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Via https://www.regulations.gov
Jill Lewandowski, Chief
BOEM Office of Environmental Programs
45600 Woodland Road, VAM-OEP
Sterling, VA 20166

Re: Docket No. BOEM-2024-0001

Dear Chief Lewandowski:

On behalf of the Fisheries Survival Fund ("FSF"), we submit the following comments in response to BOEM's Draft Programmatic Environmental Impact Statement ("Draft PEIS") for the New York Bight Wind Energy Area. FSF is an industry organization representing the significant majority of full-time Limited Access scallop fishermen along the East Coast. FSF's participants are homeported from Maine to North Carolina, and all of them fish for scallops in the New York Bight area which the PEIS would consider. The scallop fishery is, and has long been, among the most valuable federally-managed commercial fisheries in the United States, with average annual landings values totaling over $500 million.

1. Executive Summary

The Draft PEIS is prepared pursuant to the National Environmental Policy Act (NEPA), but it is implemented against the backdrop of the Outer Continental Shelf Lands Act (OCSLA). In general, the commercial fisheries avoidance, minimization, mitigation and monitoring measures set forth in the Draft PEIS (AMMMs) do nothing to mitigate the impacts of full-scale offshore wind development on the Mid-Atlantic scallop resource. Nor do they contribute appreciably to reducing any wind farm's interference with, or danger to, scallop fishing, to the extent any scalloper might attempt to operate within or transit through the New York Bight wind farm arrays. But, as a statute imposing substantive obligations, OCSLA requires any developer's ultimate construction and operations plan to protect that law's environmental, economic and safety values.

The Draft PEIS contains the seeds for sets of alternatives that would provide the basis for site-specific environmental impact statements and COPs that would comply with OCSLA. The Draft PEIS describes these alternatives as the "fisheries impact minimization" alternative and the "pelagic habitat impact minimization" alternative. But the Draft PEIS rejected developing these alternatives out of hand.

Moreover, the Draft PEIS is deficient because it does not consider a reasonable range of alternatives. While extensive, it considers only one set of AMMMs. The two other alternatives are base case scenarios – either "no action" to develop windfarms or "no action" to implement any AMMMs in connection with New York Bight windfarm development.

The Draft PEIS seems to consider itself able to proceed in the face of impacts on commercial fisheries that range from minor to major, with the consolation that if a compensation plan is undertaken, these major impacts might only be moderate. But the scallop fishery does not want to have to rely on compensation; instead, the industry wants to continue to be able to fish, safely, on a vibrant and healthy Mid-Atlantic scallop resource that is centered in the New York Bight. And, while NEPA might allow compensation as a way to mitigate adverse impacts, compensation does nothing to protect the values that OCSLA affirmatively requires protecting.

BOEM was wise to develop a Draft PEIS to underpin New York Bight windfarm development; however, if the Draft PEIS proceeds as currently structured, it will not be setting future site specific NEPA and OCSLA analyses up for success as relates to the scallop fishery. The time is at hand for BOEM to develop and consider the fisheries impact minimization and pelagic habitat minimization alternatives in a manner that would enable the scallop resource and the scallop fishery to coexist in the New York Bight with offshore wind development.

2. New York Bight Windfarm Lease Areas Are Centered on An Area of Major Scallop Productivity and Production

The Draft PEIS definitively shows that the adverse impacts of wind farm development on the scallop resource and scallop fishery in the New York Bight will be far onto the "major" end of the spectrum. It is beyond reasonable dispute the scallop fishery will be the most adversely affected fishery from wind development in the New York Bight. From 2008-2021, the scallop fishery landed $236,270,000 in scallops from the six New York Bight lease areas. (3.6.1-11)[1] FSF repeatedly urged BOEM not to center offshore wind development atop historic Mid-Atlantic scallop beds. But BOEM knowingly went ahead and designated and leased those areas.

And, even among the six lease areas themselves, those areas with the most potential impact on scallops and the scallop fishery are set to be among the first New York Bight lease areas to be developed. New Jersey just awarded power purchase agreements for two lease areas that collectively had over $100,000,000 in scallop landings between 2008 and 2021. Attentive Energy, lessee of area OCS-A-538, has been awarded a power purchase agreement from New Jersey in its latest competition. According to NOAA Fisheries data, a full $61,925,000 in scallop landings came from lease area OCS-A 0538. This was the most of any area. (3.6.1-11). Another $41,31,000 in scallops came from Invenergy lease OCS-A 0542, Invenergy being the second lessee New Jersey selected. (3.6.1-11)

[1] This was 82% of the overall value of landings of $285,087,000 from what BOEM calls the "most impacted species." (3.6.1-12-13)

3. The AMMMs in the Draft PEIS Do Nothing To Protect Fisheries or Fishing Grounds

The AMMMs in the draft PEIS for commercial fishing are vague and weak, especially when compared to alternatives BOEM considered and rejected without analysis. In a rare moment of candor, the PEIS explained the reduction of projected fishery impacts from major to moderate following application of thee AMMMs was driven "largely" by inclusion of a fishery compensation plan. (3.6.1-56) Compensation, of course, is the last step in the NEPA mitigation hierarchy—it's the step to take when all else fails. The fishing industry has repeatedly asked BOEM to provide for effective AMMMs that could forestall the need for compensation.

