DON'T CAGE OUR OCEANS

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[Submitted online at Docket No. NOAA-NMFS-2023-0097-0001 at https://regulations.gov]

RE: Request for Information; Data for Marine Spatial Studies in Puerto Rico and the U.S. Virgin Islands (88 FR 54302)

Dear Mr. Rauch, III:

Don't Cage Our Oceans is a nationwide coalition of over fifty organizations and businesses working to stop industrial-scale offshore finfish farming while uplifting values-based sea-food systems led by local communities. We represent nearly 4.5 million people nationwide. Responsible forms of aquaculture are community-driven, thoughtfully-sited, and appropriately scaled, using low impact methods. We submit these comments in response to NOAA's "Request for Information; Data for Marine Spatial Studies in Puerto Rico and the U.S. Virgin Islands (88 FR 54302)."

Our comments primarily center around NOAA's interest in developing offshore fish farms, as they directly relate to these specific items listed in the RFI:

- ***(3) Major concerns you have related to the impacts of new marine industries on ecological systems in Puerto Rico and/or the USVI.***
- ***(4) Major concerns you have related to the impact of new marine industries on other ocean industries in Puerto Rico and/or the USVI.***

Our comments conclude with an examination of how NOAA can better protect public trust resources, per item 7:

- ***(7) Ways in which NOAA can better engage and collaborate with the public and Territorial communities to promote economic, social, and ecological resilience as well as protect trust resources.***

There are several reasons why the most prudent option is for NOAA to refrain from establishing AOAs in Puerto Rico and the U.S. Virgin Islands. Chief among these, is that NOAA lacks the legal authority to regulate aquaculture in federal waters. Furthermore, there are grave ecological consequences and inevitable harms to other ocean industries in these regions, should offshore finfish farming be allowed. Some of these concerns would be partially addressed by unbiased application of relevant environmental laws, but former President Trump's Executive Order 13921 seeks to bypass those critical safeguards. Finally, NOAA's role in *promoting* industrial-scale offshore finfish aquaculture introduces unwarranted bias in the decision-making process, and flies in the face of scientific understanding on known harms.

Legality

Prior to discussing items 3 and 4 of the RFI, there are serious concerns about the legality of NOAA's actions. The agency repeatedly asserts authority in setting up and permitting an unprecedented nationwide system of commercial offshore aquaculture facilities across all U.S. (federal) waters, even though **Congress has never passed legislation granting the agency authority to do so**. Furthermore, **the courts have affirmed NOAA's lack of authority** to oversee

aquaculture activities in federal waters of the Gulf of Mexico, which logically extends to other areas under the same federal laws.

In 2020, the Fifth Circuit Court of Appeals 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).[1] 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 Fifth Circuit Court noted this did not make sense under the law, and ruled against it.

Across multiple administrations, the agency has acted as a promoter of offshore fish farming. The same summer of the Fifth Circuit Court ruling, the Trump Administration issued an executive order to grant NOAA authority where Congress had not. While EO 13921 does nothing to bolster NOAA's authority, the agency might argue otherwise. Executive orders cannot confer authority on agencies because the president's powers are executive, not legislative, in nature.[2] Rather, the President's authority to act "must stem either from an act of Congress or from the Constitution itself."[3] 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.

More recently, NOAA has claimed authority to regulate aquaculture via its role in the interagency Subcommittee on Aquaculture,[4] established by the National Aquaculture Act of 1980.[5] This legislation identifies the U.S. Department of Agriculture as the lead agency on aquaculture, and barely assigns any responsibilities to the Department of Commerce (NOAA) at all, let alone authority to designate AOAs. The Act requires only consultation with NOAA for a biennial report on the status of aquaculture,[6] and several studies due 35 years ago.[7] None of these submissions required NOAA to determine locations suitable for industrial aquaculture in federal waters.

