

## Humboldt Bay Harbor Setting

### 2.1 Introduction and Chapter Overview

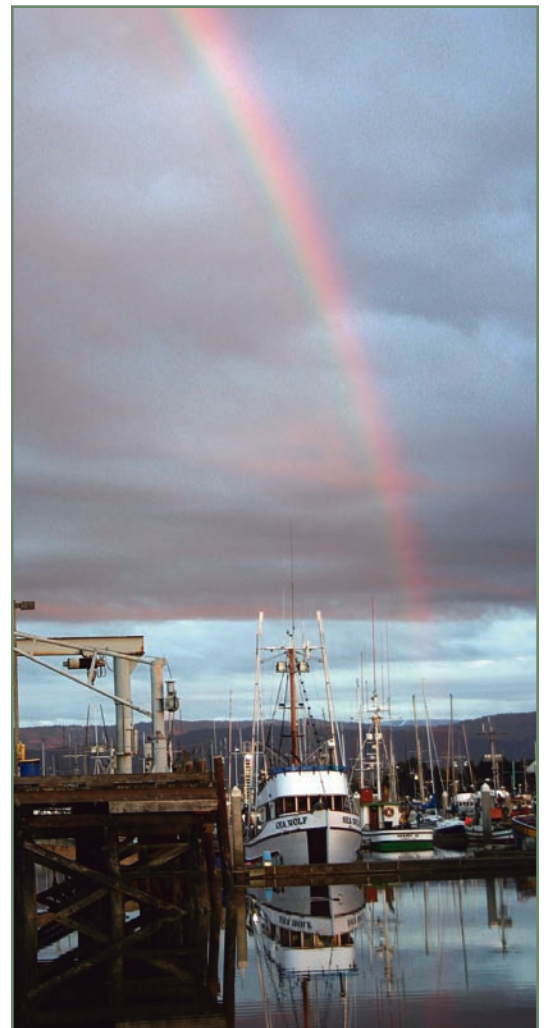
This chapter of the Management Plan provides a summary of the general state of the commercial/industrial portion of Humboldt Bay, with an emphasis on harbor areas, activities, facilities, and management responsibilities within the waters and lands of the District's primary jurisdictional area. This chapter reviews the major harbor-related functions of Humboldt Bay, both as a working port and in the more general sense as a harbor, as related to the overall mission responsibilities of the District. The discussion is not meant to be a comprehensive treatment of all harbor-related functions, but rather to provide a context for the policies presented in Section III of the Plan.

Buffered from ocean waves and storms by the Samoa Peninsula/ North Spit and the South Spit, Humboldt Bay is a sheltered, generally shallow, coastal water body that is open to the ocean yet nearly surrounded by land. For more than a century, the natural attributes that have supported the use of the Bay as a harbor – including the entrance, the water channels, and shoreline – have been modified, expanded, stabilized, and maintained in order to develop the Bay for safe moorings, commerce, and multi-modal transportation connections.

Today, Humboldt Bay continues to serve as a working port, capable of handling ocean-going vessels with domestic or international cargoes. Promotion of marine commerce was one of the main purposes behind the State legislation that created the Humboldt Bay Harbor, Recreation and Conservation District; accordingly, the District serves as the Port Authority for the Port of Humboldt Bay. Ports are important gateways for domestic and international commerce; the ports of California (largely dominated in terms of overall cargo by the ports in Southern California and the San Francisco Bay area) are particularly important economic engines to the State and to the nation. Of the approximately 185 ports in the United States, there are 25 ports on the West Coast and 11 major ports in California. The Port of Humboldt Bay is of strategic importance because it is the only deep-water shipping port between San Francisco, approximately 225 nautical miles to the south, and Coos Bay, Oregon, approximately 156 nautical miles to the north.



*Fish and anemone*



*Rainbow over the fishing vessel  
Sea Wolf in Humboldt Bay*

In addition to being a working port, Humboldt Bay also functions as a harbor for other, “non-cargo” uses. The commercial fishing fleet, recreational boaters, and other maritime activities all benefit from sheltered anchorage, maintained channels, marinas, waterfront facilities and services, and the armored shoreline of the harbor. The Bay is also the setting for important related uses, including mariculture. A variety of commercial businesses around the Bay support these activities.

An important part of the overall planning context for the harbor is the **Port of Humboldt Bay Harbor Revitalization Plan** (hereafter, Harbor Revitalization Plan), completed in 2003 by the District in conjunction with the City of Eureka and the County of Humboldt. The Harbor Revitalization Plan, important policy recommendations from which are incorporated as policy elements into Section III of this Management Plan, was aimed at identifying “a new and sustainable maritime focus” for the Humboldt Bay community. Some of the major recommendations from this plan pertaining to harbor use and future scenarios are discussed further in this chapter.

Also part of the planning context is the most recent update of the District’s Strategic Plan, adopted in 2002, which suggested interim general directions for the District (prior to the Harbor Revitalization Plan and this Management Plan), based on recommendations from the Strategic Plan Task Force and comments from the public. The Strategic Plan, in addition to stating the need for both this Management Plan and the Harbor Revitalization Plan, identified a number of strategic direction statements for the District’s three main areas of responsibility. With regard to harbor management, the Strategic Plan assigned a high priority to (1) “permit process streamlining” of compatible uses of the Bay and its margins and (2) implementation of elements in the Harbor Revitalization Plan that would build the foundation for an increase in cargo-handling capacity in the port.

As in the District’s other main functional areas, management of port and other harbor activities is conducted within a context that requires consideration

of other resources and uses in and around Humboldt Bay. Development, maintenance, and promotion of harbor-related activities must consider the District’s other responsibilities in the areas of recreation and conservation, as well as corresponding land-side uses prescribed and administered by the two cities and the county. As discussed in Section I, the District has been authorized by the State to manage Humboldt Bay in ways and for uses that are consistent with its public trust responsibilities; the District is authorized to weigh, balance, and seek to resolve potentially competing or conflicting uses.

## 2.2 Port of Humboldt Bay

This section generally describes the main features that are necessary for the harbor to function as a working port, including the jetties at the Bay entrance, the bar and entrance channel, maintained shipping channels within the Bay, turning basins, shoreline protection and improvements, docks and other landside improvements, and key waterfront sites used for coastal-dependent industry.

