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West Coast Region  
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Long Beach, CA 90802

Submitted online at Docket No. NOAA-NMFS-2022-0051-0048

**RE: Draft Programmatic Environmental Impact Statement for the Identification of Aquaculture Opportunity Areas in U.S. Federal Waters of Southern California**

Dear Ms. Barroso:

**Don't Cage Our Oceans** is a coalition of over sixty seafood businesses and organizations working to stop industrial-scale offshore finfish farming while uplifting values-based seafood systems led by local communities. [Values-based](#) and more responsible forms of aquaculture are community-driven, responsibly sited and appropriately scaled, and use more appropriate

species and methods. We respectfully submit these comments in response to NOAA's "Draft Programmatic Environmental Impact Statement for Identification of Aquaculture Opportunity Areas in Federal Waters of Southern California." Please note that we also endorse the comments submitted by the Center for Food Safety.

**We support Alternative 1, the No Action Alternative,** in which no AOAs would be identified in federal waters offshore of Southern California. In addition, our coalition neither endorses nor objects to the identification of AOAs for aquaculture activities that **explicitly** forbid finfish farming (e.g., the sub-alternatives). While seaweed and bivalve farming are wholly distinct from finfish farming and have far less harmful impacts than the latter, we nonetheless believe that existing state law is best designed to regulate that activity in state waters.

There are several reasons why the most prudent option is for NOAA to take no action in designating AOAs pursuant to Executive Order 13921. Chief among these is that NOAA lacks the legal authority to regulate aquaculture in federal waters in the first place. Furthermore, there are grave economic and ecological consequences in allowing offshore finfish farming in U.S. federal waters.

### **Legality**

NOAA asserts that this DPEIS "is not a regulatory or permitting action and does not propose to authorize or permit any specific aquaculture-related activities or individual aquaculture projects." Indeed, it does not have that authority. Yet while the agency is indeed not issuing permits with this specific document, it nonetheless notes that "Future proposed aquaculture projects may tier from the PEIS if the lead agency determines the PEIS is appropriate for its needs." The agency is well aware of the end goal. Indeed, NOAA *also* states that the purpose of this DPEIS "is to identify AOAs in Federal waters," with "the goal of identifying AOAs...to support the development of domestic commercial aquaculture."

The agency's intent here is worth noting. Contrary to the agency's downplaying of the ramifications of this DPEIS, the idea is that this document would provide a foundation and expedite any future agency regulatory action by having this very document play a central role in complying with NEPA and other environmental laws.

For many years, NOAA has asserted authority in setting up and permitting an unprecedented nationwide system of commercial offshore aquaculture facilities across all U.S. waters, even though Congress has not approved any legislation granting the agency authority to do so. In fact, the courts have affirmed the agency's lack of authority to oversee aquaculture activities in federal waters.

In 2020, the 5th Circuit Court of Appeals case *Gulf Fishermen's Association v. National Marine Fisheries Service* held that NOAA does not have authority to permit or regulate aquaculture in U.S. federal waters, as there is no Congressional authorization to do so under the Magnuson-

Stevens Fishery Conservation and Management Act (MSA).<sup>1</sup> For years, NOAA had claimed that the MSA had provided authority under the contorted view that aquaculture falls under the statutory definition of “fishing” for purposes of the MSA, as fish are ultimately extracted from net pens, and that NOAA could thus create a fishery management plan (FMP) to regulate aquaculture. The 5th Circuit Court saw through this flawed justification, and ruled against it.

Across several administrations, the agency has acted as a promoter of industrial aquaculture, contrary to the will of American fishermen and coastal residents. Following the aforementioned court ruling, EO 13921 sought to grant NOAA authority where Congress had not. Yet executive orders cannot confer authority on agencies because the president’s powers are executive, not legislative, in nature.<sup>2</sup> Rather, the president's authority to act “must stem either from an act of Congress or from the Constitution itself.”<sup>3</sup> As a result, EO 13921 cannot allow NOAA to establish a new offshore aquaculture industry in the absence of any statutory authority granted by Congress.

Notably, the other key provision that facilitated offshore aquaculture in that executive order was challenged in court. In [\*Don't Cage Our Oceans vs. United States Army Corps of Engineers\*](#), the U.S. District Court for the Western District of Washington found that the U.S. Army Corps of Engineers (the Corps) had violated a number of environmental statutes in its effort to expedite and facilitate the issuing of Nationwide Permit 56. And just as NOAA argues here in the DPEIS that it is not regulating anything, the Corps also (unsuccessfully) alleged that its actions would have no bearing on aquaculture development.

