RECIRCULATING FARMS COALITION

4522 W. Village Dr., #145
Tampa, Florida, 33624
www.recirculatingfarms.org
Phone: 844-REC-FARM Fax: 813-774-6595

GREEN JUSTICE LEGAL

Green Justice
540 Broadway St., #304 New Orleans, LA 70118

Submitted via email to wahlstrom-ramler.meghan@epa.gov.

September 29, 2019

Ms. Meghan Wahlstrom
Environmental Protection Agency
NPDES Permitting Section, Water Division
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960
wahlstrom-ramler.meghan@epa.gov

Re: Comments on Proposed Issuance of NPDES Permit to Kampachi Farms, LLC (Permit No. FL0A00001)

Dear Ms. Wahlstrom:

Please accept the following comments on behalf of the Recirculating Farms Coalition[1] and Green Justice Legal[2] regarding the Environmental Protection Agency's (EPA) proposed issuance of a National Pollutant Discharge Elimination System (NPDES) permit, under the Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.*, to Kampachi Farms, LLC (Permit No. FL0A00001) (hereinafter, the "permit").[3] These comments incorporate some language, below, also submitted by Friends of the Earth and others.

The permit would allow Kampachi Farms, LLC to operate an industrial fish farming pen in U.S. federal waters – in the Gulf of Mexico approximately 45 miles from the coast of Sarasota, FL –

[1] The Recirculating Farms Coalition is a national, non-profit organization that supports sustainable innovative farming, including aquaponics and land-based aquaculture. www.recirculatingfarms.org
[2] Green Justice is a non-profit virtual law firm under which independent public interest lawyers connect with each other and law students to offer accessible, affordable legal support. The organization focuses on cases involving the natural or human environment. www.greenjusticelegal.org
[3] U.S. EPA, Notice of Proposed Issuance of National Pollutant Discharge Elimination System Permit No. FL0A00001 (August 30, 2019).

and discharge untreated, industrial wastewater from the facility directly into the surrounding waters. Industrial ocean fish farming – also known as offshore or marine finfish aquaculture – is the mass cultivation of finfish in the ocean, in net pens, pods, and cages. These are essentially floating concentrated animal feedlots, in open water, which can have devastating environmental and socio-economic impacts. RFC strongly opposes EPA's issuance of this NPDES permit. We also urge EPA to hold a series of public hearings throughout the Gulf with the opportunity for live public testimony on this issue before the agency makes a decision on the proposed permit. As this purports to be a pilot project for the purpose of determining whether even larger industrial scale aquaculture could occur in the Gulf of Mexico, those with interest in and connections to the Gulf Mexico should be made well aware of this potential permit and have the opportunity to review and discuss.

I. The Federal Government Continues to Prioritize Marine Finfish Aquaculture Despite Evidence of Significant Global Harm and Widespread Public Concern and Opposition.

For decades, the federal government has pushed to expand marine finfish aquaculture in federal waters, despite massive public opposition and negative global experiences with the industry, including but not limited to: farmed fish spills, parasites, disease, conflicts with marine life, use of antibiotics and other toxins, harm to wild fisheries and coastal economies, and the devastation of native wild fish stocks. We have been closely tracking – and are entirely opposed to – the federal government's repeated waves of pushing the reckless development and expansion of a destructive and unnecessary industry in the United States, and the significant waste of resources over many years to do so.

Should federal agencies begin permitting marine finfish aquaculture – beginning with this permit – there is a significant conflict-of-interest risk in the proposed framework for promoting and regulating the industry. The National Oceanic and Atmospheric Administration (NOAA) has proclaimed itself as the lead federal agency on policy formulation and regulation of domestic marine finfish aquaculture. However, in addition to its regulatory efforts, NOAA also has prioritized the explicit goal of promoting and expanding marine finfish 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.[4]

Moreover, the National Oceanic and Atmospheric Administration (NOAA) has relentlessly prioritized regulating the industry despite a recent opinion out of the Eastern District of Louisiana holding that NOAA has no authority to regulate marine finfish aquaculture under the

[4] NOAA Fisheries, Priorities and Annual Guidance 2019 at 1, *available at* https://www.fisheries.noaa.gov/webdam/download/88539344.

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Magnuson-Stevens Fishery Conservation and Management Act.[5] Nevertheless, NOAA continues to promote operations along each U.S. coastline and has been significantly involved with this permit process (e.g., gathering and providing buoy data, conducting preliminary siting analysis and environmental quantitative modeling and joining in the Draft Environmental Assessment (DEA) document).

Even more concerning is that the DEA cites vacated, *ultra vires* agency action as support for the permit at issue.[6] This blind reliance is deeply troubling, if not also unlawful. Simply put, the proposed permit and supporting documentation bolsters our deep concern that EPA and the Army Corp of Engineers (USACE) are collaborating with NOAA on the questionable promotion of this potentially disastrous industry, without exercising independent due diligence to fully understand the risks and impacts of commercial permitting of industrial finfish aquaculture facilities in U.S. waters.