### 2.2.1 Bay Entrance and Shipping Channels

Maintaining an improved entrance to the Bay and dredging the entrance area and major navigation channels in the Bay are necessary activities to accommodate safe and economically viable shipping by ocean-going vessels and barges. A system of dredged channels is maintained by the District and the Army Corps of Engineers. Dredge spoils from the entrance area and main channels of the harbor are removed to the Humboldt Open Ocean Disposal Site (HOODS), an offshore disposal area 3 to 4 nautical miles west of Humboldt Bay designated in 1995 by the U.S. Environmental Protection Agency.<sup>1</sup> Outside the main navigation channels, the District has oversight responsibility for periodic maintenance dredging at facilities such as Woodley Island Marina and the Eureka Public Marina; the City of Eureka is a cooperating agency for some maintenance dredging activities, and

<sup>1</sup>See the Federal Register Notice [Federal Register: September 28, 1995 (Volume 60, Number 188)] on the EPA website at <http://www.epa.gov/fedrgstr/EPA-WATER/1995/September/Day-28/pr-180.html>. Viewed February 2007.

private dock-owners may also share responsibility for dredging activities.

In 2000, the District and the Army Corps of Engineers completed the Humboldt Bay Channel Deepening Project, the initial phase of a long-term strategy for harbor revitalization. Channel deepening was conducted to improve navigation safety as well as improve the Port's competitiveness for marine trade. The competitiveness of any port is closely related to its ability to adapt to changes in the shipping industry, most notably the use of larger deep draft vessels. After deepening, the channels can accommodate larger vessels (although not the largest tankers or similar vessels); deeper channels also may reduce the need of some vessels to enter the Bay with light loads, thus potentially improving "vessel economics" (see the Harbor Revitalization Plan). Currently, the Bay can typically accommodate vessels in the "Panamax" class,<sup>2</sup> which is up to 750 feet LOA (length over all), approximately 110 feet in width (beam), and a total of approximately 50,000 deadweight tons.

In general, the channel system in Humboldt Bay consists of the entrance channel and turning basin, a northerly channel from the turning basin to North Bay and Samoa that forks around Woodley Island, and a southerly channel to Fields Landing (see Figure 2-1). The entrance to the Bay is protected by two rock and concrete jetties, first constructed in 1889. Numerous modifications and reconstructions have taken place on the jetties over the years, including the emplacement in 1971 of large concrete dollosses at the ends of the jetties, as well as further reinforcement in 1987. Humboldt Bar at the entrance of the Bay has a history and reputation of being a dangerous passage for boats; according to the Coast Pilot (NOAA 2005):

"Even with present improvements, mariners are still advised to use extreme caution on the bar and, because strong currents may be encountered, when approaching the abrupt turn at the outer end of the S[outh] jetty. The bar is smoothest during the last of the flood current, and it is often passable at this time and impassable 2

<sup>2</sup>Refers to the largest size vessel that can be accommodated in passage through the Panama Canal.

hours later, when the ebb current has set in. Mariners are advised to contact Coast Guard Station Humboldt Bay on VHF-FM channel 16 or 22A prior to transitting the bar. Caution should also be exercised inside the jetties due to the rapid change in the channel conditions. Deep-draft vessels are usually taken in and out of the bay at high tide if there is any swell on the bar because of the shoaling in the entrance channel."

The Bar and Entrance Channels extend from the open ocean, between the jetties that form the entrance to the Bay, to a turning basin at the head of Entrance Bay. The Bar Channel extends seaward from the Entrance Channel and is maintained at a depth of 48 feet; it is approximately 2,300 feet in length, and is 1,600 feet wide at the seaward end and 700 feet wide at the jetties. The Entrance Channel extends between the two jetties and is maintained at a depth of 48 feet. It is approximately 9,000 feet in length, and 500 feet wide.

The North Bay Channel, which has a width of 400 feet and depth of 38 feet, extends north from the entrance turn for a distance of approximately 18,500 feet, where it branches into the Eureka Channel and the Samoa Channel. The easterly fork is the 400-foot wide Eureka Channel, which serves the Eureka waterfront and consists of two segments: a 3,000-foot length at a depth of 35 feet and a 6,700-foot Inner Reach at a depth of 26 feet. The westerly fork, the Samoa Channel, which serves the industries on the Samoa Peninsula, is approximately 8,000 feet long, 400 feet wide, and 35 feet deep and ends at a turning basin. The Fields Landing Channel (or Hookton Channel), which serves Fields Landing and King Salmon, extends in a southeast direction from the Bay entrance; this channel is approximately 12,000 feet long, 300 feet wide, and 26 feet deep, and also ends at a turning basin.

### 2.2.2 Shoreline and Related Improvements

Approximately 15 percent of Humboldt Bay's shoreline is devoted to port-related, marine uses and activities (Strategic Plan 2002). Currently, approximately 4,873 linear feet of dock space available



in Humboldt Bay, divided among several industries, as discussed further below. Storage is available for covered and uncovered cargo and liquid bulk.

Adjacent to Humboldt Bay shipping channels are five operating terminals serving ocean-going dry-cargo vessels, and one oil dock. There are several other inactive terminals. The locations of these facilities are shown in Figure 2-1. Three of the six active cargo docks are located on the Eureka waterfront, two are located on the Samoa Peninsula, and one is located at Fields Landing. The Samoa docks are used principally by pulp mill activities on the Samoa Peninsula. The Eureka waterfront docks are used primarily for commercial shipping (wood products and refined petroleum products), and occasionally by U.S. Coast Guard vessels, cruise ships, other passenger vessels, environmental vessels, and U.S. Navy vessels calling on Humboldt Bay. The Humboldt Bay Forest Products dock in Fields Landing is used chiefly for log exports (Revitalization Plan 2003; Humboldt County Association of Governments 2004). Approximately 164 ships and barges entered the Port of Humboldt in 2004. Key coastal-dependent industrial facilities are discussed further in the next subsection.

Among the necessary harbor-related activities for the District and other users of waterfront areas are activities related to shoreline maintenance and dock, pier, and pilings repair, replacement, or removal. The City of Eureka, for example, has for many years conducted a variety of waterfront improvement projects, including projects to remove derelict piers, wharves, and docks and, in some cases, replace these structures with improvements aimed at revitalizing the historic Old Town area.<sup>3</sup>

