

XV. ENVIRONMENTAL IMPACTS

Environmental impacts of POLA and POLB affect air and water quality. POLB implemented a “Green Port Policy” in January 2005 that serves as a guide for decision making and established a framework for environmentally friendly Port operations. The policy’s five guiding principles are:

- Protect the community from harmful environmental impacts of Port operations.
- Distinguish the Port as a leader in environmental stewardship and compliance.
- Promote sustainability.
- Employ best available technology to avoid or reduce environmental impacts.
- Engage and educate the community.

POLA Environmental Policy states that the port is committed to managing resources and conducting Port developments and operations in both an environmentally and fiscally responsible manner. The Port will strive to improve the quality of life and minimize the impacts of its development and operations on the environment and surrounding communities through the continuous improvement of its environmental performance and the implementation of pollution prevention measures, in a feasible and cost effective manner that is consistent with the Port's overall mission and goals, as well as with those of its customers and the community.

A. Air

A new state rule on cleaner-burning ship fuel took effect January 1, 2007. The regulation, adopted by the California Air Resources Board in 2005, requires large ocean-going vessels, including container and cruise ships, to use low sulfur fuels in their auxiliary engines within 24 nautical miles of the California coastline. The regulation will reduce emissions of harmful diesel particulate matter (PM), smog-forming nitrogen oxides (NOx) and sulfur oxide (SOx).

B. Water

Environmental Baseline: LA/LB Harbors Natural Resources Inventory: This inventory comprises natural habitats, plants and animals that Plan provisions may affect.

Considerable changes have occurred in the harbors since the comprehensive biological surveys of the 1970’s and more focused ones in the 1980 and 1990’s. Some of these changes included deepening of navigational channels and basins, constructing landfills at piers 300 and 400 in POLA, constructing a transportation corridor out to Pier 400, expanding Pier J in POLB, and constructing the west basin of the Cabrillo Marina complex. As part of mitigation for construction, shallow water habitats were created in formerly deepwater areas. Thus several areas that were previously aquatic habitat are now land, some previous areas that were deep water are now shallow, and circulation patterns within the harbors have been altered.

Invasive species are potential threats to the ports. Invasive species are nonnative species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Environmental harm may be a result of direct effects of *invasive species*, leading to biologically significant decreases in native species populations. Invasive species can be introduced to the ports via ship ballast water.

For further information, Appendix H contains a reference bibliography, a list of advisors and resources and the environmental study group's report of the harbors.

POLA/POLB and their associated approach areas support highly diverse biological communities in the following six habitats (see Table 1 for further detail):

a. Hard-bottom substrate:

A productive and biodiverse habitat including natural rocky reef, artificial reef features such as riprap shorelines, breakwaters, pier structures, cement pilings, etc. Hard bottom substrate provides forage and shelter for shorebirds, mammals, and numerous fish, invertebrates, and algae. .

- i. **Kelp Beds:** Kelp and macroalgal communities are narrowly distributed within the harbor areas, being principally restricted to the shallow hard bottom environments associated with riprap shorelines, breakwaters, pier structures, and most shallow horizontal hard-bottom substrates. Kelp beds support over 800 species, including birds, mammals, sharks and rays, fish, invertebrates, algae, and more. Large stands of giant kelp line both sides of the San Pedro Breakwater, along with ribbon kelp and smaller stands occurring on riprap in the Outer Harbor. Whereas algal beds include 87 species of macro-algae, there is a general decline of algal diversity from the outermost portions of the harbors to the innermost channel. Giant kelp communities within LA-LB Harbor are not abundant, totaling approximately 25 acres in the spring and declining to about 14 acres in the fall. Coastal kelp feeds and shelters near shore fish and invertebrates, which can eat up to 50% of the fronds each season. Much uneaten kelp sheds and drifts to other benthic habitats, where it feeds a myriad of marine life.
- ii. **Surfgrass beds:** surfgrass (*Phyllospadix* spp.) occurs on rocky substrates in the high-energy, low intertidal and shallow subtidal reef habitats. Composition of invertebrate communities in surfgrass beds is typical of low rocky intertidal habitats except for some smaller gastropods that are specialized to live on surfgrass leaves. Transplant projects to restore damaged surfgrass beds have been largely unsuccessful. As with many species that are persistent over long periods of time, surfgrass recovers very slowly when removed and the low intertidal community is often substantially altered in its absence.