We are also concerned and confused as to why the very agencies tasked with protection and stewardship of our ocean resources are fixated on supporting and expanding this outdated and unnecessary industry, especially in light of the well-documented ecological, social, and economic problems associated with such operations globally and even in our own state waters around the U.S. As two recent examples illustrate, many places are moving away from marine finfish aquaculture: As of August 2019, Denmark has placed a prohibition on offshore aquaculture development for the entire country out of concern for the industry's impact to the environment.[7] Here in the U.S., the state of Washington swiftly moved to phase-out marine finfish aquaculture for non-native species following a massive Atlantic salmon spill in August 2017, essentially shuttering all facilities in the state. Our federal government must heed past lessons and prevent these types of harms by not permitting marine finfish aquaculture facilities in open water.

II. The permit and supporting documentation ignore the range of risks and impacts that marine finfish aquaculture would bring to the United States.

The proposed permit and supporting documentation fail to fully acknowledge the breadth of socio-economic, public health, and environmental problems associated with marine finfish aquaculture. Issuing the permit despite these clear problems would be irresponsible, fall short of legal requirements and be subject to legal challenge.

Other countries with marine finfish aquaculture have suffered notable environmental, socio-economic, and public health problems associated with the industry. As detailed below, these impacts are varied and widespread, and may not come to light until years after irreversible damage has been done.

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[5] *Gulf Fishermen's Assoc. v. Nat'l Marine Fisheries Serv.*, No. 16-1271 (Sept. 25, 2018), *appeal docketed,* No. 19-30006 (5th Cir. Jan. 3, 2019).

[6] In *Gulf Fishermen's Assoc.*, the federal district court vacated as *ultra vires* NOAA Fisheries' 2016 final rule establishing a Fishery Management Plan for Regulating Offshore Aquaculture in the Gulf of Mexico. *Id.* at 15. EPA has also relied on NOAA's 2008 Programmatic Environmental Impact Statement, which was the subject of challenge in the case.

[7] PHYS.ORG, Denmark halts aquaculture development over environment concerns (Aug. 27, 2019), *available at* https://phys.org/news/2019-08-denmark-halts-aquaculture-environment.html.

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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 the state of Washington 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.[8] Escaped fish increase competition with wild stocks for food, habitat, and spawning areas. 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."[9] Finally, escaped farmed fish can spread a multitude of parasites and diseases to wild stocks, which could prove fatal when transmitted.[10]

We have significant concerns regarding the pervasive use of antibiotics, other drugs and chemicals for prevention and treatment of illness, diseases, and problems like growth of organisms on fish and equipment of marine finfish aquaculture facilities. The use of these chemicals creates assorted environmental and public health concerns. When fish are kept at high densities in a stationary cage, stress and other factors make them more susceptible to illness and parasites. In response, the agriculture and aquaculture sectors often administer a wide range of chemicals – and in the open ocean, residues of these drugs flow through the mesh cages into the marine ecosystem. For example, the marine finfish aquaculture industry often treats sea lice with Emamectin benzoate (marketed as SLICE®), which has been noted to cause "widespread damage to wildlife," including "substantial, wide-scale reductions" in crabs, lobsters and other crustaceans.[11] In Nova Scotia, an 11-year-long study found that lobster catches plummeted closer to marine finfish aquaculture facilities.[12] In addition, the use of antibiotics in marine finfish aquaculture facilities is contributing to the public health crisis of antibiotic resistance. For farmed fish, antibiotics not only leave residues in your seafood, but they 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.[13]

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[8] 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/.

[9] 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.

[10] 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 (2017) https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/research/clf_reports/offshor-finfish-final.pdf

[11] 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/.

[12] 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.

[13] United Nations, "Frontiers 2017: Emerging Issues of Environmental Concern" at 15

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Another serious concern is the direct discharge of untreated toxins, including excess food, fish waste, antibiotics, and antifoulants associated with industrial finfish farms. Releasing excess nutrients can negatively impact benthic habitat and water quality surrounding the farm and threaten plants and animals. These in-the-water factory farms can also create dead zones, and change natural behaviors of various species - sharks, dolphins, predatory and/or migratory fish and more - by attracting them to fish cages and/or by impeding or disrupting their swimming patterns. These predators can easily become entangled in net pens, stressed by acoustic deterrents, and more easily hunted and caught by congregating and lingering around the cages. An industrial ocean fish farm caused the death of an endangered monk seal in Hawai'i, which was found entangled in the net.[14] In August 2018, Cooke Aquaculture entangled an endangered Humpback whale in large gillnets it cast to recapture escaped farmed fish from a Canada facility.[15] These examples are merely two of many unfortunate entanglements.

The industrial scale farming of finfish will require an incredible amount of fish feed, which itself comes with environmental, public health, and human rights risks.[16] 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.

In the Gulf of Mexico, there is long history of concern about the menhaden fishery. It is primarily a "reduction" fishery, meaning the fish are pressed into fishmeal and fish oil for use in various products, like pharmaceuticals and notably pet and fish feeds. Locally called "pogies", these fish are at the base of the food chain and are important prey for a wide range of marine life, including marine mammals - like dolphins - sea birds and predatory fish. The Marine Stewardship Council, despite much opposition and concern, recently certified the Gulf of Mexico menhaden fishery as "sustainable." This, along with the development of marine finfish aquaculture in the Gulf, could mean an increased demand for menhaden, which could have significant risks for the menhaden population, other Gulf fish, and the entire Gulf ecosystem.

