitats

The proposed Project site and adjacent areas are already developed and paved. As such, very little vegetation or natural terrestrial habitats exist in the proposed Project area (Figure 3.3-1). The ALBS area was surveyed by biologists on March 10, 2011. Prior to the survey, biologists reviewed aerial photographs and information on sensitive plant and animal species that could potentially occur in the area from the California Natural Diversity Data Base (CNDDB) and California Native Plant Society (San Pedro and Long Beach Quadrangles). The CNDDB and Native Plant Society data sources provided information on the historical presence and numbers (if any) of sensitive resources in the proposed Project area.

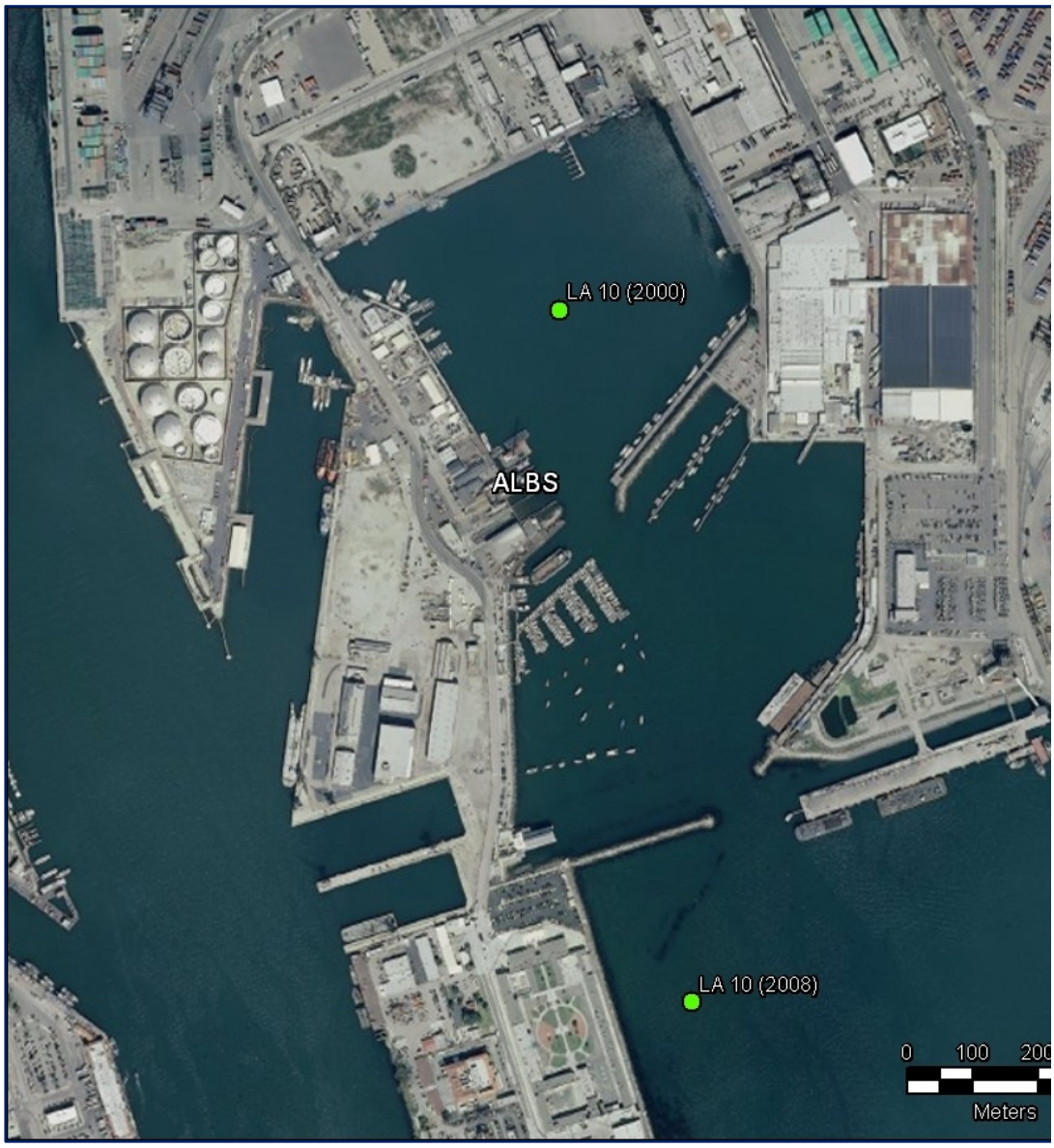

Figure 3.3-1: Existing ALBS Site and Vicinity and Infaunal Sampling Locations Near Project Site

During the March 2011 survey, no wildlife (mammals) was observed on the site, and there was no other evidence of habitat use, such as tracks or scat, by mammals. A Fremont cottonwood (*Populus fremonti*) was present on the northwest corner of the Southwest Maritime Administration Building (Building I), which is just outside the proposed Project site, and there were several grasses growing around it in what appeared to be an area previously devoted to gardening. Among the grasses was a Sydney golden wattle (*Acacia longifolia*). California fan palms (*Washingtonia filifera*) were observed on the north side of Building I (just outside the Project site), and also on the west of the machine shop (Building C2). The cottonwood and fan palms are native, while the grasses and golden wattle are considered exotic.

3.3.2.2 Benthic Environments

3.3.2.2.1 Soft-Bottom Habitats

Organisms that live on and in the bottom sediments act to modify the character of the bottom. Those that live in the sediments, primarily invertebrate species, are referred to as infauna, while those living on the sediment surface are referred to as epifauna. These species are important as a food source for fish, crabs, and other benthic organisms. Since the 1950s, improvements in water quality have aided the establishment of diverse assemblages of benthic animals in previously disturbed Inner Harbor and channel areas which were once largely devoid of marine life (MEC and Associates, 2002; SAIC, 2010). Data from the 1970s show that the polychaete *Tharyx parvus* accounted for most of the benthic organisms in soft-bottom samples (Soule and Oguri, 1976; USACE, 1980). An assessment of dominant species in the Port indicates a gradient of increasing environmental stress (enrichment/contamination) from the Outer Harbor to Inner Harbor and from basins to slips (MEC and Associates, 2002). The most recent infaunal assessment documented relatively similar densities between Inner Harbor and Outer Harbor, but densities at shallow water stations were markedly higher than those in deeper water (SAIC, 2010). Over time, there has been an increasing tendency of movement of healthy Outer Harbor assemblages up the Main Channel and improved benthic indicators in the Inner Harbor areas (MEC and Associates, 2002; MBC, 2009a; SAIC, 2010).

In 2008, one station (Station LA10) was sampled in winter and summer near the Project site near the entrance to Fish Harbor (SAIC, 2010; Figure 3.3-1). In winter, 35 infaunal taxa were collected, and the most abundant species were the Asian clam (*Theora lubrica*) and the polychaetes *Pista percyi* and *Mediomastus* spp. The Asian clam is thought to have been introduced from the Western Pacific, and was first recorded in the West Basin area of the Port in 1980 (IRC, 1981). The abundance of non-native species such as the Asian clam has increased throughout the Port Complex since the 1970s. About 12 percent of the infaunal abundance collected in 2008 was comprised of non-indigenous taxa, including the Asian clam, which was collected at 86 percent of the stations sampled and accounted for 10 percent of infaunal abundance. In summer 2008, abundance was similar to that in winter, but fewer species (26) were collected. The most abundant taxa were the Asian clam and the polychaetes *Paramage scutata* and *Pista agassizi*.

In 2000, infaunal Station LA10 was located inside Fish Harbor (MEC and Associates, 2002; Figure 3.3-1). During quarterly sampling the most abundant species was the polychaete *Pseudopolydora paucibranchiata*, which ranked first in abundance during all four quarters, comprising between 38 and 92 percent of infaunal abundance. Other abundant taxa included the polychaetes *Cossura* sp. A and *Mediomastus* sp. Out of 28 stations sampled throughout the Port Complex, mean annual abundance at Station LA10 was highest (1,177 organisms/0.1 m^2). Total abundance was three to five times greater in winter (January 2000) than any other season. Over 30 percent of the infaunal abundance in 2000 came from non-indigenous taxa, including *Pseudopolydora paucibranchiata*, which comprised nearly 22 percent of infaunal abundance throughout the Port Complex. The number of infaunal species collected at Station LA10 during each survey ranged from 10 (in May 2000) to 27 (in January 2000). In 2008, the biomass of invertebrates in sediments off Berth 303 averaged 7.6 grams per 0.1 square meter (g/0.1 m^2) (SAIC, 2010). This was slightly lower than the annual mean biomass recorded during 2000 (9.2 g/0.1 m^2) (MEC and Associates, 2002). Annual and seasonal variations in density of infaunal organisms are to be expected as a result of variations in oceanographic (chemical and physical) conditions over time and human activities (USACE and LAHD, 1992).

Epifaunal invertebrates associated with, but not living in, soft-bottom sediments are generally larger than infaunal organisms and are also referred to as macroinvertebrates. These species are most commonly caught during trawl sampling. Epifaunal abundance varied spatially and temporally in the 2008 surveys of the Port Complex. The number of individuals per trawl was five times higher at night (103 individuals) than during the day (21 individuals), although epifaunal biomass was similar between night and day.

One trawl station adjacent to the Project site was sampled in 2008: Station LA10, near the entrance to Fish Harbor at a depth of 82 feet. A combined mean of nine epifaunal invertebrate species were collected at that location in 2008, with a mean of four species collected during the day sampling and a mean of five species collected at night (SAIC, 2010). Mean abundance at the station was substantially higher at night (47 individuals) than during the day (21 individuals). Throughout the Port Complex the most abundant invertebrates were: blackspotted bay shrimp (*Crangon nigromaculata*; 38 percent of total abundance), ridgeback rock shrimp (*Sicyonia ingentis*; 16 percent), blacktail bay shrimp (*Crangon nigricauda*; 14 percent), and Xantus swimming crab (*Portunus xantusii*; 11 percent). Blackspotted bay shrimp, Xantus swimming crab, and shrimp of the genus *Heptacarpus* were collected at all stations during the 2008 surveys.

3.3.2.2.2 Hard Substrates

Surveys of invertebrate communities on riprap, pilings, and concrete were conducted at eight stations throughout the Port Complex in 2008 (SAIC, 2010). The surveys include quantitative observations by biologist-divers, as well as scraping samples that were preserved and analyzed in the laboratory. Elevations/depths of sampling stations were not measured; instead biologists used a combination of tidal zones and biological zones to delineate the upper intertidal, lower intertidal, and subtidal zones. For example, the "barnacle zone" distinguished the upper intertidal, while the "mussel zone" marked the lower intertidal. Mean abundance was highest in the lower intertidal (233 individuals per 0.01 m^2), lowest in the upper intertidal (140 individuals per 0.01 m^2), and intermediate in the subtidal zone (183 individuals per 0.01 m^2). Abundance was relatively similar between Inner and Outer Harbor stations, though highest abundance was recorded on the Middle Breakwater. Abundance was also relatively similar among substrate types. On average, the number of species was substantially higher in the low intertidal and subtidal zones (38 and 40 species, respectively) than in the upper intertidal (12 species). Mean biomass was similar among depth zones (24.1 to 25.6 grams per 0.01 m^2)

In 2008, the upper intertidal zone (as measured in the scraped quadrats) was dominated by the barnacles *Chthamalus fissus*, *Balanus glandula*, and *Balanus crenatus* (SAIC, 2010). The dominant members of the lower intertidal and subtidal communities included the amphipods *Photis* spp. 1 and *Caprella simia*, and the brittlestar *Amphipholis squamata*. Divers observed several motile species, including California spiny lobster (*Panulirus interruptus*), kelp crabs (such as *Mimulus foliatus* and *Pugettia* spp.), and hermit crabs (*Pagurus* spp.). The riprap studies in 2000 identified a more robust community in Outer Harbor areas compared with the Inner Harbor (MEC and Associates, 2002); however, the communities in 2008 appeared to be relatively similar among locations with no distinct gradient between Inner and Outer Harbor. Overall, results suggested improved conditions in the riprap communities since 2000 (SAIC, 2010).

