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US Army Corps of Engineers ®
San Francisco District

SAN FRANCISCO DISTRICT

PUBLIC NOTICE

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

PUBLIC NOTICE NUMBER: 2002-26912N
PUBLIC NOTICE DATE: September 22, 2017
COMMENTS DUE DATE: October 22, 2017

PERMIT MANAGER: L. Kasey Sirkin TELEPHONE: 707-443-0855 E-MAIL: l.k.sirkin@usace.army.mil

1. **INTRODUCTION**: Coast Seafoods (Coast) (POC: Greg Dale, 707-442-2947), 25 Waterfront Drive, Eureka, CA 95501, 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 extend regulatory approvals for the intertidal and subtidal acreage it currently farms in Humboldt Bay's North Bay and Central Bay in Humboldt County, California.. In addition to requesting continuing regulatory approval for existing operations, Coast is also proposing to implement changes to existing operations. 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 1). 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 (Attachment 2). 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 areas 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 Mean High Water (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 areas are either classified "Combined Water Use – Mariculture" or "Bay Conservation" by the Harbor District and zoned "Natural Resources – Wetland" by Humboldt County.

Project Description: Coast is proposing to extend regulatory approvals for the intertidal and subtidal acreage it currently farms in North and Central Bay. Coast is also proposing to plant four test plots of intertidal longline culture to monitor and evaluate environmental impacts associated with its proposed culture methods, including double-hung cultch-on-longlines and baskets-on-longlines. After the removal and relocation of Coast's existing culture described below, the project would result in a net reduction of approximately 20.7 acres of cultivated tidelands as compared to Coast's existing footprint. Coast's total cultivated footprint would be approximately 278.6 acres of intertidal and subtidal shellfish culture, which represents approximately 6.4% of Coast's owned and leased land in Humboldt Bay (Attachment 3).

Coast is proposing the following: (1) plant 6.1 acres of 10-ft. spaced, double-hung cultch-on-longlines test plots; (2) plant 6.1 acres of test plots of basket-on-longline culture with alternating spacing of 9-ft and 16-ft spaces between the lines; (3) increase the capacity of its existing FLUPSY by adding eight new culture bins; (4) diversify the species cultivated in its existing clam rafts; (5) convert 21.1 acres of existing 2.5-ft cultch-on-longlines to baskets-on-longlines with the spacing described above; (6) relocate and convert an additional 20.7 acres of existing 2.5-ft cultch-on-longlines to baskets-on-longlines with the spacing described above; and (7) relocate and convert 8.6 acres of existing 2.5-ft cultch-on-longlines to double-hung cultch-on-longlines spaced 10 ft apart. As part of the project, Coast is proposing to remove an additional 33.7 acres of existing cultch-on-longlines. The remaining acreage within the existing operational footprint is apportioned as follows: approximately 4.8 acres utilized as a nursery area; approximately 0.04 acres utilized for the FLUPSY; approximately 0.04 acres utilized for wet storage floats; and approximately 0.93 acres utilized for clam rafts.

In total, there would be up to approximately 29,700 cultch-on-longlines and 2,300 basket-on-longline longlines planted. The number of lines authorized would be reduced from approximately 41,950 to approximately 32,000. This represents a net change reduction of 9,950 lines.

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 4). 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 the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (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 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. Coast proposes to add eight upwell bins to the existing FLUPSY system.

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 5). 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 (Attachment 6). This is the primary method of culture currently used by Coast in approximately 283 of 300 acres in North Bay. 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 gap between groups of five lines.

