

CORRESPONDENCE



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

August 31, 2021

Michelle Morin
Chief, Environmental Branch
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166

Re: EFH Addendum for South Fork Offshore Wind Energy Project, Lease Area OCS-A-517, offshore Rhode Island

Dear Ms. Morin:

We have reviewed the revised Essential Fish Habitat (EFH) Addendum received on August 2, 2021, for the proposed South Fork Wind Farm offshore wind energy project. This project includes the construction, operation, maintenance, and decommissioning of a commercial scale offshore wind energy facility by South Fork Wind Farm (SFWF), within Lease Area OCS-A 0517, located approximately 19 miles southeast of Block Island, Rhode Island, and 35 miles east of Montauk Point, New York. You provided an EFH assessment for this project to us on April 7, 2021. In our June 7, 2021, letter, we provided a number of EFH conservation recommendations including a recommendation that the EFH assessment be revised to address several noted inconsistencies, as well as missing and new information that could affect the basis of our EFH conservation recommendations for the project. Specifically, we requested you address inconsistencies in your impact calculations and project elements, and clarify the type of turbine scour protection to be used as well as the extent of boulder relocation required for each turbine location. We also recommended that you address new project information included in a May 7, 2021, update to the Construction and Operations Plan (COP) and any proposed monitoring plans for the project. In response to our letter, you provided us with the revised EFH Addendum to address our recommendation on August 2, 2021. Based upon the information provided in the EFH Addendum, we have determined additional EFH conservation recommendations are necessary.

EFH Addendum Comments

New project components, including unexploded ordinances

Your EFH Addendum includes some of the information we requested in our June 7, 2021, letter as part of our EFH conservation recommendations (CR #1). According to the information in the Addendum, changes to the project design and additional impacts that were not considered in the EFH assessment could occur if unexploded ordinances (UXOs) are identified in the project



footprint. Specifically, additional micrositing of turbine locations and cable routes to avoid UXOs, and/or the removal and relocation of UXOs to other locations on the seabed, may be necessary. Such changes could result in additional impacts to complex habitats that were not previously considered and additional EFH conservation recommendations may be necessary. For example, the location of an UXO may deem the incorporation of an EFH conservation recommendation provided in our June 7, 2021, letter infeasible, but additional measures may be possible to avoid, minimize, or offset adverse impacts to EFH. We note that the EFH Addendum states that a reconnaissance survey is being conducted to further evaluate six potential UXOs and the results of the survey will be incorporated into the micrositing plan for the project that will be provided to us. If upon review of the micrositing plan we determine that additional EFH conservation recommendations are necessary, we will provide such recommendations within 30 days of receiving the additional information. To facilitate efficient coordination and minimize the potential for project delays, your micrositing plan should also address any UXOs that may be relocated, the materials and methods that will be used, and identify all potential relocation sites. Information on the proposed mitigation measure for each UXO should also be provided with the micrositing plan.

The Addendum also provides new information regarding the sea-2-shore transition. We have determined that the proposed project change for the in-water sea-2-shore transition does not affect the basis of our recommendations for the project construction of this component. However, we do note that we incorrectly included a time of year restriction to protect sensitive life history stages of winter flounder EFH for this portion of the project. The EFH conservation recommendation (#12) to protect and conserve winter flounder sensitive life history EFH should only apply to nearshore dredging and silt-producing activities associated with the proposed O&M facility improvements. Specifically, conservation recommendation #12 is revised as follows:

12. BOEM should restrict nearshore dredging and silt-producing activities associated with the proposed O&M facility improvements that occur at or adjacent to water depths of 5 meters or less, from January 1 through May 31, of any calendar year, to protect sensitive life history stage winter flounder EFH.

Clarification and correction of project impacts, including boulder relocation

We appreciate the revised and corrected project impact assessment calculations provided in the Addendum for each project component. The clarification and correction of the spatial extent of proposed boulder relocation activities for turbine and cable installation indicates that boulder relocation will occur within discrete spatial areas to support turbine installation and along each inter-array cable installation path. The potential long-term to permanent effects of boulder relocation are described in the provided Addendum to be similar to the long-term to permanent adverse effects associated with vessel anchoring and expected to result in the conversion of complex habitats to soft bottom habitats. Further, the relocation of boulders into complex habitats may also result in long-term to permanent adverse impacts to the existing habitats through the loss of benthic assemblages as the boulders are placed and the alteration of the existing three-dimensional complexity.