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[1] *Gulf Fishermens Ass'n v. Nat'l Marine Fisheries Serv*., 968 F. 3d 454 (5th Cir. 2020).
[2] *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.").
[3] *Id.* at 585.
[4] NSTC Subcommittee on Aquaculture, A Strategic Plan to Enhance Regulatory Efficiency in Aquaculture. (Feb. 2022) https://www.ars.usda.gov/sca/Documents/2022%20NSTC%20Subcomittee%20on%20Aquaculture%20Regulatory%20Efficiency%20Plan_Final%20508%20compliant.pdf.
[5] 16 U.S.C. §§ 2801-2810.
[6] *Id*. § 2804(d).
[7] *Id*. § 2804(c)(1)(C), (D) (requiring the Department of Commerce to submit studies by December 31, 1987).

Absent *any* plain text in support, NOAA cannot establish its authority to designate AOAs in the USVI/PR. In June 2022, the U.S. Supreme Court made plain that an agency must "point to 'clear congressional authorization' for the authority it claims."[8] NOAA's attempts here to promote and lead a new, highly controversial industry in the USVI and PR, without pointing to statutory text provides just such an "extraordinary case" in which the "history and the breadth of the authority that [the agency] has asserted," provides a "reason to hesitate before concluding that Congress" meant to confer such authority.[9]

Here, there is no ambiguity at all. **Congress has never given NOAA the authority to regulate aquaculture in federal waters, and the courts agreed with this interpretation.** EO 13921 is an attempt to circumvent Congress, which has repeatedly demonstrated immense skepticism of offshore aquaculture, in order to lay the groundwork for large-scale fish farming in federal waters — an industrial activity that is severely lacking in public approval or buy-in when the details and risks of that development are made plain to the American public. NOAA should stop considering these AOAs because of its clear lack of authority alone. 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.

RFI Item (3) "Major concerns you have related to the impacts of new marine industries on ecological systems in Puerto Rico and/or the USVI."

1. **Offshore aquaculture in PR/USVI would exacerbate overfishing and climate change**

For a variety of logistical reasons, the AOAs have generated minimal interest from companies looking to engage in shellfish or seaweed farming. Instead, 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. And the pressure on wild fish would be enormous.

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

[8] *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)).
[9] *W. Virginia*, 2022 WL 2347278, at *3; *see also FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159-160 (2000); *Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., Occupational Safety & Health Admin.*, 142 S. Ct. 661, 666, 211 L. Ed. 2d 448 (2022).

for other marine species and can change relationships in our ecosystem with widespread consequences.

In most cases, it takes more fish to feed the farmed fish than for people to simply eat the lower-trophic level fish. This is an **inherently unsustainable and energy-intensive model** that leads to a **net loss in fish and animal protein that harms coastal communities in the Global South**,[10] making clear the falseness of the "feed the world" claims made by offshore finfish aquaculture enthusiasts.

When it comes to its carbon footprint, proponents of offshore finfish farming compare apples to oranges, in contrasting various farmed fish species to land-based livestock, instead of comparing it to land-based fish farming such as predominantly herbivorous species like tilapia or catfish. The carbon footprint for farmed carnivorous finfish is significantly miscalculated in most models.[11] There is a **massive carbon footprint** associated with the global sourcing, capturing, blending, and shipping of feed inputs to go into the fish feed, and related infrastructure associated with keeping the farmed fish in cages, feeding them, medicating them, and harvesting them. Industrially-grown salmon is sold globally, and the international fish feed industry - both globally sourced and globally distributed - is *not* a "local" industry.

The higher trophic level fish is aimed to be sold to the higher-end market, since it is so expensive to set up the infrastructure. This often includes foreign markets, as most of our country's landed fish and aquaculture is sold abroad. In other words, opening up our waters for foreign investors and mega corporations does not necessarily mean that the farmed fish would be sold domestically, beyond a few restaurants and boutique grocery retailers, and likely not at an affordable price: it will go where the money is, and leave us with an ecological and economic mess and little else. In the case of USVI/PR, this exacerbates the pre-existing dynamic of U.S. territories being asked to pay the price for the desires of U.S. mainland and foreign corporations.