Of the 334 observed species in 2008, 12 were introduced and another 31 were considered cryptogenic (of unknown origin), indicating up to 13 percent of the riprap biota was

potentially non-native in origin. The most conspicuous non-native species observed during 2008 was the bay mussel (or Mediterranean mussel, *Mytilus gallovprovincialis*), although the most abundant was the amphipod *Caprella simia*.

During a site visit in March 2011, intertidal/subtidal species observed on the pilings at the ALBS included bay mussel, the barnacles *Balanus glandula* and *Chthamalus fissus*, and the brown seaweed *Sargassum muticum* was growing on small rocks in the intertidal zone. Fish associated with hard substrates are discussed in the following Section 3.3.2.3, Water Column Habitats.

3.3.2.3 Water Column Habitats

Organisms in the water column include plankton (small floating animals and plants) and fish. Phytoplankton (plant) communities tend to be less diverse in the Inner Harbor than in the Outer Harbor, but productivity can be higher in the Inner Harbor due to warmer water temperatures, nutrient inputs, and reduced circulation (Allan Hancock Foundation, 1980). Inner Harbor zooplankton (animal) communities are dominated by copepods that have seasonal peaks and declines. Ichthyoplankton (fish eggs and larvae) species and abundances vary on a spatial and temporal basis in the Port Complex. During three ichthyoplankton surveys throughout the Port Complex in 2008, the most abundant larval taxa included CIQ gobies (gobies of the genus *Clevelandia*, *Ilypnus*, and *Quietula*), combtooth blennies (*Hypsoblennius* spp.), bay goby (*Lepidogobius lepidus*), clingfishes (Gobiesocidae), yellowfin goby (*Acanthogobius flavimanus*), and white croaker (*Genyonemus lineatus*) (SAIC, 2010). Most of the fish eggs could not be identified during the study. The weighted mean abundance during 2008 was highest at Station LA7, which was located in the Pier 300 Shallow Water Habitat, where density (4,831 larvae per 100 m^2) was nearly four times higher than the Port-wide mean (1,294 larvae per 100 m^2). The weighted mean abundance at Station LA10, located at the entrance to Fish Harbor (Figure 3.3-1), was 22 percent higher than the Port-wide mean. The most abundant larval taxa at Station LA10 were CIQ gobies (45 percent of weighted mean abundance), followed by combtooth blennies (27 percent), shortspine combfish (*Zaniolepis frenata*; 4 percent), and roughcheek sculpin (*Ruscarius creaseri*; 4 percent). The only exotic adult/juvenile fish species collected during the 2008 fish surveys was yellowfin goby, a non-native species common in bays and estuaries of California. It was first identified in the Harbor around 1978 (Haaker, 1979).

The species composition and abundance of ichthyoplankton in the Port has been shown to be similar to that of the juvenile and adult fish community (Brewer, 1983), suggesting that the Port/harbor waters are a nursery for nearly all of the fish species found there as adults (MBC, 1984; MEC, 1988). Results from 2008 were relatively similar to those recorded during biweekly surveys in 2006 (MBC et al., 2007) and quarterly surveys in 2000 (MEC and Associates, 2002).

The Port Complex consists of habitat for more than 130 species of juvenile and adult fish, some of them transient visitors and some permanent residents (USACE and LAHD, 1980; Horn and Allen, 1981; Brewer, 1983; MEC, 1988; MEC and Associates, 2002; Allen and Pondella, 2006; SAIC, 2010). Several species, however, have dominated fish populations in the Port: white croaker, northern anchovy (*Engraulis mordax*), queenfish (*Seriphus politus*), Pacific sardine (*Sardinops sagax*), and topsmelt (*Atherinops affinis*) (Brewer, 1983; MEC and Associates, 2002; SAIC, 2010). Some of the other species that are also relatively abundant and are considered important residents of the Port include:

white seaperch (*Phanerodon furcatus*), California tonguefish (*Symphurus atricauda*), speckled sanddab (*Citharichthys stigmaeus*), and shiner perch (*Cymatogaster aggregata*) (Horn and Allen, 1981). Juvenile and adult individuals of most species are usually more abundant during the spring and summer than in winter (Horn and Allen, 1981); however, pelagic fishes in 2008 were most abundant in winter (SAIC, 2010). The Port also provides habitat for recreationally important species such as California halibut (*Paralichthys californicus*), barred sand bass (*Paralabrax nebulifer*), and Pacific barracuda (*Sphyraena argentea*).

At Station LA10, near the entrance to Fish Harbor, abundance of pelagic fishes as sampled by lampara net[1] was similar to the Port-wide station mean during 2008, with means of 8 individuals during the day and 414 at night (SAIC, 2010). For comparison, the Port-wide station mean was 113 individuals during the day and 358 at night. The total numbers of species collected at Station LA10, however, were lower than the Port-wide means: 2 and 4 species during day and night, respectively, compared with means of 3 and 6 species throughout the Port Complex. The most abundant species collected by lampara were northern anchovy, queenfish, and topsmelt. At Station LA10, the most abundant species collected by lampara were northern anchovy, Pacific sardine, topsmelt, and California grunion (*Leuresthes tenuis*).

Abundance of demersal fishes sampled by otter trawl in 2008 at Station LA10 was relatively high, with means of 340 individuals during the day and 255 at night (SAIC, 2010). For comparison, the Port-wide station mean was 177 individuals during the day and 179 at night. The total numbers of species collected at Station LA10 (18 species during the day and 15 at night) were similar to the Port-wide means of 13 and 18 species, respectively. The most abundant species collected by otter trawl were northern anchovy, white croaker, queenfish, shiner perch, and white seaperch. At Station LA10, located near the entrance to Fish Harbor, the most abundant fish species collected by otter trawl were queenfish, white croaker, and California tonguefish.

Results from recent studies of the fish communities in the Port Complex were consistent with those in other recent studies, although differences in sampling methods and gear precluded direct comparisons in many cases (SAIC, 2010). Fish collections in 2008 did not discern any distinct spatial pattern in the distribution of pelagic fishes throughout the Port Complex (SAIC, 2010). In contrast, Outer Harbor areas generally were typified by a greater number, biomass, and variety of trawl-caught fish than Inner Harbor areas. Number of fish species collected by otter trawl has been relatively consistent since 1986.

3.3.2.4 Water Birds

Numerous water-associated birds use the Port as residents and as seasonal visitors. Recent surveys found 68 species in the Port that depend on marine habitats and another 28 species that do not (SAIC, 2010). Waterfowl, gulls, and aerial fish foragers were the dominant groups observed throughout the Port Complex in 2008. All other types of birds (large shorebirds, wading/marsh birds, upland birds, and raptors) were also represented but in much smaller numbers. The most abundant species, in order of decreasing abundance, were western gull (*Larus occidentalis*), Brandt's cormorant (*Phalacrocorax penicillatus*), surf scoter (*Melanitta perspicillata*), California brown pelican (*Pelecanus occidentalis californicus*), western grebe (*Aechmophorus occidentalis*), Heermann's gull

[1] The typical gear used for commercial fishing and sampling are nets known as lampara or seines.

(*L. heermanni*), and elegant tern (*Thelasseus elegans*). The areas in the Port with the highest reported bird observations in 2008 were the Main Channel, the Pier 300 channel to the east of the Project site, and the Pier 300 Shallow Water Habitat. During the site visit in March 2011, only one western gull was observed flying near the Project site.

3.3.2.5 Special-Status Species

Three state and federally listed threatened or endangered species are known to be present, at least seasonally, in the Port Complex (Table 3.3-1). One endangered bird species, the California least tern (*Sternula antillarum browni*), regularly uses the Port Complex. The California least tern is present only in the Port area during its breeding season, April to September. This species is described in detail in Section 3.3.2.5.1. The threatened western snowy plover (*Charadrius alexandrines nivosus*) is a transient migratory visitor, and a few individuals have been observed on Pier 400 in recent years (Keane Biological Consulting, 2005a, 2005b). Western snowy plover forages on sandy beaches, and is occasionally observed on Pier 400 during migration; it has also been observed outside the Port Complex at Point Fermin and Cabrillo Beach (Keane Biological Consulting, 2009). It was not observed during the year-long bird surveys of 2007-2008 (SAIC, 2010). Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) inhabits pickleweed marshes exclusively (USACE and LAHD, 1992). No suitable habitat for this species is present in the area of the proposed Project.

Table 3.3-1: Threatened and Endangered Bird Species in the Proposed Project Area.

Species	Status		Notes
	Federal	State	
California least tern	E	E	Breeds on Pier 400 from about approximately April through August; forages preferentially over shallow waters; no sightings near Fish Harbor in 2007-2008.
Western snowy plover	T, BCC	SSC	Infrequent visitor to Port; observed on Pier 400. No observations during 2007-2008 surveys.
Belding's savannah sparrow	–	E	Inhabits pickleweed marsh; transient visitor to Port. No individuals observed in 2007-2008.

Notes: E = Endangered, T = Threatened, SSC = CDFG Species of Special Concern, BCC = USFWS Birds of Conservation Concern. Designations from CDFG 2011a.
Data in Notes from SAIC (2010) and Keane (2009, 2010).

There are multiple bird species that are not listed by the state or federal governments as threatened or endangered, but have special status designated by either the California Department of Fish and Game (state - CDFG) or U.S. Fish and Wildlife Service (federal - USFWS) (Table 3.3-2) (CDFG, 2011b). These include:

- **CDFG Species of Special Concern:** Vertebrates with declining population levels, limited ranges, and/or continuing threats make them vulnerable to extinction.
- **CDFG Watch List:** Birds that are: (1) not on the Bird Species of Special Concern list, but were on previous lists, and have not been listed under the California Endangered Species Act (ESA); (2) were previously state or federally listed, and now are on neither list; or (3) are on the list of Fully Protected Species.

- **CDFG Fully Protected:** This was the state's initial effort to identify and protect animals that were rare or faced possible extinction. Most of the animals on the Fully Protected list were subsequently listed under state and/or federal ESAs. It is unlawful to take these species except with an authorization for necessary scientific research.
- **USFWS Birds of Conservation Concern:** Birds of Conservation Concern are those identified by the USFWS that represent the highest conservation priorities. The designation is meant to draw attention to species in need of conservation action.

Table 3.3-2: Special Status Bird Species (Designated by CDFG and USFWS) in the Proposed Project Area

Species	Status / Designation	Notes
Black oystercatcher	USFWS BCC	Nested in Port Complex in 2007-8; no sightings near Fish Harbor in 2007-2008.
Black skimmer	CDFG SSC, USFWS BCC, and others	No nesting in the Port in 2008; no sightings near Fish Harbor in 2007-2008.
Brant	CDFG SSC	Six individuals observed during February 2008 in Long Beach Outer Harbor; no observations near Fish Harbor.
Burrowing owl	CDFG SSC, USFWS BCC	Observed on Pier 400 in 2007-2008; nesting status within the Port Complex unknown.
California brown pelican	CDFG FP	Abundant throughout Port Complex; 1,190 observations in and near Fish Harbor in 2007-2008.
Caspian tern	USFWS BCC	Nested on Pier 300 in 2008-9; no sightings near Fish Harbor in 2007-2008.
Common loon	CDFG SSC	Thirteen individual observed throughout Port Complex in 2007-2008; no observations near Fish Harbor.
Double-crested cormorant	CDFG Watch List	Nested in transmission towers in Long Beach Harbor in 2007-2008; among most abundant birds in the Harbor. Observed during 18 of 20 surveys in and near Fish Harbor in 2007-2008.
Elegant tern	CDFG Watch List	Nested on Pier 400 in 1998-2005, and on Pier 300 since 2007-2008; very abundant, forages over water near nests. Observed during 9 of 20 surveys in and near Fish Harbor in 2007-2008.
Loggerhead shrike	CDFG SSC, USFWS BCC	Observed in Inner Harbor areas of Port Complex in 2001 - 2002; no observations near Fish Harbor in 2007-2008.
Long-billed curlew	CDFG Watch List, USFWS BCC	Single individual observed in Fish Harbor area during 1 of 20 surveys (Dec. 2007).
Merlin	CDFG Watch List	One individual observed on riprap in Long Beach Outer Harbor in December 2007; no observations near Fish Harbor in 2007-2008.
Osprey	CDFG Watch List	Observed in Port Complex during all surveys in 2007-2008; no observations near Fish Harbor.
Peregrine falcon	CDFG FP, USFWS BCC	Nests on the Schuyler Heim and Gerald Desmond Bridges. Usually observed near nesting sites; no observations near Fish Harbor in 2007-2008.

