Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 101 Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Brad Pettinger, Chair | Merrick J. Burden, Executive Director

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Celia Barroso
Regional Aquaculture Coordinator, California
National Marine Fisheries Service
West Coast Region
501 W. Ocean Blvd., Ste. 4200
Long Beach, CA 90802

Re: **Draft Programmatic Environmental Impact Statement for the Identification of Aquaculture Opportunity Areas in U.S. Federal Waters off of Southern California (Docket No. NOAA-NMFS-2022-0051)**

Dear Ms. Barroso,

The Pacific Fishery Management Council (Council) appreciates the opportunity to offer the following comments on the Draft Programmatic Environmental Impact Statement (DPEIS) for the Identification of Aquaculture Opportunity Areas (AOAs) in U.S. Federal Waters off of Southern California. The Council manages West Coast commercial and recreational fishing under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), to ensure a sustainable seafood supply for the Nation. This includes responsibilities for protecting marine ecosystems, the habitats upon which healthy fisheries depend, and the wellbeing of coastal communities.

In our July 2022 comment letter[1] on the National Oceanic and Atmospheric Administration (NOAA) Notice of Intent to prepare a DPEIS, we provided detailed comments on potential impacts, mitigation measures and the Council's obligations under the MSA. Many of our comments have been incorporated into the DPEIS, and we request that that letter be incorporated by reference here. We specifically emphasize several statutory obligations and best practices, summarized below.

Council Authorities

Essential Fish Habitat

The MSA requires regional Fisheries Management Councils (RFMCs) to describe, identify, conserve, and enhance essential fish habitat (EFH) for species managed under a Council's fishery management plans (FMPs) (50 CFR 600.815). The Council has identified and described EFH throughout the Pacific Coast region for its four Fishery Management Plans (FMPs) (Pacific Coast groundfish, Pacific Coast salmon, coastal pelagic species (CPS), and highly migratory species

[1] https:/www.pcouncil.org/documents/2022/07/july-2022-letter-to-nmfs-on-noaa-aquaculture-opportunity-areas.pdf/

(HMS)). The MSA encourages the identification of special habitats within EFH as Habitat Areas of Particular Concern (HAPC) which may require additional protective measures during EFH Consultations (50 CFR 600.815(a)(8)). The Council has designated HAPCs for salmon and groundfish. Groundfish HAPCs include rocky reefs, estuaries, canopy kelp, seagrasses, and 'areas of interest' such as offshore seamounts and canyons. The Council has also designated many spatially discrete EFH Conservation Areas (EFHCAs) for groundfish to protect particularly sensitive or productive habitats from some types of bottom-contact fishing (50 CFR 600.815(a)(2)). Some EFHCAs were established based on the presence of groundfish HAPCs.

The MSA authorizes the National Marine Fisheries Service (NMFS)and RFMCs to provide comments and conservation recommendations on actions that may adversely affect the habitat, including EFH, of a fishery resource under its authority and requires comment on actions that are likely to substantially affect the habitat of an anadromous fishery resource under its authority (Section 305(b)(3)). Federal action agencies are required to provide detailed responses to conservation recommendations provided by NMFS. The Council requests the same detailed response to Council-provided conservation recommendations.

MSA National Standards

The MSA includes 10 National Standards (NS) that are principles to be followed in any FMP to ensure sustainable and responsible fishery management (50 CFR Part 600 Subpart D). The Council recommends that the analysis of impacts from offshore aquaculture activities on fishery resources consider three NS in particular:

- The effects of the proposed action on the ability of fisheries to continue to achieve optimum yield from managed wild fish stocks (NS1 – 50 CFR § 600.310)
- The effects of the proposed action on the sustained availability of fishery resources to fishing communities near any proposed or designated AOA, and on the sustained participation of those fishing communities in fisheries (NS8 – 50 CFR § 600.345)
- The effects of the proposed action on fishing vessel safety of navigation and safety of human life at sea (NS10 – 50 CFR § 600.355)

Alternatives and General Comments

Alternatives

A marine spatial modeling analysis conducted by NOAA's National Centers for Coastal Ocean Science (NCCOS) provided information to support siting decisions and the analysis of impacts. The NCCOS analysis is described in the Aquaculture Opportunity Area Atlas for the Southern California Bight (Atlas[2]). The analysis included data relevant to administrative boundaries, national security, navigation and transportation, energy and industry infrastructure, commercial and recreational fishing, natural and cultural resources, and oceanography.

