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October 26, 2020

Samuel D. Rauch III  
Deputy Assistant Administrator, Regulatory Programs  
National Marine Fisheries Service

**RE: Comments on Notice of Intent to Prepare an EIS for Pacific Ocean AquaFarms**

Dear Mr. Rauch,

Our organizations submit the following comments on the Environmental Impact Statement (EIS) for the offshore finfish aquaculture facility proposed by Pacific Ocean AquaFarms (POA).<sup>1</sup> Our comments address the following: (1) our concerns that the full range of adverse impacts of offshore finfish aquaculture are currently unknown and further research and consultation are needed before incentivizing national growth of this industry; (2) the range of potential adverse impacts of the POA facility on the environment that should be included in the EIS; and (3) how federal agencies must consult with the California state government on the POA facility and coordinate with state marine aquaculture efforts. Overall, given the uncertainty that exists regarding offshore finfish aquaculture and its significant potential for harm, our organizations request that the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), in coordination with the National Oceanic and Atmospheric Administration (NOAA), deny the permits authorizing the POA facility to proceed.

I. The Effects of Offshore Finfish Aquaculture Are Still Too Uncertain to Allow the Practice to Go Forward at Present

The scope and magnitude of direct, indirect, and cumulative adverse impacts resulting from the development of an offshore finfish aquaculture industry in federal waters are currently unknown and could be significant. As noted in Section II, these impacts include water pollution, spread of disease, attraction of wildlife and predators, fish escapes, and heightened pressure on wild fish stocks for food. Furthermore, most of the open ocean finfish aquaculture worldwide to date has been conducted in waters within four miles from shore<sup>2</sup> which lends greater uncertainty to the degree of challenges faced by aquaculture facilities operating in higher energy waters farther offshore.

Accordingly, we urge additional scientific research and consultation with existing ocean stakeholders before federal agencies advance the growth of an offshore aquaculture industry in the U.S. by approving the POA facility. Given the level of uncertainty surrounding open ocean finfish aquaculture, the EPA and USACE should deny the permits authorizing the POA facility to proceed.

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<sup>1</sup> Notice of Intent to Prepare an Environmental Impact Statement, Pacific Ocean AquaFarms Environmental Impact Statement, 85 Fed. Reg. 55667 (Sept. 9, 2020).

<sup>2</sup> California Environmental Associates, *Offshore Finfish Aquaculture: Global Review and U.S. Prospects* (2018), at 12, <https://www.ceiconsulting.com/wp-content/uploads/CEA-Offshore-Aquaculture-Report-2018.pdf>.

## II. NOAA, EPA and USACE Should Consider the Full Range of Environmental Impacts of the POA Facility

As stated in Section I, we urge EPA and USACE, in coordination with NOAA, to deny the permits authorizing the POA facility to go forward. However, if NOAA proceeds with NEPA review, there is a range of potential adverse impacts that the EIS must consider. POA has proposed constructing and operating a finfish aquaculture facility in federal waters offshore San Diego or Long Beach to cultivate California yellowtail, and potentially white seabass or other local species.<sup>3</sup> The facility would consist of 28 submersible net pens arrayed in a grid approximately four nautical miles from shore. Each circular pen would be 98.4 feet in diameter and 46 feet deep, constructed of poly-ethylene pipe and copper-alloy mesh, and moored using nylon ropes, steel chains, and anchors or concrete blocks to affix the system to the seafloor.<sup>4</sup> Once fully operational, POA aims to produce up to 11 million pounds of seafood annually, or 5.5 million pounds annually if the facility is granted a half-scale alternative instead.<sup>5</sup>

Pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations, an EIS must consider all environmental effects of a proposed action.<sup>6</sup> “Effects” are defined broadly to include potential ecological, cultural, social, and health impacts.<sup>7</sup> An EIS must consider indirect and cumulative effects, in addition to direct effects.<sup>8</sup> Cumulative effects include the incremental impact of the action at issue combined with past, present, and reasonably foreseeable future actions.<sup>9</sup> In the EIS at issue, NOAA must consider at least the following effects of the POA facility on the marine, coastal, and human environments at both the proposed San Diego location and the Long Beach alternative:

