Pacific Fishery Management Council

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Marc Gorelnik, Chair | Merrick J. Burden, Executive Director

18 February 2022

Cade McNamara, Planner II
Humboldt County Planning & Building Department
3015 H Street
Eureka, CA 95501
CEQAResponses@co.humboldt.ca.us

RE: *Draft Environmental Impact Report for Nordic Aquafarms California, LLC Land-Based Aquaculture Project*

Dear Mr. McNamara,

The Pacific Fishery Management Council (Council) submits the following comments in response to the Humboldt County Planning & Building Department Draft Environmental Impact Report (EIR) for the Nordic Aquafarms California, LLC Land-Based Aquaculture Project.

The Council is one of eight Regional Fishery Management Councils established by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA). The Council is charged with sustainably managing West Coast fisheries and the habitats upon which they depend and develops fisheries management actions for Federal fisheries of Washington, Oregon, California, and Idaho. The Council is required to achieve optimum yield for public trust marine fishery resources. Optimizing the yield of our nation's fisheries requires safeguarding these resources, their habitats, and the fishing communities that rely on their harvest.

**Essential Fish Habitat**
The Council is particularly focused on actions that may affect the essential fish habitat (EFH) of Council-managed species. EFH is defined in the MSA as:

> *"Those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. §1802(10)). For the purpose of interpreting this definition of essential fish habitat: "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.*

The MSA authorizes the Council to designate habitat areas of particular concern (HAPC), a subset of EFH, and defines HAPC to be important for ecological function, sensitive to human-induced environmental degradation, stressed by development, or rare. HAPC for Pacific Coast Groundfish include estuaries, canopy kelp, seagrass, rocky reefs, and seamounts. HAPC for Pacific salmon include complex channels and floodplains, thermal refugia, spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation.

The MSA requires the identification, conservation, and enhancement of EFH for species managed under the Council's fishery management plans. 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 and requires the Council to comment and make recommendations on any action or activity that is likely to substantially affect the habitat of an anadromous fishery resource under its authority.

The proposed land-based aquaculture facility will be located on land adjacent to and within designated EFH for federally managed Pacific Coast groundfish species, coastal pelagic species, Chinook salmon, and Coho salmon. The Council is concerned that Nordic Aquafarms operations may adversely affect EFH and HAPCs for Pacific Coast groundfish and Pacific Salmon in the nearshore environment and in Humboldt Bay.

**Potential Impacts of Nordic Aquaculture Operations**

Land-based aquaculture has the potential to have fewer impacts on fish habitat and cause less disruption to the fishing and research community than ocean-based aquaculture. However, each project requires careful assessment to evaluate project-specific habitat effects, which can be magnified with large-scale projects such as the Nordic Aquafarms project. The Council is concerned about the direct, indirect, and cumulative impacts of Nordic aquaculture operations on habitat, commercial and recreational fisheries, and fishery-dependent coastal communities. Potential impacts to habitats and species from aquaculture operations include, but are not limited to:

- Effects on habitat features
- Establishment or proliferation of aquatic invasive species
- Impacts to surrounding waters at the facility intake structures
- Introduction of pathogens and parasites
- Impacts to water quality from wastewater discharge
- Impacts to eelgrass
- Unintended introduction of a non-native salmonid
- Potential to induce or exacerbate harmful algal blooms at the effluent release site
- Effects of extraction of water from Mad River and Humboldt Bay

The EIR should disclose and analyze all potentially significant effects on Endangered Species Act (ESA)-listed and sensitive species and habitats in and around aquaculture operations, including critical habitat for California Coastal Chinook salmon, Central California Coast Coho and Southern Oregon/Northern California Coast Coho Salmon, Southern Distinct Population Segment of North American green sturgeon, Southern Resident Killer Whale, other commercially and recreationally important fishes and invertebrates, and if appropriate, identify feasible mitigation

measures to reduce those impacts. This analysis should address potential impacts to species and habitats adjacent to the aquaculture facility, related infrastructure, and outflow facilities.

The Final EIR should describe the methods proposed for cleaning and maintaining the facility intake structures to avoid changes in approach velocity and risk of impinging Pacific salmonids. A Screen Operations & Maintenance Plan (Plan) should be prepared and included in the Final EIR.[1] The Plan should provide details on the proposed self-cleaning technology and how biofouling and/or non-native invasive species growing on this structure will be monitored and prevented from further proliferation beyond the infrastructure of this facility. Additionally, alternate cleaning systems should be analyzed to determine whether different approaches may be more effective at minimizing biofouling, changes in approach velocity, and the risk of impingement.