Future cultch-on-longline would use 10-ft spacing between individual lines in a double-hung design. Coast would grow Kumamoto and Pacific oysters using cultch-on-longline culture on a maximum of 6 new acres of test plots. Cultch-on-longline would be double-hung using 10-ft spacing. Double-hung longlines have two rows of oysters strung vertically one on top of the other, with the first (bottom) row at 8 inches above the substrate and the second (top) row at 16 inches above the substrate. Double-hung longlines are supported by a set of two polyvinyl chloride (PVC) pipes that will be set as close together as possible in the substrate. Each set of two PCV pipes is spaced 2.5 ft apart. An additional 11.0 acres of existing cultch-on-longlines would be relocated to Bird Island and Mad River and converted to double-hung, 10-ft spaced longlines. 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 (Attachment 7). Basket-on-longline lines in the 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. The future configuration of basket-on-longline lines would have alternate spacing of 9-ft and 16-ft. Coast would plant Kumamoto oysters using basket-on-longline culture on 6 acres of new test plots. An additional 20.6 acres of existing cultch-on-longlines would be converted to basket-on-longlines with the spacing described above. Third, 19.1 acres of existing cultch-on-longlines would be relocated from Sand Island and converted to basket-on-longlines, to be planted in the Mad River and Bird Island Subareas.

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 is currently used to grow Kumamoto oysters and Pacific oysters. The racks are spaced 3-ft apart with an open row of 10-ft between each group of three. There are no changes proposed to existing rack-and-bag culture areas or quantities.

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 8). 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.

Coast's array of 30 clam rafts is currently used to cultivate manila clams. As part of the project, Coast is proposing to cultivate Pacific and Kumamoto oyster seed in the existing clam rafts. There would be no change to the physical structure of the clam rafts to accommodate culture of Pacific and Kumamoto oysters.

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 9). 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: 279 acres of Section 404 and Section 10 waters would be affected by the proposed project work (Attachment 10). 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 relocation areas 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.

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 (ft2) 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.

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).

Potential long-term temporary and permanent adverse impacts from the proposed project would primarily be through the continuing 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 270.5 acres out of 279 acres (97%) of existing and proposed intertidal culture areas. The impact acreages presented are the accumulation of eelgrass density reduction assuming standard densities of 50 and 80 shoots per square meter 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.

Potential impacts may occur from the following activities: (1) continuation of existing operations on 215.6 acres of intertidal areas; (2) conversion of existing 2.5-ft spaced cultch-on-longlines to alternating 9-ft and 16-ft spaced basket-on-longlines in 20.6 acres; and (3) relocation

of existing aquaculture operations into historic aquaculture areas that are currently fallow. Potential beneficial effects may occur from the removal of 63.2 acres of existing operations from locations that are viewed to be environmentally or culturally important, and from the consolidation of existing operations into areas that are less environmentally sensitive and/or do not contain eelgrass habitat.

(1) Continuing aquaculture operations have the potential to cause suppression of eelgrass in areas where aquaculture gear is placed in eelgrass. 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, the Project may reduce eelgrass functions in up to 215.6 acres.

(2) The conversion of existing longlines at 2.5-ft spacing to basket on longlines at 9-ft and 16-ft spacing in 20.6 acres of eelgrass is anticipated to have a net overall benefit to eelgrass by decreasing the quantity of existing 2.5-ft spaced cultch on longline. However, adverse effects to eelgrass habitat and function would continue to occur in the remaining areas where longlines are not converted to a wider spacing or different type of culture. At the current configuration, 2.5-ft spaced cultch-on-longline may result in an approximate reduction of eelgrass density between 3.0 and 18.5%. Much of this reduction in density is due to the shading effect of the longlines being so closely spaced. Conversion of 20.6 acres of these areas to basket–on-longline culture methods alternating 9-ft and 16-ft spacing would provide a benefit to eelgrass in these areas, as the shading effect would be diminished by the larger spacing between the lines. Rumrill and Poulton (2003) studied eelgrass response to cultch-on-longlines at line spacing ranging from 1.5-ft to 10-ft, and found that eelgrass density and percent cover were substantially higher at wider spacing with eelgrass metrics in some 10-ft spaced plots "nearly identical to those within the adjacent control plot." Similar results are expected from conversion of existing longline beds at 2.5-ft spacing to baskets at alternating 9-ft and 16-ft spacing.

