US Army Corps of Engineers ®
San Francisco District

Regulatory Division, Eureka Field Office
601 Startare Drive, Box 14
Eureka, CA 95501

SAN FRANCISCO DISTRICT
PUBLIC NOTICE

PROJECT: Coast Seafoods Company, Humboldt Bay Shellfish Aquaculture, Permit Renewal and Expansion Project

PUBLIC NOTICE NUMBER: 2002-26912N
PUBLIC NOTICE DATE: March 6, 2017
COMMENTS DUE DATE: April 6, 2017
PERMIT MANAGER: L. Kasey Sirkin TELEPHONE: 707-443-0855 E-MAIL: l.k.sirkin@usace.army.mil

1. **INTRODUCTION**: Coast Seafoods (POC: Greg Dale, 707-442-2947), 25 Waterfront Drive, Eureka, CA 95501, Coast Seafoods, through its agent, Plauche & Carr (POC: Robert Smith, 206-436-0615), 811 First Avenue, Suite 630, Seattle, WA 98104 has applied to the U.S. Army Corps of Engineers (USACE), San Francisco District, for a Department of the Army Permit to obtain continuing authorization for their existing 297 acre aquaculture operations (Attachment 1) and to expand their current aquaculture practices into an additional 256 acres of intertidal areas within Humboldt Bay (Attachment 2). The expansion of existing aquaculture would take place in two phases, with Phase 1 expanding existing operations by 165.2 acres and Phase 2 providing an additional 90.8 acres of aquaculture operations expansion. In addition, there would be placement of approximately 4 acres of fill, in the form of rack and bag mariculture, placed in Other Waters of the U.S. within Humboldt Bay, in the City of Eureka, Humboldt County, California (Attachment 3). This Department of the Army permit application is being processed pursuant to the provisions of Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*), and Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*).

2. **PROPOSED PROJECT**:

Project Site Location: The site is located in Humboldt Bay's North Bay and Central Bay in Humboldt County, California. Subtidal and intertidal Mariculture sites in North Bay are located north of the Highway 255/Samoa Bridge and west of Highway 101 (Attachment 4). A subtidal Floating Upwelling System (FLUPSY) is located in Central Bay southwest of Indian Island.

Project Site Description: Humboldt Bay is a multi-basin, tidal lagoon with limited freshwater input. Humboldt Bay encompasses approximately 62.4 square kilometers (15,400 acres) at mean high tide in three geographic segments: South Bay, Central/Entrance Bay, and Arcata Bay (North Bay). South Bay is largely included in Humboldt Bay National Wildlife Refuge with the exception of commercial docks and public boating access at Fields Landing on the east shore of the bay. Shallower, subtidal channels continue northward into Arcata Bay. These subtidal sloughs include Mad River Slough Channel, East Bay Channel, Eureka Slough, Fay Slough and Arcata channel, and the secondary and tertiary channels that connect with the larger subtidal channels. Two freshwater streams drain into brackish and tidal sloughs in the South Bay: Salmon Creek into Hookton Slough and Elk River into Elk River Slough. In the North or Arcata Bay: Freshwater Creek drains into Freshwater Slough, Rocky Gulch and Washington Gulch both drain directly into the bay as does Jacoby Creek; Jolly Giant Creek drains into Butcher's Slough near the Arcata marsh; and Janes Creek drains into McDaniel Slough.

As California's second-largest natural bay and the largest estuary on the Pacific Coast between San Francisco Bay and Oregon's Coos Bay, Humboldt Bay is a complex ecosystem and valuable resource for California and the nation because of its natural resources, aesthetic appeal and recreational opportunities, ecological services, economic benefits, and vital transportation links. Visitors and Humboldt County residents value Humboldt Bay for its natural and anthropogenic attributes. Humboldt Bay biota is diverse and ecologically important locally and

globally, with both local fisheries, including oyster farms, and habitat for long-distance shorebird and waterfowl migrants. The Humboldt Bay area hosts more than 400 plant species, 300 invertebrate species, 100 fish species, and 260 bird species, including those that rely on the bay as they travel the Pacific Flyway. Humboldt Bay is also important in the life cycles of commercially and recreationally important fish species, including shellfish, crustaceans, and finfish. Portions of the diked former tidelands around Humboldt Bay, particularly in the Arcata Bottoms, are used for agriculture, primarily livestock grazing.

The project area is located within intertidal and subtidal habitat of North Bay and Central bay, and current and proposed culture is primarily located within intertidal habitat of North Bay. Intertidal areas include substrates exposed during lower tides and submerged during higher tides. The tidal range in North Bay is approximately -2.0 feet (ft) to +8.5 ft mean lower low water (MLLW). Intertidal area in North Bay have substrates that are comprised mainly of silty mud with some sand. The total surface area of North Bay ranges from 2,941 acres at MLLW to 8,525 acres at MHW, and the total volume ranges from 38,914 acre-ft at MLLW to 68,910 acre-ft at MHW.

The areas surrounding Coast's operations are dominated by tidal flats, tidal channels, and open water. The entire project area is zoned "Natural Resources – Wetland" by Humboldt County. The Harbor District's Humboldt Bay Management Plan classifies the area as "Combined Water Use – Mariculture". Surrounding area are either classified "Combined Water Use – Mariculture" or "Bay Conservation" by the Harbor District and zoned "Natural Resources – Wetland" by Humboldt County.

Project Description: The applicant proposes to obtain continuing authorization for their existing 297 acre aquaculture operations and expand their aquaculture practices into an additional 256 acres of intertidal areas within Humboldt Bay. The expansion of existing aquaculture would take place in two phases, with Phase 1 expanding existing operations by 165.2 acres, and Phase 2 providing an additional 90.8 acres of aquaculture expansion (Attachment 2). In addition, there would be placement of approximately 4 acres of fill placed in Other Waters of the U.S. within Humboldt Bay, in the City of Eureka, Humboldt County, California (Attachment 3). Some of the existing culture area would be removed (fallowed) to provide mitigation for the expansion area. See the mitigation section below for more information on the proposed mitigation measures.

Coast Seafoods proposes the following activities would occur during Years 0 to 3: extending regulatory approvals for the existing 300 acres of shellfish culture; increasing shellfish culture by adding eight culture bins, resulting in a total additional surface area of 72 square feet; diversification of the species cultivated to include Pacific and Kumamoto oysters; and expansion of 165.2 acres of intertidal culture. The 165.2 acre expansion would include the addition of 89.2 acres of 10-ft spaced, double hung cultch-on-longline, 72.0 acres of basket-on-longline with alternating spacing of 9-ft and 16-ft spaces between longlines, and 4 acres of rack and bag cultch or basket-on-longline in areas that do not have eelgrass, while maintaining a 25-ft buffer from existing eelgrass beds. Activities proposed to occur during years 3 to 6 include the following: Reporting monitoring results of at least 3 years of data to resource agencies; determining whether Phase II can be implemented and Phase I permit conditions are met, or entering into further consultation with resource agencies; and expansion of up to 90.8 acres of intertidal culture using either 10-ft spaced, double-hung cultch-on-longline or basket on longline at alternating 9-ft and 16-ft spacing culture methods.