But the AMMMs do not achieve this goal. For instance the fisheries impact minimization alternative is labeled as considered and rejected because "AMMMs analyze the benefits of consistent turbine layouts across adjacent lease areas as well as increased spacing as ways to reduce impacts." (2-20) However in the fisheries impact analyses, under "presence of structures," the Draft PEIS explains these AMMMs as designed have little utility:

> MUL-23 and MUL-25 are designed to analyze turbine layout in order to resolve potential impacts on environmental resources, including commercial fisheries . . . . These measures, however, are unlikely to change the impact rating of the IPF because the impact from long-term reef and hydrodynamic effects from the presence of structures would remain the same and would exist for any sited locations post-installation. Therefore, these potential impacts are unlikely to differ under Alternative C, as compared to Alternative B.

Further, the COMFIS-4 AMMM requires a minimum cable burial depth of three feet. (3.6.1-53) However, other BOEM documents have required six feet minimum cable burial depth. The fishing industry has repeatedly explained that, given how the soft ocean bottom moves, six feet should be an absolute minimum burial depth. Even the Draft PEIS discusses how cables buried only three feet deep are quite likely to become unburied. (3.6.1-45)

The Draft PEIS explained that wind farm development will have other adverse and unavoidable impacts on the New York Bight pelagic and benthic habitat, identifying in particular "[s]uspension and re-settling of sediments due to seafloor disturbance … habitat quality impacts, including reduction in certain habitat types as a result of seafloor disturbance [and] conversion of soft-bottom habitat to new hard-bottom habitat." (4.1-2)

Indeed, even though hundreds of millions of dollars of ex vessel revenue is at stake, there is but one Draft PEIS AMMM directed to scallops—and that is for monitoring. Monitoring is important but it will likely be more in the realm of conducting an autopsy on the Mid-Atlantic scallop resource, rather than trying to do something to save it. If and when monitoring reveals the projected negative impacts

are actually happening, it's not like BOEM can or will do anything about it. Wind turbines aren't going to be removed for thirty years once they are installed.[2]

4. The Draft PEIS Unreasonably Rejected Developing Sets of Alternatives That Would Protect Fisheries and Fishing Grounds

In its PEIS scoping comments, FSF explained that BOEM's Fisheries Mitigation Guidelines, drafted and released back in late 2021, established a series of steps that could be taken to mitigate the impacts of offshore wind development on fishing activity. FSF urged BOEM to include these proposed mitigation measures as AMMMs in the PEIS. FSF explained:

> In particular, the AMMMs should focus on adopting a coherent set of standards that integrate with each element of the Fisheries Mitigation Guidelines. For instance, subpart B, Project Siting, Design, Navigation and Access, identifies a series of "[r]ecommended facility design elements" that "should maximize access to fisheries." *Draft Guidelines*, at 5. Especially for the four contiguous lease areas in the New York Bight, each of these facility design elements apply with equal force to these four lease areas collectively, as they would for an individual lease area standing alone. For instance, transit should be coordinated within these project areas (not just within a single project area). Likewise, infrastructure within these project areas should be laid out to reduce overall space-use conflicts. As the Fisheries Mitigation Guidelines explain, "Coordination of turbine and substation array layouts between and among neighboring lease areas to allow safe fishing and transit through multiple projects" should be pursued. *Draft Guidelines*, at 6. If there are areas on the borders of project areas where fishing activity is less intense, it would make sense to group supporting infrastructure such as substations in that border area.
>
> Sensitive benthic features, or valuable fishing grounds, may straddle project areas, and so "[f]acility planning should use nature inclusive designs, where applicable, to maximize available habitat for fish." *Draft Guidelines*, at 6. As an example of valuable fishing grounds straddling project areas, the figures set forth above show that the northeastern quadrant of Community Offshore Wind lease and the entirety of the adjacent Attentive Energy lease overlap with levels of high scallop fishing activity.

However, after much fanfare in releasing and seeking comment on these Mitigation Guidelines in mid to late 2021, BOEM has done nothing further with them for over two years, since the comment period closed on January 7, 2022.

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[2] The PEIS can't even bring itself to admit that impacts from wind farms on fisheries are irretrievable, apparently because in 30 years, the windfarms are set to be decommissioned. (4.2-3) BOEM seems to think that fish and fisheries can sprout again like a phoenix. However, in thirty years, these fishing businesses will be long since gone, and the shore-side infrastructure the lucrative scallop fishery supports will give way to other uses of highly-valuable shorefront real estate and infrastructure.