The menhaden fishery already operates with questionable practices that raise concerns for the marine environment. Using spotter airplanes to locate large schools of menhaden, fishing companies then deploy boats with purse seine nets to encircle the entire school of fish. Anything feeding on those fish can easily be caught and killed in the nets and during processing as well. The industry admits it has a bycatch rate of up to 2.8 percent. In a fishery where there is no catch cap on how many fish can be taken, no regular observers to monitor bycatch or operations, and recent annual catches of over 1 billion pounds of fish, that equates to a massive amount of

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(2017) https://www.unenvironment.org/resources/frontiers.

[14] 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/.

[15] 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.

[16] *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").

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bycatch per the industry's own admissions – between **10 to over 28.4 million pounds** of wasted marine life each year.

In light of the importance of menhaden to the Gulf ecosystem as a prey species, the enormous amount of bycatch each year in that fishery, the lack of a catch cap and no regular monitoring of the fishery, it is irresponsible to potentially increase the demand for menhaden to be taken and converted into fishmeal and fish oil for use in fish feed for farmed fish in the Gulf. This would pose serious threats to wild fish, marine mammals and seabirds, as well as the entire Gulf ecosystem.

Alternately, another concern with fish feed is the developing practice of aquaculture operations moving toward reliance on feeds with genetically-engineered ingredients, such as corn and soy as a substitute protein source for wild fish. These are not part of a natural diet for marine finfish nor do these ingredients belong in our marine environment. Use of corn and soy in fish feed can change the quality and nutritional content of the fish, raise concerns for consumers, create disruptions in the natural environment as neither are sea-based materials, and cause other ecological concerns associated with their production and processing.[17]

Moreover, the fish feed industry has been associated with human trafficking and labor practices akin to slavery.[18] There are very few requirements for the industry to include traceability of ingredients or sourcing methods in fish feed. One of the primary reasons often cited for developing a marine finfish aquaculture industry in the U.S. is to control for better health, safety and labor standards in production. If this is in fact a motivating factor for U.S. marine finfish aquaculture, standards for feed related to health, safety and labor concerns should be firmly in place before any agency considers moving forward with permits for marine finfish aquaculture in the U.S.

Finally, permitting commercial, marine finfish aquaculture in the United States could result in formidable economic harm to our coastal communities, food producers, and other marine-reliant and support industries. Members of the wild-capture fishing industry have collectively voiced concerns over displacement due to an expanded 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."[19] These operations could also close-off and essentially privatize large swaths of the ocean that are currently available for numerous other commercial purposes, including fishing, boating, diving, tourism, shipping, and navigation. 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, smaller-scale seafood producers and thus also other marine-related and support businesses. This dynamic equates to an alarming imbalance of power, and allows corporations to dominate business structures, production methods, and management

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[17] Jillian P. Fry et al, *Environmental Health Impacts of Feeding Crops to Farmed Fish,* 91 Environment International 201 (2016).

[18] 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.

[19] 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/.

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policies within the industry. Giving corporations disproportionate influence over food production also severely limits consumer choices.[20]

III. Inadequate Analysis of the Proposed Permit Application Violates the National Environmental Policy Act.

The National Environmental Policy Act (NEPA), 42 U.S.C. § 4321*et seq.*, serves as "our basic national charter for protection of the environment,"[21] by requiring federal agencies to assess the environmental and socioeconomic impacts of projects to ensure that their decisions are fully informed.[22] NEPA requires federal agencies to prepare an Environmental Impact Statement (EIS) for all "major Federal actions significantly affecting the quality of the human environment."[23] 42 U.S.C. § 4332(2)(C). The NEPA procedure begins with preparation of an Environmental Assessment (EA), which must include a "high quality," "accurate scientific analysis" of the proposed project.[24] This analysis must include a discussion of "appropriate alternatives" as well as a discussion of environmental impacts with sufficient evidence and analysis to determine whether to prepare an EIS or a finding of no significant impact.[25] . In preparing an EA, an agency must take a "hard look" at the environmental impact of the proposed action and alternatives.

A. Prior to issuing the permit, EPA is obligated to prepare an Environmental Impact Statement that comprehensively analyzes the range of cumulative impacts that marine finfish aquaculture could have in the United States.

EPA has jointly prepared a draft Environmental Assessment (DEA) with USACE and NOAA, in support of its proposed NPDES permit. In such a document, NEPA demands that an agency consider impacts from connected, similar, and cumulative actions, and to take into account the significance of the proposed action at the local level, considering both short- and long-term effects, in assessing the scope and significance of a proposed action.[26] The current DEA is insufficient in this instance. Issuance of the proposed permit is intended to be a precursor for developing an entire new and novel industry in the U.S., with well-documented, significant harm in other countries, as well as in U.S. states with operations. It is no secret that Kampachi Farms LLC plans to initially operate Velella Epsilon for research purposes, while simultaneously pursuing commercial production.[27] Tellingly, the agencies involved repeatedly refer to the

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[20] *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-movesinto-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/.

[21] 40 C.F.R. § 1500.1(a)

[22] 42 U.S.C. §§ 4321-4332; 40 C.F.R. §§ 1502.1, 1503.1.