FLUPSY

Shellfish seed transported from the hatchery would be matured in the FLUPSY. A FLUPSY is a raft-like structure designed to upwell nutrient-rich water through shellfish seed bins to provide a consistent source of nutrients to growing shellfish (Attachment 5). The FLUPSY is constructed of aluminum with poly-encapsulated floats with a submerged trough containing a paddle wheel, and the seed bins are screened according to NMFS and CDFW guidelines (i.e., 1,200 µm screens). The trough is surrounded by 16 open wells containing upwelling bins. FLUPSY activities include maintaining the seed by rinsing off

bins with water, and seed grading based on size. The proposed project would add 8 bins (approximately 72 square feet of overwater structure) to the existing FLUPSY structure. The FLUPSY is located on the west side of the entrance channel south of the Simpson wood chip loading dock in Fairhaven, 200 yards from the shoreline in 20-ft of water. The FLUPSY is tied to the dock at the Eureka Boat yard.

Intertidal Culture Methods

Long-line culture utilizes cultch set with spat attached, collectively referred to as seed. Coast places the bags of seed in the intertidal nursery on Gunther Island (Attachment 6). Coast stacks the seed on pallets in order to prevent the bottom of the stack from becoming silted in, which suffocates the seed. After a period of time, which varies due to seasonal conditions (usually 2-3 months) the seed is removed from the nursery in small batches daily and is brought to the processing plant. At the plant, individual pieces of cultch are braided into the long-line rope and rebagged. Once the cultch has been braided into the rope and bagged it is put into the bay and placed on either a bed or on Coast's Arcata Channel nursery to await planting. This process, called beach hardening, is needed to allow the seed to gain size and strength prior to placing it out on the oyster plots for further growth. The seed is allowed to beach harden for 3 to 8 months depending on time of year, growth, and condition of the seed. Once the cultch is of an appropriate size, there are two intertidal culture methods that would be used in North Bay, cultch-on-longline and basket-on-longline.

Cultch-on-longline culture: Kumamoto oysters and Pacific oyster seed is grown using the cultch-on-longline method. This is the primary method of culture currently used by Coast in approximately 283 of 300 acres in North Bay, and would continue to be the primary method in the expansion area. The existing culture (283 acres) is spaced at either 2.5-ft spaced, single-hung longlines or five rows of 2.5-ft longlines with a 5-ft gaps between groups of five lines (Attachment 7). Cultch-on-longline in the proposed expansion area would use 10-ft spacing between individual lines in a double-hung design (89.2 acres in Phase I and 0 to 90.8 acres in Phase II)(Attachment 8). See attachments for diagrams of this configuration.

There are three main activities that occur for cultch-on-longline operations: (1) planting, (2) Maintenance, and (3) harvesting.

Planting: Planting activities would occur during both low tides (when the area is exposed) and high tides (when the area is inundated). A crew of six Coast staff plant the cultch-on-longlines when the tide is low enough to access a plot on foot. Prior to planting oyster seed, notched PVC stakes are placed in 100-ft rows. The planting crew gather enough bags from the nursery during the preceding high tide using a skiff and a hook and then plant during the subsequent low tide. The longlines are strung through notches on top of the PVC stakes, which suspends the oyster seed approximately 1-ft above the bay bottom for single-hung and 8 inches above the bay bottom for double-hung methods.

Maintenance: There is a monthly inspection of each culture plot. An inspection involves one or two people either walking a small portion (up to 0.5 acres out of 10 acres or 5%) of the plot at low tide or floating over the area at high tide to make sure that the lines are in the notches and suspended above the bay bottom. Lines that have collapsed are restored, and unnatural debris is removed as opportunities arise.

Harvesting: Cultch-on-longline beds are harvested after 18 to 36 months, depending on market conditions, growth conditions, and other factors controlling consumer demand. There are two methods for harvesting the longlines. The first method uses a longline harvester (boat). The longline harvester positions a scow (barge) over the longline bed at high tide. Individual lines are pulled onto the floating scow either by hand or by means of a hydraulically operated roller. The second method, hand picking, involves placing round, 20-bushel tubs on the bed at high tide using a scow. The tubs are then filled at low tide by hand. The picking crew cuts the longline into manageable, single clusters and places them in the picking tub. A floating ball is attached to each tub, and at high tide the scow returns and lifts the tubs out of the water onto the scow deck. The oysters are dumped on the deck of the scow, and the tub placed back on

the shellfish bed to be refilled at the next low tide or collected and returned to the plant if there is not a suitable low tide for harvesting. PVC stakes are left in place for the next planting cycle.

Basket-on-longline: Kumamoto oysters are also grown using the basket-on-longline methods. Basket-on-longline lines in existing culture area (11.2 acres) use 3-ft spacing between groups of three lines with an open row of 20-ft between each group of three (Attachment 9). Basket-on-longline lines in the proposed culture area (72.0 acres in Phase I and 0 to 90.8 acres in Phase II) would have alternate spacing of 9-ft and 16-ft.

Planting: Basket-on-longline use baskets that hang from a monofilament line suspended off the bottom using 2-inch schedule 80 PVC pipe. The basket area is approximately 24 inches by 10 inches by 6 inches and is held on the line with plastic clips. The lines are positioned approximately 2.5-ft to 3.0-ft off the bottom so that the baskets are roughly 1-ft from the bay bottom when hanging down during low tides.

Maintenance: Maintenance would be similar as that used for cultch-on-longline culture, with monthly visits to inspect plots either during a low tide when exposed or during a high tide when inundated.

Harvesting: Basket-on-longline beds are harvested every 4 months and sorted for size. The baskets are taken off the longlines at either low tide (when exposed) or high tide (when inundated). PVC stakes are left in place for the next planting cycle. Oysters are sorted at the processing facility and either sold on the half shell market or placed back in the baskets for additional growth.

Rack-and-bag: Rack-and-bag culture would be used to grow Kumamoto oysters and Pacific oysters. Approximately, 4 acres of rack and bag type aquaculture activities are proposed to be installed under the expansion project (Attachment 3). The racks would be spaced 3-ft apart with an open row of 10-ft between each group of three. Any rack and bag culture placed within the expanded area would be placed at least 25-ft away from existing eelgrass beds.

Planting: The oysters would be grown as "singles," meaning they are not attached to any structure such as shells or to each other (i.e., they are "loose" in the bags). Rack-and-bag culture would use polyethylene mesh bags and rebar frames. Each rebar frame would be 3-ft by 12-ft and support 3 to 6 bags attached to the frame via industrial rubber bands. Each bag would be seeded with oysters and placed on the frames.

Maintenance: The bags would be inspected up to 3 times per week and flipped approximately once every 2 weeks. All maintenance would occur during a low tide. There is no activity that could occur by boat.

Harvesting: It takes 1 to 2 years for the seed to grow into oysters of market size and then the bags of oysters would be harvested by hand (lifted from the racks into a skiff), processed, and brought to market.

Subtidal Culture Methods:

The subtidal culture methods used by Coast include clam rafts and wet storage floats. Proposed changes to the clam rafts would include a diversification of species being cultured on the rafts to include Manila clams, Pacific oysters, and Kumamoto oysters. There are no proposed changes to the wet storage floats.

Clam Rafts: Manila clam seed is matured in clam rafts (Attachment 10). The clam rafts are located along the west side of the entrance to Mad River Slough Channel opposite Bird Island, approximately ½ mile north of the Samoa/Hwy 255 bridges. Rafts are attached to steel navy anchors in approximately 20-ft of water and accessed by skiff. There are 30 floating rafts arrayed in two groups of fifteen, each 12-ft wide by 20-ft long. Rafts are constructed from aluminum and use polyethylene encapsulated Styrofoam for floatation. Each raft has 24 tray wells containing seed nursery trays in stacks of 20 suspended in each well. The rafts would contain Manila clam seed, not grown further in Humboldt Bay but are shipped elsewhere for grow-out and harvest, and would diversify into growing oysters in trays. The activities at the clam rafts include placing and removing stacks of trays daily, cleaning, and routine maintenance. Twice each year, anchors and ground tackle are examined and repaired as necessary by divers using scuba, skiffs and an oyster barge.