### 2.2.3 Key Coastal-Dependent Sites

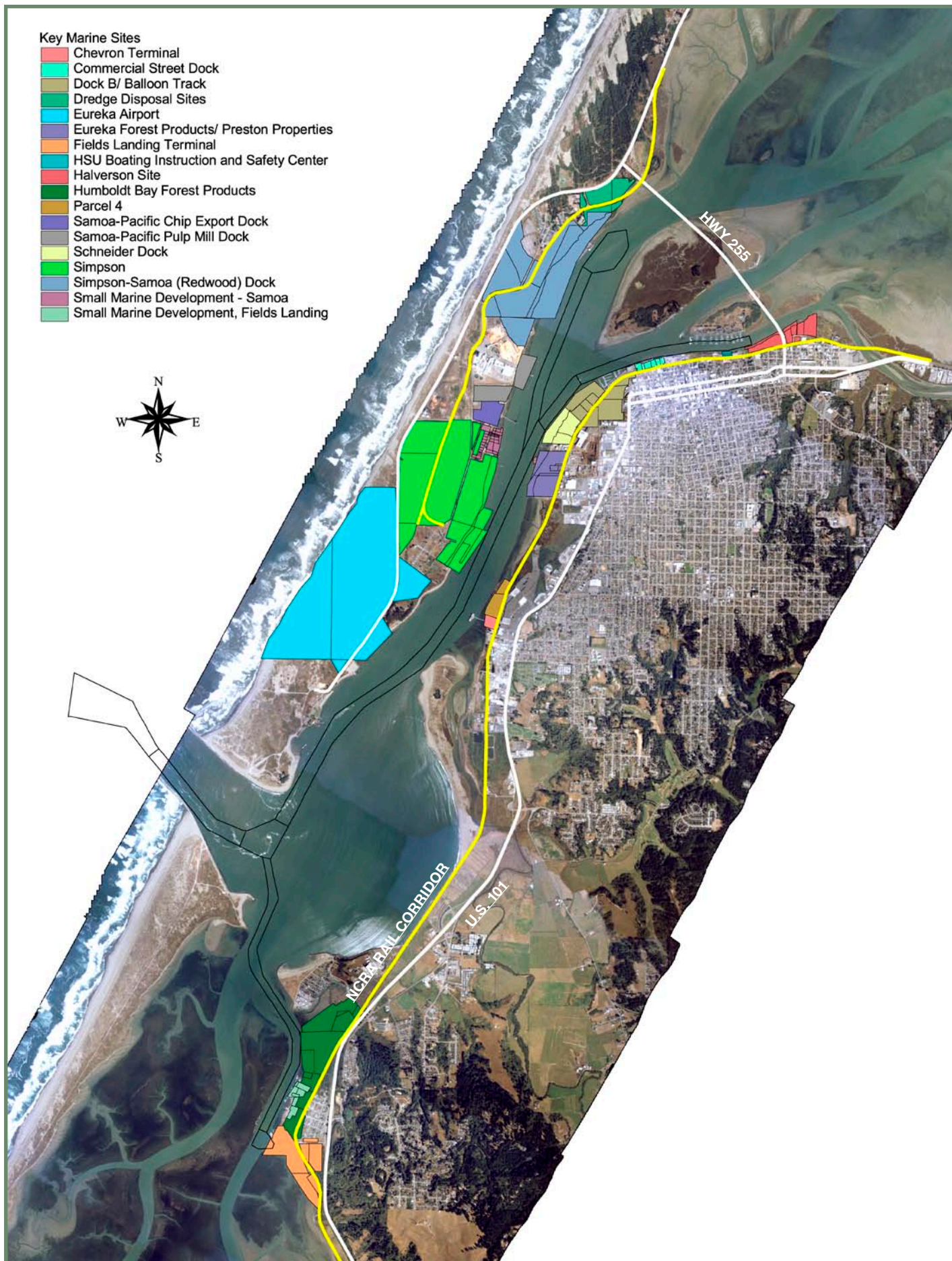
A number of waterfront areas around Humboldt Bay have a history of industrial use, particularly in parts of the Bay that are adjacent to the deep water channels on the waterfront side and adjacent to the railroad line (or a spur) on the upland side. Designation of coastal-dependent industrial sites is a function of local governments – the City of Eureka and the County of Humboldt – under their required General Plans and Local Coastal Plans, which are prepared

<sup>3</sup>See, for example, the project (approved by the California Coastal Commission and the Harbor District in 2000) to demolish dock and wharf structures and construct a 1,600-foot long public pedestrian boardwalk and dock complex along the City's waterfront between C Street and F Street [<http://www.coastal.ca.gov/eureka/1-99-077.pdf> (viewed February 2007)].