b. Soft bottom substrate: comprising most of San Pedro Bay, Santa Monica Bay, and over 10,000 acres of outer harbor, soft bottom substrate supports a diversity of burrowing organisms and bottom-dwellers. The outer harbor supports more diverse and less dense fauna than the inner harbor.

- i. Sandy intertidal habitats: along Cabrillo Beach, and Los Angeles Harbor's 190-acre landfill, support burrowing invertebrates, which provide food for shore birds at low tide and fish at high tide.
- i. Eelgrass beds: Eelgrass grows in shallow coastal, marine bays and estuaries around the world and forms the basis of a specialized coastal and estuarine habitat of great ecological value. Eelgrass is a major source of primary production in nearshore marine systems, supplying detrital based food chains. In addition, several fish, invertebrates, and birds directly graze upon it, thus contributing to the system at multiple trophic levels. Eelgrass meadows are also of vital importance as habitat and have an important role in the life cycle of many ecologically and economically important aquatic species by serving as nursery areas. In addition to the habitat and resource values that eelgrass provides, it also functions to trap and remove suspended particles, thus improving water clarity, reduces erosion by providing sediment stabilization, adds oxygen to the surrounding water, and cycles nutrients. Extensive eelgrass canopies absorb wave shock, thereby protecting adjacent shorelines. Not only does eelgrass provide high ecosystem value, but it also is used as an indicator of estuarine health because it responds to environmental factors by changing in distribution and abundance. Because of the susceptibility of eelgrass to stresses such as pollution, it is used as one of the five sensitive indicators of pollution in the NOAA National Estuarine Eutrophication Assessment. Eelgrass requires some of the highest light levels of any plant group worldwide which means it is acutely responsive to water clarity changes.

***In the United States, eelgrass habitat is protected by federal and state law under their respective Clean Water Acts; the Magnuson-Stevens Fishery Conservation and Management Act; the California Coastal Act; and Title 14, California Code of Regulations. According to these laws and regulations, any activities which may potentially impact eelgrass habitat must mitigate for those impacts. This requires mitigation for harmful impacts to existing eelgrass beds as well as potential eelgrass habitat.

c. Water Column: This habitat nurtures 130 fish species, including several commercially and recreationally valuable fish. These in turn feed resident and migratory birds. Eggs and larvae proliferate in late winter and early spring. Birds and larger fish spawn, breed and forage in the shallow water habitat near the former seaplane anchorage, the Los Angeles breakwater near Cabrillo Beach, and along the east side of the Pier 400 Corridor. These habitats, although in some cases new and not yet fully productive, are proving environmentally significant.

d. Salt Marsh: The only extant wetlands habitat in LA-LB Harbor is the 3.5 acre constructed Cabrillo Marsh adjacent to POLA's Cabrillo Beach area. The historic wetlands in the area were largely converted to port uses before World War II; only the wetlands in and around the Seal Beach Naval Weapons Station remain.

e. Special Designation Habitats: The harbor approaches are near the ecologically sensitive Point Fermin Marine Life Refuge and Seal Beach National Wildlife Refuge. In addition, 13% of California's endangered Least Terns (state and federally listed) live in a Least Tern Management Area on the southern portion of the Pier 400 Stage 1 landfill. Shallow water habitats in the harbor feed the terns and also provide a nursery for halibut.