While the Corps acknowledged numerous adverse impacts of the large fish farm structures it was authorizing in the permit, it failed to actually assess them. As the court explained, the Corps lacked the “logical bridge between the multiple acknowledged adverse impacts”—including those described by the agency itself as “high risk”—and the agency's “conclusion that the impacts of NWP 56 would be no more than minimal or would be insignificant.” The court concluded: “Because the Corps narrowed its [environmental assessment] to disclose but not account for many foreseeable effects of NWP 56, its findings of minimal effects and no significant impacts are insufficiently supported and explained.”

Here, the whole point of this DPEIS is to determine where best to encourage industrial aquaculture (especially of the finfish variety) in federal waters. The claim that this does nothing to promote the industry under the argument that no permit is being issued is unconvincing.

Absent *any* plain text in support, NOAA cannot establish its authority to designate AOAs in Southern California. In June 2022, the U.S. Supreme Court made plain that an agency must

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<sup>1</sup> *Gulf Fishermens Ass’n v. Nat’l Marine Fisheries Serv.*, 968 F. 3d 454 (5th Cir. 2020).

<sup>2</sup> *Doe #1 v. Trump*, 957 F.3d 1050, 1062 (9th Cir. 2020) (citing *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579, 587 (1952) (“[T]he President's power to see that the laws are faithfully executed refutes the idea that he is to be a lawmaker.”)).

<sup>3</sup> *Id.* at 585.

“point to ‘clear congressional authorization’ for the authority it claims.”<sup>4</sup> Congress has never given NOAA the authority to regulate aquaculture in federal waters, and the courts have agreed with this interpretation.

Just last year, in the landmark decision *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369 (2024), the U.S. Supreme Court overturned the *Chevron* doctrine, and further cemented the idea that federal agencies cannot legislate where there is ambiguity. Given that the aforementioned cases of *Gulf Fishermen’s Association* and *Don’t Cage Our Oceans* were litigated in a *Chevron* world, the bar is now higher yet for NOAA to convince any court that it has found ambiguity in any statute and should be granted deference when it comes to aquaculture in federal waters.

Congress has repeatedly demonstrated immense skepticism of offshore finfish aquaculture, an industrial activity that is resoundingly opposed by American fishermen and coastal residents. However, even if NOAA’s permitting and regulating of aquaculture were to be legal, there are a variety of other compelling reasons why this activity should not move forward.

### **The federal government’s “water grab” and misappropriation of taxpayer dollars is overwhelmingly rejected by the public**

Aquaculture Opportunity Areas are the ocean-based equivalent of a land grab; they are a “water grab” by the federal government to benefit specific corporate interests, and to the detriment of existing shoreside industries, such as fishing, tourism, and recreation. The public trust doctrine is a legal principle that U.S. waters belong to all Americans, and the government must protect and maintain these resources for the public’s use. Cordoning off large portions of Southern California waters for the exclusive use of a single out-of-state or foreign company harms the public, coastal communities, and the livelihoods of residents who live and work along the water.

Alternative 2 (“Santa Barbara Channel”) would have the agency take a combined 15,000 acres offshore the Santa Barbara and Ventura counties in the Santa Barbara Channel. The proposal is eight AOA options located between 5-10 nautical miles offshore. While sub-alternative 2(a), (“macroalgae and shellfish aquaculture only”) is less problematic than sub-alternative 2(b) (“all types of commercial aquaculture”), neither option avoids the harm of handing over America-owned waters to private interests. Sub-alternative 2(b) is worse in that the proposal would be primarily of interest to industrial finfish farming corporations, often of international ownership, who would have the financial capital to build out the astonishing quantity of sea cages, mooring lines, floating feed barges and other related infrastructure.

Alternative 3 (“Santa Monica Channel”) is also an untenable option, where the agency is proposing two AOAs offshore of Los Angeles County in Santa Monica ***near a confirmed toxic***

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<sup>4</sup> *W. Virginia v. EPA*, No. 20-1530, 2022 WL 2347278, at \*3 (U.S. June 30, 2022) (citing *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 324 (2014)).