Notes: USFWS BCC = U.S. Fish and Wildlife Service Bird of Conservation Concern; CDFG = California Dept. of Fish and Game; SSC = Species of Special Concern; FP = Fully Protected.

Data in Notes from SAIC (2010) and Keane (2009, 2010).

California brown pelican was previously listed as endangered; however, this species recovered and was delisted by the state in June 2009 and by the federal government in November 2009. It is a Fully Protected species, and is present year-round throughout the Port Complex. It accounted for 9.6 percent of the total bird observations in 2007-8, with most of the individuals observed roosting on the riprap of the breakwaters of the Outer Harbor (SAIC, 2010). It was the most abundant special-status bird species observed in and near Fish Harbor, occurring in all 20 surveys.

Peregrine falcon (*Falco peregrines*), which was listed as endangered, was delisted by the federal government in 1999 and by the state in November 2009 (CDFG, 2009). It is designated as Fully Protected by the CDFG and a Bird of Conservation Concern by the USFWS. Peregrine falcon nest at several locations in the Port Complex, but the nesting site nearest to the Project site is on the Vincent Thomas Bridge. No peregrine falcon were observed near Fish Harbor in 2007-8 (SAIC, 2010). The decrease in California least tern nests at Pier 400 in recent years (see Section 3.3.2.5.1) has been attributed, in part, to an increase in peregrine falcon activity near the nesting site (Keane, 2009).

Black oystercatcher (*Haematopus bachmani*) nested on the breakwaters during the 2000-2001 and 2007-2008 biological surveys of the Port Complex, but there were no sightings near Fish Harbor in 2007-2008 (SAIC, 2010). Nesting in the Port Complex is considered unusual for this species (SAIC, 2010).

Black skimmer (*Rynchops niger)* nested in the Port at Pier 400, but have not nested there since 2000. Six brant (*Branta bernicla*) were observed in Long Beach Harbor in February 2008. This species (a "sea goose") is considered a common migrant offshore Los Angeles County, but is rarely observed in harbor and estuarine habitats (SAIC, 2010).

The burrowing owl (*Athene cunicularia*) was sighted on Pier 400 in 2007 and 2008, but its nesting status within the Port Complex is unknown. It was not observed near Fish Harbor in 2007-2008 (SAIC, 2010).

A total of 13 common loon (*Gavia immer*) were observed during the 2007-2008 bird surveys in the Port Complex; none of the observations were near Fish Harbor (SAIC, 2010).

Double-crested cormorant (*Phalacrocorax auritus)* is one of the most abundant species in the Port Complex, and nests on transmission towers in Long Beach Harbor. It was the second most abundant special-status bird species observed near Fish Harbor in 2007-2008, with 337 observations (SAIC, 2010).

The elegant tern (*Sterna elegans*) nested on Pier 400 from 1998 through 2005, but has not returned to nest at that site since then (Keane Biological Consulting, 2009, 2010). However, elegant tern nested on Pier 300 (on the 41-acre fill site) in 2008 and 2009. By May 24, 2009, an estimated 4,200 elegant terns, 220 Caspian terns (*Hydroprogne caspia*), and an undetermined number of royal terns (*Thalasseus maximus)* were nesting near the backlands of Berth 305 (on the 41-acre fill site). By mid-June the number of elegant terns was estimated at 4,500 individuals. Elegant tern was the most abundant special-status bird species observed near Pier 300 during biweekly bird surveys in 2007-2008, with 3,284 observations. Caspian terns nested on Pier 400 from 1997 until 2005, when they left the area due to a nocturnal predator. They began nesting on the 41-acre fill site in 2008, and 174 observations of this species were made near Pier 300 in 2007-2008

(SAIC, 2010). More recently, Caspian terns and elegant terns were observed nesting at the backlands of Berth 305 on April 23, 2010. However, the following week, the terns had abandoned the area (Keane Biological Consulting, 2010). No further nesting activities by Caspian or elegant terns were observed at the backlands of Berth 305 or elsewhere in the Port in 2010, aside from limited nesting on Connolly Pacific barges from April through July (K. Keane pers. comm., 2011). No Caspian terns were observed in or near Fish Harbor in 2007-2008, but elegant terns were recorded from May through November 2008 (SAIC, 2010).

Loggerhead shrike (*Lanius ludovicianus*) was observed in 2001 and 2002, but not during the latest yearlong bird study. In 1984, loggerhead shrike was one of only five bird species known to nest in the Port Complex (USACE, 1984).

Long-billed curlew (*Numenius americanus*) is common in southern California, and in 2007-2008 there was only one observation (a single individual) in or near Fish Harbor (SAIC, 2010).

Merlin (*Falco columbarius*) is considered an uncommon winter visitor, and a single individual was observed on the riprap in Outer Long Beach Harbor in December 2007 (SAIC, 2010).

Osprey (*Pandion haliaetus*) was 1 of 20 bird species observed during all surveys in 2007-2008. However, no osprey were observed in or near Fish Harbor (SAIC, 2010).

Sporadic sightings of sea turtles have been reported in the Port Complex over the years; however, none have been observed during more than 20 years of baseline biological surveys (MEC, 1988; MEC and Associates, 2002; Keane Biological Consulting, 2007; SAIC, 2010). Because several green sea turtles have been observed in nearby Alamitos Bay and in the San Gabriel River, it is possible that sea turtles may be rare visitors to the Outer Harbor areas. However, it would be unlikely for a sea turtle to visit an Inner Harbor area near the Project site.

Several turtle species are found in the eastern Pacific Ocean, including loggerhead sea turtles (*Caretta caretta*), green sea turtles (*Chelonia mydas*), leatherback sea turtles (*Dermochelys coriacea*), and olive ridley sea turtles (*Lepidochelys olivacea*). The North Pacific distinct population segment of loggerhead sea turtles is federally listed as endangered. Loggerhead sea turtles are found in all temperate and tropical waters throughout the world and are the most abundant species of sea turtle found in U.S. coastal waters (National Marine Fisheries Service [NMFS], 2011).

Green sea turtles, federally listed as threatened, are found in all temperate and tropical waters throughout the world. They primarily remain near the coastline and around islands and live in bays and protected shores, especially in areas with seagrass beds. In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south (NMFS, 2011). A small population of green sea turtles has been observed in the lower San Gabriel River, and studies are proposed to determine more information on these animals (Lawson 2009, pers. comm.). They rarely are observed in the open ocean.

Leatherback sea turtles, federally listed as endangered, are the most widely distributed of all sea turtles and are found worldwide with the largest north and south range of all the sea turtle species. The Pacific Ocean leatherback population is smaller than the Atlantic Ocean population (NMFS, 2011).

Olive ridley sea turtles, federally listed as threatened, are found in tropical regions of the Pacific, Indian, and Atlantic Oceans. They typically forage offshore in surface waters or dive to depths of 500 feet to feed on bottom-dwelling crustaceans.

All marine mammals are protected under the Marine Mammal Protection Act (MMPA) of 1972, and some are protected by the Endangered Species Act (ESA) of 1973. These species may forage in the Port but do not breed there. Sightings of marine mammals were recorded during the 2008 biological surveys of the Port Complex (SAIC, 2010). Both California sea lion (*Zalophus californianus*) and Pacific harbor seals (*Phoca vitulina vitulina*) were observed during the 2008 surveys near the Project site in and near Fish Harbor. During 2008 California sea lions were observed throughout the Port Complex, while harbor seals were generally limited to Outer Harbor waters.

Outside the breakwater, a variety of marine mammals use nearshore waters. These include the gray whale (*Eshrichtius robustus*), which migrates from the Bering Sea to Mexico and back each year. This and other species of baleen whales generally are found as single individuals or in pods of a few individuals. Toothed whales, and particularly dolphins, can be found in larger groups up to a thousand or more (Leatherwood and Reeves, 1983). Several species of dolphin and porpoise are commonly found in coastal areas near Los Angeles, including the Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), Risso's dolphin (*Grampus grisseus*), Dall's porpoise (*Phocoenoides dalli*), bottlenose dolphin (*Tursiops truncatus*), northern right-whale dolphin (*Lissodelphis borealis*), and common dolphin (*Delphinus delphis*), with the common dolphin the most abundant (Forney et al., 1995). Bottlenose and common dolphin were observed during the 2008 baseline surveys; except for bottlenose dolphin sighted near the San Pedro Waterfront in the Main Channel, all other observations were in the Outer Harbors (SAIC, 2010).

3.3.2.5.1 California Least Tern

The California least tern was federally listed as endangered in 1970 and state listed as endangered in 1971. Loss of nesting and nearby foraging habitat due to human activities caused a decline in the number of breeding pairs (USFWS, 1992). The biology of this species has been described in the biological assessment for the *Channel Improvement and Landfill Development Feasibility Study* (USACE, 1990), biological opinion for the Los Angeles Harbor Development Project (1-6-92-F-25), and *Deep Draft Navigation Improvement EIS/EIR* (USACE and LAHD, 1992), and these studies are incorporated by reference. The following is a summary of information on California least tern use of the Port.

The California least tern has been nesting during the summer on Terminal Island (including Pier 300) since at least 1973 (Keane Biological Consulting, 1999a). In 1979, the LAHD began providing nesting habitat for the species and entered into a Memorandum of Agreement (MOA) with the USFWS, USACE, and CDFG for management of a 15-acre least tern nesting site in 1984. This MOA set forth the responsibilities of the signing parties for management of the designated California least

tern nesting site in the Port, and it is renewed every 3 to 5 years. A new MOA was approved by the Board of Harbor Commissioners in June 2006. The MOA also allows the designated nesting site to be relocated under specific conditions, and the location of this nesting site has changed over time due to Port development activities and is now on the southern tip of Pier 400 (Keane Biological Consulting, 2003). In 2009, nesting at Pier 400 accounted for 12.4 percent of the total fledglings in the Los Angeles and Orange county areas, and approximately 4 percent of statewide fledglings (Keane Biological Consulting, 2009). This is a marked decrease from 2005, when nesting at Pier 400 accounted for 71.4 percent of total fledglings in Los Angeles and Orange counties and 45 percent of the statewide number of fledglings.

Several foraging studies have been conducted in the Port. The 1982, 1984, and 1985 surveys found that California least tern foraged over shallow water (generally less than 20 feet deep) in the Outer Harbor, especially near the nesting site, but not in the Inner Harbor (Keane Biological Consulting, 1997). Surveys using radio-telemetry and observations in 1986 and 1987 showed that the California least terns foraged inside and outside the Port during egg incubation. More foraging occurred near the breakwater than adjacent to Terminal Island during incubation, but this reversed after the eggs hatched (Keane Biological Consulting, 1997). In the 1994-1996 surveys, least terns foraged around the east and south sides of Pier 300 with greater use of the Seaplane Anchorage in 1996 than in the other 2 years. After the south side of Pier 300 was dredged to deep water, use by the California least terns declined. The Cabrillo Beach and Cabrillo salt marsh areas were used to varying degrees (Keane Biological Consulting, 1997). A study in 1997 and 1998 found that the California least terns used the West Basin of Long Beach Harbor as well as the Pier 300 Shallow Water Habitat, Seaplane Lagoon, and the Gap (the area between Naval Mole and Pier 400 Transportation Corridor). The foraging frequency (dives per acre) varied among locations and between years. This variation may be related to changes in availability of prey and distance from nest sites (Keane Biological Consulting, 1998). These studies have shown that Outer Harbor shallow water areas (less than 20 feet deep) provide important foraging areas for the California least tern. During the year-long avian surveys of 2007-2008, no California least terns were observed in or near Fish Harbor (SAIC, 2010). In summary, the foraging studies show that the California least terns forage primarily in the Outer Harbor and not in the channels, basins, and slips of the Inner Harbor.