If, however, one wants search for measures that resemble what BOEM proposed in the Mitigation Guidelines, one need look no further than the considered and rejected alternatives in the PEIS. A fisheries mitigation alternative was identified but was rejected out of hand.

> Fisheries Impact Minimization: Development of an alternative that considers the Proposed Action (full build-out) of the six leases areas implemented with sufficient and consistent WTG spacing across lease areas to increase the likelihood that fishing can still occur. This alternative should consider a range of WTG spacing options identified in coordination with the fishing industries operating in these areas. This alternative should also consider removal of key fishing areas from development and identify these areas with consideration of anticipated shifts in fishing grounds in prioritizing WTG locations. (2-20)

Despite this failure to consider a fisheries mitigation alternative, the draft PEIS describes many windfarm impacts as "unavoidable," including "disruption of harvesting activities during operations of offshore wind facilities [and] changes in vessel transit and fishing operations patterns." (4.1-2) While some disruption may be unavoidable, that disruption's magnitude can and should be mitigated. The Draft PEIS should establish a roadmap for site-specific analyses that would mitigate the impact of New York Bight windfarm development to commercial fish harvesting activities, particularly as it pertains to removing key fishing areas from development.

The same is true with respect to potential changes that these wind farms would have on the Mid-Atlantic Bight pelagic and benthic environmental features that contribute to making this area so productive for scallops and other fisheries resources. A principal example is the so-called Mid-Atlantic Cold Pool. In its scoping comments, FSF asked that the PEIS consider the impacts on the Cold Pool and other features of the Mid-Atlantic ecosystem of such concentrated wind farm development as is underway in the New York Bight. BOEM developed an alternative to address potential impacts on these features, entitled it the "Pelagic Habitat Minimization," and described it as follows:

> Pelagic Habitat Impact Minimization: Development of an alternative that considers effects of development within the six lease areas and in combination with other proposed offshore wind development in the region on pelagic habitats in the NY Bight, including the Mid-Atlantic Cold Pool. This alternative would consider the size and scale of development in the six lease areas and in combination with other proposed wind developments to understand the range of interactions between wind development and the Mid Atlantic Cold Pool. This alternative may require analysis and modeling to evaluate the effects of project structures on the formation and maintenance of the Mid-Atlantic Cold Pool. Modeling can examine varying options of lease development to assess how the size and scale of different development approaches may vary in their effects on the Cold Pool. This would allow for the evaluation of options for considering different project scales and design to minimize impacts to the Cold Pool. (2-20)

But BOEM rejected this alternative out of hand as well. BOEM claims that the reason it rejected developing the alternative was because impacts to the Cold Pool were being considered in the document anyway. But BOEM's consideration did not amount to taking a hard look. Its consideration alternated between minimizing the potential effects to the Cold Pool and arguing the Cold Pool was probably going away anyway (3.4.2-8).

5. The Draft PEIS Should Set the Stage for Site-Specific Analyses to Grapple With the Difficult Issues Relating to the Protection of Fisheries and Fishing Grounds That Will Need To Be Considered Before Development Can Occur

As explained above, the Draft PEIS's commercial fisheries AAAMs do not go far enough to materially increase protection of fishing grounds from offshore wind development. While NEPA requires agencies to conduct analyses rather than achieve any particular outcome, the Draft PEIS is not being conducted in a vacuum. Offshore wind development is not governed by NEPA alone, but also by OCSLA, which does impose substantive, affirmative duties on agency decision-making relating to offshore renewable energy leasing and development.

More specifically, under the subsection entitled "Requirements," OCSLA mandates that "the Secretary shall ensure that any activity under this subsection is carried out in a manner that provides for –

(A) safety;

(B) protection of the environment; …

(D) conservation of the natural resources of the outer Continental Shelf; … and

(I) prevention of interference with reasonable uses …."

43 U.S.C. § 1337(p)(4).[3] Protecting scallop beds and their continued productivity protects the environment and conserves natural resources. Establishing an offshore regime that allows for safe and orderly offshore wind development and commercial fishing provides for safety and prevents interference with reasonable uses.

[3] In M-Opinion 37067, this Administration's Interior Department Solicitor General construed 43 U.S.C. § 1337(p)(4)'s list of secretarial obligations to confer essentially unchecked discretion on the Secretary of the Interior, and this conclusion is referenced in the Draft PEIS. (1-7) However, one example of the statutes on which M-Opinion 37067 was based is the Magnuson-Stevens Fishery Conservation and Management Act ("MSA"). The MSA has ten national standards. 16 U.S.C. § 1851(a). While these standards may require balancing, *see Lovgren v. Locke*, 701 F.3d 5, 32 (1st Cir. 2012) (cited in M-Opinion 37067, at 3), many courts have held that the Secretary of Commerce has violated one or more national standards in particular cases. *See, e.g., Southern Offshore Fishing Ass'n v. Daley*, 995 F. Supp. 1411, 1437 n.35 (M.D. Fla. 1998). While the Secretary may have considerable discretion under Section 1337(p)(4), it is an over-statement to claim that discretion is essentially unlimited, as the Draft PEIS does.