**radioactive dumpsite.**<sup>5</sup> (For more on this, see the last section of this comment letter.) These locations are just a little over 4 miles offshore and would feature a combined 1,500 acres. These proposals are barely a mile beyond the state water line, and sub-alternative 3(b) in particular (“all types of commercial aquaculture”) would feature the federal government snubbing California’s state law banning most forms of finfish farming. Sub-alternative 3(a) (“shellfish and macroalgae aquaculture only”) is a poor idea because shellfish and seaweed absorb and bioaccumulate toxins from their surrounding environment. Toxic and radioactive seaweed, shellfish, and finfish pose a direct risk to the health of American consumers.

Finally, Alternative 4 (“Combination of Geographic Areas”) is the most reckless of all proposals in that it combines the above suggested alternatives, featuring up to ten AOAs spanning 16,500 acres. While sub-alternative 4(a) is again for shellfish and macroalgae only, 4(b) would actively harm American economic and conservation interests by allowing “all types of commercial aquaculture” (read: finfish). **Tragically, sub-alternative 4(b) (allowing finfish aquaculture) is also the agency’s preferred alternative;** in other words, NOAA’s preference is the one that is most harmful to Americans who live and work along our coasts, and also incorporate toxic and radioactive farmed products.

Don’t Cage Our Oceans members assert that sub-alternatives 2(b), 3(b), and (4b) are the worst possible decisions in that they would allow finfish aquaculture in federal waters off of southern California. Sub-alternatives 2(a), 3(a), and 4(a) are misguided at best in that they are unlikely to be economically viable to coastal residents who aspire to raise shellfish and seaweed in a responsible manner. Community-owned and operated macroalgae and shellfish aquaculture is best achieved under existing state law.

Offshore finfish aquaculture proponents have requested long-term (25-year) leases for their facilities spanning hundreds of acres, which would essentially block off a swath of public oceans for more than an entire generation. In this DPEIS, NOAA is proposing to carve up and hand control of our federal ocean spaces, a public resource that should be managed for the benefit of all Americans, to private companies and corporate interests. In doing so, **NOAA is actively harming America’s fishing families and the many small businesses in coastal communities that support them.** NOAA should instead focus on supporting independent fishermen, fishermen co-ops, and small businesses that provide seafood to local and regional American markets.

Few want to see this industry get a foothold in our public waters except for the large agriculture and pharmaceutical corporations and their shareholders<sup>6</sup> who see an opportunity to profit from industrially produced fish that require enormous feed and drug inputs. In the prior Administration, NOAA listening sessions for its strategic plan on aquaculture and related initiatives revealed that **people overwhelmingly oppose** the inclusion of marine finfish

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<sup>5</sup> Fausey, Callie. *Radioactive Waste and DDT: UCSB Scientist David Valentine Releases New Study Pointing to Disposal of Radioactive Waste in Pacific Ocean*, February 22, 2024. Available at:

<https://msi.ucsb.edu/news/radioactive-waste-and-ddt>

<sup>6</sup> See Stronger America Through Seafood. <https://www.strongerthroughseafood.org/sats-members>

aquaculture as part of NOAA’s vision in the first place. In prior listening sessions for the Southern California AOAs, a substantial majority of California residents opposed their creation.

Commercial fishermen – already struggling due to rising costs, a lack of institutional support, and the lingering impacts of COVID on their industry – are especially threatened by the prospect of industrial finish farming in Southern California. If farmed fish from facilities sited within AOAs are actually sold in the U.S., they will likely undercut wild fisheries, and **drive small fishing businesses to closure**. The impacts of global salmon farming on small-boat salmon fishermen in Alaska during the 1990s are a textbook example of this effect, which caused economic insecurity and contributed to permit loss in small fishing communities.

American commercial fishermen have repeatedly voiced their concerns over being forced to coexist with a taxpayer-subsidized marine aquaculture industry, stating that “this emerging industrial practice is incompatible with the sustainable commercial fishing practices embraced by our nation for generations and contravenes our vision for environmentally sound management of our oceans.”<sup>7</sup> NOAA has failed to secure public buy-in or societal license to push forward industrial fish farms in federal waters.

That NOAA would nonetheless enthusiastically pursue the permitting of factory fish farms that are known to harm the very fisheries that the agency is tasked with conserving and managing is deeply troubling. Indeed, despite all of the data that NOAA provides in this DPEIS outlining the enormous contribution of the fishing and tourism industries to California’s economy (amounting in the billions of dollars), the agency simply brushes those concerns aside.