*The Silver Shadow visits Humboldt Bay*





**Figure 2-1: Key Marine Sites and Regions as defined in the 2003 Humboldt Bay Harbor Revitalization Plan**



# Pacific Ocean

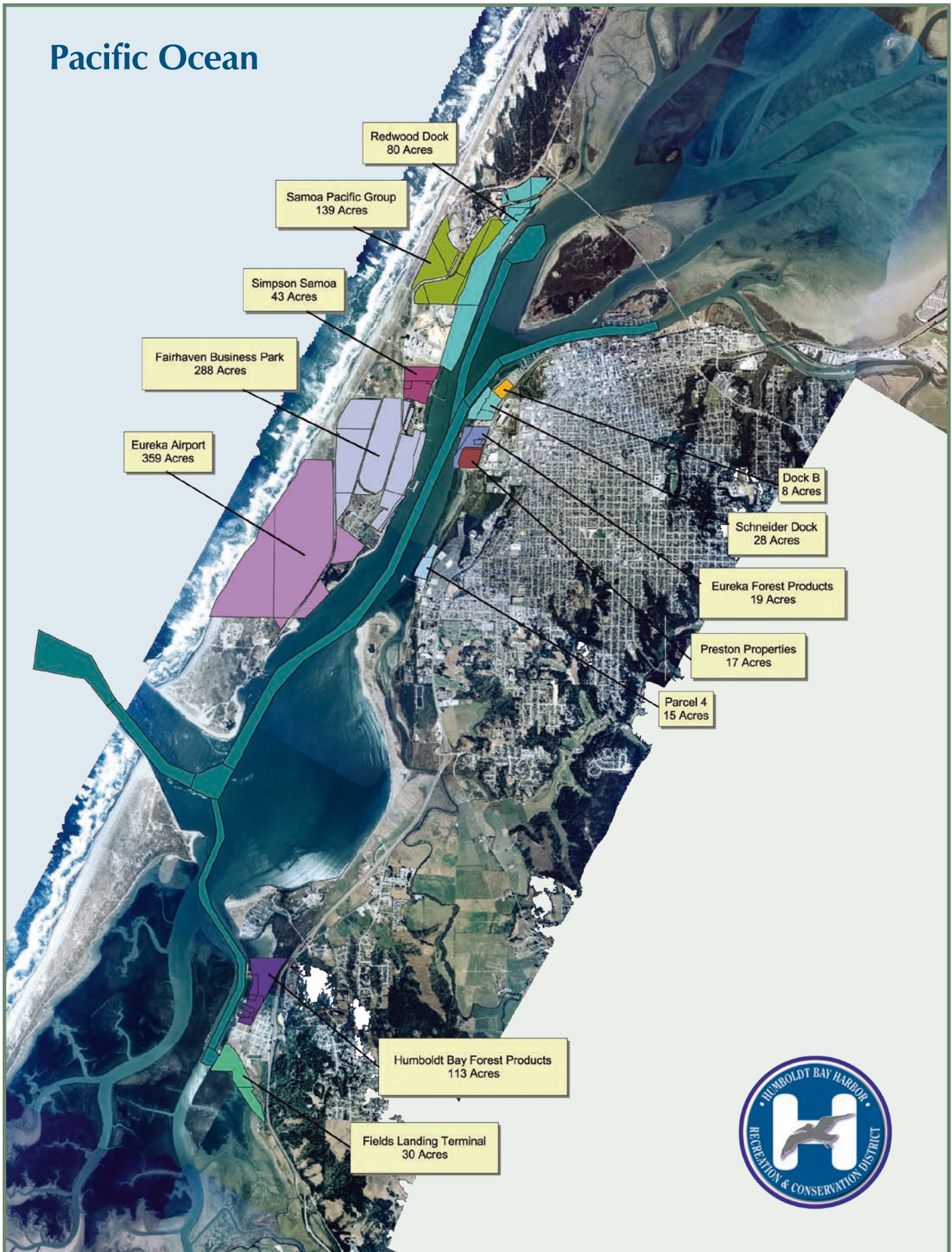


Figure 2-2: Port of Humboldt Bay Marine Terminal Properties—acreages are approximate

through processes that involve public participation and environmental review, and are typically implemented through zoning regulations and use permits. Like all forms of land use, coastal industrial uses change over time, in response to market conditions, land use and environmental requirements, and other factors; however, the designations in local, adopted planning documents continue to prescribe coastal-dependent land uses for many industrially suitable locations on the Bay.

Currently, as described in more detail in the Harbor Revitalization Plan, there are a number of “key” sites and facilities for coastal-dependent industries and port-related commerce. Sixteen key sites were identified, consisting of six sites with active cargo terminals, five sites with inactive cargo terminals, and five other industrial or commercial public sites (Table 2-1).

The key sites with active cargo terminals are virtually all in private ownership; most, with the exception of Humboldt Bay Forest Products on the Fields Landing Channel, are located on the North Bay Channel. All sites are zoned appropriately for coastal-dependent or industrial uses. One site, Humboldt Bay Forest Products, is designated as a Foreign Trade Zone;<sup>4</sup> the others could be eligible to receive that designation. All sites are located on, or have access to, the Northwestern Pacific Railroad line or spur.

Several of the key sites with inactive cargo terminals are in public ownership by the City of Eureka (Dock B waterfront parcels) or by the District (Redwood Dock waterfront parcels and Fields Landing Terminal waterfront parcels; the latter site does include an active boat repair facility and yard). All “inactive” sites are zoned appropriately for coastal-dependent or industrial uses. Dock B/Balloon Track, Fields Landing Terminal, and Redwood Dock are designated as a Foreign Trade Zones; the others could be eligible to receive that

<sup>4</sup>Foreign Trade Zones are secure areas that are physically within the United States but are considered outside the jurisdiction of U.S. Customs. Foreign Trade Zone No. 248 is sponsored by the City of Eureka, and is located on four designated sites: Site 1 – Dock B (City-owned, 7.1 acres); Site 2 – Samoa Peninsula (City-owned, 320.8 acres; Harbor District-owned, 66 acres); Site 3 – Fields Landing (privately owned, 62.3 acres; Harbor District-owned, 19 acres); and Site 4 – Eureka-Arcata Airport in McKinleyville (County of Humboldt, 50 acres).

designation. All sites are located on, or have access to, the Northwestern Pacific Railroad line.

The “other” category of key sites is a set of miscellaneous properties that are either active or inactive; the City of Eureka owns some of all of the parcels at each site. Two sites (Humboldt State University Boating Instruction and Safety Center and Commercial Street) are located on the Inner Reach of the Eureka Channel; one site (Halvorsen/City) is located just beyond the Inner Reach; and the other two sites are located on the North Bay Channel. Of the five sites, the City Airport Property at nearly 350 acres (not including mitigation and recreation areas) is by far the largest site. The six-parcel Commercial Street-C Street Docks Site includes Coast Oyster Company, Pacific Choice Seafoods, and several City-owned parcels. Parcel 4, another City parcel, is undeveloped. The City Airport Property is designated as a Foreign Trade Zone; the others could be eligible to receive that designation. All sites are located on, or have access to, the Northwestern Pacific Railroad line or spur.

#### 2.2.4 Marine Transport and Cargoes

As described more fully the Harbor Revitalization Plan, total port traffic on the West Coast overall has grown by 150 percent over the past decades; the growth in containerized cargo traffic greatly exceeds all other cargo types. Containerized cargo and automobile shipments are particularly important to ports with positive growth trends, such as the Southern California ports. Regarding other types of cargoes, bulk cargoes and general break-bulk cargo have grown slightly in recent decades, while lumber and forest products have declined by more than 50 percent.

The loss of forest product exports and domestic shipments has affected all ports from Humboldt Bay north to Washington. Historically, outgoing cargo from Humboldt Bay consisted almost exclusively of forest products exports, such as wood chips, wood pulp, lumber, and logs. Export demand has fluctuated over the years. In more recent decades, various circumstances have lessened production and output by the North Coast timber industry, with the result



**Table 2-1. Key Coastal-Dependent Sites, Humboldt Bay.**

Sites with Active Cargo Terminals	Sites with Inactive Cargo Terminals	Other Industrial, Commercial, and Public Sites
<ul style="list-style-type: none"> <li>• Schneider Dock</li> <li>• Eureka Forest Products (Sierra Pacific)/Preston Properties</li> <li>• Chevron Terminal</li> <li>• Humboldt Bay Forest Products</li> <li>• Simpson Samoa Chip Export Dock</li> <li>• Fairhaven Terminal</li> </ul>	<ul style="list-style-type: none"> <li>• Dock B/Balloon Track</li> <li>• Phillips Petroleum (formerly Tosco)</li> <li>• Fields Landing Terminal Area</li> <li>• Redwood Dock Site</li> <li>• Pulp Mill Dock</li> </ul>	<ul style="list-style-type: none"> <li>• Halvorsen/City of Eureka Sites</li> <li>• Humboldt State University Boating Instruction and Safety Center</li> <li>• Commercial Street/C Street Docks</li> <li>• Parcel 4 (City of Eureka)</li> <li>• Eureka Airport Property</li> </ul>

(Source: Modified from the *Port of Humboldt Bay Harbor Revitalization Plan*, 2003)

that, after helping to spur a peak in Humboldt Bay waterborne commerce in 1991, wood products exports have generally been on the decline, and lumber exports are nearly non-existent.