Wet Storage Floats: The wet storage floats are in the

″cut across″ channel between Bird Island and Mad River. The floats are anchored in approximately 20-ft of water in a series of four 20-ft by 20-ft square wood frames, with 60-ft between floats or rafts in the same array or smaller (Attachment 11). Bags of mature oysters recently harvested and ready for distribution to wholesalers are temporarily placed in the floats to maintain the oysters' fresh condition. Bags of oysters are placed and removed by hand and transported by boat.

Maintenance and Vessel Operations: Coast maintains a fleet of 6 small watercraft and three larger vessels to operate and maintain its existing culture footprint in North and Central bays. Four skiffs operate throughout the bay, with each skiff making an average of one 4-hour trip per day, five days per week. Coast also maintains two small scows, which each make an average of two 4-hour trips per day, 5 times a week. Coast also operates three larger vessels: a clam boat, a Kumamoto oyster harvester, and a harvest scow for hand-picked oysters. The Project would result in an increase of approximately 17 trips per week throughout the bay in total boat use (including skiffs, scows, and larger vessels). When working on beds, larger vessels are anchored in deeper channels outside of tidal flats and eelgrass habitat. Smaller skiffs are anchored at the edge of the oyster plot being worked. Where possible, anchors are dropped in channels without eelgrass. All vessels use Danforth anchors: skiffs use 10 pound anchors and harvest vessels have 25 to 50 pound anchors; heavier anchors are carried for safe anchoring in the event of a breakdown. Anchor chains are approximately 7-ft on skiffs and 33-ft on harvest vessels. The frequency of visits to any one shellfish plot varies by the culture method employed and the type of activity being conducted. Visits to cultch-on-longline plots are the least frequent. Outside of the harvest and planting cycles, which occur every 1.5 to 3 years, depending on culture method, species of oyster, and other variables, cultch-on-longline plots receive an average of one visit per month for maintenance and inspection. Basket-on-longline plots are visited more frequently to repair baskets, grade seed, and perform other tasks. Typically, crews are out on different areas of each basket-on-longline plot on an almost daily basis; however, a single longline within a basket-on-longline bed would typically be visited once every 4 months. Visits to rack-and-bag culture areas and subtidal rafts are more frequent, occurring daily in most cases.

Basic Project Purpose: The basic project purpose comprises the fundamental, essential, or irreducible purpose of the project, and is used by USACE to determine whether the project is water dependent. The basic project purpose is commercial shellfish production in Humboldt Bay, California.

Overall Project Purpose: The overall project purpose serves as the basis for the Section 404(b)(1) alternatives analysis, and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project, while allowing a reasonable range of alternatives to be analyzed. The overall project purpose is a comprehensive plan for management of Coast Seafoods Company's owned and leased lands in Humboldt Bay, California and expansion of existing shellfish farm to meet the increasing demand for shellfish products.

Project Impacts: 553 acres of Section 10 and 404 waters would be affected by the proposed project work (Attachment 12). Potential long-term temporary and permanent adverse impacts from the proposed project would primarily be through the suppression of eelgrass habitat in areas where aquaculture gear is located. Potential long-term temporary and permanent adverse effects to eelgrass can occur from the placement of aquaculture gear, shellfish products (e.g., cultch), and aquaculture activities which can lead to shading, desiccation, and mechanical abrasion. These activities may affect the spatial extent and density of eelgrass beds in the immediate vicinity of culture and is influenced by the type and concentration of gear.

Eelgrass is patchy or continuous in 287 acres out of 298.7 acres (96%) of existing intertidal culture areas (Attachment 13). Phase I of the Project, which includes a 165.2-acre expansion of oyster culture, is calculated to result in a range of impacts to eelgrass density that equates to a reduction between 5.0 acres

and 28.8 acres within the proposed Phase 1 expansion area. Phase II of the Project includes up to a total of 90.8 acres of cultch-on-longline or basket-on-longline culture within those parts of the proposed expansion area not planted in Phase I. Phase II of the Project is calculated to result in a range of impacts to eelgrass density that equates to a reduction between 1.3 acres and 15.7 acres if all culture was expanded using 10-ft double-hung, cultch-on-longline and between 4.3 acres and 14.6 acres if all culture was expanded using 9-ft/16-ft basket-on-longline culture. Under both phases of the proposed project, cultch-on-longline would be spaced at 10-ft intervals and double-hung. Basket-on-longline would be alternating 9-ft and 16-ft spacing between lines.

The impact acreages presented are the accumulation of eelgrass density reduction assuming standard densities of 50 and 80 shoots per m2 for patchy and continuous eelgrass beds, respectively. These values do not represent entire areas that have no eelgrass, but rather changes to density spread throughout the expansion area. There would be a total of between 3.0% to 18.5% eelgrass density reductions within the Phase I culture plots. Additionally, there would be a 1.6% to 19.0% eelgrass density reduction for cultch-on-longline and 5.1% to 17.7% for basket-on-longline culture within the Phase II expansion area. In terms of the overall overlap with actual gear, Project expansion may reduce eelgrass functions equivalent to up to 25% of the expansion area, the equivalent of up to approximately 64 acres (or approximately 1.7% of 3,818 acres of eelgrass in Humboldt Bay), which would be mitigated through total removal of existing culture, which is anticipated to facilitate eelgrass regrowth in prioritized areas important for ESA-listed species and Pacific herring. See the mitigation section for more on this.

A reduction in eelgrass biomass from the addition of longline culture would likely contribute to short-term reductions of floating rafts and wrack. The presence of longlines could affect the movement of floating materials and cause some material to become entangled in lines or transition from floating to submerged detached eelgrass. However, it is anticipated that most eelgrass material would be detained temporarily and would continue to travel to the areas where material is either concentrated into rafts by surface currents or becomes a component of beach wrack. Eelgrass that remains entangled in the lines would contribute to food resources and detritus in that location.

In terms of the overall overlap with actual gear, Project expansion may reduce eelgrass functions equivalent to up to 25% of the expansion area, the equivalent of up to approximately 64 acres (or approximately 1.7% of 3,818 acres of eelgrass in Humboldt Bay), which would be mitigated through total removal of existing culture, which is anticipated to facilitate eelgrass regrowth in prioritized areas important for ESA-listed species and Pacific herring. There are also several significant controlling variables independent of the Project that determine the quantity, quality, and spatial extent of floating eelgrass cover, including seasonal eelgrass abundance as well as wave and storm events during tidal stages which expose eelgrass to erosive forces. Therefore, potential effects to listed species and designated critical habitat associated with floating eelgrass rafts and the creation of wrack are considered minor and within the natural variability of the system.