The Final EIR should describe the impacts of the ocean outfall wastewater discharge and potential impacts to the surrounding water quality. Water quality and biological monitoring that will be used to determine potential impacts from the wastewater discharge should be described with sufficient detail to evaluate proposed monitoring measures. The Council recommends that pre-discharge (prior to commencement of aquaculture operations) monitoring of the receiving waters occur for at least three years to establish the baseline necessary for monitoring discharges through time and take place at least quarterly to capture seasonal variation. Nordic is proposing to conduct post-discharge receiving waters monitoring twice per year, which is not adequate. A minimum frequency of quarterly monitoring is needed to determine the behavior of the discharge plume and to better capture the upwelling and marine heatwave events where the excess nutrients discharged could interact with upwelled or warm water, and potentially contribute to harmful algal blooms. In addition, continuous monitoring of the discharge (i.e., the water going into the discharge pipe) is needed. A complete, long term monitoring plan for determining water quality impacts from the facility is needed and must be developed in conjunction with the North Coast Regional Water Quality Control Board (and potentially with U.S. Environmental Protection Agency involvement), the main agency responsible for enforcing the Clean Water Act and the Porter-Cologne Water Quality Control Act in this area.

The Council appreciates that Nordic Aquafarms California, LLC recognizes that monitoring of both the discharge and the receiving waters is necessary to determine and alleviate any potential impacts of the proposed project on the environment. The Council also recommends that the dilution modeling study be re-analyzed using data collected during baseline monitoring at the discharge location to assess for impacts to water quality. For example, it is not clear that the nearshore current flows in a predominantly north to south direction as presented in the model, as sediments deposited at the mouth of Humboldt Bay have been shown to have originated from the Eel River, which is south of Humboldt Bay. Additionally, the Final EIR should include a detailed mitigation plan that can be immediately implemented if impacts to water quality or biological communities are observed during post-discharge monitoring.

Additionally, the Final EIR should discuss the potential for pathogens and parasites that may be present in the source hatcheries providing eggs to the Nordic aquaculture facility. We understand

[1] NMFS 1997 California Fish Screening Criteria for Anadromous Salmonids can be found here: https://media.fisheries.noaa.gov/dam-migration/southwest_region_1997_fish_screen_design_criteria.pdf

that the UV disinfection system is expected to neutralize pathogens before discharge from the facility. However, the Council recommends the EIR include additional information on the effectiveness of UV disinfection on target pathogens and include an analysis of the risk to native species from pathogens/parasites associated with the species intended to be raised in the facility. The Final EIR should also describe the proposed location(s) of fish waste disposal and assess the environmental impacts from the potential transfer of pathogens, high nitrogen load, etc. to fish habitats elsewhere.

**Effects of Extraction of Water from Mad River and Humboldt Bay**

The Final EIR should discuss the potential effects of extracting large volumes of water from Mad River (up to 2.5 million gallons per day) and Humboldt Bay (10 to 12 million gallons per day), potentially exacerbating current and future hydrological drought conditions and amplifying its effect on managed species, including ESA-listed species, and particularly under climate change scenarios.

**Impacts to Eelgrass from Proposed Mitigation**

The EIR should describe the potential impacts to eelgrass habitat from the proposed mitigation measures described in the draft EIR. The removal of pilings to create additional eelgrass habitat may be an adverse impact to existing eelgrass habitat at the mitigation site. The EIR should describe in greater detail how impacts to existing eelgrass habitat will be avoided or minimized and how the creation of new eelgrass habitat will be achieved and monitored to meet the success criteria determined by approving agencies.[2]

**Non-native Salmonids**

The Council is concerned about the potential for unintended introduction of a non-native salmonid into coastal California watersheds and nearshore ocean. The Final EIR should include additional discussion on the potential impacts from accidental introduction of a non-native salmonids into Northern California watersheds and nearshore ocean and the impacts to salmonid habitat from potential introduction of new pathogens or parasites that these non-native salmonids may carry.

**Cumulative Effects**

The EIR should evaluate the potential cumulative effects of Nordic Aquafarms operations with other ongoing and foreseeable activities in the project area. Such activities should include but are not limited to navigational channel maintenance dredging, future renewable energy projects, in-bay mariculture operations, and subsea cable installation.

**Future Engagement and Consultation with the Council**

The Council values timely and effective communication and consultation regarding Nordic Aquafarms aquaculture operations. We encourage Humboldt Planning and Building Department and Nordic Aquafarms to work with us as this project moves forward, recognizing that the Council and advisory body agendas are set well in advance of each Council meeting, and that the Council's meeting schedule does not always align with public comment periods of other processes. The

[2] The NMFS California Eelgrass Mitigation Policy (CEMP) can be found here: https://www.fisheries.noaa.gov/resource/document/california-eelgrass-mitigation-policy-and-implementing-guidelines.

Council, National Marine Fisheries Service, state fishery management agencies, and fishery stakeholders must be provided sufficient opportunity to inform and engage in this process.

Thank you for your consideration of our comments. Please contact Mr. Kerry Griffin (Kerry.griffin@noaa.gov; 503-820-2409) at the Council office should any issues arise outside your public comment window, or if you have any questions.

Sincerely,

Marc Gorelnik
Chairman

Cc: Council Members
Lance Hebdon
Correigh Greene
Eric Wilkins