(3) The relocation of approximately 42.3 acres of current aquaculture operations into currently fallow areas would have an overall beneficial impact. The relocated acreage would be focused in areas of historic dredging and shell deposition in the Mad River and Bird Island areas of the bay. Cultivation beds in these re-location areas would be installed with a wider spacing between cultivation gear of either ten feet between paired longlines or nine and 16 feet between basket lines. Coast used aerial imagery collected in the summer of 2016 (SHN 2017), combined with comprehensive intertidal habitat classification that was completed in 2012 based on 2009 conditions (Schlosser and Eicher 2012), to identify aquaculture locations that are expected to minimize impacts to eelgrass. The selected sites were identified as sites that would meet Coast's needs for aquaculture activity and minimize eelgrass impacts by locating aquaculture in areas where: (1) eelgrass levels are currently low, as represented by either patchy or low density eelgrass; (2) historic aquaculture occurred and may be contributing to suppression of current aquaculture, as suggested through the presence of visible dredge scars from historic practices in current aerial photos; and (3) adjacent to or near existing aquaculture activity so that aquaculture activity can be concentrated.

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. 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.

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.

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.

Proposed Mitigation: Avoidance of potential impacts to eelgrass and other sensitive habitat, where possible, is the priority of the proposed project. 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.

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). 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. The EBMA is an area that supports a high herring spawning frequency, spawning coverage (square meters), 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.

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 listed species in Humboldt Bay. Based on the assumption that mitigation is currently compensating for the existing culture, and that the proposed project results in a net decrease in acreage of culture operations, the proposed project does not include additional mitigation measures. However, relocation and conversion of existing culture areas will provide an overall benefit.

The benefits from conversion and relocation 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, or spacing is expanded, is associated with longline culture as compared to dredge harvesting.

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.

Although compensatory mitigation is not proposed for the project Coast does propose to implement an Eelgrass Monitoring plan. The objectives of the Eelgrass Monitoring plan are as follows: (1) Measurement of eelgrass performance in Test Plots to document changes in eelgrass density or areal cover characteristics in test plots by comparing observed levels to pre-project and reference conditions; comparison of observed changes to predicted levels of eelgrass suppression reported in the recirculated Draft Environmental Impact Report for the project; and (2) measurement of eelgrass performance in removal areas through documenting of changes in areal cover within removal areas. Eelgrass cover within removal areas would be compared to adjacent areas to evaluate recovery of eelgrass.

Coast proposes establishing four growing areas to monitor the interactions between culture activity and eelgrass. These growing areas are a portion of the relocation areas located on Bird Island and Mad River. Each of these growing areas is approximately 3.06 acres in area, with half of each area used for cultch-on-longline grown at 10-ft spacing with double-hung lines and the other half used for basket-on-longline at alternating 9-ft and 16-ft spacing. These growing areas would be intensively monitored using both ground-based and aerial-based monitoring to evaluate the response of eelgrass density and cover to aquaculture activity. Each study area has an adjacent reference area where no culture activity is proposed that would also be monitored. These study areas are intended to characterize the response of eelgrass to commercial scale off-bottom aquaculture activity in Humboldt Bay.

All monitoring plots, both inside culture areas and adjacent reference areas, would be monitored for eelgrass density using a sampling design developed to assess eelgrass conditions for the population of study areas while also allowing for assessment of geographic blocks or strata. Thus, the study design is intended to characterize the response of eelgrass to each culture type (baskets and longlines) at the scale of Humboldt Bay. However, individual study areas can also be evaluated by comparing results within the study areas to adjacent reference areas.

Limited eelgrass density would also be collected in removal areas, but the methods vary from the methods for density measurements described below.

For further detail regarding the proposed eelgrass monitoring plan, see the draft Shellfish Aquaculture Humboldt Bay Permit Renewal and Modification Project Eelgrass Monitoring Plan (Attachment 11).

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

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).

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 from the California Coastal Commission.

Coastal zone management issues should be directed to the Cassidy Teufel, Senior Environmental Scientist, Energy and Ocean Resources and Federal Consistency, 45 Fremont 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. 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. 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.

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 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.