[23] 42 U.S.C. § 4332(2)(C).

[24] 40 C.F.R. 1500.1(b).

[25] 40 C.F.R. § 1508.9(a).

[26] 40 C.F.R. § 1508.25(a) (scope); 40 C.F.R. § 1508.27(a).

[27] *See* Kamapchi Farms LLC, Velella Epsilon: Pioneering Offshore Aquaculture in the Gulf of Mexico (Nov. 2, 2017) http://www.kampachifarm.com/blog/2017/11/2/velella-epsilon-pioneering-offshore-aquaculture-in-the-gulf-of-mexico.

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proposal as a "pilot-scale" project.[28] While the project is a single 54 foot x 21 foot cage, the intensity of the farming is being ignored. The amount of fish planned in this "pilot" project is 20,000 individual almaco jacks, grown to about 4.4 pounds each, with expected mortality of nearly 3,000 fish.[29] Remaining fish would ultimately collectively reach nearly 75,000 pounds total in the cage.[30] Notably, this is more than the entire amount of almaco jack from federal waters landed in Florida, for the most recent year for which landings information is available.[31] This can hardly be considered a "pilot" project and should not be reviewed or permitted as such. It is in fact an intensive industrial fish farm that is meant to be a precursor to much more.

EPA cannot approve a permit for the proposed project simply by purporting to limit the scope to a "pilot" scale, but must assess the various and many environmental, socioeconomic, and human health impacts from likely extensions and further aquaculture developments that may stem from the proposed project. An EIS is clearly required here.

We also urge the agencies to fully consider the range of available alternatives that will increase domestic seafood production. Most notably, recirculating aquaculture systems (RAS) are being utilized around the world and have been growing in popularity and success here in the United States. RAS are often self-contained, mostly closed-loop, land-based systems that raise finfish in an atmosphere similar to an aquarium, and as such, avoid a number of concerns associated with offshore aquaculture.

RAS can also be combined with growing plants, known as aquaponics (joining the terms aquaculture and hydroponics). Such systems raise plants in nutrient rich water. They mimic natural ecosystems: the fish create nutrients in the water through life behaviors and the plants (vegetables, fruits, herbs, flowers, etc.) absorb those nutrients to grow, thereby cleaning the water for the fish to reuse. Because recirculating systems do not need to be in or near natural waters, they can run on rainwater or city water (dependent on the size of the system) and reuse the waste and water in the system. There is very little chance of fish escapes or pollution into the surrounding environment. Further, as these farms are often self-contained, a wide variety of fish may be raised – in particular those that do not compete with what local fishermen catch. Because these aquaponics farms are land-based, they also avoid space conflicts in the ocean. Today, these farms can largely run on alternate energy, such as solar, wind or geothermal power (or a combination of various options). Thanks to the many benefits associated with recirculating farms, they are a better, more sustainable, less problematic way to raise fish in the U.S. making offshore aquaculture obsolete and unnecessary. When combined with sustainable wild-capture fishing, we can meet seafood demands in the U.S. without destructive industrial ocean fish farming.

B. The Draft Environmental Assessment Fails to Take a Hard Look at the Foreseeable and Cumulative Impacts of the Proposed Permit.

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[28] *See, e.g.*, DEA at 1.
[29] DEA at 9.
[30] *Id.*
[31] NOAA,NMFS Office of Science and Technology Commercial Fisheries Statistics: https://www.st.nmfs.noaa.gov/commercial-fisheries/ (last accessed September 29, 2019)

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The Draft Environmental Assessment (DEA) is insufficient to support the agency's finding of no significant impact (FONSI). A FONSI following an EA is only appropriate when an agency's "hard look" at the potential consequences of its proposed action fails to reveal even the possibility of significant effects.[32] A FONSI must be supported by a "convincing case for its finding."[33]

First, the agencies fail to take a hard look at foreseeable impacts of adverse weather on this project. Even a single extreme weather event could have a significant impact on marine ecosystems, those surrounding the operation and elsewhere, through damaging the pens and infrastructure – even if the cage is submersible – and allowing the release of debris and farmed fish into surrounding waters. The site for the proposed project is in about 40-45 meters deep, which is up to 130 feet of water[34]. Effects of hurricanes, depending on wave length and other specific factors can be felt all the way down to hundreds of feet. According to NOAA, "…resulting currents can extend as far as 91.5 meters below the surface, wrecking deadly havoc on marine life."[35] As 91.5 meters equates to 300.2 feet, even if the fish pen was sunk to the bottom in an effort to protect it and the fish during a storm, a hurricane could easily still disrupt, and even completely destroy, the cage and equipment, and harm, kill and/or release the fish.

Further, EPA has information that strong storms will eventually affect facilities, eliminating the effectiveness of some of the habitat mitigation efforts listed in the NPDES permit, but failed to consider or analyze that information in the DEA.

Similarly, the DEA acknowledges that the proposed site location is home to numerous sensitive marine species. A number of these species receive federal protection under the Endangered Species Act (ESA) (examples include the Oceanic whitetip shark, Giant manta ray, and a variety of seabirds and sea turtles) and the Marine Mammal Protection Act (examples include the Atlantic spotted dolphin and the Common bottlenose dolphin). The DEA admits that the Giant manta ray "may encounter the facility given its migratory patterns,"[36] and also recognizes that sea turtles may be impacted by the proposed operations,[37] but stops short of taking a hard look at these likely impacts.