2. Offshore aquaculture in PR/USVI would harm marine wildlife and ecosystems

[10] Thiao, D. and Bunting, S.W. 2022. Socio-economic and biological impacts of the fish-based feed industry for sub-Saharan Africa. FAO Fisheries and Aquaculture Circular No. 1236. Rome, FAO, Worldfish and University of Greenwich, Natural Resources Institute. https://doi.org/10.4060/cb7990en

[11] Michael Tlusty *et al* 2018. Commentary: comparing efficiency in aquatic and terrestrial animal production systems. *Environ. Res. Lett.* 13 128001. https://doi.org/10.1088/1748-9326/aae945

NOAA must assess impacts that these industrial facilities would have on threatened and endangered species in these regions. According to NOAA itself, **the following species are listed as either threatened or endangered for Puerto Rico[12] and the U.S. Virgin Islands:[13]**

- Green sea turtle
- Leatherback sea turtle
- Loggerhead sea turtle
- Hawksbill sea turtle
- Nassau grouper
- Oceanic whitetip shark
- Scalloped hammerhead shark
- Giant manta ray
- Queen conch
- Elkhorn coral
- Staghorn coral
- Boulder star coral
- Mountainous star coral
- Lobed star coral
- Rough cactus coral
- Pillar coral
- Sperm whale

Because the proposed facilities expected to arise from this AOA process will inevitably 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.[14]

Offshore fish farming has already harmed the lives of marine mammals across North America. Entanglement from ropes, lines, and net pens may harm endangered species and other wildlife in the proposed areas, especially as the facilities' often act as fish aggregating devices (FADs) further exacerbating 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.[15] In March 2017, an endangered Hawaiian Monk Seal died due to entanglement in net

[12] NOAA Fisheries. Threatened and Endangered Species List Puerto Rico. Available at: https://www.fisheries.noaa.gov/southeast/consultations/threatened-and-endangered-species-list-puerto-rico
[13] NOAA Fisheries. Threatened and Endangered Species List U.S. Virgin Islands. Available at: https://www.fisheries.noaa.gov/southeast/consultations/threatened-and-endangered-species-list-us-virgin-islands
[14] *See* 33 U.S.C. § 1371(c)(1).
[15] Luke T. Barrett, et al., *Impacts of marine and freshwater aquaculture on wildlife: a global meta-analysis*, Reviews in Aquaculture (2018). https://doi.org/10.1111/raq.12277.

pens at Blue Ocean Mariculture, which is a NOAA research farm.[16] The FAD effect may result in more frequent encounters with protected species, which could increase the likelihood of injury from structures or equipment associated with the facility.[17]

As there is little monitoring, other than self-monitoring of facilities, confidence in the accuracy of interaction reports is low. The August 2023 escape of over 50,000 juvenile salmon from two of Cooke Aquaculture's cages off Cross Island in Maine raised serious concerns about seal interactions and risks to wild fish.[18] But as this story unfolds, it is worth remembering that in 2017, this same company had lied and notoriously undercounted its massive fish escape in Washington state.[19]

Earlier this year, Bottlenose Dolphins were found to increase their aggression toward Spinner Dolphins around an offshore fish farm in Hawai'i.[20] These highly social animals have also been found to be more solitary as they grow accustomed to interacting with and feeding directly from the farms. They also have been known to change their feeding patterns in favor of preying on the wild fish that often congregate around finfish farms. Since 1990, at least 24 dolphins have died from entanglement at these farms.[21]

A ten-year-old Hawaiian Monk Seal died after being trapped in the nets of the NOAA-funded Blue Ocean Mariculture fish farm off the coast of Hawaii. These rare seals are endangered, with only about 630 mature adults left in the wild.[22] There have also been at least 33 documented California Sea Lion deaths due to entanglement in offshore fish farms in Washington State.[23]

Whales have died because of entanglement with offshore fish farm infrastructure as well. In 2016, two Humpback Whales died after being caught in an offshore fish farm in British