- Water pollution stemming from a variety of sources, including fish waste, uneaten feed, and antibiotic and antiparasitic treatments.<sup>10</sup>
- The spread of diseases, pathogens, and parasites from the cultivated fish population to wild fish stocks.<sup>11</sup>
- The impact of escaped cultivated fish on wild fish populations and fishing communities.<sup>12</sup> POA plans to cultivate species native to the project location, and specifically notes California yellowtail and white seabass. NOAA must consider the impact that escaped fish could have on wild populations by out-competing them for food or polluting wild gene pools. POA also proposes cultivating “[o]ther local species.”<sup>13</sup> If cultivated species are not yet identified, the

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<sup>3</sup> 85 Fed. Reg. at 55669.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> 42 U.S.C. § 4332(C)(i),(ii); 40 C.F.R. § 1502.16.

<sup>7</sup> 40 C.F.R. § 1508.8.

<sup>8</sup> *Id.* § 1508.7; *id.* § 1508.8.

<sup>9</sup> *Id.* § 1508.7.

<sup>10</sup> Jillian Fry, David Love & Gabriel Innes, *Ecosystem and Public Health Risks From Nearshore and Offshore Finfish Aquaculture*, Johns Hopkins Center for a Livable Future (revised Aug. 2018) at 9-10, <https://clf.jhsph.edu/sites/default/files/2019-09/ecosystem-and-public-health-risks-from-nearshore-and-offshore-finfish-aquaculture.pdf>; Rebecca R. Gentry et al., *Offshore aquaculture: Spatial planning principles for sustainable development*, 7 *Ecology & Evolution* 733, 735-36 (2016); Report of the Marine Aquaculture Task Force, *Sustainable Marine Aquaculture: Fulfilling the Promise: Managing the Risks* (Jan. 2007), ch. 6, [https://www.who.edu/cms/files/mcarlowicz/2007/1/Sustainable\\_Marine\\_Aquaculture\\_final\\_1\\_02\\_07\\_17244.pdf](https://www.who.edu/cms/files/mcarlowicz/2007/1/Sustainable_Marine_Aquaculture_final_1_02_07_17244.pdf)

<sup>11</sup> Fry, Love & Innes, *supra* note 10, at 6-9; Gentry et al., *supra* note 10, at 737.

<sup>12</sup> Fry, Love & Innes, *supra* note 10, at 5-6.

<sup>13</sup> 85 Fed. Reg. at 55669.

EIS should acknowledge and study the potential for effects of the full range of finfish commercial species under consideration for cultivation on existing local fish populations. Furthermore, the facility would be situated four nautical miles offshore. The EIS should assess the extent to which currents, storms, and higher energy waters offshore will increase likelihood of damage to pens, increasing the risk of fish escape. Commercial and recreational fishing in federal waters is a staple of California's coastal economy and depends on science-based standards for maintaining healthy target fish stocks, protecting forage fish populations that serve as important prey for other fish, mammals, and birds, and protecting marine habitat. Working closely with the regional fishery management council, NOAA should analyze the impacts on fishing communities that could result from marine habitat loss or degradation and other impacts described herein, including fish escapes and disease spread.