[2] An Aquaculture Opportunity Area Atlas for the Southern California Bight. Morris, J.A., et al. 2021. National Centers For Coastal Ocean Science.

The DPEIS evaluates the No Action Alternative (Alternative 1) and three action alternatives with sub-alternatives. Sub-alternative 4b is identified as the Preferred Alternative.

- Alternative 2: Santa Barbara Channel: NMFS would identify at least one and up to eight AOAs within Federal waters in the Santa Barbara Channel. Each area ranges from 1,500 to 2,000 acres.
    - Sub-alternative 2a: shellfish and macroalgae aquaculture only
    - Sub-alternative 2b: all types of commercial aquaculture

- Alternative 3: Santa Monica Channel: NMFS would identify at least one and up to two AOAs within Federal waters off Santa Monica Bay. The two areas are 500 and 1,000 acres.
    - Sub-alternative 3a: shellfish and macroalgae aquaculture only
    - Sub-alternative 3b: all types of commercial aquaculture

- Alternative 4: Combination of Geographic Areas: NMFS would identify up to 10 AOA(s) from within the boundaries of either Alternative area, up to a maximum area to be determined by NMFS with input from the public.
    - Sub-alternative 4a: shellfish and macroalgae aquaculture only
    - Sub-alternative 4b: all types of commercial aquaculture (Preferred Alternative)

The Council commends NMFS on providing a well-structured document that is thorough, concise, and clear. The Council does not recommend a preferred Alternative at this point but provides comments about some of the specifics contained in the DPEIS.

General Comments

The DPEIS accurately describes the local, regional, national, and worldwide benefits for the expansion of a domestic aquaculture industry. Any such expansion should ensure there is minimal impact to domestic fisheries, dependent fishing communities, the marine environment, and marine resources. Domestic aquaculture development could produce positive effects by functioning synergistically with existing wild capture fisheries. But to achieve such positive effects, planning activities for aquaculture should necessarily include the fishing community. Existing commercial and recreational fishing sectors have established infrastructure, markets, and the ability to develop and tap into new domestic markets. Existing fisheries sectors can also coordinate the timing of aquaculture activities to minimize interference with commercial or recreational fishing, or with wild fish space utilization (i.e., breeding, nursery grounds), etc.

The Council is concerned about domestic finfish aquaculture for several reasons, including potential competition with wild capture fisheries. This highlights the importance of working cooperatively and synergistically with coastal communities and the existing commercial and recreational fishing sectors.

The DPEIS identifies many significant risks associated with aquaculture operations, including potential escapement, disease transmission to wild fish, increased presence of marine mammals and birds, and water quality impacts. If finfish aquaculture is included in the final AOA identification(s), only species native to Southern California should be permitted. The Council **does not support the use of naturalized species.** However, if naturalized species are considered, **the Council recommends they be evaluated on a species-specific basis and only permitted after**

thorough evaluation determines the species (and their interactions) is low risk to native species, habitats, and the environment.

The DPEIS should strongly encourage consultation with local members of fishing fleets, who have site-specific knowledge of seafloor features that may not be evident from existing mapping or survey data. For example, in some areas of potential AOAs, the seafloor sediments are unconsolidated and objects such as anchors can become buried and unretrievable. The commercial market squid fleet (light boats and purse seine vessels) are important sources for local knowledge that may be especially helpful in siting decisions.

Programmatic National Environmental Protection Act (NEPA) documents require a tiered (site-specific) NEPA analysis for projects that fall under the PEIS scope (such as any proposed AOAs). The Council presumes that a programmatic EIS would necessitate a site-specific EIS rather than an EA, especially given that open water marine aquaculture is largely untested on the U.S. West Coast.

Mitigation, Monitoring, and Baseline Assessments

Mitigation

The Council previously provided several recommendations for mitigation and monitoring requirements in our July 2022 comment letter, which we reiterate here.

