

Submitted via [Aqua.RegPlan@noaa.gov](mailto:Aqua.RegPlan@noaa.gov).

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Dr. Michael Rubino  
Chair, Regulatory Efficiency Task Force  
National Oceanic and Atmospheric Administration  
1315 East-West Highway  
Silver Spring, MD 20910  
[michael.rubino@noaa.gov](mailto:michael.rubino@noaa.gov)

Re: Comments on Draft Outline for the Federal Aquaculture Regulatory Task Force Work Plan (84 Fed. Reg. 54,122)

Dear Dr. Rubino:

Please accept the following comments on behalf of Friends of the Earth, Center for Biological Diversity, Center for Food Safety, Food and Water Watch, Healthy Gulf, Institute for Fisheries Resources, Northwest Atlantic Marine Alliance, Recirculating Farms Coalition, and Pacific Coast Federation of Fishermen's Associations regarding the Federal Aquaculture Regulatory Task Force's (FARTF)<sup>1</sup> Draft Outline for a Work Plan (draft outline).<sup>2</sup>

Industrial ocean fish farming – also known as marine finfish or offshore aquaculture – is the mass cultivation of finned fish in the ocean, in net pens, pods, and cages. These are essentially floating feedlots in our ocean, which can have devastating environmental and socio-economic impacts. Other forms of aquaculture – such as intensive bivalve cultivation – can also be destructive to habitat and water quality when poorly sited and scaled. We have been closely tracking – and are entirely opposed to – the Trump Administration's brazen push to recklessly develop and expand destructive and unnecessary forms of the aquaculture industry in the United States.

The draft outline reinforces our deep concerns with the Administration's promotion of marine aquaculture in all its forms without sufficient regard for the myriad environmental, public health, and socio-economic impacts.

Because we are entirely opposed to open water finfish aquaculture and poorly sited and scaled shellfish cultivation, we urge you to cease all plans for expansion of these industries in U.S. waters, as enough money and resources have been frivolously expended on such endeavors for many years, in the face of massive public opposition. However, at the end of this comment letter we have included language to address our concerns, which we urge FARTF to incorporate into its outline and plan, should it move forward with this process.

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<sup>1</sup> In government work, we understand – nay, we *applaud* – the taking advantage of as many lighthearted opportunities as possible, especially given their rarity. With this in mind, we earnestly embrace your acronym.

<sup>2</sup> The Subcommittee on Aquaculture, [Draft Outline for a Work Plan for a Federal Aquaculture Regulatory Task Force](#), (August 1, 2019).

## I. The draft outline turns a blind eye to the range of risks and impacts of offshore aquaculture in the United States.

The draft outline makes clear that the federal government’s current focus is on efficiency and predictability for aquaculture industry participants and investors. Indeed, the stated goal for the work plan is “to address the Federal strategic goal of improving regulatory efficiency and predictability for domestic freshwater and marine aquaculture under existing laws and regulations.”<sup>3</sup> The SCA is putting the cart before the horse at significant risk to public health, the environment, and the economy.

What must come first – well before any policy streamlining – is an acknowledgement and thorough review of the socio-economic, public health, and environmental problems associated with marine aquaculture. Yet, the draft outline makes no mention of these important issues. Ignoring these items as part of building a national offshore aquaculture program is folly.

Other countries with marine finfish aquaculture have suffered extensive environmental, socio-economic, and public health problems associated with the industry. As detailed below, these impacts are varied and widespread, and oftentimes do not come to light until years after the damage has been done. The FARTF must heed the lessons learned in other countries and do all it can to research and prevent these types of harms *prior* to any commercial permitting of marine finfish aquaculture facilities in the United States, let alone any streamlining of permitting and policies.