Ultimately, the COPs that New York Bight windfarm developers will prepare will need to comply with OCSLA's affirmative requirements, and site-specific EIS' s will need to support those COPs. The Draft PEIS aspires to be a document from which subsequent site-specific NEPA analyses can be tiered. The Draft PEIS should thus address the issues—fisheries impact minimization and pelagic habitat impact minimization—that OCSLA will require developers to address to prepare a legally defensible COP. Conversely, BOEM's failure to recognize the intersection of NEPA and OCSLA requirements at this Draft PEIS stage will not be facilitating the development of site-specific analyses that will meet legal requirements.

6. The Draft PEIS Identifies A Wide Range of Impacts from Offshore Wind Development Against Which Site-Specific Analyses Will Need to Protect Fisheries and Fishing Grounds

Scallops are particularly susceptible to offshore wind development. They are sessile, and exist at the mercy of pelagic and benthic conditions that allow for their settlement, survival and growth. Among other things, these conditions include bottom composition, currents that bring nutrients to scallops and that cause larvae to settle, and turbidity. As the PEIS explains, wind farm development will change all these environmental attributes in a manner that is negative for the scallop resource.

BOEM itself explained in the Draft PEIS:

> A synthesis of European studies by van Berkel et al. (2020) [4] summarized the potential effects of wind turbines on hydrodynamics, the wind field, and fisheries. Local to a wind facility, the range of potential impacts include increased turbulence downstream, remobilization of sediments, reduced flow inside wind farms, downstream changes in stratification, redistribution of water temperature, and changes in nutrient upwelling and primary productivity. (3.5.6-48) . . . .

In terms of the changes to currents, the Draft PEIS identified at least two negative attributes of note for scallops: upwelling brings the phytoplankton that scallops eat to the surface (and away from the scallops) and forces warm surface waters detrimental to scallops' survival to the bottom. As the Draft PEIS further explains:

> Structures may reduce wind-forced mixing of surface waters, whereas water flowing around the foundations may increase vertical mixing (Carpenter et al. 2016). During summer, when water is more stratified, increased mixing could increase pelagic primary productivity near the structure, increasing the algal food source for zooplankton and filter feeders. Increased mixing may also result in warmer bottom temperatures, increasing

[4] Van Berkel, *et al*., *The Effects of Offshore Wind Farms on Hydrodynamics and Implications for Fishes*, Oceanography, Vol. 33, Issue 4, p. 108-117 (2020). Available at https://tos.org/oceanography/assets/docs/33-4_van-berkel.pdf (last accessed on June 24, 2022).

> stress on some shellfish and fish at the southern or inshore extent of the range of suitable temperatures. (3.6.1-49)
>
> Localized turbulence and upwelling effects around the monopiles are likely to transport nutrients into the surface layer, potentially increasing primary and secondary productivity. That increased productivity could be partially offset by the formation of abundant colonies of filter feeders on the monopole foundations. (3.6.1-49)

While the PEIS tries to minimize these impacts as "localized," what BOEM really means is "local[ized] to a wind facility." (3.6.1-48) This clarification makes sense as wind turbines will only be 0.6 nautical miles apart from each other (3.6.1-49). Furthermore, it is reasonable to consider the New York Bight wind lease areas as one giant facility. Four of these six areas are packed together in one unit, with no particular provision made for their separation. "The overall impact on stratification is directly related to the scale of development." (3.5.2-29) Packing these six areas tightly together and developing them during the same time period can also yield "regional" changes in benthic stability and species composition. (3.5.2-31-32) Indeed, these six lease areas' concentration is a principal reason BOEM developed this Draft PEIS. None of this bodes well for the scallop settlement, survival and growth, especially with these lease areas being concentrated in the center of the Mid-Atlantic scallop resource.

The Van Berkel paper on which BOEM relies explains how broadly these hydrodynamic impacts have been observed: "Hydrodynamics play a pivotal role in controlling turbidity, sedimentation, salinity, temperature, and nutrient uptake in coastal systems…." And, these "hydrodynamic impacts are transferred to the ocean via two routes: (1) modification of the wind field and, consequently, the wave and current fields due to the direct effect of power extraction from the wind, and (2) wind turbine foundations' effects on ocean currents and consequently on turbulence, mixing, and vertical stratification." These hydrodynamic effects were recorded to "extend 5-20 km in the downwind direction, depending on weather conditions."