### **Creating AOAs to promote offshore finfish farming harms fishing families and fishing communities**

NOAA’s AOA Atlas already concedes potential impacts on commercial fishing operations and the significant geographical overlap between the AOAs, commercial traffic, and fishing.<sup>8</sup> The agency also explicitly acknowledges that commercial fishing supports many communities along the coastline by providing employment, income, and revenue from seafood sales, stating that the seafood industry in California supported more than 150,000 jobs in 2017.<sup>14</sup> So why would we want to threaten these valuable fisheries with near-guaranteed fish escapes from aquaculture facilities?

#### *Fish Escapes Have And Will Occur*

California already has a ban on salmonid, transgenic, and non-native finfish farming in its own state waters. Yet the threat of fish escaping into Federal *and Californian state waters* is

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<sup>7</sup> Open letter to Members of the U.S. House of Representatives and Senate, Dec. 4, 2018, re: Opposition to marine finfish aquaculture in U.S. waters, <http://foe.org/DecFishFarmingSignOnLetter/>.

<sup>8</sup> Morris, J.A. Jr, MacKay, J.K., Jossart, J.A., Wickliffe, L.C., Randall, A.L., Bath, G.E., Balling, M.B., Jensen, B.M., and Riley, K.L. 2021. An Aquaculture Opportunity Area Atlas for the Southern California Bight. NOAA Technical Memorandum NOS NCCOS 298. Beaufort, NC. 485 pp. <<https://doi.org/10.25923/tmx9-ex26>>, 74-76.

inevitable, because fish escapes are a regular and ongoing occurrence in the industry. After a massive 2017 fish escape of Atlantic salmon from an aquaculture facility in state waters, the state of Washington investigated the site's operator, Cooke Aquaculture, and found that the company lied about both the cause of the escape and its magnitude.<sup>9</sup> The true number of fish that escaped ended up being roughly 263,000 Atlantic salmon in the Pacific Ocean, much higher than Cooke Aquaculture was willing to admit.<sup>10</sup> Just last month, the state of Washington voted to keep all commercial finfish net pens out of its state waters once and for all. Unfortunately, Cooke Aquaculture continues to operate in Maine state waters, and in 2023, over 50,000 of their juvenile farmed salmon escaped in Machias Bay.<sup>11</sup>

Around the world, industrial finfish aquaculture has repeatedly resulted in fish escapes, which impact wild fish and other marine wildlife. For example, in January 2020, 73,600 salmon escaped from a net pen in Mowi, Scotland, marking the third major escape in the area since October 2019.<sup>12</sup> In Norway, approximately 4,000,000 fish escaped in a single year.<sup>13</sup> AquaChile reported the escape of 787,929 fish in 2013 due to bad weather that damaged cages.<sup>14</sup> In 2018, 680,000 fish escaped from Marine Harvest Chile, 109,515 from Bakkafrost Faroe Islands, and 120,000 from Huon Aquaculture in Tasmania.<sup>15</sup> Recognizing the regularity of fish escapes from ocean-based net pens, the U.S. Council on Environmental Quality has stated that it “must be *assumed* that escapes will occur” from net pens.<sup>16</sup>

Fish escapes can disrupt the marine ecosystem and threaten wild fisheries. Farmed fish are genetically inferior fish, and when they interbreed with wild fish populations, they bring down the fitness and survivability of the wild fish. Escapes are occurring en masse, right now, and by “leaders” in this risky industry.

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<sup>9</sup> Wilson, Deborah. *Report blames negligence, not eclipse, for Washington fish farm collapse*. CBC, February 2, 2018. <https://www.cbc.ca/news/canada/british-columbia/fish-farm-collapse-cooke-aquaculture-report-washington-state-1.4516075>

<sup>10</sup> Mapes, Lynda V. *Fish farm caused Atlantic salmon spill near San Juans, then tried to hide how bad it was, state says*. Seattle Times, February 2, 2018. Accessible at: <https://www.seattletimes.com/seattle-news/fish-farm-caused-atlantic-salmon-spill-state-says-then-tried-to-hide-how-bad-it-was/>

<sup>11</sup> French, Edward. *Salmon escape raises concerns about seals, risk to wild fish*. The Maine Monitor, Aug. 26, 2023. <https://themaine-monitor.org/salmon-escape-raises-concerns-about-seals-risk-to-wild-fish/>

<sup>12</sup> *Escape calls high energy salmon sites into question*, The Fish Site (Jan. 20, 2020), <https://thefishsite.com/articles/mowi-reports-mass-salmon-escape-from-colonsay>.