The DPEIS analyzes the impacts of siting aquaculture facilities in AOAs and provides potential mitigation measures. However, the DPEIS does not require any mitigation measures to be implemented on a site-specific basis. The discussion of mitigation measures in Appendix 1 of the DPEIS describes only *potential* mitigation measures that *may or could be* implemented for individual aquaculture facilities or through other agency permitting authorities. The Council understands that project-specific measures to avoid, minimize, and mitigate impacts will need to be determined for individual projects based on the proposed aquaculture facility and local environmental conditions. However, there are several programmatic-level mitigation measures (such as avoiding sensitive benthic habitats and conducting baseline and long-term environmental monitoring) that are applicable to all aquaculture projects that should be included as a requirement in the DPEIS. **The Council recommends that the DPEIS include prescriptive mitigation measures in the DPEIS.** This should include monitoring, reporting and other measures as discussed by Chapter and Section below.

Monitoring and Reporting Requirements

Although the DPEIS is not intended to include project-level monitoring or reporting requirements for individual projects, it should nonetheless include general requirements for baseline assessments, monitoring, operations, maintenance, and adaptive management. Currently the DPEIS only provides a suite of potential monitoring and reporting practices that could be included in a plan. **The Council recommends the DPEIS require project applicants to develop detailed plans as described below**. These plans should be developed in coordination with the appropriate Federal and state permitting agencies and tribes as appropriate. Monitoring measures should be described with sufficient detail in the DPEIS to support the evaluation of monitoring plans proposed by project applicants.

- Baseline and Long-term Environmental Monitoring Plan: To assess the environmental impacts from the construction and operation of aquaculture facilities, substantial baseline information on water quality, ocean dynamics, species composition and abundances, habitat characterization, and other data must be compiled. A Baseline Environmental Study should be required in addition to a long-term Environmental Monitoring Plan to identify operational issues that could cause adverse effects to water quality, marine species, and benthic habitats. Both the baseline and long-term monitoring should be implemented by an independent third party and include spatial coverage beyond the proposed lease area to account for drift effects. The baseline information should be gathered seasonally and for a minimum of two years to account for natural variability. Similarly, post-project monitoring should also account for seasonal and annual variability for species and oceanographic conditions. Monitoring plans should also be designed to detect impacts on fisheries, wildlife, water quality, hydrodynamics, and benthic habitats, including accumulation and deposition of sediment or waste products. The monitoring plan should be used to assess whether the proposed setbacks from EFH HAPCs, deep sea coral and sponges, and hard bottom habitat are sufficient to avoid impacts to those sensitive habitats. **The Council recommends a Baseline Environmental Study should be required in addition to a long-term Environmental Monitoring Plan.**

- Finfish Aquaculture Monitoring Plan: **The Council recommends that a robust monitoring program should be part of any finfish aquaculture project to ensure any outbreaks of disease or parasites are contained and infected fish are immediately destroyed or removed, and cages containing finfish be made of materials and sited in such a way that the risk of escape is minimized to the greatest extent possible.** In the event of an escape, this should be communicated to local fishing fleets immediately and efforts to capture any escaped fish be undertaken. The monitoring and mitigation measures described in Appendix 1 of the DPEIS should be a requirement of any aquaculture. **The Council recommends complete sterilization of any finfish that are placed in open water cages, and that they be modified to make identification easy.** For example, some hatchery-raised salmon have their adipose fins removed for easy identification. **The Council also recommends any finfish aquaculture facilities only contain male fish or female fish so no spawning can occur.**

- Long-term Operations & Maintenance Plan: The DPEIS should require individual projects to develop a long-term Operations and Maintenance Plan for identifying operational issues that could cause adverse effects to water quality, marine species, and benthic habitat. As part of the Operation and Maintenance plan, project applicants should be required to immediately report any interactions or accidents such as interactions with non-project vessels and/or gear deployed by those vessels, marine wildlife, any loss of aquaculture gear or other infrastructure associated with the facility, high mortality or escapement of species being propagated, efforts to recover escaped species, accidental release of contaminants, excess feed or waste material, entanglement of objects or marine life with aquaculture gear, etc. **The Council recommends that the DPEIS require individual projects to develop a long-term Operations and Maintenance Plan for identifying operational issues that could cause adverse effects to water quality, marine species, and benthic habitat**.

