

Nordic Aqua Farms Project Water Quality Primer

Concerns:

- The Mitigated Negative Declaration has not actually considered actual current conditions in the direction of the outfall pipe.
- The Humboldt Bay estuary provides critical habitat for juvenile coho salmon, green sturgeon, eulachon, and longfin smelt.
- No modeling has been presented that addressed effluent distribution during upwelling and storm events.
- Effluent from the project will reduce the water quality for juvenile salmonids in the estuarine and nearshore marine ecosystems.
- The fish treatment drugs Parasite-S, Formalin-F, and Formacide-B may diminish the salmonid prey in the effluent stream and in critical habitat in the Mad River, Humboldt Bay, and the Eel River harming individual fish and potentially causing significant reduction in local salmonid numbers.
- Federally-listed coho salmon, Chinook, and green sturgeon juveniles will be exposed to the effluent stream from the fish factory floor and fish treatment drugs.
- The introduction of viral and bacterial pathogens to the marine environment is one of the most significant risks of the Project to wild salmonids.
- The enormous amount of power needed amount of power to needed to operate the Project has a carbon footprint comparable to 10,000 new homes.

Recommendations:

- A risk analysis for loss of salmonid prey species should be conducted to determine Project effects to Chinook salmon and steelhead critical habitat, as well as individual and population-level effects to these species.
- Modeling of flow reductions in the Mad River and the combined impact of effluent-laden sediments, marine upwelling, tidal surge, and daily south-north current changes will allow for a more complete exposure profile for effects to critical habitat for coho salmon, green sturgeon, and eulachon.
- A thorough analysis of how Project chemicals affect water quality, food resources, and aquatic vegetation should be conducted.
- Adverse effects to ESA-listed species should be addressed through consultation with NOAA Fisheries and adverse effects to CESA-listed species should be addressed through consultation with California Department of Fish and Wildlife.
- Monitoring of changes in prey availability and cover for listed species is essential for tracking the population impacts of the Project. Monitoring protocols should be reflective

of the baseline sampling methodology, in order to fairly track Project impacts to local ecosystems.

- Monitoring of changes in the amounts of PCBs, dioxin equivalents, methylmercury, EthoxyQuin, PBDEs is needed in the tidal flats within Humboldt Bay at a minimum.

Figure 1 for Rose Foundation Report

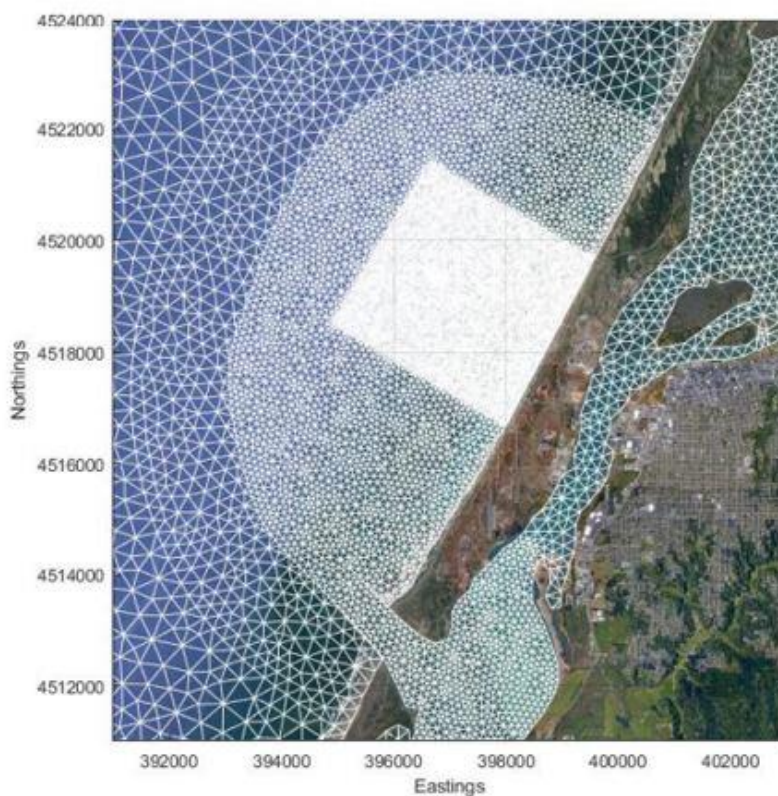


Figure 1. Excerpt from Figure 7 of the *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a) This preliminary modeling is only based on a 180. directional current and does not include local currents, northward flows, or marine upwelling.