Trampling of Eelgrass: In addition to the above described effects, potential adverse effects can result from trampling of eelgrass during planting and harvesting activities. The potential for trampling impacts is related to the frequency of activities within a culture plot. The amount of time that an area is exposed during low tide influences the amount of time that any one area can have physically disturbing activities from ground-based access. Overall, there is a range of 12% to 38% exposure during the year, with rack-and-bag having the highest level of exposure because it occurs at the highest tidal elevation but also representing the smallest amount of proposed culture (4 acres out of the 256-acre expansion area). Cultch-on-longline requires approximately 1 day per month for each 10-acre area to monitor and repair lines, and 2 days per acre every 18 to 36 months to plant and harvest. Visits typically occur during low tides and last for approximately 4 hours, although plots are also accessed during high tide when the area is inundated (accessing by boat occurs on approximately 44% of the cultch-on-longline operations). Harvest activities,

including the delivery of bushel tubs by boat and the collection of cultch-on-longline oysters by people accessing the site on foot from vessels moored in adjacent channels, would occasionally include the placement of bushel tubs, which are connected to floats and would be collected during the next high tide up to 12 hours later. Basket-on-longline culture is visited more frequently than cultch-on-longline. This culture method is visited on an almost daily basis, but crews are not in the same parts of the bed each day; instead, they work through a bed such that an individual line is visited on average once every 4 months (average rate of 12 days per acre). Once basket lines are established, they do not need to get replanted in the same way that cultch-on-longline does. Although the length of time it takes to grow oysters is comparable using each method, harvesting of baskets more commonly occurs (60%) when the culture plot is inundated using a boat to access the baskets, and the majority of operations in general can be done when the area is inundated (80%). Furthermore, baskets are rotated every 4 months, however baskets are moved by unclipping them from one line and clipping them to another which requires limited ground access and does not require re-installation of lines. Apart from planting and harvest, most activity is simply a visual inspection of culture equipment where staff can survey large amounts of equipment without physically accessing all parts of the plot.

In addition to frequency, the intensity of activities in one location varies by longline spacing. For the existing culture (2.5-ft spacing for cultch-on-longline and 3-ft spacing for basket-on-longline), there is less distance between longlines and so activities are concentrated in a smaller area. The mitigation areas are comprised of areas where culture would be fully removed (or fallowed). These include 42.0 acres during Phase I and up to 22.7 acres during Phase II. All planting, harvest and maintenance activities would cease in the mitigation areas.

Trampling represents impacts to a small portion of a plot on an 18- to 36-month cycle, and the majority of impacts are related to planting and harvest activities when the area is accessed by foot during a low tide, which is a small portion of the year just based on when plots are exposed. Overall, recovery from these events would occur within a relatively short time frame and before the next disturbance event within any one location. In general, disturbance events associated with aquaculture operations in eelgrass are considered infrequent and of short duration relative to the time that the beds remain submerged. Therefore, potential effects to listed species and designated critical habitat associated with trampling of eelgrass habitat are considered minor and within the natural variability of the system.

Other mechanisms of effect, such as shading and other processes associated with lines, would likely reduce eelgrass density within existing eelgrass beds. However, this reduction is not expected to be large enough to change how fish use the habitat or to affect the ability of the bed to persist from year to year. Prey organisms in the sediment tend to be more closely linked to sediment characteristics than to other habitat features although epibenthic species on the surface of structured habitat is dependent on the presence of structure. The proposed action reduces eelgrass density, but does not exclude eelgrass from within the longline plots.

Sediment Distribution and Tidal Circulation: The presence of cultivation structures can influence hydrodynamic conditions (wind-waves and currents), which can then modify sedimentation rates and seabed topography. North Bay is characterized by strong tidal circulation, with relatively higher tidal currents than other parts of Humboldt Bay because of the large tidal prism. Transport of sediments, either into or out of culture sites, is more likely to occur during storm events because of wind-waves re-suspending sediments that can be more easily transported. Sediment transport processes in the areas of culture on the west side of North Bay (short fetch) would be most affected by tidal currents combined with short waves during low water. Whereas areas of culture on the east side of North Bay (longer fetch) would be most affected by tidal currents combined with longer waves in areas where they are submerged at mean and higher water elevations. On the tidal flats of estuaries, such as where the culture sites are located, the sediments tend to be finer grained and contain a large fraction of silts and clay evidenced in the grain size analysis from Humboldt Bay. Although these silts and clays can be

easily suspended into the water column, they settle out faster than sand particles of a similar size as the result of a process called flocculation.

The proposed Project includes a continuation of 2.5-ft spaced cultch-on-longline within an estimated 218 acres, and 11.2 acres of existing basket on longline, 5.8 acres of other activities (e.g., intertidal nursery, FLUPSY, wet storage floats, and clam rafts), and the expansion of 10-ft spaced double-hung cultch-on-longline within 89.2 acres in Phase I, 9-ft and 16-ft alternating spaced basket-on-longline in 72.0 acres in Phase I, 90.8 acres of basket-on-longline and/or cultch-on-longline in Phase II, and low density of rack-and-bag structures (4 acres). The existing culture is part of the environmental baseline and appears to have reached equilibrium in terms of changes to sediment dynamics over the last 10 years. The removal of culture at the tighter spacing would likely improve sediment dynamics. The proposed expansion at 10-ft spaced cultch-on-longline and 9-ft/16-ft spaced basket-on-longline is not expected to significantly affect hydrodynamic conditions or sediment deposition patterns in North Bay. For most of existing and proposed culture, that is or is proposed in eelgrass habitat, oyster longlines would be similar to conditions exhibited in eelgrass beds. Therefore, the effects to sediment distribution and circulation from the proposed Project are expected to be minor and within the natural variability of the system.

All culture structures have vertical cylindrical support posts, which would directly interact with the bottom boundary layer causing an abrupt change in hydrodynamics and localized changes in bedload and suspended load sediment transport. This change can result in erosion of sediment around the post (scour). Scour around cylindrical structures is proportional to the diameter of the structure, speed of flow, and mean grain size distribution. In the case of scour around the PVC posts for culture structures on tidal flats, post diameters and grain size are small and, therefore, the depth and extent of scour would be localized (e.g., a few inches away from the post). Although the combination of eelgrass and longline aquaculture may slightly reduce flow rates beyond either activity alone, placing longlines in eelgrass is not likely to significantly change sediment dynamics beyond the natural conditions exhibited in eelgrass beds.

Gear Related Impacts: Aquaculture gear that is not maintained or that is dislodged by waves and storms can interact with the bay bottom and potentially impact eelgrass. Because Humboldt Bay is a dynamic environment, aquaculture gear is subjected to multiple stressors and needs to be regularly inspected and repaired. Monthly and post-storm inspections of aquaculture plots would occur to ensure that gear is properly maintained. Gear-related impacts to eelgrass would thus be short-term and corrected within a maximum of one month.

Shell Accumulation: The physical alteration of the elevation of the seabed by shell accumulation can also alter the hydrodynamics by decreasing the water depth. Effects on seabed topography can also occur at sites where cultivation structures are not only high density (less porous), but aligned perpendicular to tidal currents. The goal of gear placement for existing culture has been to align gear to minimize sediment accumulation or scouring. This may include gear being placed parallel to tidal currents, to the extent practicable, although currents change seasonally. While the proposed expansion is also working to minimize potential shading impacts by using a north-south orientation, there would also be a balance to make sure that sediment accumulation or scouring does not become a mechanism of impact to eelgrass. The physical alteration of the elevation of the seabed by shell accumulation can also alter the hydrodynamics by decreasing the water depth. Regardless, studies in locations with active transport (such as Humboldt Bay) do not indicate that changes to sediment distribution and tidal circulation from the proposed types of shellfish aquaculture primarily proposed by the Project would result in large-scale changes to seabed topography, although minor changes have likely occurred.

Habitat Fragmentation: The placement of longline aquaculture (i.e., basket-on-longline and cultch-on-longline) within patchy and continuous eelgrass beds does not appear to result in habitat fragmentation, and is not expected to increase this risk with the proposed expansion of oyster culture. Overall, species use of oyster longlines is similar to use of eelgrass habitat, and, therefore, would not result in effects associated

with fragmentation reported in the literature for terrestrial systems. Potential effects to listed species and designated critical habitat associated with fragmentation of eelgrass habitat are considered minor and within the natural variability of the system.