The DEA mentions concerns regarding nutrient loading,[38] but then fails to fully discuss recent issues off Florida including harmful algal blooms (HABs) (often called a "red tide"), coral die off and, more recently, the persistent accumulation of sargassum seaweed. From October 2017–February 2019, more than a full year, Florida experienced an especially long and intense red tide event. Hundreds of tons of fish and at least 150 dolphins and 100 manatees were documented as dead and more than 400 sea turtles washed ashore.[39] Additionally, in recent years, corals in south Florida have been experiencing mass die off due to an infectious waterborne disease that scientists are scrambling to stop. The disease is so severe that ecosystem managers and scientists

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[32] 40 C.F.R. § 1501.4(e); see, e.gA FONSI must be supported by a "convincing case for its finding." *Id.*
[33] *Sierra Club v. U.S. Dep't of Transp.*, 753 F.2d 120, 127 (D.C. Cir. 1985).
[34] DEA at 26.
[35] NOAA, National Ocean Service, *How Do Hurricanes Affect Marine Life, https://oceanservice.noaa.gov/facts/hurricanes-sea-life.html (last accessed on September 28, 20219).*
[36] DEA at 36.
[37] DEA at 40-41.
[38] DEA at 16.
[39] See: https://www.pbs.org/wgbh/nova/article/florida-red-tide-gulf-coast/ (Last accessed September 29, 2019).

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are now removing healthy coral from the water and storing them in "coral condos" in the hopes of saving enough to replant back in the ocean if and when the disease passes.[40] This is an extreme management measure, the occurrence of which should not be taken lightly. NOAA itself is involved in the response, with the Florida Keys National Marine Sanctuary leading efforts.[41] There is evidence that coral die off is related to sewage runoff.[42] Given this serious and spreading concern, it is unwise to add any increased nutrients to the waters off Florida. Further, in the past year, Florida is seeing a massive increase in sargassum seaweed (which is really a type of algae)[43], so much so that hotels are hiring workers to remove it from shorelines daily and it is being called by scientists, the "biggest seaweed bloom in the world."[44] This too, is hypothesized to be related to sewage runoff and nutrification of ocean waters. While each of these issues should individually give responsible agencies significant pause in approving any permits for an operation that will contribute nutrients to Florida and surrounding waters, at a bare minimum, none of this individually or collectively was sufficiently discussed and analyzed for this NPDES permit in the DEA, and this is a glaring gap in the foreseeable and cumulative impact review.

The DEA fails to sufficiently analyze cumulative impacts of the proposed facility for the full possible five year duration of the permit by using the permit's initial 18-month approval, and discussion that the project could take between 12 and 18 months, to excuse sufficient analysis of significant cumulative impacts. NEPA defines cumulative impacts as "the impact of the environment which results from the incremental impacts of the action when added to other past, present and reasonably foreseeable future actions."[45] The DEA itself admits that an adequate cumulative impacts analysis must, at a minimum, cover the entire life of the proposed permit (5 years).[46] Yet, the agencies still fail to sufficiently analyze cumulative impacts such as interference with migration, entanglements, and ocean noise disturbance over the full potential five-year duration of this permit.

An analysis of the full duration is essential for migration because cumulative impacts of the facility on migration over a five-year period greatly differ from impacts up to an 18-month period. Here, the DEA acknowledges that giant manta rays will likely encounter the facility during their migrations but fails to analyze this impact based on claims that the project will not affect them over a period of 16-18 months. This dismissal does not address whether the project will affect their migration over the full potential five-year period. Additionally, the DEA states that sea turtles are "highly migratory" throughout the Gulf, but does not address whether the project will interfere with their migration over the potentially five-year span of this permit.

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[40] CBS News, *Scientists Race to Save Gulf Coast Coral Ravaged By Mysterious Underwater Disease,* July 25, 2019. Available at: https://www.cbsnews.com/news/gulf-coast-mysterious-underwater-disease-ravages-coral/

[41] NOAA, Florida Keys National Marine Sanctuary, *Florida Reef Tract Coral Disease Outbreak,* https://floridakeys.noaa.gov/coral-disease/ (Last accessed on September 29, 2019).

[42] Brian E. Lapointe et al., *Nitrogen Enrichment, Altered Stoichiometry and Coral Reef Decline at Looe Key, Florida, USA: A 3-Decade Study,* 166 Marine Biology 108 (2019).

[43] Kristen Kusek, University of South Florida, College of Marine Science, *Scientist Discover the Biggest Seaweed Bloom in the World,* July 4, 2019, https://www.marine.usf.edu/news-and-events/scientists-discover-the-biggest-seaweed-bloom-in-the-world/ (Last accessed on September 29, 2019).

[44] Id.

[45] 40 C.F.R. § 1508.7.

[46] DEA at 48.