From 1994 through 2002, the Pier 300 Shallow Water Habitat and the channel south of Pier 300 supported the highest foraging preference by California least terns (Keane Biological Consulting, 2003). The foraging preference scores were calculated using the ratio between observed foraging dives and foraging flights. During the two years data were collected in Fish Harbor, foraging and transit scores were low (1 or 2, with 1 being lowest and 5 being highest), suggesting the area of the Project site was not an important foraging or transit area for least terns.

In 2003, foraging showed three peaks: early to mid-May (egg-formation period), mid-June (chick hatching period), and early to mid-July (fledging period) (Keane Biological Consulting and Aspen Environmental Group, 2004). In 2003, foraging outside the Port increased in relation to that of the previous 2 years. Stations with deep-water habitats accounted for 29 percent of California least tern foraging dives in the Port in 2003, compared with 71 percent for stations with shallow-water habitats. The waters of Fish Harbor accounted for only 0.1 percent of least tern transit flights, and only 2 percent of foraging flights in the Port.

3.3.2.6 Wildlife Movement Corridors

The Conservation Element of the City of Los Angeles General Plan addresses wildlife corridors. These are for movement of animals between large habitat areas. The Port does not provide any such corridors. However, some marine fish species move into and out of the Port for spawning or nursery areas.

3.3.2.7 Invasive Species

There are at least 196 non-native aquatic species in the Los Angeles and Long Beach Harbor (CDFG, 2008). The occurrence of non-native species is also discussed above under each habitat type. Without controlling pressures found in a native ecosystem, invasive species can compete with or prey upon resident species and thus alter the local ecology, which can have economic effects as well. Invasive species in the Port Complex include a Japanese brown alga (*Sargassum muticum*), New Zealand bubble snail, Japanese mussel (*Musculista senhousia*), an isopod (*Sphaeroma quoyanum*), and yellowfin goby. Another species of *Sargassum* (*S. horneri*) was discovered in Long Beach Harbor during annual subtidal surveys in in 2003 (MBC, 2009b). It has now been found at Santa Catalina, San Clemente, and Anacapa Islands, Mission Bay, Crystal Cove (in the intertidal zone), Laguna Beach, and Todos Santos Bay, Baja California (Engle, 2009). The primary source of invasive organisms is likely to have been the discharge of ballast water from cargo vessels using the ports (NRC, 1996). Other potential vessel sources include hulls, anchors and chains, piping and tanks, propellers, and suction grids, while non-vessel sources include aquarists and restaurant live fish trade.

During the 2008 surveys, when comparing results to the 2000 survey, the same fish and alga taxa were collected or observed, but there were fewer non-indigenous riprap invertebrate species (12) and soft-bottom associated infauna and epifauna species (10). The number of cryptogenic species (those with unknown origin) was similar between the two periods for infauna/epifauna (35 species in 2000 and 32 in 2008), but increased for riprap invertebrates (13 species in 2000 and 31 in 2008; SAIC, 2010). The authors of the report noted that this could have resulted from increased knowledge and distinction of cryptogenic species made in the last five years. Overall, however, the percentage of introduced and cryptogenic species identified in the 2008 study was similar to that reported for the 2000 study (SAIC, 2010).

The aquarium strain of *Caulerpa* (*Caulerpa taxifolia*) is an invasive alga that has covered more than 30,000 acres in the Mediterranean Sea and is listed as a federal noxious weed under the Plant Protection Act. *Caulerpa* was found in two southern California locations in 2000. This species has never been identified in the Port Complex, but is of particular concern because it is a fast-growing green alga native to tropical waters where it typically grows in isolated patches. However, in areas outside its native range, *Caulerpa* can grow rapidly and quickly overtake native species. In the Mediterranean, *Caulerpa* has caused ecological devastation by overwhelming local seaweed species and altering fish distributions. Its rampant growth also has resulted in huge economic losses by harming tourism, pleasure boating, fishing, and the diving industry. Species of *Caulerpa* are used in the aquarium trade and can enter coastal marine waters through disposal of the plants or aquarium water into storm drains or coastal waters. Due to its potential to create severe ecological and economic losses, a *Caulerpa* survey must be completed in accordance with the *Caulerpa* Control Protocol prior to specific underwater disturbances

(such as bulkhead repair, dredging, and placement of navigational aids) (NMFS and CDFG, 2008).

3.3.2.8 Significant Ecological Areas

The County of Los Angeles has established Significant Ecological Areas (SEAs) to preserve a variety of biological communities for public education, research, and other non-disruptive outdoor uses. SEAs do not preclude limited development that is compatible with the biological community. Policies and regulations for SEAs do not apply within city boundaries. No SEAs are present near the proposed Project site. The closest designated SEA, and the only SEA located in the Port, is the Terminal Island SEA, which is located at the Pier 400 California least tern nesting site (County of Los Angeles, 1980 and 2011).

3.3.2.9 Essential Fish Habitat (EFH)

The proposed Project/alternative area is located in an area designated as EFH for two Fishery Management Plans (FMPs): the Coastal Pelagics and Pacific Groundfish Management Plans. Of the 95 species federally managed under these plans, 24 are known to occur in the Port Complex and could potentially be affected by the proposed Project or alternatives. However, most of these 24 species have been collected only sporadically and in very low numbers, and habitat near the proposed Project site is not suitable for these species. The species with the highest potential to be affected by the proposed Project are identified in Table 3.3-3.

Two coastal pelagics—northern anchovy and Pacific sardine—are likely to occur in the vicinity of the proposed Project. Northern anchovy is among the most common and abundant fish species in the Port Complex. In 2006, larvae were present in the Port Complex during two seasonal periods: a greater peak in March-July and a lesser peak in October-December (MBC et al., 2007). Juvenile and adult anchovies have consistently been collected during fish sampling near the proposed Project site (MEC and Associates, 2002; SAIC, 2010). Northern anchovy are found from the surface to depths of 1,017 feet, though juveniles are generally more common inshore and in estuaries (Davies and Bradley, 1972).

Pacific sardine were not abundant during 2006 ichthyoplankton sampling throughout the Port Complex; two sardine larvae were collected in the Outer Harbor in April 2006 (MBC et al., 2007). This species is also less common than northern anchovy near the Project site (MEC and Associates, 2002; SAIC, 2010). Pacific sardine is epipelagic, occurring in loosely aggregated schools (Wolf et al., 2001).

Jack mackerel and Pacific mackerel have been collected in the Port, but in much lower frequency and numbers than northern anchovy and Pacific sardine. While no mature market squid have been reported in recent surveys, market squid paralarvae were collected in Inner and Outer Harbor areas in 2006 (MBC et al., 2007). All coastal pelagics are associated with the water column (as opposed to the seafloor like many of the groundfish); however, female squid also lay egg masses on sandy bottoms during spawning (at depths of about 16-180 feet, with most occurring between 66-115 feet) (PFMC, 1998).

Table 3.3-3: Managed Fish/Invertebrate Species Most Likely to Occur Near the Proposed Project Site in Port of Los Angeles Based on Past Occurrences

Common Name	Potential Habitat Use	Larval Occurrence[1,2,4]	Juv./Adult Occurrence[2,3,4,5]
Coastal Pelagics			
northern anchovy (*Engraulis mordax*)	Open water.	Abundant	Abundant
Pacific sardine (*Sardinops*	Open water.	Uncommon	Common
Pacific (chub) mackerel (*Scomber japonicus*)	Open water, juveniles off sandy beaches and around kelp beds.	-	Uncommon
jack mackerel (*Trachurus symmetricus*)	Open water, young fish over shallow banks and juveniles around kelp	Rare	Uncommon
market squid (*Doryteuthis opalescens*)	Open water. Rare near bays, estuaries, and river mouths.	Rare	-
Pacific Groundfish			
English sole (*Parophrys vetulus*)	Soft bottom habitats.	Rare	Uncommon
Pacific sanddab (*Citharichthys sordidus*)	Soft bottom habitats.	Rare	Common
butter sole (*Isopsetta isolepis*)	Soft bottom habitats.	Rare	-
black rockfish (*Sebastes melanops*)	Along breakwater, near deep piers and pilings. Associated with kelp.	-	Rare
Bocaccio (*Sebastes paucispinis*)	Multiple habitat associations, including soft and hard bottom, kelp,	-	Rare
brown rockfish (*Sebastes auriculatus*)	Multiple habitat associations but prefer hard substrata and rocky	-	Rare
calico rockfish (*Sebastes dallii*)	Multiple habitat associations but prefer hard substrata and rocky	-	Rare
California scorpionfish (*Scorpaena guttata*)	Benthic, on soft and hard bottoms, as well as around structures.	-	Uncommon
grass rockfish (*Sebastes rastrelliger*)	Common on hard substrate, kelp, and eelgrass habitats.	-	Rare
kelp rockfish (*Sebastes atrovirens*)	Common on hard substrate, kelp; reported along breakwater.	-	Rare
olive rockfish (*Sebastes serranoides*)	Common around hard substrate, kelp; reported along breakwater.	-	Rare
vermilion rockfish (*Sebastes miniatus*)	Juveniles over soft-bottom and kelp, adults associated with hard substrate.	-	Uncommon
lingcod (*Ophiodon elongatus*)	Multiple habitat associations but prefer hard substrata and rocky	-	Rare
cabezon (*Scorpaenichthys*	Multiple habitat associations but prefer hard substrata and rocky	Rare	Rare
Pacific hake (*Merluccius productus*)	Common offshore, juveniles in open water.	Rare	-
leopard shark (*Triakis semifasciata*)	Multiple habitat associations, including soft bottoms, and near	N/A	Rare

Table 3.3-3: Managed Fish/Invertebrate Species Most Likely to Occur Near the Proposed Project Site in Port of Los Angeles Based on Past Occurrences

Common Name	Potential Habitat Use	Larval Occurrence[1,2,4]	Juv./Adult Occurrence[2,3,4,5]
spiny dogfish (*Squalus acanthias*)	Pelagic and on muddy bottoms.	N/A	Rare
big skate (*Raja binoculata*)	Soft bottom habitat.	N/A	Rare
California skate (*Raja*	Soft bottom habitat.	N/A	Uncommon

Sources: 1 – (MBC et al.,2007), 2 – (MEC and Associates, 2002), 3 – (MBC ,2009a,b), 4 – (SAIC, 2010), 5 – (MEC,1999).
Notes: N/A = Not applicable, internal fertilization.
Abundant>Common>Uncommon>Rare.
Most rockfish larvae not identifiable to species.

None of the species covered under the Pacific Groundfish FMP are considered abundant in the area of the proposed Project. However, many are associated with hard substrate, kelp, and/or eelgrass (*Zostera marina*), which are less frequently sampled habitats than soft bottoms. Pacific sanddab is considered common in the study area because it was collected by trawl in all three of the Port-wide biological studies, though not in great numbers (MEC, 1988; MEC and Associates, 2002; SAIC, 2010). One individual was collected in 1986, 51 were collected in 2000, and 171 were collected in 2008. English sole has also been collected during all three trawl studies, but in relatively low numbers: one individual in 1986, three individuals in 2002, and 24 individuals in 2008. Larvae of English sole were also collected in 2008. English sole prefer soft bottoms from 60 to 1,000 feet, while Pacific sanddab are found between 30 and 1,800 feet (Miller and Lea, 1972).