Overwater Structures: The existing culture operations proposed to continue under the Project include a total of 1.0 acre of overwater structures. This is comprised of approximately 0.04 acres of FLUPSY, 0.04 acres of wet storage floats, and 0.93 acres of clam rafts. The proposed project makes some limited changes to the clam rafts, not in terms of additional overwater structure, but by changing from culturing clams to oysters and/or clams. The only new overwater structure proposed by the Project are those associated with the expansion of the existing FLUPSY. There would be an increase of 8 bins in the existing FLUPSY located within Central Bay, which is an increase of approximately 72 square feet (ft^2) or 0.002 acres of additional overwater surface area. While structure can provide increased prey resources and refugia from predation, it can also increase the number of predatory fish associated with the added structure and result in direct impacts from the consumption of fish. The existing amount of overwater structure (1.0 acres) and proposed expansion of overwater structures (0.002 acres) is a minor amount of overlap with the subtidal habitat in either Central or North bays, and is not likely to result in additional impacts to resident or migrating species due to the increase in area or potential to attract ambush predators. Therefore, potential effects to listed species and designated critical habitat associated with overwater structures are considered insignificant and discountable.

Unstructured Habitat: There are certain species that tend to avoid structure while there are other species that tend to be structure-oriented. A review of the existing literature that evaluates activities similar to the proposed activity (i.e., off-bottom culture) does not support the conclusion that shellfish aquaculture adversely impacts fish and wildlife. Recent literature indicates that effects to fish are often neutral or positive. Adding structure to mudflat habitat in North Bay can provide an increase in prey resources along the near channel habitat where many species appear to forage (discussed in more detail below). However, the majority of the Project does not occur adjacent to channel habitat, so this benefit is likely small. There are other considerations related to changes to mudflat habitat that would be discussed in the species-specific sections below. Based on the amount of unstructured habitat present in North Bay (up to 3,535.5 acres), the amount of habitat affected is a small portion of what is available (0.8% combining both existing and proposed culture). That does not mean that there is no change to these habitats, only that the change is limited to a relatively small component of North Bay and the changed area would be used in a similar manner to other habitat types present (i.e., a transitional area from unstructured to structured habitat). Similarly, the net change for the entire Project in terms of added gear is a small proportion of the cultured plot itself. For example, approximately 26% of a 2.5-ft spaced culture plot has gear (assuming full grow-out), 8% of a 10-ft spaced cultch-on-longline plot has gear, 7% of a basket-on-longline plot has gear, and 17% of a rack-and-bag plot has gear. Note that this represents in-water gear (including the shellfish products), and only a fraction of that area is in the sediment itself, which is the point of off-bottom culture. The net change in gear would be a minor change (3.0 acres or 0.6% out of a total 491.3-acre culture area), which includes the off-sets provided by removing gear associated with 2.5-ft single-hung longlines.

Proposed Mitigation: Avoidance of potential impacts to eelgrass and other sensitive habitat, where possible, is the priority of the proposed mitigation plan. Avoidance includes project siting, longline spacing, and culture practices. In areas where avoidance is not possible, Coast is proposing to implement various conservation measures that would minimize direct and indirect impacts to biological resources.

Because the existing culture area is considered fully mitigated, the reduction of eelgrass impacts represented by the proposed mitigation measures would serve as mitigation for the expansion area. This action would include the removal of 42.0 acres of existing culture on Sand Island during Phase I, and up to 22.7 acres of existing culture on Sand Island, Arcata Channel, and Gunther Island during Phase II

(Attachment 2). This would result in complete removal (or fallowing) of existing culture and existing activity, eliminating potential sources of eelgrass suppression. In addition, the full value of ecological functions provided by eelgrass would be realized because there would no longer be any potential reduced use of intertidal habitats due to the presence of structure or activities.

The Project has taken a Comprehensive Management Plan approach to protecting eelgrass within the context of broader ecosystem needs and management objectives as described in the NMFS California Eelgrass Management Plan (CEMP). The goal of comprehensive management plans (CMPs) is to protect eelgrass resources within the context of broader ecosystem needs and management objectives. Eelgrass provides many ecological functions, however two areas within Coast's footprint in Humboldt Bay have been identified as having potential heightened importance for resources in addition to eelgrass. These are the East Bay Management Area (EBMA) and areas in northeast Arcata Channel. It has been suggested that the EBMA is an area that may support the highest herring spawning frequency, spawning coverage (m2) and escapement (tons) in Humboldt Bay). The northeast portion of Arcata Channel is an area where large numbers of green sturgeon detections have occurred adjacent to Sand Island, including portions of Sand Island that are emergent during most tides and attracts bird and recreational use.

Part of the Phase I action would be to remove 42.0 acres of the existing 282.7 acres of cultch-on-longline culture (Attachment 2). This would leave approximately 218 acres at the 2.5-ft spacing (including areas with 2.5-ft spacing and areas with 2.5-ft spacing and 5-ft gaps) and the additional 11.2 acres of basket-on-longline culture at the 3-ft spacing with 20-ft gaps. The areas prioritized for removal were identified through a consultative process with representatives of natural resource agencies to identify sites where removal would provide the greatest benefits to the Humboldt Bay ecosystem, and, where possible, reduce use conflicts.

The mitigation previously provided for the existing culture operations were calculated based on the assumption that impacts to eelgrass would be long-term, and that the mitigation would provide appropriate off-setting benefits. Although the long-term impacts were assessed as part of a 10-year permit application, long-term and permanent impacts create the same mitigation requirements, and, in assessing both impacts and mitigation, the previous application process did not focus on the 10-year permit period. Indeed, mitigation associated with eelgrass impacts from the previous culture cycle are continuing to provide ecological benefits to ESA listed species in Humboldt Bay. Based on the assumption that mitigation is currently compensating for the existing culture, removing 42.0 acres of existing 2.5-ft spacing cultch-on-longline culture would compensate for potential reduction in eelgrass function during the Phase I expansion.

The benefits from removal of culture activities are expected to accrue upon the removal of culture gear and cessation of associated culture activity. As further described below, eelgrass can quickly recover in areas where aquaculture gear is removed, particularly when the gear removed is associated with longline culture as compared to dredge harvesting. Therefore, the removal of gear and activity is sufficient to achieve mitigation benefits. The CEMP recommends a 1:1 ratio for mitigation associated for eelgrass density reductions, in that for every one acre-equivalent of functionality lost, one is replaced. However, the Project does not result in 100% loss of eelgrass density or function. The mitigation ratio is based on an assumed impact of 25% to habitat function, and is used to estimate mitigation needs for the expansion of oyster culture in Humboldt Bay regardless of eelgrass presence. This estimate is significantly more conservative than the estimated eelgrass density reductions based upon the available science described in Section 4.2.2 above. Based upon a projected 25% impact to habitat function, the removal of each acre of cultch-on-longline is predicted to offset eelgrass function impacts associated with the expansion using a basic ratio of 0.25:1.0 mitigation acreage to expansion acreage.

Based on a 165.2-acre expansion of oyster culture in Humboldt Bay and a removal of 42.0 acres of existing culture, Phase I of the Project is calculated to result in a net neutral or potentially beneficial overall

impact to eelgrass function. During Phase II an expansion of up to 90.8 acres and a removal of up to 22.7 acres of existing cultch-on-longline culture (based on the same mitigation ratio) is similarly expected to result in a net neutral or potentially beneficial overall impact to eelgrass function.

In terms of recovery potential, there is a range of 2 to 6 years of recovery for areas that are totally devoid of eelgrass, especially within softer substrates. However, there is considerable revegetation of eelgrass within 1 year when patches of eelgrass are retained in the disturbed recovery area. This last example is likely the most similar to the Project, which proposes to remove oyster longlines in areas that already contain eelgrass. Therefore, mitigation was assumed to occur at the same rate as impacts, within a 1 to 2-year period.