<sup>13</sup> Nat'l Marine Fisheries Service Pac. Islands Reg'l Off., Draft Programmatic Env't Impact Statement (DPEIS) 171 (2021).

<sup>14</sup> Lola Novarro, *Here are the largest recorded farmed Atlantic salmon escapes in history*, IntraFish (Feb. 1, 2019), <https://www.intrafish.com/aquaculture/here-are-the-largest-recorded-farmed-atlantic-salmon-escapes-in-history/2-1-388082>.

<sup>15</sup> *Id.*

<sup>16</sup> Council for Environment Quality & Office of Science and Technology Policy, Case Study No. 1: Growth-Enhanced Salmon, at 23 (2001), <https://clintonwhitehouse5.archives.gov/media/pdf/salmon.pdf>; *CEQ and OSTP Assessment: Case Studies of Environmental Regulations for Biotechnology*, [https://hygeia-analytics.com/wp-content/uploads/2016/12/RP\\_RegGETech\\_CEQ.pdf](https://hygeia-analytics.com/wp-content/uploads/2016/12/RP_RegGETech_CEQ.pdf).

In 2024, [65,000 atlantic salmon smolts](#) escaped from a Mowi facility; [farmed cod](#) were found in nets around a farm which ultimately resulted in the culling of the entire net pen; [13,500 atlantic salmon](#) escaped due to a tear at yet another Mowi facility; [14,000 atlantic salmon](#) escaped from a Lerøy facility - the largest escape in the prior two years; and between [100 and 1,000 atlantic salmon](#) escaped from a facility, leading to interbreeding between wild and farmed salmon. Incredibly, this non-exhaustive list *only includes facilities in Norway - the world's leader in industrial aquaculture.*

Beyond just escapes, in Scotland in 2024 [liquid waste was seeping onto public beaches](#), exposing sheep, cows, and cats to disease. In British Columbia, Grieg Seafood allowed [7,000-8,000 liters of diesel fuel](#) to spill into the Esperanza inlet, polluting the water and contaminating clam beds. Sea lice, a common parasite in industrial aquaculture, was also found across [Norway](#) and [Scotland](#).

Less than a month into 2025, [15,000 farmed salmon escaped from a damaged net pen in Norway](#). The pen was operated by aquaculture giant Lerøy and the fish it contained had previously been found to have pancreatic disease as well as a bacterial pathogen called *moritella viscosa*. Both of these ailments could be passed on to wild fish surrounding the escapement. Unfortunately, an escape of this magnitude is not uncommon. As we go further into 2025, it is guaranteed that more of these disasters will arise.

#### *Fish Farms in Southern California will Incubate and Spread Diseases to Wild Stocks*

Floating CAFO-style fish farms incubate and proliferate parasites and diseases (e.g., sea lice) that then spread to the wild fish populations. This is harmful to both the marine ecosystem and wild fisheries, and runs contrary to the Administration's plan to Make America Healthy Again. There is more evidence that pathogens from farmed salmon spread to wild salmon: piscine orthoreovirus (PRV) is widespread in farmed salmon and is associated with heart and skeletal muscle inflammation.<sup>17</sup> *Tenacibaculum maritimum* is known to cause disease and mortality.<sup>18</sup> The toxic chemicals that offshore fish farm operators use to treat these diseases are widely known to harm other marine life and commercially-sought species as well, as discussed further below.

There are documented studies of large populations of sea lice having left their origin sites of fish farms into the broader ocean environment, both in the Atlantic and Pacific oceans. In March 2022, a study from *Scientific Reports* notes: "Our results suggest that salmon lice in the Pacific Ocean have recently evolved substantial resistance to the antibiotic EMB ["SLICE"], and that salmon-lice outbreaks on Pacific farms will therefore be more difficult to control in the coming

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<sup>17</sup> Palacios G, Lovoll M, Tengs T, Hornig M, Hutchison S, et al. (2010) Heart and Skeletal Muscle Inflammation of Farmed Salmon Is Associated with Infection with a Novel Reovirus. PLOS ONE 5(7): e11487. <https://doi.org/10.1371/journal.pone.0011487>