For its part, BOEM confirmed that:

> [B]roadscale hydrodynamic impacts could alter zooplankton distribution and abundance, with impacts that may extend to tens of kilometers from structure foundations (Christiansen et al. 2022; van Berkel et al. 2020). (3.5.6-50)

Further, a second, even more recent paper cited by BOEM also explained the impacts that offshore wind farms have on ocean hydrodynamics. The Draft PEIS reports that:

> Daewel et al. (2022) modeled the effects of offshore wind farm projects in the North Sea on primary productivity and found that there were areas with both increased and decreased productivity within and around the wind farms. There was a decrease in productivity in the center of large wind farm clusters but an increase around these clusters in the shallow, near-coastal areas of the inner German Bight and Dogger Bank (Daewel et al. 2022). (3.5.6-49)

Scallops generally are not found in the shallower waters of the New York Bight, as can be seen from relatively lower landings in Lease Areas OCS-A 544 and OCS-A 541. (3.6.1-12) Scallops generally begin to be found at depths of 20-25 fathoms.

The Draft PEIS likewise soft-pedals the potential impacts from offshore wind farms to scallop larval distribution. As FSF explained in its scoping comments, BOEM commissioned an exercise to model the potential wind farms' impacts on larval distribution. The modeling predicts significant impacts on scallop larval distribution but the paper then rationalized that, "The results of this modeling effort indicate that, at a regional fisheries management level, these shifts are not considered overly relevant with regards to larval settlement." (3.5.5-34)[5]

The actual Johnson et al. modeling tells a different story. Any reasonable review of Figures 1 and 2 (below) reveals a redistribution of scallop larvae over dozens of miles. Indeed, due to the projected effects of wind farms south of Martha's Vineyard, scallop larvae were redistributed along an area from well east of Nantucket to well west of Montauk.

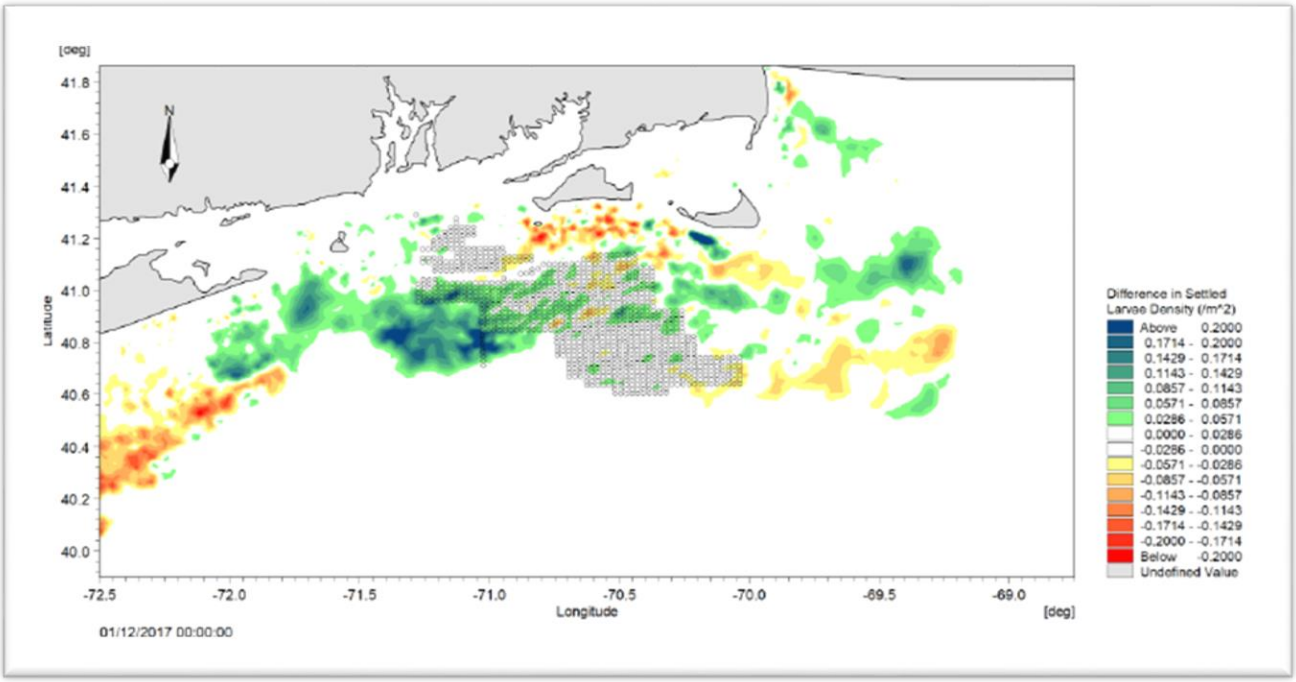

Figure 1: Predicted differences in settled larval sea scallop density (larvae/m2) from full build-out OSW lease offshore MA-RI area, 12 MW turbines (1,063 towers).
Source: T. Johnson et al.