The Phase II expansion would not proceed without at least 3 years of monitoring data confirming that Phase I expansion and mitigation activities are consistent with predictions and that impacts associated with expansion were fully compensated with the proposed mitigation. If both phases are developed, the total remaining existing culture would be 235.3 acres and the total expansion would be 256.0 acres, resulting in a total area of culture of 491.3 acres.

This approach includes the calculation of predicted reductions of eelgrass density within expansion areas, to be confirmed through monitoring, and targeted restoration of intertidal habitats through the removal of 2.5-ft spaced longlines in priority areas. Mitigation success will be judged based on the complete removal of existing aquaculture gear and oysters and subsequent recovery of eelgrass within the mitigation areas. Removal of aquaculture gear may result in short-term impacts to eelgrass due to trampling effects, and sites prioritized for removal of gear have not been selected to maximize eelgrass recovery, but instead to maximize use of eelgrass ecological functions by other species. Therefore, the removal of aquaculture gear and the reduction in human activity within the aquaculture plot following gear removal are mitigation metrics that will be tracked to determine whether mitigation has been successfully implemented.

Coast will evaluate eelgrass conditions within the removal areas for a period of up to 5 years. Vegetation cover will be characterized based on aerial imagery that will be classified to identify eelgrass area. Monitoring may be suspended if areas within and adjacent to removal areas show similar eelgrass conditions at Year 3. Monitoring of expansion areas is intended to facilitate impact assessment and verify that impacts to eelgrass are consistent with predictions. These predictions anticipate that average impacts to eelgrass will be between 1.6 and 19.0% decrease in eelgrass density within culture areas. To account for uncertainty, the project has assumed that eelgrass density and function may decrease by up to 25% of the total area of expansion. The assumed density reduction, which forms the basis for the proposed mitigation, is greater than the average projected density reduction provided by a survey of pertinent eelgrass literature and therefore represents a conservative estimation of projected eelgrass impacts. Success criteria that will be applied to the project include achieving minimum of 90% area and 75% density of pre-project conditions when
compared to appropriate reference sites. Monitoring design incorporates three treatment groups to be evaluated: Fallow -> Cultch-on-Longline at 10’ spacing; Fallow -> Basket-on-Longline at 9’ and 16’ alternating spacing; Fallow -> Fallow (Reference sites). Cultch-on-longline and basket-on-longline will be evaluated as separate treatments during monitoring planning and initial survey efforts. If effects from these two treatments are similar they may be combined during subsequent sampling efforts.

Eelgrass area cover will be mapped as a complete census of the study area using high resolution
aerial imagery collected during low tides during the eelgrass growing season (May-August). Imagery will be collected with a minimum of 50% overlap between images during tides lower than 0 MLLW, however will prioritize the lowest available tides. Imagery will be classified to identify eelgrass using an appropriate number of ground sample points for confirmation of habitat classification. A minimum of 100 ground observation points will be characterized for each season of aerial imagery. Eelgrass area will include those areas where eelgrass is observed plus a 0.5-meter

buffer. Ground truthing may be comprised of a combination of actual ground observations and synthetic ground observations taken from extremely low elevation UAVs (e.g., observations from 50-feet or less above ground elevation). The project area will be divided into three primary sub-areas for density observations and comparisons. These areas are: 1) South end of Bird Island; 2) Mad River, 3) southwestern portion of East Bay. expansion areas. Reference area sampling will occur Reference areas will be established adjacent to proposed between 10 and 200 meters from the edge of proposed or existing culture areas. Individual sub-areas or the entire project area may achieve performance standards for the project. If one or two, but not all three, sub areas meet performance criteria during a reporting period those sub-areas meeting performance criteria may be released from further monitoring. Eelgrass density is the number of turions per meter and will be measured using 0.25 m^2 quadrats in representative reference areas and within the expansion sites. Sample sites will be distributed randomly within each sampling area. Eelgrass may respond to elevation, exposure, substrate, site history and other context dependent factors. These factors will be tracked and reported for each sampling event and may result in post-hoc reassessment and adjustments to monitoring methods. Reference areas are anticipated to be concentrated in south end of Bird Island, Mad River, and the southwestern portion of East Bay. Sampling within expansion and reference sites will be stratified using existing bathymetry data to account for elevation with sample groups of 0 to +1 ft MLLW and +1-1.5 ft MLLW. Project areas above 1.5-ft MLLW or without eelgrass will not be monitored for eelgrass density. Samples within the same treatment group will be compared to baseline conditions to evaluate effects of treatment with adjustments based on the regional changes as observed in the reference sites using a Before-After Control Impact (BACI) design. The number of samples will be sufficient to provide test the hypothesis that eelgrass density will decrease by 25% or less with alpha = 0.2 and beta= 0.2 for one-sided t-test. The alpha and
beta values used here exceed those described in CEMP. These values have been increased to account for special conditions due to the heterogeneity associated with North Humboldt Bay and a project extending across elevation and other environmental gradients in an approximately 4300-acre study area. The number of sampling units may be increased between years if variance exceeds predictions and more sampling will economically increase statistical power. Based on the adaptive management plan for the Coast Expansion Project, Phase II will not proceed until Phase I monitoring shows that impacts are consistent with predictions for eelgrass density impacts. Phase II Expansion occurs in areas adjacent to or within areas included in Phase I and uses the same culture methods as in Phase I. Furthermore, any adaptive management measures applied to Phase I that reduce impacts to eelgrass from culture activities will also be applied to Phase II. It is anticipated that monitoring for Phase II will characterize similar levels of impact as monitoring during Phase I. Therefore, monitoring for Phase II is anticipated to end after 3 years of monitoring are completed. Three years of monitoring should be sufficient to demonstrate that eelgrass impacts are either consistent with predictions or consistent with the trajectory of Phase I expansion.

Reports for aerial observations will characterize the aerial surveys undertaken, the confidence in the classification of aerial data and any other notable observations since the last report. These reports will be distributed to agencies during reporting periods after baseline, year 3 and year 5. Ground-based density monitoring will occur at 3 and 5 years after implementation of both Phases I and II to demonstrate progress towards performance criteria. Reports will evaluate changes in both eelgrass density and area against implementation targets described above. Modifications to mitigation or expansion sites will be characterized and conditions will be assessed versus the adaptive management plan in collaboration between Coast and agency representatives. Following distribution of monitoring reports agency staff and Coast will hold meetings to review monitoring results, make recommendations for any potential changes to monitoring or project implementation and determine whether project success criteria are being achieved.

Aside from the rapid recovery of eelgrass anticipated within the mitigation areas, the Project

impacts would not occur instantaneously, as noted above. While this impact assessment has applied the same scenarios to assess impacts and mitigation activities, these scenarios are intended to reflect the long-term impacts and uplift associated with the Project. Initial impacts associated with longline placement may result in some initial loss of eelgrass function through trampling, but recovery from these activities is expected within 1 month, and the other potential impacts would occur over a 2-year period. Similarly, recovery in areas where suppression is removed is likely to result in some initial recovery and some delayed recovery. Overall, it is likely that both impacts to eelgrass and eelgrass recovery in fallowed culture areas would occur.