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[16] *Rare monk seal dies in fish farm off Hawaii*. (2017, March 17). USA Today. Retrieved September 11, 2023, from https://www.usatoday.com/story/news/nation/2017/03/17/rare-monk-seal-dies-fish -farm-off-hawaii/99295396/
[17] Barret*, supra* note 15.
[18] French, Edward. *Salmon escape raises concerns about seals, risk to wild fish.* Maine Monitor, August 26, 2023. Available at: https://themainemonitor.org/salmon-escape-raises-concerns-about-seals-risk-to-wild-fish/
[19] 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/>
[20] Harnish, A. E., Baird, R. W., Corsi, E., Gorgone, A. M., Perrine, D., Franco, A., Hankins, C., & Sepeta, E. (2023). Long-term associations of common bottlenose dolphins with a fish farm in Hawai'i and impacts on other protected species. Marine Mammal Science, 1–17. https://doi.org/10.1111/mms.13010
[21] Bath, G. E., Price, C. A., Riley, K. L., & Morris, J. A. (2023). A global review of Protected Species Interactions with marine aquaculture. *Reviews in Aquaculture*. https://doi.org/10.1111/raq.12811
[22] USA Today, *supra* note 16.
[23] Bath, *supra* note 19.

Columbia.[24] A Humpback Whale was trapped in a tuna farm for two days before being successfully released.[25] A juvenile North Atlantic Right Whale, of which there are only 336 remaining individuals, died after being entangled in aquaculture gear in the Western North Atlantic Ocean.[26] Rice's Whales, of which only 30-50 individuals remain,[27] are under increasing risk of entanglement thanks to the proposed Manna Farms fish farm in the Gulf of Mexico - right in the middle of the critically endangered species' core habitat. Unfortunately, NOAA is also pushing full steam ahead on AOAs for the Gulf region despite major concerns.

3. Offshore aquaculture would significantly degrade water quality in PR/USVI

Waste from intensive finfish farming (excess feed, fish excrement, 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.* Indeed, a modest 2-acre salmon farm produces 100,000 kg of *untreated* excrement and uneaten food waste per year, which is as much waste as a town of 10,000 people.[28] One fish farm in Scotland was found to put out the same amount of *untreated* waste as all of Scotland's west coast towns combined.[29]

In the Gulf of Mexico, where NOAA has already begun the process of designating AOAs, this is simply adding fuel to the fire. Nutrient pollution decreases oxygen levels in our waters, killing off aquatic life and creating low-oxygen "dead zones" and harmful algal blooms.[30] 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.[31]

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[24] Ibid.
[25] Ibid.
[26] Price CS, Morris JA Jr, Keane E, Morin D, Vaccaro C, Bean D. *Protected Species and Marine Aquaculture Interactions: NOAA Technical Memorandum NOS NCCOS 211*. US National Oceanic and Atmospheric Administration; 2017.
[27] *Rice's Whale | NOAA Fisheries*. (n.d.). NOAA Fisheries. Retrieved September 11, 2023, from https://www.fisheries.noaa.gov/species/rices-whale
[28] Barinaga, M. (1990). Fish, money, and science in Puget sound. *Science*, *247*(4943), 631–631. https://doi.org/10.1126/science.247.4943.631
[29] Grant, A. (2018, March 14). *One fish farm produces waste equivalent to 'all of Scotland's west coast towns'*. The Herald. Retrieved September 11, 2023, from https://www.heraldscotland.com /news/16086953.one-fish-farm-produces-waste-equivalent-all-scotlands-west-coast-towns/
[30] Donald Boesch *et al.*, Pew Oceans Comm'n, *Marine Pollution in the United States* 20-22 (2001).
[31] NOAA, Harmful Algal Blooms, https://oceanservice.noaa.gov/hazards/hab/.