[5] The BOEM-funded study in question is T. Johnson et al., Hydrodynamic Modeling, Particle Tracking and Agent-Based Modeling of Larvae in the U.S. Mid-Atlantic Bight, OCS Study BOEM 2021-049 (June 2021). Available at https://espis.boem.gov/final reports/BOEM_2021-049.pdf (last accessed on June 24, 2022).

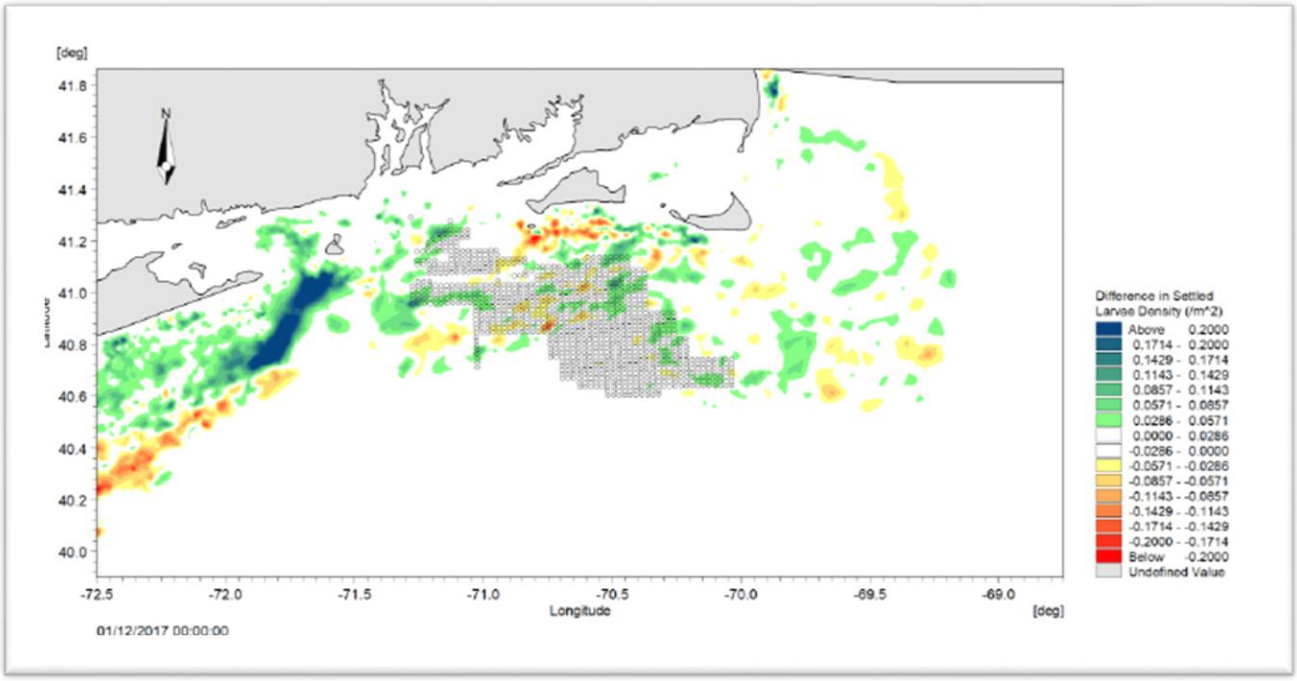

Figure 2: Predicted differences in settled larval sea scallop density (larvae/m2) from full build-out OSW lease offshore MA-RI area, 15 MW turbines (1,063 towers).
Source: T. Johnson et al.

Moreover, the issue here is not about an impact over the entire range of the New England Fishery Management Council's authority over scallops. Rather, it concerns the impact of six lease areas clustered tightly together in the center of the mid-Atlantic scallop resource. The question is whether these wind farms will disperse scallop larvae from areas of historical productivity (based on a combination of benthic and pelagic conditions) to areas that are less hospitable to scallop growth, settlement and survival.

As FSF previously explained in its comments on the New York Bight lease areas, based on modeling conducted by Chen et al. [6], wind farms will alter patterns of scallop larval settlement. The Chen study was performed by researchers from the University of Massachusetts – Dartmouth School of Marine Science and Technology ("SMAST") and the Woods Hole Oceanographic Institution ("WHOI") who modeled scallop larval flow around wind turbines. Using the turbine array plans for Vineyard Wind, which is located near (but not adjacent to) a scallop access area—the Nantucket Lightship Scallop Access Area—the researchers examined the windfarm's future impacts on scallop settlement, abundance, and dispersion via oceanographic modeling. The presentation on this work provided at the 2021 Scallop RSA Share Day explained:

[6] See C. Chen et al., Assessing Potential Impacts of Offshore Wind Facilities on Regional Sea Scallop Larval and Early Juvenile Transports, NOAA Grant Number: NA19NMF450023 (May 6 and 12, 2021) (hereinafter, "Share Day Report") (attached hereto, in part, as Exhibit 3; the full report is available at https://s3.amazonaws.com/nefmc.org/Doc.14.a-UMASSD_WHOI_short_report_05_6_12_2021_revison.pdf).