- Adaptive Management Plan: The DPEIS should require a detailed mitigation and adaptive management plan that can be immediately implemented if impacts to water quality, marine species, or benthic habitats are observed. The marine environment presents significant uncertainty and natural variability, and unanticipated natural- or human-caused events can result in significant environmental harm. Appendix 1 of the DPEIS describes potential adaptive management approaches, which should be a required element of any aquaculture project. **The Council recommends the DPEIS include a detailed mitigation and adaptive management plan that can be immediately implemented if impacts to water quality, marine species, or benthic habitat are observed during monitoring**.

- Marine Debris Monitoring Plan: The Council is concerned that offshore aquaculture operations could introduce marine debris into the nearby ocean environment, potentially affecting benthic habitats, fish nursery grounds, or other important and sensitive habitat features. A marine debris monitoring and management plan, as described in DPEIS Appendix 1, should include measures to monitor marine debris (including unique marking or branding of all aquaculture gear with contact information), measures to prevent debris, actions to recover debris, and mitigation options for damage caused by marine debris. If consistent discoveries of certain gear types are found, the project should evaluate and implement use of alternative gear types or practices that would reduce these consistent sources of debris. NOAA should also consider insurance, bonding requirements, or other financial guarantees to ensure a project operator will have funds available for any necessary gear cleanup and/or any damage resulting from escape. The DPEIS should evaluate the appropriate amount of insurance, bonding, or financial guarantee. **The Council recommends the DPEIS include a requirement for project applicants to develop a Marine Debris Management and Monitoring Plan to minimize the risk of aquatic pollution**.

- Sediment Deposition, Accumulation, and Biofouling: Long-term Environmental Monitoring Plans (EMPs) should be required for aquaculture facilities, to monitor sediment deposition and accumulation, discharges, or solids that occur from aquaculture operations. Specific to macroalgae farming operations described in Alternatives 2a and 3a, EMPs should also monitor invertebrate and fish communities that are attracted to these facilities, including changes to benthic habitat, water quality, spread of non-native species, and the potential for facilities to function as fish aggregating devices. Adaptive management plans should include remediation options if there is evidence of deposition on the seafloor.

Section-Specific Comments

Chapter 1 – Introduction and Background

Section B ii - Status of Marine Aquaculture in the Southern California Bight Ecosystem
The DPEIS lists channel catfish and rainbow trout (both are freshwater species) in an overview of saltwater species that are grown in the state for food. This should be corrected for the Final PEIS.

Chapter 2 – Proposed Alternatives

Section A(ii)(a) – Shellfish and mariculture

The DPEIS implies the Alternatives provided are located in "deep, offshore waters." For many mariners, the waters in the locations of the proposed AOAs are neither deep nor offshore. For clarity, **the Council recommends using alternate language when characterizing the depth and location of the proposed locations**. For example, "moderately deep, coastal waters outside the State boundary line."

Section B - Alternatives Considered but Not Further Analyzed
Natural disasters and other "force majeure" events were deemed outside the scope for this DPEIS. Given the proximity of the Alternatives to earthquake faults, areas known to be subject to major wildfires, and prone to impacts from tsunamis from earthquake across the Pacific Rim**, the Council recommends that those be considered in the analysis.**

Chapter 3: Affected Environment and Environmental Consequences

Section B - Physical Environment and Potential Impacts

Subsection iii - Seafloor Characteristics
As noted in the DPEIS, the Atlas considers setbacks from certain habitats or management areas (rocky reef EFH HAPCs with a 152 m (500 ft) setback, deep-sea coral and sponge observations with a 500 m (1,640 ft) setback, and hard bottom habitat with a 152 m setback). However, the DPEIS does not specifically prescribe these setbacks as the minimum required setback distances, nor does the DPEIS clearly describe which activities, equipment or infrastructure these setbacks apply to. The DPEIS should clearly articulate the application (i.e., activities, equipment, infrastructure) of these setbacks and prescribe the minimum setback distances as a requirement for all aquaculture projects. Prescribed setbacks should account for the proximity to neighboring projects and those resulting cumulative effects on habitat resources. Furthermore, **the Council recommends project applicants be required to monitor and assess whether prescribed setbacks from EFH HAPCs, deep-sea coral and sponges, and hard bottom habitat are sufficient to avoid impacts to those sensitive habitats** (see *Baseline and Long-term Environmental Monitoring Plan* above).