Today, the incoming cargo to Humboldt Bay includes unprocessed logs from New Zealand and Canada, as well as imported wood chips. Overall, according to the Harbor Revitalization Plan, for all commerce flowing through Humboldt Bay facilities, exports (which are declining, but still dominated by forest products) and domestic receipts (e.g., refined petroleum products and woodchips) are currently the dominant cargoes in waterborne commerce in Humboldt Bay (Table 2-2).

Marine transport of goods also has been affected by changes in the shipping industry (Harbor Revitalization Plan 2003; HCAOG 2004). Larger, deep-draft vessels are becoming more common for moving cargo via the Pacific Ocean shipping lanes; while these vessels have higher cargo capacities, they also require deeper and wider channels and turning basins. An assessment by the Army Corps of Engineers in 1995 of the feasibility of deepening and widening of Humboldt Bay<sup>5</sup> found navigation concerns in two areas: (1) safety and efficiency, including that the North Bay Channel depths did not allow for the efficient movement of deep draft vessel commerce, and (2) deep-draft vessels that called at Humboldt Bay had vessel design drafts that were constrained by the existing channel depths. The

<sup>5</sup>U. S. Army Corps of Engineers Final Feasibility Report and Environmental Impact Statement/Report for Navigation Improvements.

purpose of the Humboldt Bay Channel Deepening Project in 2000 was to address these conditions.

### 2.2.5 Port-Related Services

Associated with port activities are a number of related commercial services, including tug boat and harbor pilot services, stevedoring, and longshoremen. Tugboat service is provided by several companies, including Knutson Towboat Company, Brusco Tug & Barge, and Mark’s Tugboat Company.

The Humboldt Bay Harbor District provides expert pilotage for vessel arrivals, departures, and moves within the harbor. The District requires that all foreign vessels and U.S. flagged vessels navigating Humboldt Bay, not sailing under a coastwise endorsement issued by the U.S. Coast Guard, except vessels under 300 gross tons, are required to use a pilot holding current licenses for Humboldt Bay.

Stevedoring services in Humboldt Bay are provided by Stevedoring Services of America (SSA Marine) and Marine Terminals Corporation (MTC).<sup>6</sup> The International Longshore and Warehouse Union (ILWU) supplies manpower for on- and off-loading assistance. Currently no dockside cranes are in use on Humboldt Bay, and vessels use on-board cranes to load and off-load cargo.

<sup>6</sup>Stevedores contract with a vessel’s owner, representative, or agent or with the owner of a vessel’s cargo to load or unload the vessel in port, typically serving as a liaison between the vessel and the longshoremen who perform the actual cargo handling.



**Table 2-2. Summary of Cargo & Operation by Terminal (Revised 2005).**

Terminals	Channel Location	Cargoes & Operations
• Schneider Dock	North Bay/Eureka Channel, south of downtown Eureka	Multi-purpose utility dock; intermittent berthing of non-cargo vessels, including Coast Guard, cruise boat and marine environmental/safety
• Eureka Forest Products (Sierra Pacific)/Preston Properties	North Bay Channel, south of downtown Eureka	Multi-purpose forest products dock; inbound log barges; outbound woodchip barges; occasional inbound lumber barges
• Chevron Terminal	North Bay Channel, south of downtown Eureka	Bulk refined petroleum products; dedicated ocean barge every 7 to 8 days
• Humboldt Bay Forest Products	Fields Landing Channel, Fields Landing	Import logs; approximately 20 to 35 inbound log barges per year
• Simpson Samoa Chip Export Dock	North Bay/Samoa Channel Samoa Peninsula	Bulk woodchip exports
• Fairhaven Terminal	North Bay Channel, North Spit	Fairhaven: containerized and/or break-bulk wood pulp exports from Evergreen Mill

(Source: *Port of Humboldt Bay Harbor Revitalization Plan*, 2003)

*Fields Landing Channel, South Bay*



### 2.2.6 Landside Transportation Considerations

The market competitiveness of any port depends to a considerable extent upon efficient connections to inland areas by truck and rail transportation modes. These connections are critical factors in determining the long-term, economic well-being of a port. The Harbor Revitalization Plan addressed Humboldt Bay’s “transportation competitiveness” as part of a market opportunity analysis for the harbor. Port-related transportation issues for Humboldt Bay have also been addressed in a number of other studies by the District, County of Humboldt, Humboldt County Association

of Governments, City of Eureka, and advisory and trade groups, including the California Marine and Intermodal Transportation System Advisory Council.

Humboldt Bay’s transportation competitiveness is limited by a number of economic and geographic conditions that do not constrain other potentially competing ports, including the area’s relative remoteness and rugged topography. In terms of rail transport, the Northwestern Pacific Railroad line, which formerly served Humboldt Bay, has been out of service since 1996 after the line washed out at several points in the

Eel River canyon. The line was closed by Federal Railroad Authority in 1998. Since that time the North Coast Railroad Authority (NCRA), the current owner of the line, has pursued state and federal funding and support for restoring service on the line; major right-of-way, track, station and yard, service, and environmental cleanup improvements are needed.<sup>7</sup> The NCRA has made some progress in restoring service on the south end of the 300-mile line; reopening the line north of Willits depends on the availability of state and federal funds, a number of agency and environmental approvals, and stabilization of the line through highly unstable geological materials along the northern route.

Humboldt Bay's competitive range by truck is also limited. The Harbor Revitalization Plan identifies a truck-competitive "hinterland" that includes a relatively small area bounded approximately by Medford and Klamath Falls, Oregon, on the north, Redding on the west, and Willits on the south. Beyond that area, truck shipping rates are generally lower to competing ports.

Truck competitiveness to and from Humboldt Bay is further limited by truck length restrictions that do not apply at competing ports. The trucking industry uses longer trailers of 53 to 56 feet in length to help cut costs and improve efficiency. California currently allows trucks with 53-foot trailers to operate on the National Network and terminal access routes throughout the state. Currently, however, Humboldt County has truck restrictions on all state highways entering the county from the north, east and south, and no portion of Humboldt County (or Trinity County) is served by truck routes meeting federal interstate truck length guidelines. In addition, truck routes in all directions to and from Humboldt Bay currently do not meet California legal truck length requirements, which allow a king-pin-to-rear-axle (KPR) length on semi-trailers of up to 40 feet. Advisory routes at three locations limit KPR length in and out of Humboldt Bay to 32 feet or less: on CA 299 to the east at Buckhorn Summit, to the south on U.S. 101 at Richardson Grove, and to the north on U.S. 101 nine miles north of Trinidad (Harbor Revitalization Plan 2003; HCAOG 2004).