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Additionally, the DEA fails to provide a significant analysis of the risks of entanglement and ocean noise disturbance, dismissing these impacts due to the "short" 18-month period, despite the possibility of up to a five-year period. Marine mammals, seabirds, and other ESA-listed species such as sea turtles, whales, and the Giant manta ray will be attracted to the operation as a food source and could become entangled in the flexible mooring and net pen connection lines. The DEA also acknowledges that underwater noise disturbance could affect these species. However, the DEA carelessly dismisses these impacts as unsubstantial over an 18-month period, while failing to analyze these impacts over the possible five-year deployment.

Relatedly, the DEA fails to discuss in detail any impacts from the 70-foot tender vessel that is planned to be "always be present at the facility," except during certain storms or resupplying.[47] This is a boat of significant size, much larger in fact than the fish cage, and thus it too will have a variety of notable impacts associated with it, more than just "a small source of emissions,"[48] if it is meant to always be at the facility throughout the 18 months and up to 5 years duration of the permit. These have not at all been thoroughly reviewed, discussed and evaluated in the DEA to simply assume no significant impact.

The agencies also fail to adequately address the question of monitoring and observation of the operation, to identify and address any of the likely potential negative impacts that may occur. Is there monitoring outside the company engaged in the project, if so, how does that monitoring occur and who is doing such monitoring? Are there independent observers? Is there camera monitoring? The document mentions use of "best management practices," but without sufficient monitoring, there is no way to enforce whether best management is actually in practice. Similarly, the DEA repeatedly mentions that the operation will "keep the lines taut at all times," as a means to avoid entanglements in equipment related to the fish cage, yet no explanation is proffered for how this will be achieved with such certainty. The ocean is a dynamic environment, with changes in waves and current, and assorted fish and other sea creatures are likely to interact with the cage and equipment. Without specific management tactics, it seems highly unlikely that in such an environment, all lines will be kept taut at all times, as is the relied upon remedy to alleviate entanglement concerns in the DEA.

As stated above, the DEA's cumulative impacts analysis of impacts from this and future aquaculture operations is arbitrary and capricious because analysis is limited to inadequate analysis of the current "pilot-scale" proposal as well as one other known project.[49] At a minimum, to satisfy NEPA's hard look requirement, the agencies' cumulative analysis must better examine current potential concerns and the reasonably foreseeable expansion of the current proposal beyond its so-called pilot stage.

Lastly, it is inconceivable that at a time when children are striking from school nationwide as a means to garner attention from adults in power everywhere, and 16 year old Greta Thunberg sailed across the ocean to the U.S in a solar-powered vessel to make the point climate change is real, that the authors of this DEA have not fully considered risks related to climate change issues relative to this project. Simply because our current administration denies the existence of climate concerns does not absolve agencies from their NEPA hard look requirements. In this instance

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[47] DEA at 169.
[48] DEA at 34.
[49] DEA at 49.

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particularly, changes in the ocean associated with climate over the next five (5) years are critical. Changes in sea temperature, salinity, currents and movement, as well as intensity and frequency of storms and benthic changes are all possible and likely in coming years and these and other related matters must be reviewed, discussed and fully analyzed before any permits can be issued for this project. Simply stating there will be limited emissions from the project and that the cage will be sunk to avoid storm damage is wholly insufficient to address these significant concerns.

IV. Analysis of the Discharge from the Proposed Industrial Fish Farm is Inadequate, in Violation of NEPA and the CWA.

Despite the foreseeable discharges and pollution discussed above, EPA fails to analyze the discharge of significant pollutants from the facility under the Ocean Discharge Criteria required for NPDES aquaculture permits, in violation of NEPA and the CWA.

The CWA broadly defines "pollutant" to include a range of substances, such as "solid waste . . . sewage, garbage, . . . chemical wastes, biological materials, . . . wrecked or discarded equipment, . . . and industrial . . . and agricultural waste."[50] Courts have interpreted "pollutant" to also include "substances not specifically enumerated but subsumed under the broad generic terms" listed in § 1362(6) of the CWA.[51] Yet, the only discharges that EPA evaluated under the "ocean discharge criteria" are fish food pellets and fish wastes. Elsewhere in the proposed permit and accompanying Environmental Assessment (EA), EPA acknowledged that the proposed facility will consist of copper mesh, and recognized the risks of fish escape, pollution from pharmaceutical and chemical inputs, and the development of pathogens and parasites. EPA's failure to sufficiently analyze copper, escaped fish, pharmaceuticals, and pathogens/parasites as potential pollutants violates the CWA's anti-degradation policy. The document repeatedly parrots the industry line that "dilution is the solution to pollution," with no meaningful basis for assuming this would be so for this specific project. The project will be about 500m from hard habitat – water flows, and pollution and debris move, thus the dismissal of concerns and the failure to analyze these foreseeable pollution risks is also arbitrary and capricious, in violation of NEPA.

V. The Endangered Species Act requires formal consultations and preparation of a Biological Opinion prior to issuing a permit.

The Endangered Species Act (ESA), 16 U.S.C. §§ 1531-1544, "represent[s] the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978).[52] Section 9 of the ESA prohibits

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[50] 33 U.S.C. § 1362(6).

[51] *See, e.g., Hudson River Fishermen's Ass'n v. City of N.Y.*, 751 F. Supp. 1088, 1101 (D. N.Y. 1990), aff'd, 940 F.2d 649 (2nd Cir. 1991)(citing *United States v. Hamel*, 551 F.2d 107 (6th Cir. 1977)).