The DPEIS states that "a more detailed and site-specific Baseline Environmental Survey (BES) may be needed for siting and permitting individual projects," but does not require a BES. **The Council recommends the DPEIS includes a mitigation measure that specifically requires individual projects to conduct site-specific BES's so that the highest resolution, site-specific information is being used to site these projects**.

Subsection iv – Water Quality
The DPEIS states that "projects sited in an AOA would *likely* have Best Management Practices or other permitting requirements that would be designed to manage water quality stressors; prevent spills, fires, or other sources of hazardous materials; conduct monitoring; and identify procedures to manage and clean up and report incidents," but this is not a stated requirement. **The Council recommends the DPEIS specifically require programmatic-level mitigation measures to avoid, minimize, or offset potential impacts from water quality stressors, potential spills of oils or hazardous materials, monitoring of impacts, and remediation efforts.** Additionally, **the Council recommends adding a water quality requirement that project applicants consider new technologies and propose alternatives that reduce or prevent discharge of uneaten feed**

and metabolic waste (as has been recently imposed by the Washington Department of Ecology).

The DPEIS also discusses the potential application of the Macroalgal Cultivation Modeling System (MACMODS) to be used in facility design and project level analysis, which can be used to assess potential impacts to hydrodynamic processes. Again, this is not a stated requirement. **The Council recommends the DPEIS specifically requires all project applicants to use MACMODS, or a similar modeling system, to analyze potential impacts of project siting and design on local hydrodynamic processes.**

The DPEIS references an environmental monitoring study of offshore finfish culture of mutton snapper and cobia in water off Puerto Rico which reported no evidence of anaerobic sediments beneath the fish cages, and inorganic nitrogen levels near the cages similar to background levels. However, the DPEIS fails to mention the depth of water those operations took place, nor does it mention prevailing currents, weather and oceanic conditions. Thus, it is not clear if that study would be applicable for informing potential finfish operations in any of the proposed AOAs. The other reports referenced in that section relating to a Pacific threadfin operation and an offshore aquaculture demonstration project off New Hampshire also do not describe the depth or prevailing conditions.

The DPEIS states on Page 84 that the Santa Monica AOAs options are within 5 km of inactive oil platforms. This appears to be an error as there are no oil platforms in marine waters within Santa Monica Bay.

Considering recent wildfires in Southern California, fire retardants such as Phos-Chek and other chemicals should be included as potential impacts to water quality. A recent study found wildfire retardant is laden with toxic metals.[3] How these metals may impact aquaculture operations, particularly whether those metals can be easily filtered or if they remain in the flesh of product, should be analyzed.

Section C. Biological Environment and Potential Impacts
Subsection i - Federally-Protected Species and Habitat

The Council agrees that recent updates to the methods and results for identifying cetacean Biologically Important Areas in marine waters of California published after the spatial modeling for the Atlas should be incorporated and reflected if and/or when NOAA publishes a Final DPEIS and during future site-specific environmental planning activities.

The DPEIS states "[d]ocumented entanglements of Federally protected species in shellfish aquaculture gear in other areas have included cetaceans and sea turtles." It also highlights risks to federally protected species and habitats are amplified given the uncertainty due to a lack of available information on aquaculture impacts to such species. The Council notes the great costs our fisheries and fishing communities are required to endure in order to minimize risks to federally

[3] https://www.firerescue1.com/wildfire-and-wildland-urban-interface/study-finds-wildfire-retardent-is-laden-with-toxic-metals

protected species.[4] Proposed aquaculture operations should be held to similar standards. For example, when whale migrations are occurring in or near the proposed locations of the AOAs lessees could be required to reduce the number of vertical lines in the water. The DPEIS correctly points out that marine aquaculture operations in the California EEZ are listed as a Category III fishery under the Marine Mammal Protection Act's list of fisheries. It should be noted the current List of Fisheries describes the Hawaiian offshore pen culture as a Category II fishery.

The DPEIS also states that it was rare to see gray whale cow-calf pairs more than 0.75 miles from shore. While this may be a true statement where water depths increase closer to shore, fishing industry participants operating in or near the areas identified under the Alternatives suggest, based on years of experience in these areas, that water depth is far more important in determining where cow-calf pairs are likely to be found, rather than distance from shore.

It is very likely that pinnipeds will frequent any developed aquaculture facilities. It will be important to ensure any disease found in any aquaculture facility be contained and not spread to any protected species and other wild populations.