*North Bay Pacific Oyster long-lines*

Improvements to the east side of the Buckhorn grade have been identified by various studies as potentially providing the greatest travel time reduction and benefit to truck transport to and from Humboldt Bay on State Route 299 corridor; however, this project would be expensive and require major environmental reviews. CalTrans has considered approximately \$120 million in Buckhorn Summit improvements that would remove the Advisory Route restrictions and allow California legal truck lengths connecting to I-5 at Redding; additional improvements at about six locations along CA 299 would raise the route to Federal interstate STAA standards (Harbor Revitalization Plan 2003; HCAOG 2004).

## **2.3 Harbor-Related, Non-Cargo Activities**

In addition to port-related functions discussed above, other commercial, non-cargo activities also rely on Humboldt Bay. These other uses are described separately from port activities in this subsection mainly as a convenience for discussion; these activities comprise important facets of harbor-related activities with significant contributions to the local economies.

### **2.3.1 Marinas, Boat Repair Operations, and Associated Small Craft Facilities**

Humboldt Bay is served by marinas at Woodley Island, on the City of Eureka waterfront, and at King Salmon. Woodley Island Marina, owned by the District, is the largest marina in Humboldt County. The 237-slip facility is located on the 26-foot deep Inner

<sup>7</sup>See, for further discussion, HCAOG 2004.



Reach of Eureka Channel, and serves a combination of commercial fishing boats and recreational vessels. At the west end of the marina is an approximately 200-foot dock for larger vessels, such as the Humboldt State University marine research vessel and a Coast Guard patrol boat. The Woodley Island Marina facility also provides a work and storage areas, hoist and forklift services, restaurant, ships chandlery, offices, laundry, and restroom facilities. The island has also become home to the region's National Weather Service facility.

The Eureka Public Marina (also known as the "Boat Basin" or "Small Craft Harbor") is a 134-slip facility, owned by the City of Eureka and located near downtown on the 26-foot Outer Reach of Eureka Channel; the Eureka Public Marina serves a combination of local and visiting recreational vessels and commercial fishing boats. King Salmon Marina, Johnny's Marina and RV Park, and E-Z Landing are located just north of Fields Landing on the 26-foot deep Fields Landing Channel; these privately owned and operated facilities are used by recreational vehicles, seasonal commercial fishing boats, and pleasure craft.

Humboldt Bay is served by one small boat/ship repair facility. The Fields Landing Boat Yard is a self-serve facility provided by the District at Fields Landing Terminal. The District provides the haul-out and launch service and the individual vessel owners arrange for repair work at the site; the facility includes a 150-ton capacity travel lift. The Eureka Boat Yard was a small, privately owned facility located on Samoa Peninsula south of Samoa Pacific Chip Export that formerly also provided repair work on a seasonal basis.

Two areas in Humboldt Bay provide locations for small-parcel marine commercial and industrial uses, as identified in the Harbor Revitalization Plan. In this capacity, they serve as "incubator" sites for small industry to develop. The approximately 8-acre "Fields Landing Small-Parcel Site," located on the Fields Landing Channel between Humboldt Bay Forest Products and Fields landing Terminal, encompasses seven parcels, formerly home to Vita Sea Corporation and Eureka Fisheries. These parcels are now owned

by Humboldt Bay Forest Products. The "Samoa Peninsula Small-Parcel Site" is located on Samoa Peninsula between the Simpson Samoa Chip Export Dock and the Simpson/Fairhaven Terminal Property. The approximately 9-acre site encompasses almost 40 parcels, including residential, boat repair, mariculture, and other uses.

### 2.3.2 Commercial Fishing

Commercial fishing, and a number of occupations and facilities related to commercial fishing, has long been an important part of the tradition, culture, lifestyle, and economy of the Humboldt Bay area. In the 1950s, there were approximately 500 commercial boats in the Bay, and fish canneries in Old Town Eureka, King Salmon and Fields Landing were highly productive; in 1953, the Tom Lazio Fish Company processed 1.1 million pounds of crab (Times Standard 2004). In more recent times, commercial fisheries have been impacted by habitat loss and degradation and by over-fishing; the industry has also been adversely affected by restrictions of fishing areas and seasons. Fishery-related landings in Humboldt Bay have declined from 20 million pounds in 1990 to under 8 million pounds in 2001 (Harbor Revitalization Plan; District information).

Currently, approximately 220 registered commercial vessels list Eureka as home port and over 500 vessels from other West Coast ports use the bay's facilities annually (HCAOG 2004; District information). Commercial fishing facilities are concentrated at Woodley Island Marina, along the Eureka waterfront from the Eureka Public Marina to the foot of J Street, and at Fields Landing. The fishing fleet is based at Woodley Island Marina, the City Marina, and, to a lesser extent, at King Salmon Marina in South Bay.

The two types of fishing boats generally used in Humboldt Bay are trollers and trawlers.<sup>8</sup> Trollers, typically under 50 (often 30) feet in length, deploy multiple individual lines to catch salmon; larger trollers may fish for albacore tuna in deeper ocean waters. In season, trollers often set crab pots to catch Dungeness

<sup>8</sup>There is, in addition, a limited herring gillnet fishery within Humboldt Bay, with six permit-holders but only one operator who regularly fishes for herring.



*Eureka waterfront tug Ranger, circa 1910*

crab. An estimated salmon fleet of 75 commercial boats remain active; this number is supplemented during salmon season by large numbers of recreational boats that generally fill the marinas. Trawlers generally range from 45 to 80 feet in length and carry large net spools on their sterns. These boats pull nets along the seafloor at depths of 250 to 3,500 feet to catch various types of groundfish. Many trawlers have been bought out with federal funding to reduce fishing impacts on the groundfish fishery.

According to the Harbor Revitalization Plan, a “strong core group of approximately 200 commercial fisher people (sic) based in Humboldt Bay continue to make their living from the harvesting of fish for human consumption and research.” In addition to the Humboldt Bay-based fleet, the Bay provides a safe haven for the Pacific-based albacore tuna fleet when weather conditions force them to harbor. The albacore tuna fleet makes use of the Bay on an annual basis; these boats generally tie up at the Eureka Public Marina and Woodley Island Marina.

Pacific Choice Seafoods is the major remaining fish-processing facility in operation on Humboldt Bay;

other fish buyers include Carvalho Fisheries, Caito Fisheries, and Humboldt Seafood Unloaders. Some processing facilities have gone out of business or been bought up by the larger companies. Pacific Choice, the Bay’s largest processor, is located on the Inner Reach of the Eureka Channel at the City of Eureka owned EDA-funded fish plant. The City-owned facilities, at the foot of Commercial Street in Eureka, include a fish processing plant with area for a second plant, a ship’s chandlery, and a fueling facility (HCAOG 2004). Groundfish, tuna, salmon, Pacific pink shrimp, and Dungeness crab are among the most important commercial species.