f. Bird/Marine Mammal Habitat: In winter, the harbor hosts up to 16,500 birds from 153 species, with those migrating along the Pacific Flyway joining species present all year. Most birds roost in the inner harbor and feed in the outer harbor. Waterfowl forage in shallow water, endangered brown pelicans (state and federally listed) in deeper waters. The breakwater annually hosts pelicans foraging on northern anchovies. Another state endangered bird, the peregrine falcon, nests on bridges throughout the harbor area. Human activity, noise, and pollution interfere with bird feeding. Repeated disturbance forces birds to consume five times their normal intake to maintain body weight. Least terns are especially vulnerable to nesting disruptions. POLB relocated a large colony of black-crowned night herons from the former Long Beach Naval Station to Gull Park at the end of the Navy Mole in 1998. The population monitoring is ongoing. Dolphins inhabit the harbor year-round, with record numbers counted in 1995. Seals and sea lions rest and forage on the breakwaters and other rocky harbor areas. Marine turtles, including federally endangered green sea turtles, also visit. Whale species migrate through the area, southbound from November through February and northbound from March through May. A navy vessel struck and killed an adult gray whale in 1995, highlighting the need for caution during migrations.

g. Water Quality: Water quality measurements have proven to be consistent with expected values for near-coastal and harbor environments. Results indicate a continued trend of water quality improvement since the 1970's, with most dissolved oxygen concentrations in excess of 5 milligrams/liter. Episodic and localized changes in some parameters, such as low dissolved oxygen concentrations coinciding with low water clarity, suggested minor effects possibly associated with sediment dredging events.

Table 1: Examples of species found in various harbor habitats

Hard-bottom substrate species:

Acorn barnacle, articulated coralline alga, bat ray, coral, corbina, filter-feeding gastropod, kelp bass, limpet, leopard shark, mussel, octopus, purple sea urchin, rockfish, shore crab, blacksmith, feather boa kelp, giant kelp, kelp bass, sargassum, kelp, sea bass, señorita, surfperch, etc.

Kelp bed species: Over 800 species of birds, mammals, fish, invertebrates, algae: amphipod, abalone, crab, flatworm, lobster, mollusks, polychaete worm, purple sea urchin, etc. shrimp, black perch, kelp bass, señorita, California sheephead, etc.

Surfgrass bed species: Shallow subtidal rocky reef species and others, including: surfgrass limpet, multiple species of *Lacuna*, invertebrates such as the aggregating anemone, turban snails, octopus, crabs, lobster; also shallow subtidal habitat fish species such as Garibaldi, surfperches, etc.

Soft bottom substrate species:

Halibut, tongue fish, gobies, sand dabs, round stingray, white croaker, clam, starfish, sea urchin, worms

Sandy intertidal habitat: worm, sand crab, silversides, grunion

Eelgrass beds species: brant geese, Pacific salmonids, lingcod, rockfish, crabs, lobster, shrimp, amphipods, isopods, gobies, clams, etc.

Water column species:

Barracuda, grunion, mackerel, northern anchovy, queenfish, ray, sardine, shad, smelt, white sea Bass

Bird species:

American kestrel, Anna's hummingbird, barn swallow, belted kingfisher, black oystercatcher, brown pelican, Caspian tern, cormorant, diving duck, elegant tern, grebe, gull, loon, mockingbird, peregrine falcon, royal tern, western gull

Marine mammal species:

Blue whale, bottlenose dolphin, common dolphin, harbor seal, Pacific gray whale, Pacific white-sided dolphin, California sea lion

C. Environmental Impact Analysis: The following Plan chapters may have an environmental impact:

Chapter VI Contingency Routing

Chapter X Small Craft

Chapter XI Vessel Traffic Service
Chapter XII Tug Escort/Assist for Tank Vessels
Chapter XIII Pilotage
Chapter XVI Plan Enforcement
Chapter XVII Other: Offshore Marine Oil Terminals