Project Alternatives:

No Project Alternative: Under this alternative, Coast Seafoods existing Corps permit (USACE permit #2002-26912) would expire in August 2017. Following expiration of the permit, Coast Seafoods Company would be required to remove all of their existing Mariculture operations, equipment and infrastructure from all areas of Humboldt Bay. In addition to removal of all existing mariculture operations, no expansion of mariculture operations would be proposed. Overall, the No Project Alternative would result in a decrease of approximately 300 acres of existing mariculture operations and equipment within Humboldt Bay

Alternative 1: 10 –Foot spacing Alternative: Under Alternative 1, Coast would renew regulatory approvals for its existing shellfish culture activities and add an additional 622 acres of intertidal oyster culture using 10-ft spacing between longlines. The expansion area would include up to 618 acres of 10-ft spaced, single-hung cultch-on-longline and up to 4 acres of rack-and-bag and/or basket-on-longline culture at alternating 9-ft and 16-ft spacing. Single-hung, 10-ft spaced cultch-on-longline is not expected to result in significant impacts to eelgrass resources. Coast would implement a reduced monitoring plan under Alternative 1 to verify this impact assumption and, if impacts to eelgrass were found to exceed the no-net-loss threshold of significance, would implement adaptive management. To further reduce potential impacts to eelgrass, rack and bag culture (or, if selected, basket-on-longline culture) would not be planted within 25-ft of existing eelgrass beds. In total, there would be a maximum of 26,124 cultch-on-longlines planted under Alternative 1 and up to 360 racks (or 160 basket-on-longline longlines). Coast would also seek regulatory approval to add eight new upweller bins to its existing FLUPSY, cultivate Pacific and Kumamoto oysters in its existing clam rafts, and relocate approximately 820 longlines from where they are currently planted to an area within its Harbor District Lease. Alternative 1 would not include phased implementation or compensatory mitigation.

Alternative 2: Reduced Footprint Alternative: Under Alternative 2, Coast would renew regulatory approvals for its existing shellfish culture activities and seek regulatory approval to implement the 210-acre expansion associated with Phase I of the Proposed Project. The amount of culture type within the expansion area would include 150 acres of double-hung, 10-ft spaced cultch-on-longline; 6 acres of single-hung, 10-ft spaced cultch-on-longline; 50 acres of basket-on-longline at alternate 9-ft and 16-ft intervals; and up to 4-acres of rack-and-bag and/or basket-on-longlines outside of existing eelgrass beds (25-ft buffer). Alternative 2 would also include 100 acres of mitigation within Coast's existing culture footprint and monitoring of eelgrass impacts and mitigation uplift. In total, Coast would plant an additional 12,852 cultch-on-longline and remove 6,043 cultch-on-longline from the mitigation area (a net gain of 6,719 longlines). Coast would also plant an additional 2,000 basket-on-longline and up to 360 racks/160 basket-on-longlines.

Alternative 3: Existing Footprint Alternative: Under Alternative 3, Coast would renew regulatory approvals for its existing shellfish culture activities but would not seek to permit additional intertidal culture in Humboldt Bay. As such, the environmental baseline for the Project would not change.

Alternative 4: Eelgrass Avoidance: Under the Eelgrass

Avoidance Alternative, Coast would only expand intertidal shellfish culture in areas within its existing leased and owned footprint that do not currently support dense or patchy eelgrass. The vast majority of Coast's leased and owned area is either above +1.6 MLLW, in areas occupied by eelgrass, or in subtidal and tidal areas of the bay. Coast's leased and owned area includes 673 acres of patchy eelgrass beds (17% of total footprint) and 1,478 acres of continuous eelgrass habitat (38% of Coast's total footprint).The total combined acreage occupied by subtidal or tidal areas and eelgrass is 3,013 acres, or 70% of Coast's total footprint. Approximately 149 acres of Coast's leased and owned lands do not support continuous or patchy eelgrass beds and are at tidal elevations best suited for oyster aquaculture—between -1 and +1.6 ft MLLW.

In addition to the above Alternatives, the following alternatives were considered and rejected by the applicant: 1) Basket-on-longline culture at 20-ft spacing between longlines; 2) Double-hanging cultch-on-longline using 1 PVC pipe in a "T" shape such that a longline would hang from either side of the cross-bar, with both longlines at the same height; 3) Planting cultch longlines in closely-spaced pairs (1-ft apart), with a 10-ft space separating each pair of lines; and 4) Planting cultch and basket longlines in up to 6 configurations (treatments) in Phase I of the Project.

3. **STATE AND LOCAL APPROVALS**:

Water Quality Certification: State water quality certification or a waiver is a prerequisite for the issuance of a Department of the Army Permit to conduct any activity which may result in a fill or pollutant discharge into waters of the United States, pursuant to Section 401 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1341 et seq.). The applicant has recently submitted an application to the California Regional Water Quality Control Board (RWQCB) to obtain water quality certification for the project. The applicant is hereby notified that, unless USACE is provided documentation indicating a complete application for water quality certification has been submitted to the California Regional Water Quality Control Board (RWQCB) within 30 days of this Public Notice date, the District Engineer may consider the Department of the Army permit application to be withdrawn. No Department of the Army Permit will be issued until the applicant obtains the required certification or a waiver of certification. A waiver can be explicit, or it may be presumed, if the RWQCB fails or refuses to act on a complete application for water quality certification within 60 days of receipt, unless the District Engineer determines a shorter or longer period is a reasonable time for the RWQCB to act.

Water quality issues should be directed to the Executive Officer, California Regional Water Quality Control Board, North Coast Region, 5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403, by the close of the comment period.

Coastal Zone Management: Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1456(c) *et seq*.), requires a non-Federal applicant seeking a federal license or permit to conduct any activity occurring in or affecting the coastal zone to obtain a Consistency Certification that indicates the activity conforms with the State's coastal zone management program. Generally, no federal license or permit will be granted until the appropriate State agency has issued a Consistency Certification or has waived its right to do so. Since the project occurs in the coastal zone or may affect coastal zone resources, the applicant the applicant has applied for a Coastal Development Permit.

Coastal zone management issues should be directed to the Cassidy Teufel, Senior Environmental Scientist, Energy and Ocean Resources and Federal Consistency, 45 Freemont Street, Suite 2000, San Francisco, CA 94105-2219, by the close of the comment period.

Other Local Approvals: The applicant has applied for the following additional governmental authorizations for the project: Humboldt Bay Harbor, Recreation and Conservation District Use Permit, and a Humboldt County Conditional Use Permit.

4. **COMPLIANCE WITH VARIOUS FEDERAL LAWS**:

National Environmental Policy Act (NEPA): Upon review of the Department of the Army permit application and other supporting documentation, USACE has made a *preliminary* determination that the project neither qualifies for a Categorical Exclusion nor requires the preparation of an Environmental Impact Statement for the purposes of NEPA. At the conclusion of the public comment period, USACE will assess the environmental impacts of the project in accordance with the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347), the Council on Environmental Quality's Regulations at 40 C.F.R. Parts 1500-1508, and USACE Regulations at 33 C.F.R. Part 325. The final NEPA analysis will normally address the direct, indirect, and cumulative impacts that result from regulated activities within the jurisdiction of USACE and other non-regulated activities USACE determines to be within its purview of Federal control and responsibility to justify an expanded scope of analysis for NEPA purposes. The final NEPA analysis will be incorporated in the decision documentation that provides the rationale for issuing or denying a Department of the Army Permit for the project. The final NEPA analysis and supporting documentation will be on file with the San Francisco District, Regulatory Division.