Two of the proposed AOAs in that region, C-11 and C-13, lie within the Gulf of Mexico dead zone. Here, it would similarly be unrealistic to suppose that wastes will simply "wash away" according to the 1800s-era thinking of "the solution to pollution is dilution." Indeed, simply moving fish farms further offshore does not mean that nutrient loading is lessened, and similar depletions in oxygen and benthic biodiversity are to be expected.[32] In the year 2023, it feels sadly necessary to remind the agency that pollution *always goes somewhere*.

4. **Offshore aquaculture would proliferate waterborne diseases and increase toxicity of the marine environment in the USVI/PR**

The spread of disease is also of grave concern. 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-louse outbreaks on Pacific farms will therefore be more difficult to control** in the coming years." (emphasis added)[33] 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.[34]

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.[35] In Nova Scotia, the use of the

[32] Holmer, M. (2010). Environmental issues of fish farming in offshore waters: perspectives, concerns and research needs. Aquaculture Environment Interactions, 1(1), 57–70. https://doi.org/10.3354/aei00007
[33] 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.
[34] 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.
[35] United Nations, Fro*ntiers 2017: Emerging Issues of Environmental Concern*, at 15, https://www.unenvironment.org/resources/frontiers.

antibiotic EMB resulted in "widespread damage to wildlife," including "substantial, wide-scale reductions" in crabs, lobsters and other crustaceans close to marine finfish facilities.[36]

RFI Item (4) Major concerns you have related to the impact of new marine industries on other ocean industries in Puerto Rico and/or the USVI.

1. **Fish escapes "must be assumed" and regularly occur with offshore fish farming**

The threat of fish escaping into USVI/PR waters is inevitable, because fish escapes are a regular and ongoing occurrence in the industry. **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.**[37]

After a massive 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.[38] 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.[39] As a result, in 2018 Washington Governor Jay Inslee signed into law House Bill 2957, which phases out industrial ocean fish farms in state waters. It does so by banning new leases to non-native net pen operations and prohibits the renewal of existing leases. More recently, DNR Commissioner Hilary Franz listened to Tribal voices and coastal communities by banning net pens in Washington state waters altogether.

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

[36] Rob Edwards, The Sunday Herald, *Scottish government accused of colluding with drug giant over pesticides scandal* (June 2, 2017), available at: http://www.heraldscotland.com/news/15326945.Scottish_government_accused_of_colluding_with_drug_giant_over_pesticides_scandal/

[37] 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.

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

[39] 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/>

October 2019.[40] In Norway, approximately four million fish escaped in a single year.[41] AquaChile reported the escape of 787,929 fish in 2013 due to bad weather that damaged cages.[42] In 2018, 680,000 fish escaped from Marine Harvest Chile, 109,515 from Bakkafrost Faroe Islands, and 120,000 from Huon Aquaculture in Tasmania.[43]

Back in the U.S., the same Canadian company that was responsible for the massive Washington state fish escape is also facing ongoing spills in Maine as of the date of this letter. In August 2023, 50,000 Atlantic salmon escaped from a Cooke aquaculture cage, and other escapes were reported to local regulators on August 25, 30, and 31. Scientists and fishermen have documented 46 escaped farmed fish in the Magaguadavic River in New Brunswick since the beginning of August.[44]

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 populations. Escaped fish also compete with wild fish for limited resources, and sometimes eat the juvenile wild fish as well. This directly harms coastal communities where fishermen make their livelihood catching local, wild fish.

If farmed fish from facilities sited within AOAs are actually sold in the U.S., they will likely undercut wild fisheries sales, 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.

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. 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

[40] *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.
[41] Nat'l Marine Fisheries Service Pac. Islands Reg'l Off., Draft Programmatic Env't Impact Statement (DPEIS) 171 (2021).
[42] 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.
[43] *Id*.
[44] Warner, Pete. *46 escaped aquaculture salmon found in New Brunswick River.* Bangor Daily News, September 6, 2023. Accessible at: https://www.bangordailynews.com/2023/09/06/outdoors/46-escaped-aquaculture-salmon-new-brunswick-river-n6hjn1me0n/?mc_cid=ace5e696e7&mc_eid=7159584126

skeletal muscle inflammation.[45] *Tenacibaculum maritimum* is known to cause disease and mortality.[46] 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 above in RFI Item (3). 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.