California skate and big skate were collected by trawl during the biological surveys of the Port, although only 23 California skate were collected in 2008, and no big skate were collected. Like English sole, California skate has been collected in all three Port-wide biological surveys, whereas big skate was only collected in 2002. Both species prefer soft-bottom habitat, although California skate occurs in much deeper waters (60-2,200 feet) than big skate (10-360 feet) (Miller and Lea, 1972). California scorpionfish is another species collected in all three Port-wide surveys, with 11 individuals in 2008. Vermilion rockfish was only collected in 2002 (four individuals) and 2008 (20 individuals). Vermilion rockfish occur between 20-1,440 feet, but are most common between 165-495 feet. Juveniles are common in shallower water (20-120 feet), where they hover over sand patches near alga or structures, including pier pilings (Love et al., 2002). The remaining species in the table have only been collected sporadically and in low numbers.

3.3.2.10 Wetlands and Other Special Habitats

3.3.2.10.1 Wetlands

Wetlands are regulated under the Clean Water Act (CWA). The definition of wetlands varies among state and federal agencies, but USACE uses a three-parameter method that includes assessing vegetation, hydrology, and soils. Wetlands commonly present in estuarine to marine habitats are salt marshes dominated by pickleweed (*Salicornia virginica*) and other salt-tolerant plant species. No wetlands under the USACE

jurisdiction are present at or near the proposed Project site. The closest wetlands are at Inner Cabrillo Beach in the Outer Harbor, about 1.6 miles from the Project site.

3.3.2.10.2 Eelgrass Beds

Another special habitat in the Port Complex is eelgrass. Eelgrass is a rooted aquatic plant that inhabits shallow soft-bottom habitats in quiet waters of bays and estuaries, as well as sheltered coastal areas (Dawson and Foster, 1982). Eelgrass can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. Most eelgrass beds in bays or estuaries are found in water less than 20 feet deep with light being the primary limiting factor. Eelgrass beds, as with wetlands, are considered "special aquatic sites" under the CWA (40 CFR Part 230). Surveys of the Port in 2000 and 2008 documented eelgrass along Inner Cabrillo Beach and in three beds in the Pier 300 Shallow Water Habitat/Seaplane Lagoon area (MEC and Associates, 2002; SAIC, 2010). The nearest eelgrass beds are located at the Pier 300 Shallow Water Habitat, more than 1.3 miles from the proposed Project site.

3.3.2.10.3 Kelp Beds

In 2000, giant kelp beds were present in the Outer Harbor along the breakwaters, on the outer riprap of Pier 400, at the entrance East Channel, Main Channel, and Fish Harbor and on the containment dike for the Cabrillo Shallow Water Habitat (MEC and Associates, 2002). Total canopy coverage was estimated at 24.8 acres in spring 2000, and 14.2 acres in fall 2000 (MEC and Associates, 2002). Canopy coverage of giant kelp at these locations in 2008, however, was estimated at 77.8 acres in spring 2008 and 50.4 acres in fall 2008 (SAIC, 2010). The nearest kelp beds to the proposed Project site are outside entrance to Fish Harbor, more than 1,300 feet from the Project site. Because the majority of kelp distribution in the Port Complex is located at the outer breakwaters, and riprap structures in the Outer Harbors that face Port entrances (SAIC, 2010), giant kelp is not expected to occur in areas adjacent to the proposed Project.

3.3.2.10.4 Mudflats

The shoreline at and near the proposed Project site is armored with rock riprap, and piers/wharves with pilings. No mudflats, which are also considered a "special aquatic site" under the CWA (40 CFR Part 230), are present at the proposed Project site. The nearest known mud flat habitats are located at Berth 78 along the west side of Main Channel and at Salinas de San Pedro Salt Marsh, which are 1.6 miles or more from the proposed Project site.

3.3.3 Applicable Regulations

3.3.3.1 Clean Water Act

This Act (33 U.S.C Sections 1251 *et seq*.) provides for the restoration and maintenance of the physical, chemical, and biological integrity of the waters of the nation. Section 402 of the CWA created the National Pollutant Discharge Elimination System (NPDES) to enforce effluent limitations. The NPDES program prohibits the point-source discharge of pollutants unless an NPDES discharge permit has been obtained. The ultimate goal of the NPDES program is the complete elimination of all discharges. The NPDES program was expanded in 1987 to regulate stormwater discharges (runoff) originating from municipal and industrial sources.

Under Section 404, the USACE issues permits for discharge of dredge or fill materials into waters of the United States, including wetlands and other special aquatic sites. A Section 401 Water Quality Certification or waiver from the Regional Water Quality Control Board (RWQCB) also is necessary for issuance of a Section 404 permit. Additional CWA water quality permitting requirements may include compliance with the Section 402 NPDES General Construction Permit for Storm Water Discharges Associated with Construction Activity (including the development of a Storm Water Pollution Prevention Plan [SWPPP]) issued by the State Water Resources Control Board (SWRCB) for projects that will disturb one or more acres. These regulations are discussed in greater detail in Section 3.13, Water Quality, Sediments, and Oceanography.

In southern California, dredging is usually not regulated under Section 404 of the Clean Water Act, but instead under Section 10 of the Rivers and Harbors Appropriations Act. Exceptions to this could include permitting for return water from upland disposal of dredged material and/or CDFs, both of which would require a Section 404 permit. Disposal of dredge material from the proposed Project (or an alternative) would occur at a CDF. A Section 404 permit would therefore be required. All dredge material would be handled in accordance with protocols per the Los Angeles Regional Contaminated Sediments Task Force – Long Term Management Strategy (May 2005).

3.3.3.2 Rivers and Harbors Appropriations Act of 1899

Sections 9 and 10 of the Act (33 U.S.C. Sections 401 *et seq*.) regulate work and structures in, over, and under navigable waters of the U.S., including dredging, filling, and bridges. Section 9 relates to bridges and causeways and is administered by the U.S. Coast Guard. Under Section 10, the USACE issues permits for construction, dumping, and dredging in, over, and under navigable waters as well as construction of piers, wharves, weirs, jetties, outfalls, aids to navigation, docks, and other structures. In coastal areas, it is typical for permits issued by the USACE to reference their Section 10 and Section 404 authorities.

3.3.3.3 Federal Endangered Species Act

The Federal ESA (16 U.S.C. 1531 *et seq*.) protects threatened and endangered species, and their designated critical habitat, from unauthorized take. Section 9 prohibits such take, and defines take as to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. Take incidental to otherwise lawful activities can be authorized under Section 7 when there is federal involvement and under Section 10 when there is no federal involvement. The USFWS and the NMFS share responsibilities for administering the ESA. Whenever actions authorized, funded, or carried out by federal agencies could adversely affect listed species or affect designated critical habitat, the lead agency must conduct formal consultation under Section 7. The Biological Opinion issued at the conclusion of that consultation, depending on the outcome of the consultation, will include a statement authorizing any take that might occur incidental to an otherwise legal activity. Federal action agencies make a determination as to whether the action will have “no effect” or “may affect” a listed species or designated critical habitat. If a “may effect” determination is made, the action agency consults informally with the applicable Service to determine if the effect will be adverse or not, and the applicable Service then provides a concurrence letter to the action agency if the effect is not likely to be adverse.

3.3.3.4 Magnuson-Stevens Fishery Conservation and Management Act

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (16 U.S.C. Sections 1801 *et seq*.) require federal agencies that fund, permit, or carry out activities that may adversely affect EFH to consult with the NMFS regarding potential adverse effects of their actions on EFH and respond in writing to the conservation recommendations of NMFS. In addition, NMFS is required to comment on any state agency activities that would affect EFH.

3.3.3.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Sections 703 *et seq*.), as amended, provides for the protection of migratory birds by making it illegal to possess, pursue, hunt, take, or kill any migratory bird species, unless specifically authorized by a regulation implemented by the Secretary of the Interior, such as designated seasonal hunting. The Act also applies to removal of nests occupied by migratory birds during the breeding season. Under certain circumstances, a depredation permit can be issued to allow limited and specified take of migratory birds.

3.3.3.6 California Endangered Species Act

The California Endangered Species Act (California Fish and Game Code Sections 2050 *et seq*.) provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the CDFG, and prohibits the taking of such species without authorization by CDFG under Section 2081 of the Fish and Game Code. State lead agencies must consult with CDFG during the CEQA process if state-listed threatened or endangered species are present and could be affected by a proposed project. For projects that could affect species that are both state and federally listed, compliance with the federal ESA will satisfy the state Act if CDFG determines that the federal incidental take authorization is consistent with the state Act under Fish and Game Code Section 2080.1.

3.3.3.7 Ballast Water Management for Control of Nonindigenous Species Act

California PRC Sections 71200 *et seq*. (enacted January 1, 2000), and as amended by Assembly Bill (AB) 433 in September 2003, requires ballast water management practices for all vessels, domestic and foreign, carrying ballast water into waters of the state after operating outside the Exclusive Economic Zone (EEZ), which includes waters within 200 nautical miles from shore). Specifically, the regulation prohibits ships from discharging ballast water in harbor waters unless they have performed an exchange outside the EEZ in deep, open ocean waters. Alternatively, ships may retain water while in port, discharge to an approved reception facility, or implement other similar protective measures. Each ship must also develop a ballast water management plan to minimize the amount of ballast water discharged in the Port. The Act also requires an analysis of other vectors for release of non-native species from vessels. Rules for vessels originating in the Pacific Coast Region took effect in March 2006. Ships must now exchange ballast water on coastwise voyages. Regulations currently under consideration for future years (present to 2022) will require phase-in of ballast water treatment performance standards, first for newly constructed ships and then for existing ships

3.3.3.8 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) (16 U.S.C. Sections 1361 *et seq*.) prohibits the taking (including harassment, disturbance, capture, and death) of any marine mammals, except as set forth in the act. The NMFS and the USFWS administer this Act. Species found in the Port are under the jurisdiction of NMFS.

3.3.4 Impacts and Mitigation Measures

3.3.4.1 Methodology

Impacts to biota were assessed by estimating the amount of habitat that would be gained/lost or disturbed, through analysis of water quality and sediment analyses results (see Section 3.13, Water Quality, Sediments, and Oceanography), based on biological resources that may be present or may use the area adjacent to the existing site, and from preparer expertise and judgment. The assessment of impacts is based on the assumption that the proposed Project will include the following:

- A CWA Section 401 Water Quality Certification from the RWQCB for construction dredging activities that contains conditions including standard Waste Discharge Requirements (WDRs).
- A CWA Section 404/Rivers and Harbors Act Section 10 permit from the USACE for dredging and pier construction activities in waters of the U.S., and for disposal in two CDFs.
- Disposal at the CDFs would only occur if they were permitted by the USACE (under Section 404 of the federal CWA and Section 10 of the Rivers and Harbors Act). The ultimate approval of any disposal option would be coordinated with the Los Angeles Dredged Material Management Team (DMMT)/Contaminated Sediment Task Force (CSTF).
- A boom would be placed around the immediate work area during removal timber wharf decking, and a silt curtain would be used during dredging to limit potential dispersal of a dredge plume.
- During dredging, an integrated multi-parameter monitoring program shall be implemented by the LAHD's Environmental Management Division in compliance with both USACE and RWQCB permit requirements, wherein dredging performance is measured in situ. The objective of the monitoring program shall be adaptive management of the dredging operation, whereby potential exceedances of water quality objectives can be measured and dredging operations subsequently modified. If potential exceedance levels are approached, the LAHD's Environmental Management Division shall immediately meet with the construction manager to discuss modifications of dredging operations to reduce turbidity and to keep it at acceptable levels. This could include alteration of dredging methods, and/or implementation of additional Best Management Practices (BMPs).
- An individual NPDES permit for construction stormwater discharges or coverage under the General Construction Activity Storm Water Permit will be obtained for the onshore portions of the proposed Project (or an alternative). See Chapter 2, Project Description, for a description of Project features designed to minimize discharges and improve water quality.

- The tenant would obtain and implement the stormwater discharge permits (such as the General Industrial Permit). In addition, Standard Urban Stormwater Management Plan (SUSMP) requirements for any applicable redevelopment would be implemented. These are described in detail in Section 3.13, Water Quality, Sediments, and Oceanography.