Fishermen operating in or near the areas identified under the Alternatives are reporting significant increases in the presence of dolphin and porpoise. The DPEIS references a report from the Mediterranean which showed site-fidelity, changed hunting tactics, and exhibited different social structures in dolphin species around finfish facilities. This could have profound impacts on the commercial fishery for market squid which has historic dependence on areas identified under the alternatives. The presence of dolphin and/or porpoise changes the behavior of market squid and makes them much less catchable and also will keep squid fishermen from deploying their nets to avoid potential interactions.

Subsection ii – Wild Fish stocks

The DPEIS notes that waters in the Southern California Bight (SCB) are potential nursery for juvenile great white sharks. Fishermen with experience fishing in the areas near or within Alternative 1 believe that to be an important nursery area for thresher sharks and an area with historic presence of basking sharks.

Page 131 lists various international forums and agreements related to highly migratory species management. The treaty between the governments of Canada and the United States on Pacific Albacore Tuna Vessels and Port Privileges should be included in that list, as it impacts U.S. North Pacific albacore fishery participants.

The DPEIS cites data on fish and larval dispersal from the California Cooperative Oceanic Fisheries Investigations (CalCOFI) surveys but does not mention the nearshore surveys conducted by the California Wetfish Producers Association (CWPA). The CWPA surveys are conducted as cooperative research with CDFW and should be included as a potential source of information on wild fish presence and abundance.

[4] The California Dungeness Crab fishery is managed to minimize the risk of interactions with specified protected species (humpback whales, blue whales and leatherback sea turtles). This is accomplished by managing effort in the fishery during times when the risk is elevated.

The high likelihood of escapes from aquaculture facilities, particularly from finfish operations, remains a significant concern. As noted above, measures intended to ensure that any escapes will have no impacts on wild fish stocks should be required. While the NOAA Marine Aquaculture Policy (2011) supports the use of only native or naturalized species in Federal waters unless best available science demonstrates use of non-native or other species in Federal waters would not cause undue harm to wild species, **the Council strongly recommends that native species be prioritized.** The risk to wild fish that support commercial and recreational fishing communities should be minimized to the maximum extent possible.

Subsection iv - Potentially-Farmed Species

As noted above, the Council has serious concerns about the potential introduction of non-native species (fish, shellfish, and macroalgae), including risk of disease/parasite transmission, competition for resources, interbreeding, and impacts to habitat. The DPEIS states that AOAs are considered potentially suitable for finfish, shellfish, macroalgae, or multi-species aquaculture, and that, "This DPEIS assumes no non-native species would be grown in an AOA, thereby eliminating the risk of introducing non-native species to the environment, other than via contaminated broodstock." And yet the DPEIS identifies three non-native species as potentially suitable for finfish aquaculture in the AOAs (longfin yellowtail, olive flounder, and striped bass). Neither longfin yellowtail nor olive flounder are present in the SCB and there are only rare instances of recreational catch of striped bass within the SCB. The Council agrees that native species should be prioritized for aquaculture. **The Council does not support the use of non-native species and does not support the use of naturalized species without additional scrutiny**, as these species can be highly problematic for native species and habitats, particularly if they can out-compete native species for important resources. Given the high likelihood of escapes, any release of non-native species (even naturalized species) could have serious impacts on wild fish populations in the SCB.

The Council recommends against identifying longfin yellowtail, olive flounder. and striped bass as "suitable" in the DPEIS. The Council recommends close coordination with state and Federal agencies, stakeholders, researchers, and tribes, regarding species proposed for aquaculture prior to authorization.

The DPEIS includes discussion on regulatory frameworks that prevent contaminated broodstock; however, broodstock sourcing is outside the scope of the DPEIS which creates additional risk that should be addressed at project-level NEPA analyses.

The DPEIS states that "In New Zealand, in the past, mussel aquaculture was thought to accelerate the spread of harmful algal blooms, by harboring the phytoplankton and also stimulated by increased release of ammonium and other micronutrients." This is a significant concern for local commercial fisheries. Domoic acid is linked to harmful algal blooms and can close commercial fisheries in the interest of Public Health. As the DPEIS notes, the commercial fishery for spiny lobster is very important to ports and harbors near the AOA locations in Alternative 2. **The Council recommends additional studies be undertaken to better understand the link between industrial mussel aquaculture and domoic acid and appropriate mitigation measures be developed to minimize the risk of negative impacts on important commercial fisheries in the SCB**.