- Interactions with other wildlife species. Marine mammals and other wildlife will likely be attracted to the POA facility.<sup>14</sup> The EIS must consider the impacts that increased predator presence may have on other marine organisms in the area, as well as how POA intends to address predator interactions with the facility itself.
- Marine mammal and wildlife entanglement. The EIS must assess the potential for marine wildlife to become entangled, either on the mooring systems used to attach the aquaculture pens to the seafloor or through secondary entanglement on derelict fishing gear and trash that may become entwined with the mooring ropes. We are concerned about adverse effects on marine mammal populations inhabiting and transiting through the area — multiple species of large cetaceans migrate annually near the California coast, including the Eastern North Pacific stock of gray whales which is currently undergoing an Unusual Mortality Event.<sup>15</sup>
- Pressure on wild fish stocks as a source of feed for cultivated fish.<sup>16</sup> Wild California yellowtail and white sea bass eat key forage fish such as sardines and anchovies.<sup>17</sup> The EIS must consider the extent to which procuring feed for the cultivated fish populations in the POA facility will stress the ability of these species to adequately provide for the nutritional needs of local wildlife, as well as alternative sources of feed that could avoid or mitigate reliance on wild fish stocks.
- Increased vessel traffic, port use, and ocean noise. During the construction stage, POA would need pier or wharf access, and vessels would transport the materials needed to assemble the facility. Similarly, during the operational stage, vessels would transport feed, staff, and harvested fish between the facility and the Port of San Diego, Port of Long Beach, or Port of Los Angeles on a regular basis.<sup>18</sup> NOAA must consider the potential impacts of increased port use and vessel traffic in the waters between the ports and the facility locations at both

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<sup>14</sup> See Katie Rowley, *Bibliography: Aquaculture Interactions with Endangered Species*, NOAA Central Library (May 2020), sec. I, [https://repository.library.noaa.gov/view/noaa/24250/noaa\\_24250\\_DS1.pdf?](https://repository.library.noaa.gov/view/noaa/24250/noaa_24250_DS1.pdf?)

<sup>15</sup> NOAA Fisheries, *2019-2020 Gray Whale Unusual Mortality Event along the West Coast and Alaska*, <https://www.fisheries.noaa.gov/national/marine-life-distress/2019-2020-gray-whale-unusual-mortality-event-along-west-coast-and> (last updated Sept. 9, 2020).

<sup>16</sup> See Harold Upton & Eugene Buck, Congressional Research Service, CRS Report RL32694, *Open Ocean Aquaculture* (2010) at 11-12, <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32694.pdf>.

<sup>17</sup> Sea Grant California, *California Seafood Profiles: Yellowtail*, <https://caseagrant.ucsd.edu/seafood-profiles/yellowtail> (last accessed Oct. 11, 2020); Sea Grant California, *California Seafood Profiles: White Seabass*, <https://caseagrant.ucsd.edu/seafood-profiles/white-seabass> (last accessed Oct. 11, 2020).

<sup>18</sup> 85 Fed. Reg. at 55669.

alternatives. In particular, NOAA should consider the risk of vessel strike and harassment from increased ocean noise for marine mammals and other wildlife.

- The EIS must also consider the cumulative impacts of the POA facility in concert with other uses of the area surrounding the San Diego and Long Beach sites, including shellfish and algae aquaculture, offshore wind energy, and military activity. Shellfish and algae aquaculture are fledgling industries in southern California. An oyster nursery operates in the San Diego Bay,<sup>19</sup> and other aquaculture projects are found in the region.<sup>20</sup> Catalina Sea Ranch, a shellfish aquaculture facility, previously operated near the Long Beach alternative site,<sup>21</sup> and two other offshore aquaculture facilities have been proposed nearby.<sup>22</sup> Additionally, the state of California is currently working on a plan for approving future shellfish and algae aquaculture projects, and the California Ocean Protection Council (OPC) has stated a goal of promoting sustainable aquaculture.<sup>23</sup> Consequently, it is reasonably foreseeable that other aquaculture facilities will be developed in the vicinity of the POA facility, and the cumulative impacts of multiple facilities must therefore be assessed.<sup>24</sup>
- Offshore wind energy is also an emerging industry on the California coast. A joint state-federal task force, including the California Energy Commission and the Bureau of Ocean Management, is currently working to determine appropriate sites for offshore wind in California.<sup>25</sup> NOAA should consider the potential cumulative impacts of the POA facility and the construction, maintenance, and operation of forthcoming offshore wind turbines. Finally, the waters of southern California are used extensively by the U.S. Navy.<sup>26</sup> The EIS should therefore assess the cumulative impacts of the POA facility and naval uses.