<sup>18</sup> Avendaño-Herrera R, Toranzo AE, Magariños B. Tenacibaculosis infection in marine fish caused by *Tenacibaculum maritimum*: a review. Dis Aquat Organ. 2006 Aug 30;71(3):255-66. doi: 10.3354/dao071255. PMID: 17058606.



years.”<sup>19</sup> A May 2021 study from *Royal Society* shows how the industry is losing the “arms race” in the North Atlantic Ocean because multiresistant salmon lice are dispersed throughout.<sup>20</sup>

An October 2024 study from *Science Advances* showed that three pathogens are prevalent in farmed Atlantic salmon in British Columbia, spill over to wild Pacific salmon, and are linked to negative impacts on wild salmon; they include Piscine orthoreovirus, *Tenacibaculum* spp., and sea lice (*Lepeophtheirus salmonis*).<sup>21</sup>

As parasites develop resistance to these chemicals, there is a growing trend to increase the level of toxicity of the chemicals used in response; this of course further increases the load of toxic chemicals in the marine environment. NOAA must assess these potential discharges since these pathogens, parasites, and the chemicals used to treat them can easily spread to wild fish, including wild populations that are listed as endangered or threatened under the Endangered Species Act.

The chemicals used as anti-foulants, antibiotics, and pesticides are often **carcinogenic and toxic to marine life**; these chemicals (e.g., organophosphates, cypermethrin) are openly discharged into the marine environment. In fact, up to 75% of antibiotics used by the industrial aquaculture industry directly absorb into the surrounding environment.<sup>22</sup> In Nova Scotia, the use of the antibiotic EMB resulted in “widespread damage to wildlife,” including “substantial, wide-scale reductions” in crabs, lobsters and other crustaceans close to marine finfish facilities.<sup>23</sup> None of this squares with the Administration's goal to Make America Healthy Again.

### **Creating AOAs would harm marine life and degrade water quality**

As referenced earlier, the AOAs have generated minimal interest from companies looking to engage in shellfish or seaweed farming. NOAA is fully aware that the farming of high-trophic level finfish — that is, carnivorous or omnivorous fish that require high animal protein inputs — is the ultimate endgame for these public-turned-private spaces.

Industrial offshore finfish aquaculture **leads to overfishing** of forage fish. Most farmed marine fish require large amounts of fish in their feed – much of this comes from wild forage fish,

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<sup>19</sup> Godwin, S.C., Bateman, A.W., Kuparinen, A. *et al.* Salmon lice in the Pacific Ocean show evidence of evolved resistance to parasiticide treatment. *Sci Rep* 12, 4775 (2022). <https://doi.org/10.1038/s41598-022-07464-1>.

<sup>20</sup> Fjørtoft Helene Børretzen, Nilsen Frank, Besnier Francois, Stene Anne, Tveten Ann-Kristin, Bjørn Pål Arne, Aspehaug Vidar Teis and Glover Kevin Alan. 2021. Losing the ‘arms race’: multiresistant salmon lice are dispersed throughout the North Atlantic Ocean *R. Soc. open sci.* 8: 210265. <https://doi.org/10.1098/rsos.210265>.

<sup>21</sup> Martin Krkosek *et al.*, Pathogens from salmon aquaculture in relation to conservation of wild Pacific salmon in Canada. *Sci. Adv.* **10**, eadn7118 (2024). DOI:[10.1126/sciadv.adn7118](https://doi.org/10.1126/sciadv.adn7118)

<sup>22</sup> United Nations, *Frontiers 2017: Emerging Issues of Environmental Concern*, at 15 (2017), <https://www.unenvironment.org/resources/frontiers>.

<sup>23</sup> Rob Edwards, The Sunday Herald, *Scottish government accused of colluding with drug giant over pesticides scandal* (June 2, 2017), [http://www.heraldscotland.com/news/15326945.Scottish\\_government\\_accused\\_of\\_colluding\\_with\\_drug\\_giant\\_over\\_pesticides\\_scandal/](http://www.heraldscotland.com/news/15326945.Scottish_government_accused_of_colluding_with_drug_giant_over_pesticides_scandal/).

including anchovies, menhaden, sardines and other small fish that are critically important to the diet of marine wildlife, including birds, dolphins, sharks, and other fish. Removing massive amounts of forage fish from our oceans reduces prey availability for other marine species and can change relationships in our ecosystem with potential widespread consequences.