Marine finfish aquaculture routinely results in a massive number of farmed fish escapes that adversely affect wild fish stocks. In August 2017, a Cooke Aquaculture facility in Washington State spilled more than 263,000 farmed Atlantic salmon into Puget Sound. Long after the escape, many of these non-native, farmed fish continued to thrive and swim free – some were even documented as far north as Vancouver Island, west of the Strait of Juan de Fuca, and south of Tacoma, traveling at least 100 miles from the farm.<sup>4</sup> Escaped fish increase competition with wild stocks for food, habitat, spawning areas and mates. Moreover, reliance on the sterility of farmed fish to prevent interbreeding is *never* 100% guaranteed; therefore, the “long-term consequences of continued farmed [fish] escapes and subsequent interbreeding . . . include a loss of genetic diversity.”<sup>5</sup> Finally, escaped farmed fish might spread a multitude of parasites and diseases to wild stocks, which could prove fatal when transmitted.<sup>6</sup>

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

<sup>4</sup> Lynda V. Mapes, SEATTLE TIMES, Despite agency assurances, tribes catch more escaped Atlantic salmon in Skagit River (Dec. 1, 2017), available at <https://www.seattletimes.com/seattle-news/environment/despite-agency-assurances-tribes-catch-more-escaped-atlantic-salmon-in-skagit-river/>.

<sup>5</sup> Fisheries and Oceans Canada, Newfoundland and Labrador Region, Stock Assessment of Newfoundland and Labrador Atlantic Salmon (2016), available at <http://waves-vagues.dfo-mpo.gc.ca/Library/40619655.pdf> (“Genetic analysis of juvenile Atlantic Salmon from southern Newfoundland revealed that hybridization between wild and farmed salmon was extensive throughout Fortune Bay and Bay d’Espoir (17 of 18 locations), with one-third of all juvenile salmon sampled being of hybrid ancestry.”); see also Mark Quinn, CBC News, *DFO study confirms ‘widespread’ mating of farmed, wild salmon in N.L.* (Sept. 21, 2016) <https://www.cbc.ca/news/canada/newfoundland-labrador/farmed-salmon-mating-with-wild-in-nl-dfo-study-1.3770864>.

<sup>6</sup> Jillian Fry, PhD MPH, David Love, PhD MSPH, & Gabriel Innes, VMD, Johns Hopkins University, Center for a Livable Future, “Ecosystem and Public Health Risks from Nearshore and Offshore Finfish Aquaculture” at 6-7

While on the topic of parasites and diseases, we have significant concerns over the pervasive use of pharmaceuticals and other chemicals for prevention and treatment of outbreaks in marine finfish aquaculture facilities. The use of these chemicals creates environmental and public health concerns. It is no secret that large concentrated populations of animals are more susceptible to pests and diseases due to confined spaces and increased stress. In response, the agriculture and aquaculture sectors administer a pharmacopeia of chemicals – and in the open ocean, residues of these drugs are discharged and absorbed into the marine ecosystem. For example, the marine finfish aquaculture industry often treats sea lice with Emamectin benzoate (marketed as SLICE®), which has caused “widespread damage to wildlife,” including “substantial, wide-scale reductions” in crabs, lobsters and other crustaceans.<sup>7</sup> For example, in Nova Scotia, an 11-year-long study found that lobster catches plummeted as harvesters got closer to marine finfish aquaculture facilities.<sup>8</sup> In addition, the use of antibiotics in marine finfish aquaculture facilities is contributing to the public health crisis of antibiotic resistance. In farmed fish, there may still be antibiotic and other chemical residues by the time they reach consumers, and they can also leach into the ocean, contaminating nearby water and marine life. In fact, up to 75% of antibiotics used by the industrial ocean fish farming industry are directly absorbed into the surrounding environment.<sup>9</sup>

Another vital concern is the direct discharge of untreated toxins, including excess food, waste, antibiotics, and antifoulants associated with industrial ocean fish farms. Releasing such excess nutrients can negatively impact water quality surrounding the farm and threaten surrounding plants and animals. These underwater factory farms can also physically impact the seafloor by creating dead zones, and change marine ecology by attracting and harming predators and other species that congregate around fish cages. These predators – such as birds, seals, and sharks – can easily become entangled in net pens, stressed by acoustic deterrents, and hunted. In fact, an industrial ocean fish farm caused the death of an endangered monk seal in Hawaii, which was found entangled in the net.<sup>10</sup> In August 2018, Cooke Aquaculture entangled an endangered Humpback whale in large gillnets it cast to recapture escaped farmed fish from a Canada facility.<sup>11</sup> These examples are merely two of many unfortunate entanglements.