In addition, the Los Angeles Regional Water Quality Control Board, through its “Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties” (June 13, 1994), has identified the following beneficial uses for the Los Angeles/Long Beach Harbor areas:

a. Inner & Outer Harbor; Beaches, Marinas: Existing Uses: Industrial service, navigation, contact and non-contact recreation, commercial and sport fishing, marine habitat, wildlife habitat, preservation of rare and endangered species, shellfish harvesting. Potential: spawning.

b. Los Angeles River Estuary: Existing Uses: preservation endangered species, estuarine habitat, wetland, habitat, marine habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development of fish, navigation, commercial and sport fishing, industrial service supply, and contact and non-contact water recreation. Potential uses: shellfish harvesting.

c. Dominguez Channel Estuary: Existing Uses: preservation of rare and endangered species, estuarine habitat, marine habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development of fish, commercial and sport fishing, and contact and noncontact water recreation. Potential uses: navigation.

The Los Angeles Regional Water Quality Control Board (“RWQCB”) has also recognized that most of the harbor area waters presently do not achieve the water quality objectives of the Federal Water Pollution Control Act (“Clean Water Act”) and are therefore identified as impaired waterbodies in the “2008 CWA Section 303(d) List of Water Quality Limited Sections” (approved by RWQCB July 16, 2009). Pollutants causing impairment include, among others, DDT, PAHs, PCBs, Bensopyrene, Chlordane, Chromium, Lead, Zinc, Copper, Mercury, sediment toxicity, and bacteria. The 303(d) List of water quality impairments in the LA/LB Harbor area, by specific waterway, is available through the RWQCB.¹ Overall water quality varies within the harbor areas with contaminant concentrations often localized in back channels, along wharf faces, and near storm water outfalls.

¹ 2008 CWA Section 303(d) List of Water Quality Limited Segments Requiring Pollutant-Specific TMDLs: Los Angeles Harbor- Consolidated Slip, Los Angeles Harbor- Fish Harbor, Los Angeles Harbor- Inner Cabrillo Beach, Los Angeles/Long Beach Inner Harbor, Los Angeles/Long Beach Outer Harbor, Machado Lake, Los Angeles River Reach 1.

Once a water body becomes section 303(d) listed for a specific pollutant, TMDL numeric targets for effluents are set at a level that will ensure the water body will meet the water quality necessary to support its beneficial uses. To date, the Los Angeles Harbor Bacteria TMDLs (Inner Cabrillo Beach and Main Ship Channel), Los Angeles River Metals TMDLs, and Machado Lake Nutrients TMDLs have been completed and approved by the EPA. The Los Angeles River Bacteria TMDLs, Dominguez Channel and greater Los Angeles/Long Beach Harbor Toxics TMDLs are still in development. Over the next ten years, TMDLs for the other harbor 303(d) listings will be established by the RWQCB and the EPA.

Harbor area waters are also subject to the Environmental Protection Agency (“EPA”) vessel discharge rules and regulations. The centerpiece of the EPA’s National Pollutant Discharge Elimination System (NPDES) vessels program is the nationwide Vessel General Permit (“VGP”) which applies to discharges incidental to the normal operation of all non-recreational, non-military vessels of 79 feet or greater in length which discharge into ocean or shoreline waters. The VGP contains effluent limits for different types of discharges including ballast water, deck runoff, bilge water, gray water, and cooling sea water. The VGP’s requirements overlap with existing laws and regulations.² A detailed discussion of vessel discharge rules and regulations can be found at http://www.portoflosangeles.org/DOC/WRAP_Vessel_Discharge_Rules.pdf.

² Local regulations include Port of Long Beach Tariff No. 4 and Port of Los Angeles Tariff No. 4. State laws and regulations include the California State Lands Commission regulations, the California Clean Coast Act of 2005, and California Department of Fish and Game Code 5650. International Regulations include the International Convention for the Prevention of Marine Pollution from Ships (MARPOL) which, among other things, specifies methods of oily ballast and bilge water containment and prohibits the discharge of untreated sewage.