NOAA must assess impacts of these industrial facilities on all species, not just those that are listed under the Endangered Species Act. The agency's AOA Atlas reveals that 18 threatened and endangered species can be found in the southern California bight, including several whale species, several sea turtle species, giant manta rays, black and white abalone, the Guadalupe fur seal, and the gulf grouper.<sup>24</sup> Additionally, nineteen species of marine mammals may traverse the proposed areas,<sup>25</sup> and fourteen fish species whose Essential Fish Habitat overlaps with proposed AOA sites.<sup>26</sup>

Furthermore, Santa Monica Bay and the Santa Barbara Coast serve as nurseries for great white sharks.<sup>27</sup> NOAA even admits that "[g]iven the high occurrence of these species, it is unlikely that aquaculture activities can avoid interactions."<sup>28</sup> It also admits that more indirect impacts to marine mammals and other wildlife may occur as well.<sup>29</sup> Because the proposed facilities will be located in, or near, species' migration routes or in their habitat, NOAA must analyze the AOA designations' cumulative effects of this project and other proposed projects for the full term of any proposed permit on species.<sup>30</sup>

Entanglement from ropes, lines, and net pens may harm endangered species and other wildlife in the proposed areas, especially as the facilities' propensity to act as fish aggregating devices (FADs) further exacerbates risks of entanglements and vessel strikes as species are drawn to the facilities. Recently, NOAA has admitted that industrial aquaculture may attract predators as a result of fish escapes, food drifting outside the pens, and other animals aggregating around the pens.<sup>31</sup> The FAD effect may result in more frequent encounters with protected species, increasing the likelihood of injury from structures or equipment associated with the facility.<sup>32</sup>

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<sup>24</sup> Morris, J.A. Jr., *supra* n. 7 at 52. at 194.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> Marc Cota-Robles, *Drone footage captures cluster of juvenile great white sharks off Pacific Palisades coast* (Aug. 11, 2021),

<https://abc7.com/great-white-shark-pacific-palisades-will-rogers-state-beach-california-population/10945063/>;

Beth Farnsworth, *Santa Barbara Coast is a nursery 'hot spot' for great white sharks* (Jan. 27, 2022),

<https://keyt.com/news/santa-barbara-s-county/2022/01/27/santa-barbara-coast-is-a-nursery-hot-spot-for-great-white-sharks/.s/>

<sup>28</sup> Morris, J.A. Jr., *supra* n. 7 at 194.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> Luke T. Barrett, et al., *Impacts of marine and freshwater aquaculture on wildlife: a global meta-analysis*, *Reviews in Aquaculture* (2018).

<sup>32</sup> *Id.*

Waste from intensive finfish farming (excess feed, fish poop, and any chemicals used on the fish or pens) readily flows from the net pens into surrounding waters. In many cases, the nitrogen outputs associated with the concentrated rearing of hundreds of thousands of fish in a limited area is equivalent to the sewage output of major U.S. cities; worse, in this case, it is *untreated*.

Nutrient pollution decreases oxygen levels in our waters, killing off aquatic life and creating low-oxygen “dead zones” and harmful algal blooms.<sup>33</sup> Harmful algal blooms produce toxic chemicals that can kill fish and other vertebrates by affecting their central nervous systems, and can cause serious illness in humans with severe or chronic respiratory conditions.<sup>34</sup>

Southern California has already been experiencing an increase in harmful algal blooms in recent years and harbors some of the world’s highest concentrations of domoic acid, an algal toxin dangerous to wildlife and people who eat local seafood.<sup>35</sup> NOAA must consider the likelihood of algal blooms in all study areas and assess the potential harms that could occur to the region, including harm to the local fishing industry from more frequent and severe disruptions due to Domoic Acid.

### **CAFO-style fish farming does not feed Americans or help alleviate hunger**

In raising marine carnivorous finfish, it takes more fish to feed the farmed fish than for people to simply eat the lower-trophic level fish in the first place.<sup>36</sup> This is an **inherently unsustainable and energy-intensive model** that leads to a **net loss in fish and animal protein**, mocking the purported “feed the world” claims of NOAA and industry alike.

Opening up American waters to foreign investors and large corporations does not guarantee that the farmed fish would be sold domestically, beyond limited distribution to a handful of high-end restaurants and boutique grocery retailers, nor that it will be affordable to most consumers: instead, production will follow the highest profit margins, and leave us with little else than a mess. In short, this approach would not contribute to feeding America.