### III. NOAA, EPA and USACE Must Consult and Coordinate with the State of California

As stated above, we urge EPA and USACE, in coordination with NOAA, to deny the permits authorizing the POA facility. However, if the POA facility is allowed to proceed, the involved federal agencies—NOAA, EPA, and USACE—must consult with the State of California and its agencies

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<sup>19</sup> San Diego Bay Aquaculture, *About Us* (last accessed Oct. 12, 2020), <https://sandiegobayaquaculture.com/>.

<sup>20</sup> *E.g.*, Carlsbad Aquafarm, *Welcome* (last accessed Oct. 12, 2020), <https://carlsbadaquafarm.com/>.

<sup>21</sup> Catalina Sea Ranch filed for bankruptcy earlier this year, and the future of the facility is currently unclear. *See* Jason Smith, *Strained mussels: Causes of the first US offshore farm's demise are up for debate*, Undercurrent News (May 4, 2020), <https://www.undercurrentnews.com/2020/05/04/strained-mussels-causes-of-us-offshore-farms-demise-are-up-for-debate/>.

<sup>22</sup> USACE, Public Notice: Avalon Ocean Farm (Aquaculture) Application for Permit (March 13, 2020), [https://www.spl.usace.army.mil/Portals/17/docs/publicnotices/SPL-2020-00039-TS%20Avalon%20Ocean%20Farm\\_PN.pdf?ver=2020-03-18-130535-037](https://www.spl.usace.army.mil/Portals/17/docs/publicnotices/SPL-2020-00039-TS%20Avalon%20Ocean%20Farm_PN.pdf?ver=2020-03-18-130535-037) (proposing a shellfish and kelp aquaculture facility 3.3 miles offshore Huntington Beach, CA); Ventura Port District, *Ventura Shellfish Enterprise: Draft Preliminary Operations Plan* (Sept. 2, 2020), <http://venturashellfishenterprise.com/pdf/VSE%20Draft%20Ops%20Plan%20August%202020.pdf> (proposing a mussel aquaculture facility 3.5 miles offshore, northwest of Ventura Harbor).

<sup>23</sup> *See infra* Section III; California Ocean Protection Council, *Strategic Plan to Protect California's Coast 2020-2025* (2020), objective 4.2, at 27, [https://opc.ca.gov/webmaster/ftp/pdf/agenda\\_items/20200226/OPC-2020-2025-Strategic-Plan-FINAL-20200228.pdf](https://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20200226/OPC-2020-2025-Strategic-Plan-FINAL-20200228.pdf).

<sup>24</sup> 40 C.F.R. § 1508.7.

<sup>25</sup> California Energy Commission, *Offshore Renewable Energy*, <https://www.energy.ca.gov/programs-and-topics/topics/renewable-energy/offshore-renewable-energy> (last accessed Oct. 18, 2020).

<sup>26</sup> Scripps Institution of Oceanography, *Southern California Naval Clearance Information*, UC San Diego, <https://scripps.ucsd.edu/ships/planning/clearances> (last accessed Oct. 21, 2020).

throughout the siting, environmental assessment, and permitting process. They must also ensure that the state has ample advance notice and can fully participate in the process. The proposed aquaculture facility would be sited off the coast of San Diego or alternatively off the coast of Long Beach and would have significant potential to affect California state waters, coastal lands and infrastructure, and other economic uses of the coastal area. For example, effluents from the facility may pollute state waters, the facility will likely attract predators and other wildlife to the area, and construction and operations vessels will travel frequently between ports and the facility, increasing traffic.<sup>27</sup> Furthermore, impacts from the POA facility may impact the state's coastal conservation efforts. California Governor Gavin Newsom has issued a recent executive order avowing a goal of conserving thirty percent of California coastal waters by 2030.<sup>28</sup> Multiple state Marine Protected Areas (MPAs) are also located near the proposed and alternative sites.<sup>29</sup> The POA facility may impair the capacity of MPAs to protect biodiversity, marine ecosystems, and marine life populations.<sup>30</sup>