As noted above, it is very likely that seabirds and marine mammals will be present around any finfish aquaculture facilities. The DPEIS notes this will cause stress in the farmed species which could worsen a disease outbreak. Ensuring that any disease outbreak is contained should be required to avoid negative impacts to native fish stocks in the SCB.

Section D. Socioeconomic Environment and Potential Impacts
Subsection i – Commercial Fishing

Many potential impacts to the commercial fishing community are outlined above. The DPEIS is correct to acknowledge distinctions when considering impacts to fisheries, fishing fleets, and individual vessels. This important consideration should be further analyzed if and/or when any facilities are proposed.

The DPEIS discusses short-term adverse impacts on "benthic fish, urchin, and sea cucumber presence" during baseline surveys and construction. Squid eggs can be deposited during spawning activities and should be considered as a potential impact. Prior to conducting baseline surveys or construction, lessees should engage with the local commercial market squid fishery to determine if there is a potential impact to squid eggs.

The DPEIS identifies the trawl-based sea cucumber fishery as one which would not be able to take advantage of any ecological benefit from anchoring systems due to incompatibility of trawl operations and fixed aquaculture gear. This is equally true for purse seine fisheries and the set net fishery operating outside state waters.

"[T]he highest-ranked fishing transits in and around Alternative 2 are sea cucumber and California halibut trawl, prawn and Dungeness crab pot/trap, and gillnet." **The Council recommends including the market squid purse seine fishery which is active in those areas**. The DPEIS cites the EA for a past aquaculture facility near the San Pedro Shelf to support the proposition that "the majority of fishing effort for squid occurs within one mile from shore." While that may be a true statement when considering the full extent of squid effort in the SCB, that is untrue as it relates to areas in and around those described in Alternative 2. The squid fishery typically operates around depth contours ranging from 15 – 25 fathoms. There are many locations within the SCB where those depths are well outside one mile from shore. The Council reiterates a comment included in our letter on the Notice of Intent that there is no Dungeness crab fishery which operates in the SCB.

The DPEIS states that: "It is likely that projects within an AOA would be sited with some distance between them; so commercial fishing vessels could take advantage of this effect." However, this does not apply to most commercial fishing vessels. Commercial fishing vessels using trawl gear, purse seine gear, or set nets would likely be unable to take advantage of any fish aggregating benefits associated with aquaculture operations. A more accurate statement would be: "It is likely that projects within an AOA would be sited with sufficient distance between them; so that *some* commercial fishing vessels deploying certain gear types could take advantage of this effect."

The Ocean Rainforest's demonstration seaweed aquaculture facility on an 86-acre site in Federal waters approximately 4.4 nautical miles offshore of Santa Barbara contains a significant number

of buoys on the surface of the area. While not easily visible from the shore, they are quite visible to vessels transiting near the facility. The differing sizes of the buoys create confusion for mariners new to the area or who are unaware of the project. To minimize confusion and risk of navigation problems, **the Council recommends requiring standardized buoy design and set ups, depending on the type of aquaculture facility being proposed.**

Subsection ii – Recreational Fishing

The DPEIS should be updated to reflect the closure of the salmon fishery off California in 2024.

Recreational fishing activities based out of ports and harbors are dependent upon access to live bait. **The Council recommends the DPEIS analyze potential impacts on availability of live bait that support recreational fishing activities.**

Catalina Sea Ranch operated an aquaculture facility near the San Pedro Shelf. In 2019, an accident occurred where a 25-foot private recreational vessel capsized after a broken line from the facility wrapped the propellor of the vessel. The incident resulted in the death of a passenger onboard the vessel.[5] Any aquaculture developments in the heavily trafficked areas identified in the alternatives need to be mindful of ensuring their equipment is properly maintained and do not pose an undue risk to recreational or commercial fishermen who fish near the facility.[6]

Subsection iii – Markets and Regional Food Systems

The Council agrees that responsibly sited and managed aquaculture facilities can provide numerous benefits. Every effort must be made to ensure that those benefits do not come at the cost or expense of our local fishing communities. For example, if finfish aquaculture is allowed, lessees should engage with local fishing communities to consider harvests of farmed fish outside the time the commercial fishery is active. This would reduce competition in the marketplace while allowing buyers to have more confidence in a steady year-round supply. Assuming that local buyers/processors are utilized for offloading or other services, this would strengthen the business of those buyers and processors by ensuring a steady supply of product hitting the floor, likely increasing employment opportunities.