### **Scientifically unsound in conception and siting**

It is astonishing that NOAA — an agency with so many experienced scientists and fishery regulators on staff — is pushing forward in creating AOAs for offshore finfish farming. This siloed approach to management demonstrates a fundamental lack of understanding of fisheries on the

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<sup>33</sup> Donald Boesch *et al.*, Pew Oceans Comm’n, *Marine Pollution in the United States 20-22* (2001).

<sup>34</sup> NOAA, Harmful Algal Blooms, <https://oceanservice.noaa.gov/hazards/hab/>.

<sup>35</sup> Donald Boesch *et al.*, Pew Oceans Comm’n, *Marine Pollution in the United States 20-22* (2001). <sup>34</sup> Crable, M. Climate change could make toxic algal blooms in our oceans more deadly. *Phys.org* (2020) <https://phys.org/news/2020-07-climate-toxic-algal-blooms-oceans.html>

<sup>36</sup> Patricia Majluf *et al.*, A review of the global use of fishmeal and fish oil and the Fish In: Fish Out metric. *Sci. Adv.* **10**, eadn5650(2024). DOI:[10.1126/sciadv.adn5650](https://doi.org/10.1126/sciadv.adn5650).

part of the agency's proponents, and a grave miscalculation of the critical roles of science and public input on the fisheries regulatory process.

Finally, two of the proposed AOAs in the Alternative 3 (CN1-A and CN1-B) are near a known toxic and radioactive dumpsite.<sup>37</sup> In 2020, scientists found up to 500,000 barrels of the banned pesticide DDT dumped in the Pacific Ocean off of Catalina Island near NOAA's proposed AOA option CN1-B.<sup>38</sup> Following these discoveries, in July 2022 the EPA launched an investigation into this dumpsite and several other areas in southern California.<sup>39</sup> It was later revealed that while the plumes around the barrels contained DDT, the corroding barrels themselves still currently contain radioactive waste.<sup>40</sup> DDT is highly toxic and carcinogenic and linked to a wide variety of health problems in both humans and wildlife; unfortunately it is also very durable, as it biomagnifies and bioaccumulates as it travels through food webs.<sup>41</sup> It is inconceivable that NOAA deemed these areas ideal at any stage of the siting process.

**The agency's assessment does not reflect the findings of the [October 2024 Science Advances issue on aquaculture](#), where peer-reviewed North American scientists detailed the many shortcomings of ocean-based finfish farms.** Our coalition members encourage agency staff to talk with fellow staff from various line offices, and to also engage with scientists and colleagues *outside* of the finfish aquaculture industry.

The logic behind many of the tables included in this DPEIS is alarming. NOAA repeatedly insists that the No Action Alternative would lead to poor siting of proposed fish farms (and notes the many harms caused by offshore finfish aquaculture), *while ignoring that it is not actively aiding those very companies to set up fish farms through NOAA-provided funding and related advocacy efforts.* Indeed, the agency then argues that its preferred alternatives *mitigate* the harms it otherwise plans to inflict upon American coastal communities.

For the many reasons above, our members strongly urge NOAA to refrain from identifying any federal waters offshore in Southern California as Aquaculture Opportunity Areas. We recommend the No Action Alternative.

Sincerely,

James Mitchell

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<sup>37</sup> Jacob T. Schmidt, Mong Sin Christine Wu, Hailie E. Kittner, J. Samuel Arey, Douglas E. Hammond, Earth 182A Group, and David L. Valentine. Disentangling the History of Deep Ocean Disposal for DDT and Other Industrial Waste Off Southern California. *Environmental Science & Technology* 2024 58 (9), 4346-4356  
DOI: 10.1021/acs.est.3c08575.

<sup>38</sup> Samantha Haugen, *How Barrel After Barrel of DDT Ended Up On the Ocean Floor*, OCEAN BLUE PROJECT (Jan. 13, 2021) <https://oceanblueproject.org/ddt-effects-on-the-environment/>.

<sup>39</sup> EPA, Southern California Ocean Disposal Site #2 Investigation, <https://www.epa.gov/ocean-dumping/southern-california-ocean-disposal-site-2-investigation>

<sup>40</sup> Schmidt et al., *supra* note 37.

<sup>41</sup> EPA, *supra* note 39.

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