> Selecting 2010 and 2013 (two years with significant larval settlement in the Southern New England] region) as pilot study years, we used the couple Scallop-IBM and NS-FVCOM/NECOFS model system to examine the impact of offshore WTG deployment in the lease area of OCS-A-501 on the dispersal and settlement of scallop larvae in the region. The preliminary results show that the WTGs can significantly enhance the mesoscale eddy circulation and turbulent mixing within and around the turbine area, reducing the horizontal larval dispersion and pushing the larvae offshore. The model suggests that the impact of WTGs on scallop larvae in the SNE could considerably change the larval abundance in the Nantucket Lightship Closed Area (NLCA).

Share Day Report, at 2-3. Set forth below is Figure 9 from the RSA Share Day Presentation, which demonstrates these impacts:

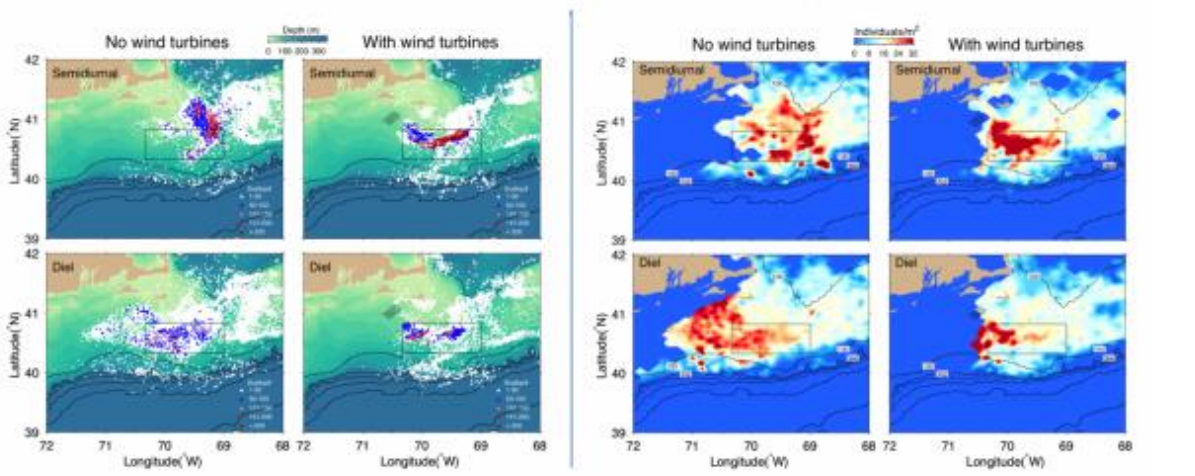

Fig. 9: Locations/abundances of settled super-individuals (left) and distributions of the settled larval density (right) in the SNE region for the cases with and without WTGs on November 30, 2013. The black box indicates the Nantucket Lightship Closed Area. Gray dots are the WTGs' locations.

The Share Day Report further explained the model output in the following way:

> The preliminary results show that the flow field significantly changed with WTGs. The flow tended to push the larvae offshore during the 2010 and 2013 simulation period (Figs. 8 and 9). The WTGs produced mesoscale flows and enhanced vertical mixing within and around individual WTGs, which considerably reduced the horizontal dispersion around the wind energy development area. In those two years, a large number of larvae were advected into the Nantucket Lightship Closed Area. Although larval behaviors play a critical role in the larvae dispersal and settlement by altering the flow-induced advection experienced at different depths, the WTGs seem to significantly change vertical mixing and horizontal advection as well as horizontal turbulent dispersion. Using a so-called ensemble larval swimming behavior approach, we calculated the mean, percentage and deviation of settled scallop larvae for the cases with and without WTGs. Changes in the

flow field due to WTGs tended to push the larvae together and advected them as a group offshore. As a result the settle percentage in the Nantucket Lightship Closed Area increased considerably. (Fig. 10).

