Pacific Fishery Management Council

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Herbert A. Pollard II, Chair | Charles A. Tracy, Executive Director

April X, 2017

L. Kasey Sirkin
San Francisco District, Regulatory Division
Eureka Field Office
U.S. Army Corps of Engineers
601 Startare Drive, Box 14,
Eureka, California 95501
l.k.sirkin@usace.army.mil

Re: **2002-26912N - Coast Seafoods Company, Humboldt Bay Shellfish Aquaculture, Permit Renewal and Expansion Project**

Dear Ms Sirkin:

The Pacific Fishery Management Council (Council) is writing to comment on the Coast Seafoods Humboldt Bay Shellfish Aquaculture Permit Renewal and Expansion Project (Project) for the proposed expansion of aquaculture operations. The Council has previously commented on the Draft Environmental Impact Review and recognizes that Coast Seafoods has made changes to the proposed project that address many of those comments and concerns.

**The Council believes this proposed action may ~~substantially~~ affect the habitat of managed species.** As you know, the Council is one of eight Regional Fishery Management Councils established by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA), and recommends management actions for Federal fisheries off Washington, Oregon, and California. The MSA includes provisions to identify, conserve, and enhance essential fish habitat (EFH) for species managed under a Council fisheries management plan. The MSA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." [1] Section 305(b)(3)(A) of the MSA authorizes the Council to comment on any Federal or state activity that may affect the habitat, including EFH, of a fishery resource under its authority. Furthermore, the Council is obligated under Section 305(b)(3)(B) to provide comments and recommendations for activities that the Council believes are likely to substantially affect the habitat of an anadromous fishery resource under its authority.[2] In addition, Regional Fishery Management Councils may, at their discretion, designate Habitat Areas of Particular Concern (HAPCs). HAPCs are specific habitat types or areas within EFH that are of particular ecological importance in the fish life cycle or are especially sensitive, rare, or vulnerable. HAPCs designated by this Council are rocky reefs, estuaries,

[1] For the purpose of interpreting this definition of EFH: ''waters'' include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; ''substrate'' includes sediment, hard bottom, structures underlying the waters, and associated biological communities; ''necessary'' means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and ''spawning, breeding, feeding, or growth to maturity'' covers a species' full life cycle (50 CFR 600.10).

[2] The regulatory guidance that implements the EFH provisions of the MSA (50 CFR Part 600) defines an "adverse effect" as any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH.

kelp forests, eelgrass, seagrass, and unique geologic features. The Project's proposed shellfish culture activities will occur in Humboldt Bay, within the estuarine and eelgrass HAPCs, and have the potential to result in substantial adverse effects to HAPC resources.

[Moved from below] ~~The Council disagrees with the assessment that habitat fragmentation will not occur due to the placement of longline aquaculture (i.e., basket-on-longline and cultch-on-longline) within patchy and continuous eelgrass beds.~~ Salmon use freshwater and brackish areas as well as marine channels and eelgrass habitats during their outmigration to the sea. Juvenile salmon use eelgrass as shelter from predators, and feed on epibenthic and epiphytic zooplankton. The loss of eelgrass could result in adverse effects to the salmon populations of Humboldt Bay by reducing feeding and sheltering areas (vital aspects of their life history) that would otherwise be provided by eelgrass, by facilitating predation on outmigrating smolts, and by interrupting the food web dynamics of eelgrass in coastal and marine environments.

[Moved from below] A recent meta-analysis of fourteen field studies conducted along the west coast showed that eelgrass was adversely affected by shellfish aquaculture operations (Conway-Cranos et al. 2016). Research has shown that estuarine and nearshore artificial habitats are "poor surrogates" for natural habitats; they tend to support different assemblages of fish and invertebrates, facilitate establishment of non-native species, and do not function or provide the equivalent ecological services provided by natural habitat (Bulleri & Chapman 2004 & 2010; Glasby et al. 2007; Moschella et al. 2005). Aquaculture gear in eelgrass habitat alters the vertical and horizontal structure of the habitat, which will likely attract a different composition of fish and invertebrate species (Erbland & Ozbay 2008; Pinnix et al. 2005; Tallman & Forrester 2007). Such impacts do not only affect the altered site, but are likely to extend into adjacent "intact" habitat. ~~The loss of eelgrass and the increase in structure (longline, wrack-and-bag, and double-hung longline) could result in significant adverse effects to the salmon populations of Humboldt Bay by reducing feeding and sheltering areas (vital aspects of their life history) that would otherwise be provided by eelgrass, by facilitating predation on outmigrating smolts, and by interrupting the food web dynamics of eelgrass in coastal and marine environments.~~

The project proposes to obtain continuing authorization for Coast Seafoods' existing 297-acre aquaculture operations and expand its aquaculture practices into an additional 256 acres of intertidal areas within Humboldt Bay. This expansion 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. The project would add eight culture bins, diversify the species cultivated to include Pacific and Kumamoto oysters, and add 165.2 acres of intertidal culture. This 165.2-acre area would include 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 four 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. The project proposes to monitor and report to resource agencies during years 3 to 6 before Phase II expansion would begin.