Endangered Species Act (ESA): Section 7(a)(2) of the ESA or 1973, as amended (16 U.S.C. § 1531 *et seq*.), requires Federal agencies to consult with either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) to insure actions authorized, funded, or undertaken by the agency are not likely to jeopardize the continued existence of any Federally-listed species or result in the adverse modification of designated critical habitat. As the Federal lead agency for this project, USACE has conducted a review of the California Natural Diversity Data Base, digital maps prepared by USFWS and NMFS depicting critical habitat, and other information provided by the applicant, to determine the presence or absence of such species and critical habitat in the project area. Based on this review, USACE has made a preliminary determination that the following Federally-listed species and designated critical habitat are present at the project location or in its vicinity, and may be affected by project implementation. The proposed project has been reviewed for its impacts to endangered species and their designated critical habitat. National Marine Fisheries Service (NMFS) listed threatened and endangered species and critical habitat within the project area includes: Southern DPS Green sturgeon (*Acipenser medirostris*), Southern OR-Northern CA ESU Coho salmon (*Oncorhynchus kisutch*), Northern California DPS Steelhead (*O. mykiss*), California coastal ESU Chinook salmon (*O. tshawytscha*), and Southern DPS Eulachon (*Thaleichthys pacificus*) and their critical habitat. United State Fish and Wildlife Service (USFWS) threatened and endangered species and their designated critical habitat within the project area includes: Marbled Murrelet (*Brachyramphus marmoratus*) and Western Snowy Plover (*Charadrius nivosus*) and their critical habitat.

To address project related impacts to these species and designated critical habitat, USACE will initiate informal consultation with USFWS and NMFS, pursuant to Section 7(a) of the Act. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project. To complete the administrative record and the decision on whether to issue a Department of the Army Permit for the project, USACE will obtain all necessary supporting documentation from the applicant concerning the consultation process. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project.

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA): Section 305(b)(2) of the MSFCMA of 1966, as amended (16 U.S.C. § 1801 *et seq*.), requires Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all proposed actions authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH). EFH is defined as those

waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. EFH is designated only for those species managed under a Federal Fisheries Management Plan (FMP), such as the *Pacific Groundfish FMP*, the *Coastal Pelagics FMP, and* the *Pacific Coast Salmon FMP*. As the Federal lead agency for this project, USACE has conducted a review of digital maps prepared by NMFS depicting EFH to determine the presence or absence of EFH in the project area. Based on this review, USACE has made a *preliminary* determination that EFH is present at the project location or in its vicinity, and that the critical elements of EFH may be adversely affected by project implementation. Pacific Groundfish, Coastal Pelagics, and Pacific Coast Salmon FMPs are all present within the project area. Potential adverse effects to EFH may include temporary reduction in prey resources, suppression of eelgrass habitat, loss of herring spawning areas, loss of herring eggs due to trampling or gear removal, alteration of unstructured habitat, decrease in habitat complexity, changes in the benthic community, and changes in water column phytoplankton, water column and sediment nutrients.

To address project related impacts to EFH, USACE will initiate consultation with NMFS, pursuant to Section 305(5(b)(2) of the Act. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project.

Marine Protection, Research, and Sanctuaries Act (MPRSA): Section 302 of the MPRS of 1972, as amended (16 U.S.C. § 1432 *et seq*.), authorizes the Secretary of Commerce, in part, to designate areas of ocean waters, such as the Cordell Bank, Gulf of the Farallones, and Monterey Bay, as National Marine Sanctuaries for the purpose of preserving or restoring such areas for their conservation, recreational, ecological, or aesthetic values. After such designation, activities in sanctuary waters authorized under other authorities are valid only if the Secretary of Commerce certifies that the activities are consistent with Title III of the Act. No Department of the Army Permit will be issued until the applicant obtains the required certification or permit. The project does not occur in sanctuary waters, and a *preliminary* review by USACE indicates the project would not likely affect sanctuary resources. This presumption of effect, however, remains subject to a final determination by the Secretary of Commerce, or his designee.

National Historic Preservation Act (NHPA): Section 106 of the NHPA of 1966, as amended (16 U.S.C. § 470 *et seq*.), requires Federal agencies to consult with the appropriate State Historic Preservation Officer to take into account the effects of their undertakings on historic properties listed in or eligible for listing in the *National Register of Historic Places.* Section 106 of the Act further requires Federal agencies to consult with the appropriate Tribal Historic Preservation Officer or any Indian tribe to take into account the effects of their undertakings on historic properties, including traditional cultural properties, trust resources, and sacred sites, to which Indian tribes attach historic, religious, and cultural significance. As the Federal lead agency for this undertaking, USACE has conducted a review of latest published version of the *National Register of Historic Places*, survey information on file with various city and county municipalities, and other information provided by the applicant, to determine the presence or absence of historic and archaeological resources within the permit area. Based on this review, USACE has made a *preliminary* determination that historic or archaeological resources are present in the permit area, and that such resources may be adversely affected by the project. Historic properties identified within the proposed project area include portions of Humboldt Bay. To address project related impacts to historic or archaeological resources, USACE will initiate consultation with the State Historic Preservation Officer or the Tribal Historic Preservation Officer, pursuant to Section 106 of the Act. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project. If unrecorded archaeological resources are discovered during project implementation, those operations affecting such resources will be temporarily suspended until USACE concludes Section 106 consultation with the State Historic Preservation Officer or the Tribal Historic Preservation Officer to

take into account any project related impacts to those resources.

5. **COMPLIANCE WITH THE SECTION 404(b)(1) GUIDELINES**: Projects resulting in discharges of dredged or fill material into waters of the United States must comply with the Guidelines promulgated by the Administrator of the Environmental Protection Agency under Section 404(b) of the Clean Water Act (33 U.S.C. § 1344(b)). An evaluation pursuant to the Guidelines indicates the project is dependent on location in or proximity to waters of the United States to achieve the basic project purpose. This conclusion raises the (rebuttable) presumption of the availability of a practicable alternative to the project that would result in less adverse impact to the aquatic ecosystem, while not causing other major adverse environmental consequences. The applicant has submitted an analysis of project alternatives which is being reviewed by USACE.

6. **PUBLIC INTEREST EVALUTION**: The decision on whether to issue a Department of the Army Permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the project and its intended use on the public interest. Evaluation of the probable impacts requires a careful weighing of the public interest factors relevant in each particular case. The benefits that may accrue from the project must be balanced against any reasonably foreseeable detriments of project implementation. The decision on permit issuance will, therefore, reflect the national concern for both protection and utilization of important resources. Public interest factors which may be relevant to the decision process include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

7. **CONSIDERATION OF COMMENTS**: USACE is soliciting comments from the public; Federal, State and local agencies and officials; Native American Nations or other tribal governments; and other interested parties in order to consider and evaluate the impacts of the project. All comments received by USACE will be considered in the decision on whether to issue, modify, condition, or deny a Department of the Army Permit for the project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, and other environmental or public interest factors addressed in a final environmental assessment or environmental impact statement. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the project.

8. **SUBMITTING COMMENTS**: During the specified comment period, interested parties may submit written comments to L. Kasey Sirkin, San Francisco District, Regulatory Division, Eureka Field Office, 601 Startare Drive, Box 14, Eureka, California 95501; comment letters should cite the project name, applicant name, and public notice number to facilitate review by the Regulatory Permit Manager. Comments may include a request for a public hearing on the project prior to a determination on the Department of the Army permit application; such requests shall state, with particularity, the reasons for holding a public hearing. All substantive comments will be forwarded to the applicant for resolution or rebuttal. Additional project information or details on any subsequent project modifications of a minor nature may be obtained from the applicant and/or agent, or by contacting the Regulatory Permit Manager by telephone or e-mail cited in the public notice letterhead. An electronic version of this public notice may be viewed under the *Public Notices* tab on the USACE website: http://www.spn.usace.army.mil/Missions/Regulatory.