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(2017) [https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/pdf/research/clf\\_reports/offshor-fish-fish-final.pdf](https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/pdf/research/clf_reports/offshor-fish-fish-final.pdf)

<sup>7</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/).

<sup>8</sup> I. Milewski, et al., (2018) *Sea Cage aquaculture impacts market and berried lobster catches*, Mar Ecol Prog Ser 598: 85-97, available at <https://www.int-res.com/articles/meps2018/598/m598p085.pdf>.

<sup>9</sup> United Nations, “Frontiers 2017: Emerging Issues of Environmental Concern” at 15 (2017) <https://www.unenvironment.org/resources/frontiers>.

<sup>10</sup> Caleb Jones, USA Today, *Rare Monk Seal Dies in Fish Farm off Hawaii* (Mar. 17 2017), available at <https://www.usatoday.com/story/news/nation/2017/03/17/rare-monk-seal-dies-fish-farm-off-hawaii/99295396/>.

<sup>11</sup> Terri Coles, CBC News, *Humpback whale freed from net meant for escaped farm salmon in Hermitage Bay* (Aug. 14, 2018), <https://www.cbc.ca/news/canada/newfoundland-labrador/whale-caught-gill-net-cooke-aquaculture-1.4784732>.

Large populations of farmed fish will require an incredible amount of fish feed, which carries its own environmental, public health, and human rights risks.<sup>12</sup> Most industrially farmed finfish, like salmon, are carnivorous and need protein in their feed. This often consists of lower-trophic level “forage fish,” which are at risk of collapse. Lately, aquaculture facilities are relying more on genetically-engineered ingredients such as corn, soy, and algae as substitute protein sources, which do not naturally exist in a fish’s diet. Use of these ingredients can lead to heightened, widespread environmental degradation, a heightened demand on natural resources, and a less nutritious fish for consumers. Moreover, the fish feed industry is a global contributor to human trafficking and slavery.<sup>13</sup> There are very few requirements for the industry to include traceability of ingredients or sourcing methods in fish feed, allowing these serious problems to pervade.

Finally, permitting commercial, marine finfish aquaculture in the United States could bring formidable economic harm to our coastal communities, food producers (on land and at sea), and other marine-reliant industries. Members of the wild-capture fishing industry have collectively voiced their trepidations over attempting to coexist with the marine finfish 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>14</sup> These massive facilities could also close off and essentially privatize large swaths of the ocean that are currently available for numerous other commercial purposes, including fishing, tourism, shipping, and navigation. Finally, given what we know about economies of scale and the business models of modern agriculture and terrestrial food production, we can only expect a similar trend at sea: that is, the marine finfish aquaculture industry could easily push out responsible, small-scale seafood producers and crop growers. This dynamic equates to an alarming imbalance of power, and allows corporations to dominate business structures, production methods, and management policies within the industry. Giving corporations disproportionate influence over food production also severely limits consumer choices.<sup>15</sup>

The risks are not isolated to finfish operations. Other forms of aquaculture – such as intensive bivalve cultivation – can also be destructive to essential habitat, water quality, and public health when poorly sited and scaled. While *wild* bivalves are known to clean water, the water quality impacts of intensive shellfish aquaculture may not always be beneficial; to the contrary, many

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<sup>12</sup> See generally, Changing Markets Foundation, *Until the Seas Run Dry* (2019), available at <http://changingmarkets.org/wp-content/uploads/2019/04/REPORT-WEB-UNTILL-THE-SEAS-DRY.pdf> (concluding that using wild fish to feed farmed fish “raises concerns of overfishing, poor animal welfare and disruption of aquatic food webs; it also undermines food security in developing countries, as less fish is available for direct human consumption”).