The Harbor Revitalization Plan also notes the following:

“Although the Humboldt Bay fishery has declined in recent years, the industry remains an important part of Eureka’s economy. Diversification efforts have succeeded in bringing people and other businesses closer to the water, but they have contributed to a sense among the commercial [fishing industry] that it is subject to displacement. The City of Eureka has been actively pursuing a common [fish products] marketing and support center to be built at the



foot of C Street, west of the recently completed boardwalk. ...

“The foot of C Street is currently zoned by the City as for waterfront commercial uses. This zoning designation is appropriate for the [proposed fish products] center but does not ensure against encroachment by other permitted uses such as restaurants and water-oriented retail. The current zoning is a concern to fishermen as they have seen tourist-oriented activities force out commercial activities on other waterfronts. This [Harbor Revitalization] study’s findings are that completion of the [fish products] center should be a high priority of the City and other supporting agencies, and that serious consideration be given to zoning that will protect [fishing industry] activities against further encroachment.”

### 2.3.3 Mariculture

With good water quality, a healthy estuarine environment, and sheltered tidal substrates, Humboldt Bay provides an excellent environment for shellfish mariculture. The Bay’s mariculture industry consists of shellfish farming, primarily oysters but also clams; both seed and adult oysters are produced. Approximately 74,240 gallons of oysters were harvested from Humboldt Bay in 2002. The District exercises primary local jurisdiction over mariculture activities in Humboldt Bay; other agencies that may also be involved in directly or indirectly regulating mariculture include the U. S. Army Corps of Engineers, the California Department of Fish and Game, the California Coastal Commission, the North Coast Regional Water Quality Control Board, the State Lands Commission, the California Department of Health Services, the City of Arcata, and the City of Eureka.

Various methods are used for shellfish farming, as described in more detail in the Harbor Revitalization Plan and other sources.<sup>9</sup> The “Rack and Bag” method uses steel reinforcing bar (“rebar”) racks placed into the sandy or muddy substrate, and plastic mesh bags

<sup>9</sup>See, for example, Conte, Harbell, and RaLonde 1994 & 1996. Oyster Culture – Fundamentals and Technologies of the West Coast Industries. Western Regional Aquaculture Center Publication Numbers 94-101 and 6-96 Addition.

containing oyster stock are attached to the racks. Another method is the Floating Upweller System (or “FLUPSY”), which is a porous mesh raft that holds the seed stock. Oyster “longlines” are another suspension method where oysters are grown along ropes supported above the intertidal substrate. Manila seed clam mariculture generally is conducted using floating, anchored rafts. Ground culture methods, involving harvesting of cultured oysters by hydraulic dredge, were typically used in the past. In the past five years, a variety of off-bottom techniques, particularly longlines, have become the primary method of oyster mariculture used in Humboldt Bay, and hydraulic dredging has been permanently discontinued.

Coast Seafoods Incorporated, the largest mariculture company on Humboldt Bay, uses Humboldt Bay for oyster and clam cultivation, providing fresh and canned shellfish to local and foreign markets. Coast Seafoods holds title to approximately 561 acres of Humboldt Bay tidelands, and it leases another 3,385 acres from the District and the City of Eureka, for a total of approximately 3,946 acres, all in Arcata Bay. The actual amount of area in production at any given time is much less, however; the operational area has varied from 500 or 600 acres in the past to about 300 acres currently. Coast Seafoods currently uses a variety of “off-bottom culture” methods, primarily longlines (Army Corps 2003).

Other mariculture companies operating in Humboldt Bay include North Bay Shellfish, Emerald Pacific Seafoods, Aqua-Rodeo Farms, Humboldt Bay Oyster Company, and Kuiper Mariculture. These companies conduct a variety of activities – including shore-based tanks, rack-and-bag, longlines, FLUPSY, and floating work platforms – in areas of the Bay from the Mad River Slough to Fields Landing. Kuiper Mariculture and North Bay Shellfish, for example, use mariculture rafts in the Mad River Slough Channel area. North Bay Shellfish sells its products locally; Kuiper is a seed supplier for both domestic and international markets. Humboldt Bay Oyster Company produces oyster seed and market oysters – including “single oysters” for the half-shell market and other specialty uses – for

customers all along the West Coast. Humboldt Bay Oyster Company uses rafts in the Mad River Slough for the nursery stage of production; seed oysters are then moved to the North Bay and grown in mesh bags strapped to rebar racks. Various scientific studies related to mariculture and the environment have been conducted in recent years in cooperation with mariculture companies, including studies related to eelgrass, salmonids, and water-quality issues.

The Harbor Revitalization Plan also notes the following:

“The aquaculture industry in Humboldt Bay is an independent, thriving business community. Its current needs include continued water quality improvement, rapid transport access to markets (throughout the U.S., North America, and Europe) and a dedicated work area for independent shellfish farmers. Such a work area would include a waterfront building with dock access to water; covered areas for harvesting and packaging; tanks for larval settings; and storage for gear and supplies. A 3-4,000 square foot building on a two-acre parcel would be adequate to serve existing independent shellfish farmers with some room for moderate growth....

“Humboldt Bay shellfish farmers need recognition from their community that their industry is important, and continued consideration of their requirements as other Bay planning efforts move forward.”

## 2.4 Harbor Revitalization

This Harbor portion of the Humboldt Bay Management Plan is based in part upon – and incorporates recommendations from – the Port of Humboldt Bay Harbor Revitalization Plan, a technical study completed for the District, the County of Humboldt, and the City of Eureka in 2003. While keeping the port “vital” is among the ongoing objectives of the District, the vision is updated and renewed periodically by studies such as this Harbor Revitalization Plan. This chapter of the Plan highlights some of the main findings and recommendations of the Revitalization Plan in terms of Humboldt Bay’s advantages and limitations, priority market opportunities, and recommendations for utilization of key port sites.

### 2.4.1 Advantages and Limitations

The Revitalization Plan identified a number of core competitive advantages for the Port of Humboldt Bay, including: large waterfront industrial sites; natural resource availability (forest products, bulk aggregates, rock, fresh water); unique tourism surroundings and attractive downtown waterfront areas; marine science and environmental base (including Humboldt State University’s marine science program); and “livability” – the positive qualities of the Humboldt Bay area that could attract new industries.

With respect to the large waterfront sites, the Revitalization Plan specifically noted that “large waterfront industrial sites on deep water ... are a rarity and, thus, a significant advantage for Humboldt.” The plan identified three particular sites in excess of 200 acres that are all located on the 38-foot shipping channel: the publicly-owned City airport site, the privately-owned Simpson site, and the District-owned Redwood Dock (Simpson-Samoa) site, all located on the Samoa Peninsula.