Share Day Report, at 15. Figure 10 of the Report is copied below:

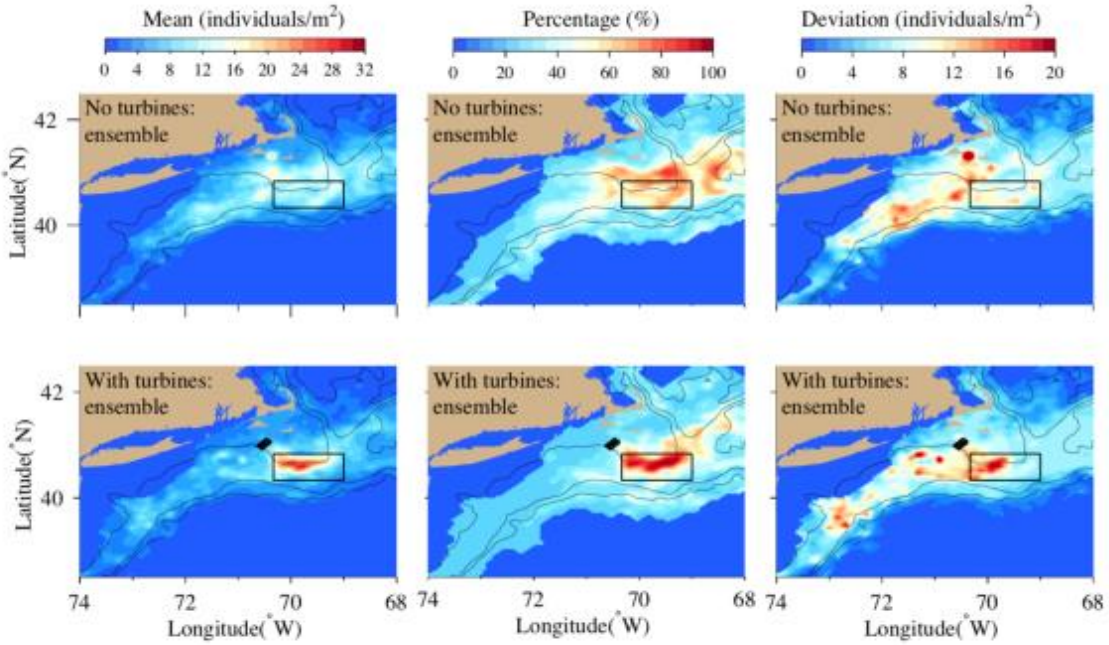

Fig. 10: The mean, percentage, and standard deviation of settled scallop larvae averaged over 2010 and 2013 for the cases with and without WTGs. The calculation was done for ensembled results with diel and semidiurnal larval behaves in the ocean mixed layer. Black dots: locations of individual WTG. Black box: Nantucket lightship closed area.

While these studies do not assess the potential impacts of windfarms in the New York Bight on scallop larvae, the overall findings would indicate that impacts in this area should be expected to have similar effects on the aggregation and advection of larvae.

Offshore wind development not only negatively affects the scallop resource, it affects scallop fishing. Scallops are fished with mobile gear, and scallop vessels are among the largest vessels in the U.S. New England and Mid-Atlantic fishing fleet. Correspondingly, they have the least opportunity to be able to maneuver and fish within a wind farm. In the depths of water that scallops are found in the New York Bight lease areas, a scallop dredge is towed several football fields behind the fishing vessel. Thus, AMMMs that require cable burial and avoidance of methods that raise the profile of the seabed (COMFIS-2 and COMFIS-4) will have limited utility for relatively larger bottom tending mobile gear fishing vessels because they will not be able to tow through wind farms with turbines spaced only 0.6 n.mi. apart. As the Draft PEIS concedes, "Certain sectors of the commercial fishing industry will likely be at

higher risk operating within an offshore wind farm (e.g., mobile gear such as trawls and dredges) due to maneuverability and entanglement hazards." (3.6.1-46)

7. BOEM Is Required to Proceed to Consider Additional Alternatives, Including the Fisheries Habitat Minimization Alternative and the Pelagic Habitat Minimization Alternative

The Draft PEIS only considers one action alternative—Alternative C, a unitary list of mitigation measures BOEM proposes. The other two alternatives are "no action" on building windfarms (Alternative A) and "no action" on implementing any mitigation measures (Alternative B). This is insufficient. *See, e.g., Muckleshoot Indian Tribe v. U.S. Forest Service*, 117 F.3d 800, 813 (9th Cir. 1999) (alternatives analysis considering only a "no action" alternative and two other "virtually identical" alternatives did not constitute the requisite "hard look"). The Draft PEIS contains at least two alternatives—the Fisheries Habitat Minimization Alternative and the Pelagic Habitat Minimization Alternative—that would have better addressed the significant concerns presented in these comments than did Alternative C. The concerns expressed in these comments are neither theoretical nor unfounded. Indeed, as explained above, the Draft PEIS essentially validated all of them. Nor were the alternatives in question inviable, and BOEM did not reject them as such. A "viable but unexamined alternative renders [the] environmental impact statement inadequate." *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985).

Accordingly, BOEM should reconstitute the Draft PEIS to consider alternatives that the agency itself identified that better protect scallops and the scallop fishery, as well as other commercial fisheries species and fisheries.

Please do not hesitate to contact the undersigned if you have any questions or need additional information.

Respectfully submitted,

David E. Frulla
Andrew E. Minkiewicz

Counsel for Fisheries Survival Fund