<sup>13</sup> Tickler, David, et al. (2018) *Modern slavery and the race to fish*, Nature Communications 9: 4643, available at <https://www.nature.com/articles/s41467-018-07118-9>.

<sup>14</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, available at <http://foe.org/DecFishFarmingSignOnLetter/>.

<sup>15</sup> See generally, Undercurrent News, “World’s 100 Largest Seafood Companies” (Oct. 7, 2016) <https://www.undercurrentnews.com/report/undercurrent-news-worlds-100-largest-seafood-companies-2016/>; Tom Seaman, Undercurrent News, “World’s top 20 salmon farmers: Mitsubishi moves into second place behind Marine Harvest” (June 29, 2016) <https://www.undercurrentnews.com/2016/06/29/worlds-top-20-salmon-farmers-mitsubishi-moves-into-second-place-behind-marine-harvest/>; Aslak Berge, Undercurrent News, “These are the world’s 20 largest salmon producers” (July 30, 2017) <http://salmonbusiness.com/these-are-the-worlds-20-largest-salmon-producers/>.

aquaculture activities can negatively affect water quality through the removal of eelgrass, the increase of wastes from concentrated production, and the disruption of sediments. Other significant potential environmental impacts from dense shellfish aquaculture is a reduction in shoreline biodiversity,<sup>16</sup> installation of plastic gear (e.g., PVC tubes, polyethylene anti-predator netting, and polyolefin ropes),<sup>17</sup> and use of pesticides.<sup>18</sup>

## **II. There are significant legal and conflict-of-interest concerns with the Administration’s proposed framework for streamlining regulations and permitting of marine aquaculture.**

There is a significant conflict-of-interest risk within the National Oceanic and Atmospheric Administration (NOAA), which is the self-proclaimed lead federal agency on policy formulation and regulation of domestic aquaculture. However, in addition to its regulatory efforts, NOAA also has prioritized the explicit goal of promoting and expanding marine aquaculture production in the United States. For 2019, NOAA Fisheries states:

A high priority objective in the Department of Commerce strategic plan is “increasing marine aquaculture production.” Supplementing U.S. wild-caught fisheries, a healthy marine aquaculture industry has the potential to greatly increase our overall U.S. seafood production and reduce the seafood trade deficit. In 2019, we will give our full support to growing a healthy U.S. marine aquaculture industry. Our first step will be to address the bureaucratic hurdles an applicant faces in the federal permitting process.<sup>19</sup>

The FARTF draft outline confirms our deep concern that the Administration is charging full-steam ahead with promoting this potentially disastrous industry without exercising due diligence to fully understand the risks and impacts of permitting commercial facilities in U.S. waters. In fact, the dearth of environmental, public health, and other socio-economic concerns mentioned in

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<sup>16</sup> See *id.*; Bouwman, L., A. Beusen, P. M. Glibert, C. Overbeek, M. Pawlowski, J. Herrera, S. Mulrow, R. Yu, and M. Zhou, *Mariculture: significant and expanding cause of coastal nutrient enrichment*, *Environ. Res. Lett.* 8 (2013); DeFur, P. and D.N. Rader, *Aquaculture in estuaries: Feast or famine?* *Estuaries* Vol. 18, No. 1A (1995); Hastings, R.W. and D.R. Heinle, *The effects of aquaculture in estuarine environments: Introduction to the dedicated issue*, *Estuaries* Vol. 18, No. 1A (1995); Dethier, M., *Native shellfish in nearshore ecosystems of Puget Sound*, Puget Sound Nearshore Partnership Report No. 2006-04, Published by Seattle District, U.S. Army Corps of Engineers, Seattle, Washington (2006); Diana, J.S., H. S. Egna, T. Chopin, M.S. Peterson, L. Cao, R. Pomeroy, M. Verdegem, W.T. Slack, M.G. Bondad-Reantaso, and F. Cabello, *Responsible Aquaculture in 2050: Valuing Local Conditions and Human Innovations Will Be Key to Success*, *Bioscience*, Vol. 63(4) (2013); Bendell, L.I. and P.C.Y. Wan, *Application of aerial photography in combination with GIS for coastal management at small spatial scales; a case study of shellfish aquaculture* (2013).