3.3.4.2 Thresholds of Significance

The significance criteria have been developed using the *L.A CEQA Thresholds Guide* (City of Los Angeles, 2006) and were modified to better assess impacts of the proposed Project. Consequently, criterion BIO-2 has been modified to delete locally designated species (because none are present) and to include state and federally designated habitats (e.g., EFH, mudflats, and wetlands), criterion BIO-3 has been modified to cover species other than sensitive species, and BIO-4 has been deleted because it is now included in BIO-2. BIO-5 is now BIO-4 and has been modified to address only disruption of local biological communities, and a new criterion, BIO-5, has been added for permanent loss of marine habitat. Impacts of the proposed Project on biological resources are considered to be significant if the project would result in any of the following:

BIO-1 The loss of individuals, or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally designated critical habitat.

BIO-2 A substantial reduction or alteration of a state, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

BIO-3 Interference with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

BIO-4 A substantial disruption of local biological communities (e.g., from construction impacts or the introduction of noise, light, or invasive species).

BIO-5 A permanent loss of marine habitat.

3.3.4.3 Impact Determination

Impact BIO-1: Construction and operation of the proposed Project would not cause a loss of individuals or habitat of a state- or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally listed critical habitat.

Construction

Listed and other sensitive species in the Port that could use the water surface and shoreline and potentially be displaced or affected during construction include: seals and sea lions, and the bird species listed in Tables 3.3-1 and 3.3-2. California sea lions are common in the Port and harbor seals occasionally can be seen resting on riprap or buoys in various locations throughout the Port. Established roosting areas for birds occur along the breakwaters, particularly the Middle Breakwater, which is isolated from human access. However, the proposed Project would not affect these locations as work is proposed well away from them (a distance of approximately 2.0 miles). No critical habitat for any federally listed species is present at the proposed Project site.

Demolition, dredging, and pier construction could affect water-associated birds and marine mammals through temporary increases in noise, vibration, and turbidity, as well as the potential for displacement of individuals from the work area. However, these birds and marine mammals would be able to use other areas in the Port if construction activities occurred when they were present and if the disturbances caused them to avoid the work area. With the exception of potential noise impacts during pile driving (discussed further below), other construction disturbances are considered insignificant.

Dredging activities and the resultant temporary turbidity have the potential to affect foraging by bird species in the general area, such as California brown pelican and double-crested cormorant. California least tern and Caspian tern were not observed near Fish Harbor during the year-long 2008 biological surveys. Of the thousands of elegant terns present in the Port, only 38 were recorded in survey Zone 4, which includes Fish Harbor and the waters to the south, just to the east of Reservation Point; only 11 were observed foraging in Zone 4(SAIC, 2010). This suggests the waters off the ALBS are not an important foraging area for terns. This is consistent with past studies (Keane Biological Consulting, 2003a,b; Keane Biological Consulting and Aspen Environmental Group, 2004).

Any potential turbidity impacts would be temporary, limited to the construction areas, and conditions would return to normal after conclusion of dredging activities. Moreover, high levels of turbidity and total suspended solids are usually not measured during dredging operations in southern California (Anchor Environmental, 2003). In addition, the use of cement stabilization, a surface boom during pile removal, and silt curtains during dredging would keep impacts to a less-than-significant level. Implementation of required water quality monitoring during dredging according to the requirements of the RWQCB, as well as implementation of standard dredging BMPs via adaptive management of the dredging would further minimize impacts.

Based on water quality monitoring data from other harbor dredge projects using hydraulic pipeline and clamshell dredge equipment (Jones & Stokes 2007a, 2007b), water quality effects are expected to be transitory, lasting for less than one tide cycle following active dredging, and covering an area generally within 1,000 feet of the activity, and often less than 300 feet. Turbidity may also be temporarily increased during installation of piles (or other subtidal construction activities that take place near the seafloor). However, the extent would generally be much less than the area affected by dredging, likely affecting a radius of no more than about 100 feet from the activity.

Water quality monitoring conducted during the Los Angeles Harbor Channel Deepening Project in June 2003 indicated that reductions in light transmittance from clamshell dredging were 31 percent at the surface and 11 percent at mid-depth; there was no reduction in transmittance near bottom (LAHD and CH2M Hill, 2008). There were no reductions during suction dredging during that same survey. MBC (2002) monitored clamshell dredging at Berth 100 in the Port during a five-week period in 2002. During these surveys, a dredge plume was evident in the bottom half of the water column at the station 300 feet downcurrent from dredge operations. However, suspended solids concentrations measured during dredge surveys were within the range seen during periods of no dredging. Similar results were recorded during six dredge surveys each at Berths 212-215 and Berths 261-265 in the Port in 2001 (MBC, 2001a,b). During those surveys, light transmittance was reduced in the lower half of the water column by about 15 percent on average at the station 300 feet downcurrent from dredge operations at

Berths 212-215, and reduced by about 36 percent on average at Berths 261-265. The differences were likely due to the configuration of the dredge areas, as dredging at Berths 261-265 occurred in a semi-enclosed basin.

Implementation of required water quality monitoring during dredging according to the requirements of the RWQCB, as well as implementation of standard dredging BMPs via adaptive management of the dredging would keep these impacts to a less than significant level.

Potential impacts from deposition of dredged sediments into the CDFs include water quality impacts from turbidity or re-suspension of contaminants and smothering of resident fishes and invertebrates. Any temporary water quality impacts would be minimized as discussed by pre-dredge screening, water quality monitoring, and adaptive management and use of BMPs. Use of dredged sediments for creation of CDFs could result in smothering of fishes and invertebrates, and would result in the modification/loss of habitat (discussed in Impact BIO-5).

Dredging and disposal operations would remove sediments and their associated benthic communities, which are an important food source for many fish species. Adverse, short-term impacts on fish and invertebrate populations could result from the direct mortality of organisms, deposition and/or burial by suspended sediments, restricted development, reduction in growth, reduced feeding capacity and filtration, increased mucous secretion, and higher susceptibility to disease. There would be some loss of pier and piling habitat due to removal of the 200-foot timber wharf (including creosote-treated timber piles); however, the concrete runways for the new boat hoists would be supported by battered pile clusters. There would also be additional hard substrate available for colonization and habitat from solid facing of the sheet pile walls. The 126 new concrete piles installed for the finger piers would provide approximately 2.4 acres (assuming 24-inch diameter piles installed in 22 feet of water) of subtidal hard substrate. By comparison, only about 0.010 acres (418 sq ft) of soft-bottom habitat would be lost due installation of 126 piles. The installation of sheet piles in Phases 1 and 2 would provide approximately 0.24 acres (roughly 10,560 sq ft) of hard-substrate habitat that would provide habitat for fishes, invertebrates, and algae. Over time, invertebrate communities would recolonize both the newly exposed soft-bottom substrate and the piling/sheet pile (hard-substrate) habitats. Results from past recolonization studies in the Port (Soule and Oguri, 1976; MEC, 1988) and San Diego Bay (Merkel, 2010) suggest infaunal communities would resemble reference communities after dredge/fill activities within 17 to 36 months.

Planktonic organisms within the proposed Project areas may be affected by turbidity as a result of decreased light levels available for phytoplankton photosynthesis and by clogging the filter feeding mechanisms of zooplankton. These potential impacts however, would likely be short term and minor because of the limited area of impact compared to the overall Port area. Suspended particulate levels should rapidly return to normal levels immediately upon completion of construction activities.

Removal of the creosote-treated timber wharf would eliminate pier and piling habitat found within the proposed Project area. Some fishes, such as surfperch and rockfish, are sometimes attracted to pier and piling habitat. Vertical structures found along piers and pilings often provide points of attachment for a variety of invertebrate species, including barnacles, anemones, mussels, and worms; however, creosote has been shown to disrupt the reproductive abilities of species associated with timber piles. ALBS' removal of the

creosote-treated timber supports one of the goals of the POLA's Pile Program (to reduce or eliminate the use of treated piles in the Port [including creosote]) and results in long-term benefits to the aquatic environment.

During Phase 1, approximately 126 new octagonal concrete support piles would be installed for the two new finger piers (for this analysis, it is assumed the concrete piles are 24-inch diameter). Installation of the sheetpile wall using a vibratory hammer would also occur as part of Phases 1 and 2. Piling installation would be accomplished with impact pile-driving methods. The size and type of pilings affect the sound volume produced during pile driving. For instance, larger piles generally produce higher sound volume than smaller ones. In addition, the extent and intensity of noise effects would also depend on the underwater geography and water depth in the piling vicinity.

Sound transmission in the underwater environment can be affected by local bathymetry, substrates, currents, and stratification of the water column. Based on underwater studies of gray whale behavior, a disturbance threshold (Level B harassment) of 160 dBRMS has been identified for marine mammals based on previous research on cetaceans (Federal Register, 2006). Exposure to sound at this level would likely cause avoidance, but not injury, for marine mammals. The current Level A harassment (injury) threshold for non-explosive sounds is 180 dBRMS for cetaceans and 190 dBRMS for pinnipeds.

Concrete piles would be used for wharf construction. Concrete piles would be installed with impact driving to achieve final depth and to firmly set the piles. Impact driving of 24-inch concrete piles (of unspecified shape) has produced peak sound volumes of 183-193 dB_{PEAK}, and volumes of 171-175 dB_{RMS} at a distance of 33 feet (ICF and Illingworth and Rodkin, 2009). This is consistent with Illingworth and Rodkin (2007), who measured sound pressures from impact pile driving of 24-inch concrete piles of 185-188 dB_{PEAK} and 170-176 (dB_{RMS}) within 33 feet of the source. Therefore, concrete pile driving is anticipated to result in disturbance (Level B harassment) to marine mammals in the vicinity of construction operations. No listed marine mammals are expected to occur in the Port study area. California sea lions have been observed in waters surrounding the proposed Project site, and harbor seals may also be present. Noise from impact pile driving during wharf construction could cause seals and sea lions to avoid construction areas during pile driving, but would not result in the loss of individuals or habitat.

Operation

Operation of modernized facilities at the proposed Project site would not adversely affect any of the state or federally listed, or special concern bird species listed in Tables 3.3-1 and 3.3-2. Those species that currently use the proposed Project area for foraging or resting could continue to do so because the proposed Project would not appreciably change the industrial activities in the proposed Project area. Operation of the shipyard facilities would not measurably change the numbers or species of common birds in that area and, thus, would not affect foraging. The modernization of the ALBS is needed to meet current and future demand for ship repairs and maintenance, but is not expected to result in additional disturbance in the Port Complex. Runoff of pollutants to the Port from the new facilities on existing land and newly developed fill areas would have negligible effects on marine mammals and special-status bird species because the proposed Project includes features to comply with the BMP requirements for NPDES and WDR process water and stormwater discharge into harbor waters. For example, stormwater currently flows untreated through the existing stormwater system or over the

wharf and into the Port. As part of the proposed Project, a new storm drain would be installed in conjunction with the installation of an oil/water separator. The current pavement would be replaced with high strength pavement (including over the newly-constructed CDF cells) designed to drain stormwater away from harbor waters to be collected by the storm drain system for treatment in the proposed oil/water separator facility. Process water from hydroblasting would go through a filtration system and then be discharged into sewer system.

Under the proposed Project, dikes would be used to redirect the flow of stormwater around the remaining buildings. A raised curb/step would be constructed around Buildings C2 and A1, a combination of either trench drains and/or catch basins to capture the flow would be introduced, and the flow would be directed to the new oil/grease separator unit(s) for treatment to comply with the BMP requirements for NPDES and WDR permitted discharge into harbor waters.

The operation of the ALBS is not expected to result in a measurable change in overall noise. Impacts of proposed Project-related vessel traffic on marine mammals would be considered less than significant because of the low probability of vessel strikes and proposed Project vessel strikes would not be expected to occur. No critical habitat for any of the listed species is present in the Port; therefore, no critical habitat would be affected by operation of the proposed Project.