2. **Extreme weather events will wreck ocean-based infrastructure and create more marine litter**

Hurricanes now regularly cause widespread devastation in the Caribbean, including the loss of human lives. Hurricane Irma (Sept. 2017) killed three people in Puerto Rico and four in the USVI. Hurricane Maria killed 2,975 people in Puerto Rico and three in the USVI. Puerto Rico's government estimated it would need $132 billion from 2018 through 2028 to repair and replace the infrastructure damaged by the hurricanes. According to the U.S. GAO, the hurricanes severely damaged Puerto Rico's electricity grid, causing the longest blackout in U.S. history (11 months).[47]

For 2023, NOAA is forecasting a range of 12 to 17 total named storms, and of those, 5 to 9 could become hurricanes, including 1 to 4 major hurricanes.[48] With hurricane season encompassing half of the year, the new normal of more frequent and devastating hurricanes makes the idea of siting any offshore fish farms in the U.S. Caribbean pure folly. Residents will be left to shoulder the economic and ecological impacts of torn cage debris and 100% fish escapes.

RFI Item (7) Ways in which NOAA can better engage and collaborate with the public and Territorial communities to promote economic, social, and ecological resilience as well as protect trust resources.

1. **The Federal Government's "water grab" and misappropriation of public funds is overwhelmingly rejected by the public**

[45] 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

[46] 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.

[47] U.S. Government Accountability Office. *Hurricane Recovery Can Take Years—But For Puerto Rico, 5 Years Show Its Unique Challenges.* Nov. 14, 2022. Available at: https://www.gao.gov/blog/hurricane-recovery-can-take-years-puerto-rico-5-years-show-its-unique-challenges

[48] National Oceanic and Atmospheric Administration. *NOAA predicts a near-normal 2023 Atlantic hurricane season.* May 25, 2023. Available at: https://www.noaa.gov/news-release/2023-atlantic-hurricane-season-outlook

The first thing that NOAA should do is acknowledge that in the other two areas it has proposed Aquaculture Opportunity Areas (AOAs) in federal waters - Southern California and the Gulf of Mexico - these proposals were met with overwhelming opposition by coastal communities and many others. Indeed, the only proponents were those who stood to financially gain from the industrial facilities. This should be reason alone for the agency to stop.

AOAs are the ocean-based equivalent of a land grab; they are a "water grab" facilitated by the federal government on behalf of mainly distant and foreign big corporate interests. The public trust doctrine is a legal principle that the public is considered the owner of the ocean resource, and the government must protect and maintain these resources for the public's use. Cordoning off large portions of the ocean for the exclusive use of the private sector actively harms the public, coastal communities, and the livelihoods of residents who live and work along the water.

For years, NOAA has been funneling millions of dollars of taxpayer money into research, development, and start-up funding to develop Confined Animal Feeding Operations (CAFO)-style industrial finfish farms in U.S. waters. These funds have been transferred to the aquaculture industry through programs like Sea Grant and the Saltonstall-Kennedy (S-K) program. The agency is hardly a disinterested partner in this space, and is listed as a member of the Ocean Stewards Institute, in its California Sea Grant capacity. The Ocean Stewards Institute identifies as "a trade organization advocating for the emerging open ocean aquaculture industry."[49] All told, through Sea Grants, S-K Grants, and SBIR grants, the agency has spent **over $40 million** in taxpayer money to prop up the offshore fish farm industry between the years of 2017-2022 alone, directly against the public interest.[50]

Privatizing public resources for the benefit of large corporations, especially those not the U.S., is inherently un-American. People should have the freedom to recreate and fish in our oceans without the government giving a private company exclusive access to our publicly-held resource. Americans should not have to worry about crony capitalism and that their taxpayer money is being taken by the Federal government to give to an already well-heeled multi-million dollar corporation so that it can use our oceans as a toilet for its industrial operations.