<sup>17</sup> Bendell, L.I., Favored use of anti-predator netting (APN) applied for the farming of clams leads to little benefits to industry while increasing nearshore impacts and plastics pollution, *Marine Pollution Bulletin* (2015).

<sup>18</sup> Jennifer Wing, Willapa Bay Oyster Farmers Ask State Again For Permission To Use Neurotoxin, KPLU, (Jan. 9, 2016) <http://www.kplu.org/post/willapa-bay-oyster-farmers-ask-state-again-permission-use-neurotoxin>; Wash. Dept. of Ecology, Willapa Bay- Grays Harbor: Burrowing Shrimp Control – Imidacloprid, <http://www.ecy.wa.gov/programs/wq/pesticides/imidacloprid/index.html> (last visited Aug. 1, 2016).

<sup>19</sup> NOAA Fisheries, Priorities and Annual Guidance 2019 at 1, available at <https://www.fisheries.noaa.gov/webdam/download/88539344>.

the draft outline seems to confirm that the Administration is already displaying the harmful outcomes from a conflict of interest - a work plan that sacrifices even basic regulation, enforcement, and transparency, to achieve rapid and easy industry growth and profitability. Such swift development of marine aquaculture will be achieved at the expense of our ocean ecosystems, coastal economies, and public health.

Moreover, we have deep concerns over the legality of the proposed work plan. First, expanding the U.S. Army Corps of Engineers nationwide permit 48 (NWP 48) to encompass additional aquaculture operations, as laid out in Objective 1.1 is inappropriate. The U.S. District Court for the District of Washington recently held that Army Corps reissuance of NWP 48 was unlawful.<sup>20</sup> In sum, the Court held that there is insufficient evidence to support the Army Corp's "conclusion that the reissuance of NWP 48 in 2017 would have minimal individual and cumulative adverse impacts on the aquatic environment for purposes of the [Clean Water Act] and that the Corps' environmental assessment does not satisfy [the National Environmental Policy Act's] requirements."<sup>21</sup>

Second, we question the legality of setting up regional interagency coordinating groups and permit processes "similar to the one operating for authorization of new operations in federal waters in the Gulf of Mexico." As NOAA is aware, the U.S. District Court for the Eastern District of Louisiana recently vacated as *ultra vires* NOAA Fisheries' 2016 final rule establishing a Fishery Management Plan for Regulating Offshore Aquaculture in the Gulf of Mexico, stating the agency has no authority to regulate marine finfish aquaculture in the Gulf of Mexico under the Magnuson-Stevens Fishery Conservation and Management Act.<sup>22</sup>

The work plan's reliance on these unlawful, overturned agency actions is simply flawed policy (and likely to be met with further legal challenge).

### **III. If it moves forward, the FARTF must devote a significant portion of the draft outline to researching the potential socio-economic, public health, and environmental problems associated with industrial offshore aquaculture.**

To promote only sustainable and responsible aquaculture development and production in the United States, the FARTF must devote sufficient resources to studying and understanding the risks and impacts of the industry for the environment, society, and the economy. This includes both *thorough and separate* review of all forms of aquaculture. Not all aquaculture is the same, and finfish facilities, in particular, pose very different threats and consequences than their shellfish or plant counterparts.

However, the draft outline focuses on a utopian view of streamlined aquaculture, including, but not limited to, improving efficiencies (rather than traceability, health, or quality) for drug

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<sup>20</sup> Order Holding NWP 48 Unlawful, *Coalition to Protect Puget Sound Habitat v. U.S. Army Corps of Engineers*, No. 16-950 (U.S. Dist. Ct. Wash. Oct. 19, 2019), ECF No. 65.