Summary

As described above, construction of the proposed Project is not likely to result in the loss of individuals or the reduction of existing habitat, of a state or federally listed endangered, threatened, rare, protected, candidate, or sensitive species or a species of special concern. In-water construction, dredging, and creation of the CDFs would cause localized activity, noise, and turbidity that could affect birds and marine mammals. However, these impacts would be temporary and limited to the waters in the vicinity of construction activities. Required water quality monitoring, use of a surface boom, and use of a silt curtain, as well as implementation of standard dredging BMPs via adaptive management of the dredging would keep these impacts to a less than significant level. Impacts related to Project construction would be less than significant.

Concrete pile driving is anticipated to result in disturbance (Level B harassment) to marine mammals (particularly harbor seals and sea lions, which would be the marine mammals most likely to occur in the vicinity of Fish Harbor) in the vicinity of pile-driving operations. Impacts would not be significant. It is expected that marine mammals would voluntarily move away from the area at the commencement of the pile driving activities.

Upon construction completion, operational activity under the proposed Project would continue; operational activities would result in no loss of habitat for rare, threatened, endangered, protected, or candidate species, or Species of Special Concern. No impacts to critical habitat would occur because no critical habitat is present.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-2: Construction and operation of the proposed Project would result in a substantial reduction or alteration of a state, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.

Construction

There are no special aquatic habitats or other sensitive natural communities identified in the proposed Project area that would be affected by proposed Project construction. Construction is not expected to affect subtidal eelgrass because the nearest documented eelgrass beds are located more than 1.3 miles from the Project site. Prior to dredging and in-water construction, eelgrass surveys would be conducted as required under the *Southern California Eelgrass Mitigation Policy* (NMFS, 1991 as amended). If eelgrass is found in the vicinity of any of the structures, a plan would be developed to ensure that there would be no net loss of eelgrass habitat, consistent with the policy.

The nearest kelp beds to the Project site are located adjacent to the entrance to Fish Harbor, and kelp distribution in the Port Complex is generally located at the outer breakwaters and riprap structures in the Outer Harbors that face Port entrances (SAIC, 2010). Giant kelp does not occur in waters directly off the ALBS, and the nearest beds (at the entrance to Fish Harbor) are more than 1,300 feet from the from the proposed dredge area. Based on water quality monitoring data summarized in Impact BIO-1, water quality effects are expected to be transitory, lasting for less than one tide cycle following active dredging, and covering an area generally within 1,000 feet of the activity, and often less than 300 feet. Turbidity may also be temporarily increased during installation or removal of piles (or other subtidal construction activities, such as construction of sheetpile walls). However, the extent would generally be much less than the area affected by dredging, probably affecting a radius of no more than about 100 feet from the activity. Therefore, effects from dredging/pile driving on giant kelp are not expected. There is no eelgrass or giant kelp in the vicinity of the proposed finger piers, so shading from pier construction would not impact these resources.

There are no mudflats or marshes near the Project site that would be affected by proposed Project construction. The SWPPP implemented by ALBS during construction would minimize effects to biological resources in the vicinity of the Project site. This program would include standard BMPs, such as use of sediment barriers, to minimize runoff.

The construction of the CDFs would result in the permanent loss of 0.9 acres of EFH. Although this does not represent a substantial portion of the EFH present in the Port, any loss of EFH is considered significant. The loss of marine habitat would be mitigated through the use of existing mitigation credits as discussed below under mitigation measure **MM BIO-1**.

Operation

Operation of proposed Project facilities would have minimal effects on EFH. Runoff from the new facilities would not substantially reduce or alter EFH in harbor waters because water quality standards for protection of marine life would not be exceeded (see Section 3.13, Water Quality, Sediments, and Oceanography). Removal of contaminated sediment would result in an incremental improvement in habitat in Fish Harbor.

No SEAs or natural plant communities are present that could be affected by operation of proposed Project facilities. No wetlands or mudflats are present in the proposed Project area, and those in other areas of the Port are not located in or near (more than 1 mile away) the Project site. Due to their distance from the ALBS, and the nature of operations at the proposed Project site, kelp and eelgrass beds would not be affected by the continued operation of the ALBS.

Summary

Construction would result in the permanent loss of 0.9 acres of EFH. Although this does not represent a substantial portion of the EFH present in the Port, any loss of EFH is considered significant. Operational activities on land and in the water would not substantially reduce or alter EFH for the reasons described above. No SEAs, natural plant communities, mudflats, or wetlands are present. Due to their distance from the ALBS, as well as the construction methods and the nature of operations at the Project site, kelp and eelgrass beds would not be affected by the construction and operation of the proposed Project. Due to the permanent loss of 0.9 acres of EFH, impacts would be significant.

Mitigation Measures

MM BIO-1: Apply Habitat Mitigation Credits

> The LAHD shall apply 0.45 credits available in the Bolsa Chica or Outer Harbor mitigation banks to compensate for loss of 0.9 acres of marine habitat in the Inner Harbor due to construction of fill in Fish Harbor. This mitigation measure would also offset the impacts to Essential Fish Habitat.

Residual Impacts

Impacts would be less than significant.

Impact BIO-3: Construction and operation of the proposed Project would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.

Construction

No known terrestrial wildlife migration corridors are present in the study area. The only defined migratory species in the Port are birds. California least tern is a migratory bird species that currently nests on Pier 400 April through July, while Caspian tern, elegant tern, and royal tern nested on Pier 305 in 2008 and 2009, but have not done so recently; construction of the proposed Project would not interfere with the aerial migration of these species. Movement to and from foraging areas in the Port also would not be affected by proposed Project construction activities. As described in Impact BIO-1, California least tern and Caspian tern were not observed near Fish Harbor during the 2008 biological

surveys, and only 38 elegant terns were recorded during the year-long study (SAIC, 2010), suggesting the waters off the ALBS are not an important foraging area for terns.

A number of other water birds that are present at least seasonally in the Port are migratory as well. Construction activities within the study area would not block or interfere with migration or movement of any of these species covered under the MBTA, because the work would be in a small portion of the Port area where the birds occur and the birds could easily fly around or over the work.

Fish species present in the Port would be subject to temporary acoustic and possibly water quality impacts during dredging, creation of the CDFs, and other in-water construction (such as installation of sheetpile walls). Turbidity and effects related to possible resuspension of contaminants during dredging would be temporary and localized. The use of a surface boom during piling removal, use of a silt curtain during dredging, and the implementation of required water quality monitoring during dredging and implementation of standard dredging BMPs via adaptive management of the dredging would keep these impacts to a less than significant level. Water quality conditions would quickly return (likely within 24 hours) to baseline once dredging/disposal is completed (USACE and LAHD, 1992; Anchor Environmental, 2003).

The sound pressure waves from pile driving could cause mortality of some fish in the Coastal Pelagics FMP, but these species are abundant in the Port and due to the limited area of potential effect, the numbers of fish exposed to harmful pressure waves would represent a very small proportion of the number of fish in the Port Complex at any given time. These impacts could result in temporary avoidance of the construction areas. However, these effects would be temporary, lasting for a few days at a time. There would be no physical barriers to movement, and the baseline condition for fish and wildlife access would be essentially unchanged.

Overall, the Port and specifically the location of the proposed Project is subject to a high degree of ongoing commercial activity, including the movement of large vessels, and frequent maintenance dredging. Project-related construction vessel traffic to and from the Port (i.e., tugboats carrying dredged sediments) would not interfere with whale migrations along the coast, because these vessels would operate in Fish Harbor and whales rarely enter the Port Complex (LAHD and USACE, 2007).

Operation

No barriers to wildlife passage would result from operation of the proposed Project. The type of operational activity that would occur within the Port (movement of vessels to and from the ALBS) would not interfere with wildlife movement or migration within the Port.

Summary

Construction and operational activities on land and in the water would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species. The only defined migratory species in the Port are birds, which would not be adversely impacted by construction or operation of proposed Project. Possible effects on fish species in the Port, related to noise and water quality during construction, would be temporary, lasting for a few days at a time and impacts would be

less than significant. No barriers to wildlife passage would result from operation of the proposed Project; therefore, impacts from operation would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-4: Construction and operation of the proposed Project would not substantially disrupt local biological communities.

Construction

Biological communities, the collection of species inhabiting a particular habitat or ecosystem, can potentially be disrupted by changes in environmental conditions that favor a different assemblage of species, or alter the dynamics among species that make up a biological community. The significance of changes in local conditions depends on the extent and duration of those changes, as well as the species or groups of species affected. The terrestrial portions of the Project site are developed, and the only plant life at the Project site is a few trees; therefore, impacts on terrestrial biological communities would be very limited. Construction-related impacts on marine biological communities are expected to be temporary, lasting through the construction period and for a short time thereafter. These include physical disturbance, underwater and overwater noise, and turbidity produced during dredging/disposal activities, pile driving and removal, and other subtidal construction (such as installation of steel sheet pile bulkheads/walls).

Physical Disturbance

Where pilings are installed below the ordinary high water mark (OHWM) or high tide line, some physical disturbance of the underlying sediment would be inevitable and a small conversion of habitat area (from soft bottom to hard substrate) would occur where pilings are installed. Benthic habitat at the piling sites would be disturbed and individual invertebrates would be crushed. Sediment displaced during pile driving would bury surface organisms in the immediate vicinity (i.e. within an approximately 1-foot diameter around each piling). Sediment recolonization would occur rapidly, however, so this impact would be limited in both time and space and would not constitute a substantial disturbance of biological communities.

Under the proposed Project, a 200-foot creosote-treated wharf and its existing pilings would be removed, and approximately 126 concrete pilings would be installed for the new finger piers. Removal of the creosote-treated pilings would reduce the amount of pier/piling habitat in the Project area. Some fishes are attracted to this habitat; however, the removal of these piles supports the Port's Pile Program and results in a long-term benefit to the aquatic environment. Once installed, the new pilings would offer habitat for fishes and invertebrates.

Prior to installation of in-water structures, eelgrass surveys would be conducted as required under the *Southern California Eelgrass Mitigation Policy* (SCEMP; NMFS, 1991 as amended). Eelgrass is not known to occur in the waters off the ALBS; however, if eelgrass is found in the vicinity of any of the structures, a plan would be developed to

ensure that there would be no net loss of eelgrass habitat, consistent with the policy. If avoidance and/or minimization measures are not insufficient in protecting losses to eelgrass, the SCEMP requires mitigation (re-planting or transplanting of eelgrass) and monitoring. As discussed below under Invasive Species, *Caulerpa* surveys would also be conducted prior to dredging to ensure no *Caulerpa* is present in the construction area.

As discussed under Impact BIO-1, special-status and other sensitive species in the Port that could use the water surface and shoreline and potentially be displaced or affected during construction include the harbor seal, sea lion, double-crested cormorant, and elegant tern. Physical disturbances as a result of proposed Project construction activities could temporarily disrupt foraging and other activities of these species; however, no substantial disruption to biological communities would result from proposed Project construction.

Direct impacts would occur to benthic organisms living within the sediments removed as part of the dredging and disposal activities, although these communities quickly re-establish (see discussion under Impact BIO-1, above). Dredging/disposal can cause temporary, adverse affects to organisms through impacts on water quality. Increased turbidity can adversely affect fish and other aquatic life by impairing vision and sense of smell, injuring gills, reducing water transparency, and covering sessile organisms. If anoxic sediments are disturbed, dissolved oxygen may also be reduced in the water column during dredging in the vicinity of the dredge operation. Water quality effects of dredging depend on the quality of sediments, currents, and type of dredge equipment used. Water quality effects are expected to be transitory, lasting for less than one tide cycle following active dredging, and covering an area generally within 1,000 feet of the activity, and often less than 300 feet. The use of a silt curtain and surface boom would confine any surface turbidity to the immediate construction area(s). Based on past water quality monitoring results (summarized under Impact BIO-1, above), only minor effects to water quality are likely to be detected during dredging. Therefore, construction activities would not result in a substantial disruption to local biological communities.