California is a crucial partner in overseeing effects on state natural resources and communities, and NOAA is required by law to coordinate with the state in developing this EIS. Under NEPA regulations, NOAA is required to invite state agencies and governments likely to be affected by a proposed action to participate in the scoping process.<sup>31</sup> Additionally, under the Coastal Zone Management Act federal agency activities affecting state coastal zones must be carried out in a manner consistent with the enforceable policies of state Coastal Management Programs (CMP).<sup>32</sup> The POA facility requires permits under section 402 of the Clean Water Act and section 10 of the Rivers and Harbors Act.<sup>33</sup> Both of these federal permits are subject to certification for consistency under California's CMP.<sup>34</sup> EPA and USACE, as the permitting agencies for the POA facility, must work with the California Coastal Commission to complete this review.

In addition to fulfilling these statutory requirements, we more broadly urge the federal agencies to coordinate their efforts to establish aquaculture offshore California with those of the state government. As previously noted, the OPC is currently developing a statewide aquaculture action plan for assessing and approving marine algae and shellfish aquaculture projects in state waters.<sup>35</sup> Up to this point, NOAA has not adequately engaged with the OPC on federal aquaculture efforts off the California coast. During a recent public meeting, OPC Executive Director Mark Gold stated the OPC was given inadequate notice and time to provide input on NOAA's designation of federal waters off the coast of southern California as an Aquaculture Opportunity Area (AOA) and expressed concern about maintaining consistency between state and federal aquaculture development processes, stating a desire to "get shellfish...[and] algae right"

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<sup>27</sup> Fry, Love & Innes, *supra* note 10, at 9-10; Upton & Buck, *supra* note 16, at 11-12.

<sup>28</sup> California Executive Order N-82-20 (Oct. 7, 2020), <https://www.gov.ca.gov/wp-content/uploads/2020/10/10.07.2020-EO-N-82-20-.pdf>.

<sup>29</sup> 14 Cal. Code Reg. § 632; *see* Cal. Dept. Fish & Wildlife, *Southern California Marine Protected Areas* (Jan. 1, 2019), <https://wildlife.ca.gov/Conservation/Marine/MPAs/Network/Southern-California>.

<sup>30</sup> Cal. Fish & Game Code § 2853(b).

<sup>31</sup> 40 C.F.R. § 1501.9(b).

<sup>32</sup> 16 U.S.C. § 1456(c)(1)(A).

<sup>33</sup> 85 Fed. Reg. at 55667.

<sup>34</sup> California Coastal Commission, *California Coastal Management Program: List of Federal Licenses and Permits Subject to Certification for Consistency* (2015), [https://www.coastal.ca.gov/fedcd/listlic\\_2015.pdf](https://www.coastal.ca.gov/fedcd/listlic_2015.pdf).

<sup>35</sup> California Ocean Protection Council, *supra* note 22, at 27.

before pursuing finfish aquaculture off the California coast.<sup>36</sup> Going forward, NOAA must coordinate aquaculture efforts in federal waters with those in state waters.

Thank you for considering these comments. Should you have any questions, we would be pleased to discuss our concerns in greater detail.

Sincerely,

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<sup>36</sup> Comments of Mark Gold, Executive Director of OPC, during Ocean Protection Council meeting (Sept. 17, 2020), at 01:33:00-01:36:00, <https://cal-span.org/unipage/index.php?site=cal-span&owner=COPC&date=2020-09-17>.

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