Future site-specific NEPA analyses must consider additional economic considerations. Of particular interest to the Council will be any potential negative impacts to local fishing communities. The Council fully supports the following statement from the DPEIS, "[m]ore precise, localized data from these fishing communities would be needed to ground-truth the high-level predictions in this DPEIS." It is our hope that any potential lessees do just that.

Subsection vi - Transportation and Navigation

Placement of aquaculture facilities in any of the locations identified in Alternatives 2 and 3 will result in the creation of hazards to navigation. Commercial and recreational vessel transit or fishing activities in and around these locations could be impacted. During the Consistency Review process undertaken by the State for the Catalina Sea Ranch project, one of the conditions required a lost

[5] https://www.latimes.com/socal/daily-pilot/news/story/2019-12-11/underwater-mussel-farm-reason-fishing-boat-capsized

[6] https://calmatters.org/environment/2020/05/california-shellfish-farming-aquaculture/

fishing gear and mitigation program. **The Council recommends any leases issued within the AOAs be required to have similar programs that compensate fishermen for lost gear.**

Subsection vii - Offshore Energy and Public Services

California Senate Bill 605 (Padilla) was signed into law in October of 2023. Among other things, this Bill required the California Energy Commission (CEC) to study the feasibility of wave and tidal energy projects in state and Federal waters off the California coast. It also required the CEC, in coordination and consultation with the California Coastal Commission, the Department of Fish and Wildlife, the Ocean Protection Council, and the State Lands Commission to "identify suitable sea space for offshore wave energy and tidal energy projects in state and federal waters." A draft of a report identifying suitable sea space is expected during the first quarter of this year. It is possible that areas identified within Alternative 2 or 3 will also be deemed suitable for wave or tidal energy facilities. **The Council recommends the DPEIS not be finalized until the CEC's Report on suitable sea space is finalized.** If there is overlap, that could change the analysis of potential cumulative impacts to fisheries and fishing communities.

Subsection viii - Public Health and Safety

Our comments above address potential public health concerns related to domoic acid and safety concerns related to proper maintenance of any future facilities.

Chapter 4: Cumulative Impacts and Climate Change

The DPEIS lists baseline conditions and trends in the SCB that should be considered for potential cumulative impacts. The DPEIS also lists current events and trends in the SCB and states that these are considered beyond the temporal and spatial scope of the DPEIS. The cumulative impact assessment does not include reasonably foreseeable aquaculture projects in southern California (e.g., Pacific Ocean Aquafarms, Ocean Rainforest, and Avalon Ocean Farm) or the Pier Wind Project in the Port of Long Beach. **The Council recommends potential impacts to marine resources from these reasonably foreseeable projects be included in the cumulative impact assessment**. Additionally, the cumulative impacts assessment should consider the potential environmental impacts to sensitive habitats and species from concentrating fishing effort that has been displaced outside of AOAs.

Section A. Past, Present, and Foreseeable Actions

Subsection ii - Other Ocean Uses and Current Events in the Southern California Bight

For the reasons identified above under the discussion of wave and tidal energy, **the Council** recommends including "Renewable Energy" under the list of topics which contribute to the baseline conditions and trends in the SCB and should be considered for potential cumulative impacts associated with aquaculture, should an AOA be identified.

Subsection iv - Marine Conservation Efforts

In October 2020, Governor Newsom issued Executive Order N-82-20[7] which establishes a state goal of conserving 30 percent of California's lands and coastal waters by 2030. It is unclear how implementation of the Executive Order may affect the California Marine Protected Area network,

[7] https://www.gov.ca.gov/wp-content/uploads/2020/10/10.07.2020-EO-N-82-20-.pdf

which could potentially be expanded to meet this goal. The Executive Order could potentially be considered as a marine conservation effort.

Thank you for consideration of these comments. Please contact Kerry Griffin (Kerry.Griffin@noaa.gov) on Council Staff with any questions or concerns.

Sincerely,

Brad Pettinger
Council Chair

KFG:kma

Cc: Council Members