<sup>21</sup> *Id.* at \*6. *See also id.* at \*21 ("The Court finds that the Corps has failed to adequately consider the impacts of commercial shellfish aquaculture activities authorized by NWP 48, that its conclusory findings of minimal individual and cumulative impacts are not supported by substantial evidence in the record, and that its EA does not satisfy the requirements of NEPA and the governing regulations.")

<sup>22</sup> *Id.*

approvals, biologics, and feed ingredients; developing surveillance strategies and emergency response plans for “priority” pathogens (rather than natural prevention or mitigation of *all* pathogens); the movement, import, and export of aquaculture product, and improving efficiency of siting, permitting, and authorizing of operations in at least two marine areas.

In fact, the only sections of the draft outline dedicated to the risks we highlight are “Objective 2.1.3.: Review NEPA analyses of specific pathogen risks and pharmaceutical/chemical use, including concerns of effluent” and “Objective 3.1.: Identify needs and prepare work plans for additional science information needed to inform federal and state permit reviews, consultations, and policy decisions.” Thus, it is abundantly clear that the FARTF, and federal agencies involved, are prematurely pushing forward with streamlined permitting of an industry about which very little is being studied.

We are alarmed that the draft outline lacks meaningful discussion of, or planning for, the risks and impacts listed above. We urge the FARTF to prioritize and incorporate such information into its final outline and plan.

We strongly suggest placing a hold on the proposed work plan, and any related activity, to improve regulatory efficiency and predictability until the following action items are implemented by the FARTF:

**Goal 1. Comprehensively analyze the risks and impacts of commercial aquaculture in the United States.**

Objective 1.1: Conduct socioeconomic research to discover the impacts that aquaculture would have on marine-reliant industries, coastal economies, and land-based crop production

Objective 1.2: Compile and analyze the range of environmental harms of commercial-scale aquaculture (shellfish, finfish and plants)

Objective 1.3: Research environmental and public health impacts of veterinary drugs and other chemicals used in aquaculture

Objective 1.4: Implement proper mitigation and alleviation strategies, including consideration of alternatives to marine aquaculture, like recirculating systems on land, and elimination of marine finfish aquaculture production from the national strategic plan.

We also urge FARTF to require that all research carried out pursuant to its work be entirely independent, to ensure that there is no conflict of interest or bias in the analysis and conclusions.

Thank you for the opportunity to submit these comments. We look forward to engaging further in this process at every available opportunity.

Sincerely,

Hallie Templeton  
Senior Oceans Campaigner  
Friends of the Earth  
[h templeton@foe.org](mailto:h templeton@foe.org)

Amy van Saun  
Senior Attorney  
Center for Food Safety  
[AvanSaun@CenterforFoodSafety.org](mailto:AvanSaun@CenterforFoodSafety.org)

Julie Teel Simmonds  
Senior Attorney  
Center for Biological Diversity  
[jteelsimmonds@biologicaldiversity.org](mailto:jteelsimmonds@biologicaldiversity.org)

Wenonah Hauter  
Executive Director  
Food and Water Watch  
[whauter@fwwatch.org](mailto:whauter@fwwatch.org)

Cynthia Sarthou  
Executive Director  
Healthy Gulf  
[cyn@healthygulf.org](mailto:cyn@healthygulf.org)

Noah Oppenheim  
Executive Director  
Institute for Fisheries Resources &  
Pacific Coast Federation of Fishermen's  
Associations  
[noah@ifrfish.org](mailto:noah@ifrfish.org)

Rosanna Marie Neil  
Policy Council  
Northwest Atlantic Marine Alliance  
[rosanna@namanet.org](mailto:rosanna@namanet.org)

Marianne Cufone  
Executive Director  
Recirculating Farms Coalition  
[mcufone@recirculatingfarms.org](mailto:mcufone@recirculatingfarms.org)