Fish in the water column and on or near the bottom at the proposed construction areas would be temporarily disturbed by the dredging activities as a result of turbidity, noise, displacement, and vibration. Most fish would leave the immediate area of the dredging, although some may stay to feed on invertebrates released from the sediments. No mortality of fish has been observed in the Outer Harbor as a result of dredging activities associated with the Deep Draft Navigation Improvements Project (Pier 400) (USACE and LAHD, 1992). Recolonization of areas affected by dredging would begin immediately and provide a food source for fish. There would be no substantial disruption of Fish Harbor fish communities because the affected area represents only a small proportion of the total available area within Fish Harbor, and similar habitat is available in adjacent areas, as well as other areas of the Port Complex. Marine mammals (such as sea lions) in Fish Harbor at the time of construction could be temporarily disturbed by construction activities, but any individuals present would likely avoid the work area. Construction activities would not interfere with marine mammal foraging because the disturbances would be in localized areas of Fish Harbor and large foraging areas would remain available to them in adjacent areas and throughout the Port Complex. Construction activities would therefore not substantially disrupt local fish and marine mammal communities.

Noise

As described under Impact BIO-2, pile driving creates underwater sound. Although this sound is not expected to cause injury to marine mammals, it may be of a sufficient volume and range to cause some acoustic impacts to fish. Acoustic impacts may include avoidance of the area, injury, or death. As described under Impact BIO-2, the extent of acoustic impacts would depend on the size and type of pilings used, and the pile driving methods used. Impact methods would be required to drive or proof the concrete pilings. Impact pile driving may cause some fish mortality, particularly at the onset. Because smaller fish are more susceptible to acoustic injury, the species most likely to suffer mortality would be northern anchovy, Pacific sardine, and topsmelt. These species play important roles in the cycling of energy and nutrients in harbor waters, which has been designated as EFH for both northern anchovy and Pacific sardine. A peak sound level of 180 dB_{PEAK} has been identified as an injury threshold for small fish. Impact driving of concrete piles would create sound of levels of about 183 to 193 dB_{PEAK} to a radius of up to 33 feet from each pile (Illingworth and Rodkin, 2007; ICF and Illingworth and Rodkin, 2009). However, due to the limited potential impact area, this is not considered a substantial disruption, and impacts are considered less than significant.

Marine mammals, such as sea lions and harbor seals, in the study area at the time of construction could be temporarily disturbed by construction activities; however any individuals present would likely avoid the work area. As described under Impact BIO-1, construction activities are not likely to interfere with marine mammal foraging because the disturbances would be temporary and limited to relatively small areas off the ALBS. These temporary behavioral effects on marine mammals would not measurably affect biological communities; therefore, impacts are considered less than significant.

Light

Shade from construction vessels, and lights to support construction activities at night, would have temporary influences on the distribution of water column species. Certain zooplankton, fish, and squid are attracted to light. Other species may be attracted by concentrations of zooplankton and squid associated with night lighting. Conversely, daytime shading from construction vessels or localized turbidity during in-water construction may reduce algal productivity. Certain fish species are attracted to shade and cover that construction vessels provide, while vibration and activity may frighten certain species from the area. However, because construction activities and locations would be constantly changing, the effects would be similar to those that occur under normal Port operations with vessels constantly coming and going, and night lighting provided for Port operations. Changing light conditions would therefore not represent a substantial disruption to local biological communities, and impacts would be less than significant.

Invasive Species

Construction activities have the potential to introduce or redistribute invasive species if those species are present in the construction area and are disturbed by boat anchors or other equipment, or if in-water equipment or construction vessels bring those species into the area of the proposed Project. However, the potential for introduction during construction activity would be essentially the same as under normal Port operations. The invasive green alga, *Caulerpa*, has the potential to spread by fragmentation. Prior to in-water work (including dredging), an underwater survey for the invasive alga *Caulerpa*

would be conducted to ensure that no *Caulerpa* is present in the study area. In the unlikely event that *Caulerpa* is detected during pre-construction surveys, an eradication program would be implemented per the requirements of the *Caulerpa* Control Protocol (NMFS and CDFG, 2008). Construction would commence only after the area is certified to be free of this invasive species. To date, more than 38 *Caulerpa* surveys have been conducted in the Port as a standard procedure conducted prior to sediment disturbing activities, and no *Caulerpa* has been found (SCCAT, 2011). Considering the *Caulerpa* survey requirement and absence of *Caulerpa* to date, and with implementation of the aforementioned *Caulerpa* protocols, the potential for proposed underwater construction activities to spread this species is unlikely. The potential to spread invasive species during construction is extremely low, and local biological communities would not be substantially disrupted; therefore, impacts are considered less than significant.

Operation

Operational activities at the modernized ALBS facility would be similar to those that occurred as part of the baseline. Accidental spills of fuel or other vessel fluids during operation could occur as a result of a vessel collision, although the likelihood is considered remote. Accidental spills of pollutants during shipyard operations on land would be small because large quantities of such substances would not be used. Also, as discussed in Section 3.13, Water Quality, Sediment, and Oceanography, compliance with standard laws and requirements would ensure that the shipyard includes containment and other countermeasures that would prevent upland spills from reaching navigable waters. Furthermore, the site drainage system would include BMP devices to process site runoff prior to discharge (to Fish Harbor) in accordance with SUSMP requirements (see Section 3.13 for further information). Because of these measures, upland spills from shipyard operations are not expected to result in significant impacts to biological resources.

Runoff of pollutants to the Port from the new facilities on existing land and newly developed fill areas would have negligible effects on marine biological communities (fish, benthos, plankton) because water quality standards for protection of marine life would not be exceeded (see discussion under Impact BIO-1, Operation, above). Proposed Project features such as a new storm drain, new trench drains and/or catch basins, an oil/water separator, and new drainage patterns are designed to improve water quality and bring the ALBS into compliance with its NPDES permit and WDR. Runoff from the site could occur during dry weather and from storm events. The latter are periodic, primarily during the winter rainy season, and generally of short duration.

Non-native invertebrate species could be introduced via vessel hulls. The California State Lands Commission has issued a report on commercial vessel fouling in California (CSLC, 2006). The Commission recommended that the state legislature broaden the state program and adopt regulations to prevent non-indigenous species introductions by ship fouling. Of particular concern is the introduction of an alga, *Caulerpa taxifolia*. As discussed in Section 3.3.2.7, this species is most likely introduced from disposal of aquarium plants and water and is spread by fragmentation rather than from ship hulls or ballast water; therefore, risk of introduction is associated with movement of plant fragments from infected to uninfected areas by activities such as dredging and/or anchoring. The Port conducts surveys, consistent with the Caulerpa Control Protocol (NMFS and CDFG, 2008) prior to every sediment-disturbing construction project to verify that *Caulerpa* is not present. This species has not been detected in the Port and has been eradicated from known localized areas of occurrence in southern California

(SCCAT, 2011). Therefore, there is little potential for shipyard operations to introduce *Caulerpa* to the Port environment. The number of ships served by the ALBS is projected to increase by 110 to 184 ships per year by 2042. However, by providing maintenance and shipyard services the operation of the ALBS would not increase the potential for non-indigenous taxa to be spread because (1) most of the ships/barges serviced at the ALBS do not operate outside the Pacific Coast region, and (2) ballast water management requirements would minimize the potential for introduction of non-indigenous taxa to the Port. Due to the low potential for the introduction of invasive species, this would not be considered a substantial disruption and impacts are considered less than significant.

Summary

As described above, construction activities in the study area, particularly pile driving, could cause short-term impacts on individuals (e.g. marine mammals and fishes, including those with designated EFH) in the immediate vicinity of pile driving. However, no substantial disruption of biological communities would result from proposed Project construction, and impacts are considered insignificant.

Resuspension of contaminants of concern during dredging could adversely affect aquatic organisms if toxic substances are present in sufficient concentrations. Required sediment testing and analyses prior to dredging/disposal, use of a silt curtain during dredging, and water quality monitoring and construction BMPs would further identify and then reduce the potential for these effects. Disposal of dredged sediments in the CDFs could result in smothering of fishes and invertebrates; however, these effects would be limited in extent and duration, and are not considered substantial.

A remote potential exists for an accidental shipyard or vessel spill that could harm biological resources in the Port or ocean during proposed Project operation. Based on past operations, however, such a spill is unlikely to occur. Proposed Project operations would not substantially disrupt biological communities through runoff of contaminants in the vicinity of the Project site. Modernized runoff and storm drain discharge controls, as well as conditions of all proposed Project-specific permits, would be implemented (see Section 3.13, Water Quality, Sediments, and Oceanography). The ALBS NPDES permit includes discharge limitations that are protective of aquatic life.

Operation of the proposed Project facilities is not expected to result in the introduction of non-native species into the Port via ballast water or vessel hulls because (1) most of the ships/barges serviced at the ALBS do not operate outside the Pacific Coast region, and (2) ballast water management requirements would minimize the potential for introduction of non-indigenous taxa to the Port. In summary, construction and operation of the proposed Project is not expected to substantially disrupt local biological communities, and impacts are less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact BIO-5: Construction and operation of the proposed Project would result in a permanent loss of marine habitat.

Construction of the proposed Project includes fill (disposal of sediment to create the CDFs) that would result in the direct loss of approximately 0.9 acres of marine habitat in Fish Harbor. Even though the area proposed for construction of the CDFs is considered "impacted" due to the presence of contaminated sediments, it is still considered EFH for the Coastal Pelagics and Pacific Groundfish. The loss of marine habitat is considered significant.

Mitigation Measures

Mitigation for the permanent loss of EFH that would be implemented under mitigation measure **MM BIO-1** (discussed above for Impact BIO-2) would offset the permanent loss of marine habitat.

Residual Impacts

Impacts would be less than significant.

3.3.4.4 Summary of Impact Determinations

Table 3.3-4 summarizes the impact determinations of the proposed Project related to Biological Resources, as described in the detailed discussion in Section 3.3.4.3. Identified potential impacts are based on federal, state, and City of Los Angeles significance criteria, Port criteria, and the scientific judgment of the report preparers, as applicable.

Table 3.3-4: Summary Matrix of Potential Impacts and Mitigation Measures for Biological Resources Associated with the Proposed Project

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
BIO-1: Construction and operation of the proposed Project would not cause a loss of individuals or habitat of a state- or federally-listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally listed critical habitat.	Less than significant	No mitigation is required	Less than significant
BIO-2: Construction and operation of the proposed Project would result in a substantial reduction or alteration of a state, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands.	Significant	**MM BIO-1: Apply Habitat Mitigation Credits.**	Less than significant
BIO-3: Construction and operation of the proposed Project would not interfere with wildlife movement/migration corridors that may diminish the chances for long-term survival of a species.	Less than significant	No mitigation is required	Less than significant
BIO-4: Construction and operation of the proposed Project would not substantially disrupt local biological communities	Less than significant	No mitigation is required	Less than significant
BIO-5: Construction and operation of the proposed Project would result in a permanent loss of marine habitat.	Significant	**MM BIO-1.**	Less than significant

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3.3.4.5 Mitigation Monitoring

The following mitigation monitoring program is applicable to the proposed Project:

Impact BIO-2: The proposed Project would not result in a substantial reduction or alteration of a state, federally, or locally designated natural habitat, special aquatic site, or plant community, including wetlands; and, Impact BIO-5: The proposed Project would result in a permanent loss of approximately 0.9 acres of marine habitat.	
Mitigation Measure	**MM BIO-1: Apply Habitat Mitigation Credits.** The LAHD shall apply 0.45 credits available in the Bolsa Chica or Outer Harbor mitigation banks to compensate for loss of 0.9 acres of marine habitat in the Inner Harbor due to construction of fill in Fish Harbor. This mitigation measure would also offset the impacts to Essential Fish Habitat.
Timing	Commit 0.45 credits prior to issuance of USACE Section 10/404 Permit. Final determination of needed credits and formal deduction of credits performed from as-built drawings after construction is complete.
Methodology	LAHD shall reduce the available mitigation bank credits by the appropriate amount (determined after construction of fill) in accordance with mitigation agreements.
Responsible Parties	LAHD
Residual Impacts	Less than significant after mitigation.

3.3.5 Significant Unavoidable Impacts

There are no significant and unavoidable impacts to Biological Resources associated with construction and operation of the proposed Project.

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