The key disadvantages at Humboldt Bay identified by the Revitalization Plan were: small local market size, and difficult inland transportation access. The plan noted that the limited size of the population and economic base in Humboldt’s natural “hinterland” area are a clear disadvantage in attracting traditional marine cargo business. In addition, the local area is primarily a producing region, generating little inbound freight for consumption. As discussed above, Humboldt Bay area’s limited inland rail and truck access is also a significant disadvantage; if rail service is restored, it would aid marine-dependent industrial opportunities where adequacy of rail service is needed to compete.

### 2.4.2 Priority Market Opportunities

According to the Revitalization Plan, the most promising opportunities for the Port of Humboldt Bay Harbor are in the following areas:

- Marine-dependent industrial projects,
- Niche dry and liquid bulk cargoes,
- Tourism and marine science,
- Aquaculture and commercial fishing,



- Boat building and vessel repair, and
- Forest products.

Marine-dependent industrial opportunities are essentially manufacturing facilities requiring a major marine shipping component, either to bring in raw materials or to ship out finished products. Humboldt’s advantages are the availability of large sites on Samoa Peninsula with access to the 38-foot channel, relatively low cost land, labor, and livability. Dry bulk cargo opportunities include the shipment of bulk aggregates and rock to the Northern California construction market. Liquid bulk cargo opportunities were identified in liquefied natural gas (LNG) and export water.

For marine-dependent uses in general, the District supports port-related functions for Humboldt Bay, according to its legislative mandate; in this support, the District must also take into account its obligations with respect to conservation and recreation. The Revitalization Plan provides a perspective indicating that some forms of liquid bulk and solid bulk commodities may be economically desirable in the future operations of the Port of Humboldt Bay; however, land-use approval authority for coastal-dependent areas and uses around the Bay rests primarily with other agencies. With respect to LNG development, a preliminary proposal in 2004 to develop an LNG terminal met with considerable public opposition, and the proposal was withdrawn. In implementing the Humboldt Bay Management Plan, the District will continue to balance the variety of (sometimes competing) uses of the Bay’s waters, as it is mandated to do.

Aquaculture (mariculture) was seen to be a growth industry with relatively low investment requirements; the excellent shellfish farming conditions in Humboldt Bay suggest that the region has a good opportunity to build on its competitiveness in this area (the relatively higher transportation costs notwithstanding). Possible tourist and marine science activities – such as a public aquarium, cruise dock, Naval vessel museum, and marine science center – were also found to be potential opportunities, particularly if approached as a “synergistic cluster.” The study found some merit in the opportunity

of attracting a boat builder to Humboldt Bay.

Existing import and export forest product terminal handling activities should continue to be supported and monitored for potential new opportunities; the potential for a coastal forest products barge service or rail-on-barge service warrant monitoring and further investigation; and the needs of commercial fishing should continue to be supported.

According to the Revitalization Plan, Humboldt’s basic weaknesses – in the areas of local market size, lack of proximity to a large metropolitan market, and limited inland truck and rail access – are major competitive disadvantages for cargo handling activities, including containers, automobiles, break-bulk steel, fruit, and project cargoes. The study found that these markets should be given the lowest priority.

### 2.4.3 Recommended Strategy and Utilization

The Revitalization Plan considered two future scenarios, first with restored rail service, and under current conditions without rail service. The plan recommended involving public investment in bulk and marine-dependent industrial dock facilities: “These strategies target the harbor activities most justified by the market in terms of their overall attractiveness and the Port of Humboldt Bay’s competitiveness.”

According to the Revitalization Plan:

“[B]y pursuing public investment in bulk and marine-dependent industrial dock facilities, the Harbor District can play a vital role in attracting and securing new harbor opportunities with an appropriate level of risk. Because these types of facility developments tend to be deal driven and long-term in nature, direct participation in their development by the Harbor District, City of Eureka or County of Humboldt, or the application of port-issued, tax-exempt industrial development bonds, could provide a valuable service while assuming a reasonable business risk.

“The scenarios that include a public general cargo terminal are not recommended because they are not supported by the market analysis and they



*Levee breach*



*Chip barge—Humboldt Bay Forest Products*  
(Photo by John Powell)



*Eland departs with Nehalem dredge*

involve an unreasonably high level of risk. Almost all of the markets that would be involved in public general cargo terminal operations were identified as unattractive in the prioritization analysis, and Humboldt Bay was found to be uncompetitive in most of them as well. The ‘build it and they will come’ nature of public general cargo terminals, combined with the short contract terms common in the trade, high customer leverage, and intense port competition, would result in excess capacity and a level of risk that is not commensurate with the limited market opportunity available.

“The scenarios that involve no public investment in marine facilities are also not recommended. Based on the potential bulk cargo and marine-dependent industrial opportunities that could be available, and their deal-driven nature, a ‘no public investment’ strategy is likely to be too passive and provide too little public stimulus to result in success.

“As to the rail conditions, a strategy of supporting restoration of the NCRA rail line but preparing for the continuation of no rail service is recommended. The availability of rail service will no doubt enhance the marine-dependent development strategy and the two should be coupled when promoting the Port’s needs with state and Federal agencies and representatives. However, there is no certainty that rail service will be funded and restored in the foreseeable future. Therefore, the District should continue to periodically explore the feasibility of coastal barge feeder services as an alternative to rail.”

Finally, the Revitalization Plan identified certain marine uses for a number of key or priority sites for each market segment. These recommendations are summarized in Table 2-3.



**Table 2-3. Summary of Recommended Sites for the Priority Markets (Modified 2005).**

Marine Use	Recommended Sites
• Marine-Dependent Industrial Opportunities	Eureka Airport Property Redwood Dock
• Bulk Aggregates/Rock	Fields Landing Terminal (southern origin) Pulp Mill Dock (northern origin)
• Liquid Bulks	Evergreen Pulp Mill Dock Fairhaven Terminal
• Marine Science/Tourism	Dock B/Balloon Track Property
• Aquaculture Facility	Fields Landing Small-Parcel Site (current needs) Parcel 4 (long term growth)
• Boat Building & Vessel Repair	Fields Landing Terminal (public site) Schneider Property (private site)
• Commercial Fishing Work Area	Commercial Street/C Street Dock
• Coastal Lumber Barge Service	Eureka Forest Products/Sierra Pacific (open storage) Fairhaven Terminal (covered storage)
• Rail-on-Barge Service	Fields Landing Terminal Humboldt Bay Forest Products Schneider Dock
• Forest Products Cargo Handling	Eureka Forest Products/Sierra Pacific (chips, logs lumber) Fairhaven Terminal (pulp, plywood, veneer) Humboldt Bay Forest Products (logs, lumber) Simpson Chip Export dock (chips)



*Silva towing a two masted schooner in Arcata Bay—circa 1890*

## 2.5 REFERENCES

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