**The Council has reviewed the alternatives discussed within the Public Notice and recommends *Alternative 4: Eelgrass Avoidance*, and additionally move ~~which moves~~ current activities within the east bay out of eelgrass areas.** Alternative 4 is most protective of eelgrass habitat by limiting expansion of intertidal shellfish culture to areas within its existing leased and owned footprint, which do not currently support dense or patchy eelgrass. The California Coastal Commission required that the project conduct a feasibility study to evaluate oyster culture in areas above +1.5 mean low low water (MLLW). The feasibility study demonstrated that oyster cultivation is successful outside the primary depth range of eelgrass in Humboldt Bay (H.T Harvey and Associates, March 3, 2015). Growing oysters at or above +1.5 MLLW would substantially reduce the Project's impact on eelgrass resources. The study found that there was no significant difference in oyster growth, biofouling, or quality of oyster between higher and lower elevational study plots (HT Harvey & Associates 2015). To reiterate, **The Council recommends that oyster plots be located outside of the eelgrass primary depth range and existing eelgrass beds.**

The Council is also concerned about the use of double-hung longlines. As proposed, Phase I consists of 89.5 acres of double-hung lines that will be monitored over three years. Double-hung longlines are untested in Humboldt Bay, and we are unaware of their application in a comparable situation elsewhere. The Council is concerned that they may impact eelgrass habitat in unforeseen ways and believes the proposed methodology warrants further study prior to commercial buildout to 89.5 acres. Specifically, the Council recommends a controlled field experiment on limited acreage, as determined by experimental design. Such an experiment would document the effects of these longlines on eelgrass beds, associated communities, and ecological functions from shading, flows, sedimentation, etc. Commercial buildout of double-hung longlines should be permitted only after the field experiment shows that they have minimal environmental effects. Should commercial build-out of double-hung longlines be permitted, the Council agrees with the Public Notice that extensive testing and monitoring should be required.

The Council **recommends not permitting the double-hung longlines**. However, should they be permitted, the Council agrees with the Public Notice that extensive testing and monitoring should be required, and recommends that double-hung longlines be tested and monitored (through a controlled field experiment) on a limited parcel of acreage in order to document their effects on eelgrass beds and associated communities. The continued use, and expansion, of double-hung longlines should be permitted only after such a field study shows that they have minimal effects on eelgrass density and distribution.

[Moved up] The Council disagrees with the assessment that habitat fragmentation will not occur due to the placement of longline aquaculture (i.e., basket-on-longline and cultch-on-longline) within patchy and continuous eelgrass beds. A recent meta-analysis of fourteen field studies conducted along the west coast showed that eelgrass was adversely affected by shellfish aquaculture operations (Conway-Cranos et al. 2016). Research has shown that estuarine and nearshore artificial habitats are “poor surrogates” for natural habitats; they tend to support different assemblages of fish and invertebrates, facilitate establishment of non-native species, and do not function or provide the equivalent ecological services provided by natural habitat (Bulleri & Chapman 2004 & 2010; Glasby et al. 2007; Moschella et al. 2005). Aquaculture gear in eelgrass habitat alters the vertical and horizontal structure of the habitat, which will likely attract a different composition of fish and invertebrate species (Erbland & Ozbay 2008; Pinnix et al. 2005; Tallman & Forrester 2007). Such impacts do not only affect the altered site, but are likely to extend into adjacent “intact” habitat.

[Moved up] Salmon use freshwater and brackish areas as well as marine channels and eelgrass habitats during their outmigration to the sea. Juvenile salmon use eelgrass as shelter from predators, and feed on epibenthic and epiphytic zooplankton. The loss of eelgrass and the increase in structure (longline, wrack-and-bag, and double-hung longline) could result in significant adverse effects to the salmon populations of Humboldt Bay by reducing feeding and sheltering areas (vital aspects of their life history) that would otherwise be provided by eelgrass, by facilitating predation on outmigrating smolts, and by interrupting the food web dynamics of eelgrass in coastal and marine environments.

The Council appreciates the opportunity to provide comment and looks forward to your response.

Sincerely,

Charles A. Tracy
Executive Director
JDG:xxx

Enclosure
Cc: Council Members
Mr. Eric Wilkins (Habitat Committee Chair)
Mr. Correigh Greene (Habitat Committee Vice Chair)

References

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