Offshore aquaculture proponents have requested long-term (25-year) leases for their facilities spanning hundreds of acres, which is essentially blocking off a swath of public oceans for more than an entire generation. Through the AOA designation process, NOAA is proposing to carve up

[49] Ocean Stewards Institute. https://www.oceanstewards.org/

[50] Spreadsheet of NOAA and federal government money spent on offshore fish farming. https://docs.google.com/spreadsheets/d/e/2PACX-1vTd4l_ET3MdV5_aFkFLnWm6hES1juMidVAphBj-xHgU7IWLxtrX346r-j3YnWwzbKvWZqyGRUVxGifv/pubhtml?urp=gmail_link

and hand control of our federal ocean spaces, a public resource that should be managed for the benefit of all Americans, to private corporations and foreign interests. In rushing through permitting for marine finfish aquaculture, NOAA is actively harming fishing families and the many small businesses in coastal communities that support them. NOAA should instead focus on supporting independent fishermen and co-ops, as their small businesses continue to struggle, and recover from so many challenges. After all, these small businesses were a vital source of food security during the height of the COVID-19 pandemic, as we witnessed the collapse of global supply chains.

Indeed, it is stunning that the Biden Administration would push through an unnecessary and unpopular program like industrial scale marine finfish aquaculture when it is so detached from actually supporting people's access to food. These factory farms take significant time and money to build; they are not community driven, and in fact will harm people from coastal communities. The species grown in these facilities are high-trophic level fish that are destined for higher-end markets. CAFO-style fish farming has been repeatedly met with fierce opposition from the public and Congress, and it has been rejected in the courts.

Few people want to see this industry get a foothold in our public waters except for mega-corporations and their shareholders[51] who see an opportunity to profit from industrially produced fish. In the recent NOAA listening sessions for NOAA's 5 year draft strategic plan on aquaculture, people overwhelmingly voiced their opposition to the inclusion of marine finfish aquaculture as part of NOAA's vision in the first place, and urged its removal from the strategic plan. Participants in the commercial fishing industry have collectively voiced their concerns over being forced to coexist with the 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."[52]

2. Real Tribal engagement is severely lacking

The agency has also failed to ascertain Tribal input on offshore fish farming. It can only point to *a single Tribe* that is a business partner of the aforementioned Cooke Aquaculture, and has turned a blind eye toward the affront that offshore net pen fish farming is to *many more Tribes*. At a July 2023 NOAA Budget hearing, the Chair of the Senate Commerce Committee, Senator Maria Cantwell (D-WA) went on record to critique NOAA and the Administration's inability to

[51] Stronger America Through Seafood. https://www.strongerthroughseafood.org/sats-members

[52] 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/.

effectively consider Tribal input, stating: “I'm going to say something that's going to kind of shock people. I need to understand that the Biden Administration understands Tribal consultation. We in the West understand it, but we're spending an enormous amount of time trying to make sure this Administration understands it as well.”[53]

Noting the level of interest and effort that the agency puts into listening sessions, the Senator continued, “So I hope that doesn't take more listening sessions, because we've already forced Commerce to have many listening sessions. And, you know, I would say that, as you said, there's more work to be done there. And I don't understand. I don't know if it's like some historical perspective that people are missing. I don't know what it is, but we got to do better.”[54]

Our coalition members agree. NOAA has to do better. The agency has failed to secure public buy-in or societal license to push forward industrial fish farms in federal waters. For the many reasons above, including the lack of authority to regulate aquaculture under existing law, our members strongly urge NOAA to refrain from identifying any Federal waters offshore in the USVI/PR as Aquaculture Opportunity Areas.

Sincerely,

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[53] Maria Cantwell. (Sen.) NOAA Budget Oversight: Hearing before the U.S. Senate Committee on Commerce, Science, and Transportation. 118th Cong. (2023). Available at: https://www.commerce.senate.gov/services/files/87699A58-0C0F-40BD-9B31-3E3190708501

[54] *Id.*