[52] The National Marine Fisheries Service (NMFS) and the Fish and Wildlife Service (FWS) share responsibilities for implementing the ESA. 16 U.S.C. § 1532(15). Pursuant to a 1974 Memorandum of Understanding, NMFS has primary jurisdiction over marine and anadromous species, including marine mammals (except walruses) and marine turtles, while FWS has primary jurisdiction over land-dwelling and freshwater species, including birds. *See* Memorandum of Understanding Between the U.S. FWS of the Department of the Interior and the NMFS NOAA DOC Regarding Jurisdictional Responsibilities and Listing Procedures Under the ESA of 1973 at 3, 5 (1974).

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any "person" from "taking" any member of an endangered or threatened species. 16 U.S.C. § 1538(a).[53]

Pursuant to Section 7 of the ESA, before undertaking any action that may have direct or indirect effects on any listed species, an action agency must engage in consultation with NMFS and/or FWS (collectively, the "consulting agencies") in order to evaluate the impact of the proposed action. *See id.* § 1536(a). In jointly issued regulations, the consulting agencies defined the term "action" for the purposes of Section 7 broadly to mean "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies," 50 C.F.R. § 402.02, "in which there is discretionary federal involvement or control." *Id.* § 402.03. An agency may only avoid this consultation requirement for a proposed action if it determines that its action will have "no effect" on threatened or endangered species or critical habitat. *Id.* § 402.14(a).
The purpose of consultation is to ensure that the action at issue "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated] habitat of such species." 16 U.S.C. § 1536(a)(2). As defined by the ESA's implementing regulations, an action will cause jeopardy to a listed species if it "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02. The evaluation of the effects of the proposed action on listed species during consultation must use "the best scientific . . . data available." 16 U.S.C. § 1536(a)(2). Moreover, after the initiation of consultation, the action agency is prohibited from making "any irreversible or irretrievable commitment[s] of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures." *Id.* § 1536(d).

Consultation under Section 7 may be "formal" or "informal" in nature. Informal consultation is "an optional process" consisting of all correspondence between the action agency and the consulting agency, which is designed to assist the action agency, rather than the consulting agency, in determining whether formal consultation is required. *See* 50 C.F.R. § 402.02. During an informal consultation, the action agency requests information from the consulting agency as to whether any listed species may be present in the action area. If listed species may be present, the action agency is required by Section 7(c) of the ESA to prepare and submit to the consulting agency a "biological assessment" that evaluates the potential effects of the action on listed species and critical habitat. As part of the biological assessment, the action agency must make a finding as to whether the proposed action may affect listed species and submit the biological assessment to the consulting agency for review and potential concurrence with its finding. 16 U.S.C. § 1536(c). If the action agency finds that the proposed action "may affect, but is not likely

[53] The term "take" is defined broadly to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect." *Id.* § 1532(19). By regulation, NMFS has defined "harm" to mean "an act which actually kills or injures fish or wildlife," and "include[s] significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering." 50 C.F.R. § 222.102. Likewise, FWS has defined "harass" to include "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding, or sheltering." 50 C.F.R. § 17.3. In addition, "harm" is defined to "include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." *Id.*

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to adversely affect" any listed species or critical habitat and the consulting agency concurs with this finding, then the informal consultation process is terminated. 50 C.F.R. § 402.14(b).

If, on the other hand, the action agency finds that the proposed action "may affect" listed species or critical habitat, then the action agency must undertake formal consultation. 50 C.F.R. § 402.14; *see also* FWS & NMFS, Endangered Species Consultation Handbook ("Consultation Handbook") at 3-13 (1998). The result of formal consultation is the preparation of a biological opinion ("BiOp") by the consulting agency, which provides the consulting agency's analysis of the best available scientific data on the status of the species and how it would be affected by the proposed action.[54] Additionally, a BiOp must include a description of the proposed action, a review of the status of the species and critical habitat, a discussion of the environmental baseline, and an analysis of the direct and indirect effects of the proposed action and the cumulative effects of reasonably certain future state, tribal, local, and private actions. *See* Consultation Handbook at 4-14 to 4-31.

Without an adequate biological opinion and incidental take statement in place, any activities likely to result in incidental takes of members of listed species are unlawful. *Id.* § 1538(a)(1)(B). Accordingly, anyone who undertakes such activities, or who authorizes such activities, *id.* § 1538(g), may be subject to criminal and civil federal enforcement actions, as well as civil actions by citizens for declaratory and injunctive relief, *see id.* § 1540.

In this instance, the agencies have unlawfully failed to meet ESA's mandate to conduct adequate formal consultations and prepare a Biological Opinion. The DEA reaches the flawed conclusion that Velella Epsilon's potential threats are "highly unlikely to occur or extremely minor in severity" and that the proposed project is not likely to adversely affect listed species and critical habitat or designated critical habitat.

As detailed above, the expansion of finfish aquaculture systems into the open ocean generally, and the Gulf of Mexico in particular, presents serious environmental concerns. Farmed fish will escape. Industrial wastewater will be discharged into the ocean, including pharmaceuticals, heavy metals, and excess nutrients from feed and fish waste. Marine mammals and other wildlife will be attracted to the nets and put at risk of fatal entanglement. Operations will be a breeding ground for parasites and disease. It is readily apparent that the construction and operation of a commercial scale pilot project that is expressly intended to facilitate the development of even larger commercial aquaculture could have serious adverse effects on listed species and designated critical habitat.

The Biological Evaluation (BE) acknowledges more than 20 federally protected species, listed as either threatened or endangered, located in or near the proposed action area, including two seabird species, four fish species, seven invertebrates, six whales, and five reptiles.[55]

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[54] When preparing a biological opinion, the consulting agency must (1) "review all relevant information," (2) "evaluate the current status of the listed species," and (3) "evaluate the effects of the action and cumulative effects on the listed species," 50 C.F.R. § 402.14, using "the best scientific and commercial data available," 16 U.S.C. § 1536(a)(2); *see also Greenpeace v. Nat'l Marine Fisheries Serv.*, 80 F. Supp. 2d 1137, 1149-50 (W. D. Wash. 2000) (remanding biological opinion where agency failed to "meaningfully analyze" the risks to the species and the key issues).

[55] Draft Biological Assessment at 8 (Table 2).

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Despite Velella Epsilon's likely and potential adverse effects to these listed species and critical habitats, the agencies did not conduct an adequate formal Section 7 consultation on the project. Nor did the agencies ever participate in any sort of Section 7 process regarding the indirect or cumulative impacts to listed species that will occur should this project fulfill its intended purpose and incentivize the expansion of commercial aquaculture in the Gulf of Mexico. *See* 50 C.F.R. § 402.02 (defining "indirect effect" as one that is (1) "caused by the proposed action," (2) occurs later in time than the action, and (3) is reasonably certain to occur"); *id.* § 402.14(g) (requiring a BiOp to evaluate the "effects of the action," which include the action's "indirect effects"); *see also San Luis & Delta-Mendota Water Auth. v. Locke*, 776 F.3d 971, 1009 (9th Cir. 2014).

In short, the agencies have failed to undertake the legally mandated process for formally and fully analyzing and addressing impacts to listed species and their habitat, although it is apparent that marine finfish aquaculture indisputably harms myriad such species in various ways.

A. EPA Cannot Approve the Proposed NPDES Permit Without Completing Consultation with NMFS.

Under Section 7(d) of the ESA, the EPA may not issue the NPDES permit until the EPA and NMFS consult and NMFS concurs with EPA's findings in the BE. Section 7(d) of the ESA provides that once a federal agency initiates consultation on an action under the ESA, the agency, as well as any applicant for a federal permit, "shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section."[56]

Since the purpose of Section 7(d) is to maintain the environmental status quo pending the completion of consultation, Section 7(d) prohibitions remain in effect while NMFS determines whether it will concur with EPA's findings. These prohibitions must also remain in effect throughout the consultation period and until the federal agency has satisfied its duty under Section 7(a)(2) to insure that the action will not result in jeopardy to listed species or adverse modification of critical habitat. Hence, EPA may not approve the proposed permit until it has complied with the statutory mandates of the ESA.

B. The Draft Biological Evaluation Is Inadequate.

The Biological evaluation (BE) is arbitrary and capricious, as the DEA fails to consider several impacts on endangered species. A BE is arbitrary and capricious when an agency "entirely fail[s] to consider an important aspect of the problem or to consider the relevant factors and articulate a rational connection between the facts found and the choice made."[57] *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 901 (9th Cir. 2002). Here, the BE is arbitrary and capricious because EPA failed to consider the effects on endangered species of releasing fish feed into the water, as well as potential disturbances caused by light pollution. Additionally, while the agencies acknowledge genetic impacts to wild fish from cultured fish and the potential spread of disease from cultured to wild fish, the DEA fails to even mention the impact of escaped cultured fish on

[56] 16 U.S.C. § 1536(d).
[57] *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 901 (9th Cir. 2002).

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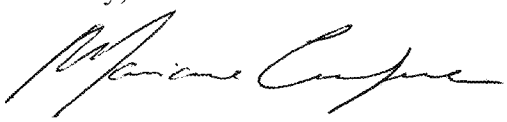
endangered species in the BE. Omission of these essential impacts on endangered species renders the BE arbitrary and capricious.

As set forth above, the agencies have not provided sufficient data to support conclusions rendered, and made no attempt to quantify or analyze the potential harm from several significant impacts to the Listed Species. As stated, the threshold for triggering formal consultation is very low, and a Biological Opinion that meaningfully accounts for and addresses the action's adverse impacts on each listed species is mandated, unless it can be clearly established that a proposed action is not likely to adversely affect a particular species. This requirement is not met.

In conclusion, EPA and its collaborating agencies must remedy the above violations of law prior to reaching a decision on any permits, and in particular, the primary subject of these comments, the NPDES permit. **We strongly oppose issuance of the NPDES permit for industrial wastewater discharge from a marine finfish aquaculture facility in the Gulf of Mexico, and we request EPA to hold public hearings throughout the Gulf, with the opportunity for live public testimony, prior to reaching a decision on the NPDES permit.**

We appreciate your consideration of these comments.

Sincerely,



Marianne Cufone, Director (Green Justice and Recirculating Farms Coalition)
813-785-8386

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