In our June 7, 2021, letter, we recommended (CR #3) that multiple turbine locations (WTG 2, WTG 4, WTG 6, WTG 8, WTG 9, WTG 10, WTG 12, WTG 13, WTG 14, OSS), and the associated inter-array cables be microsited into low multibeam backscatter return areas and that restrictions on seafloor disturbance (e.g. anchoring) during construction be required to avoid impacts to higher multibeam backscatter return areas in order to minimize long term to permanent impacts to complex habitats. As boulder relocation will occur within discrete and defined spatial extents to support turbine and inter-array cable installation, the spatial extent of boulder relocation should be considered in the micrositing of each turbine location and inter-array cable path. Where feasible, the boulder relocation area for each of the turbine locations and inter-array paths should be microsited into areas of low multibeam backscatter return to minimize long-term to permanent impacts to complex habitats. The turbine and inter-array cable micrositing plan should clearly identify the proposed extent of boulder relocation, and the locations boulders will be relocated to, for each turbine installation and along each inter-array cable route.

Project Monitoring Plans

We have reviewed the provided information regarding the effects of the proposed project monitoring plans to EFH and do not have additional EFH conservation recommendations to minimize adverse impacts to fishery managed species EFH. However, as noted in our June 7, 2021, letter, we have previously reviewed the proposed Benthic Monitoring Plan referenced in the EFH Addendum and have substantial concerns with the proposed methods and scope of the monitoring. Specifically, it is not clear that the proposed benthic monitoring will be able to detect benthic effects at a meaningful scale or scope. We will provide your staff a spreadsheet with our specific comments on the referenced benthic monitoring plan. Consistent with the EFH conservation recommendation (CR #9) provided in our June 7, 2021, letter, we recommend that our comments are addressed and incorporated into the plan, with further coordination to occur as needed in the revision and refinement of the proposed plan. Once your staff have reviewed our comments, we recommend setting up a meeting to discuss our concerns to help ensure they are effectively addressed prior to commencement of the study.

EFH Consultation Coordination

We appreciate that you provided the revised EFH Addendum in response to our EFH conservation recommendation #1 in our June 7, 2021 letter. As we have previously discussed, in order to accurately document how impacts to habitat would be avoided and minimized, our EFH conservation recommendations should be incorporated into the Final Environmental Impact Statement (FEIS). It was our expectation that we would have received a response to all of our EFH conservation recommendations prior to the publication of the FEIS. Although the FEIS has been published without a full response to our EFH conservation recommendations, we continue to welcome your continued coordination with us and look forward to your response to all of our EFH conservation recommendations.

EFH Conservation Recommendations

The project area, covering both the WDA and the OECC, is designated as EFH under the MSA for multiple federally managed species, including Atlantic cod, summer flounder, winter

flounder, windowpane flounder, scup, black sea bass, longfin inshore squid, Atlantic scallop, surfclam and ocean quahog. We previously provided thirteen (13) EFH conservation recommendations on June 7, 2021. Based upon the new and revised project information in the revised EFH Addendum, and pursuant to Section 305(b)(4)(A) of the MSA, we recommend that you adopt the following additional EFH conservation recommendations.

14. The location of identified and potential UXOs within the project area should be clearly depicted on the micrositings plan (see EFH conservation recommendation #3 of our June 7, 2021, letter). Should any UXOs be proposed to be relocated, the micrositings plan should clearly depict the initial location and all potential relocation sites. Information on the proposed mitigation measure for each UXO should also be provided with the micrositings plan. Upon receipt and review of the new information, we may determine additional EFH conservation recommendations are necessary if the location of any UXO, or a proposed UXO relocation affects the basis of our EFH conservation recommendations, or we determine that additional measures are necessary to avoid, minimize, or offset adverse impacts to EFH.
15. The spatial extent of boulder relocation should be considered in the evaluation of micrositings turbine and inter-array cable paths (see EFH conservation recommendation #3 of our June 7, 2021 letter). As feasible, the spatial extent of boulder relocation activities should be located fully within low multibeam backscatter areas. Boulder relocation activities associated with the installation of project turbines and inter-array cables should be clearly depicted on the micrositings plan for each turbine installation and inter-array cable route.

Conclusion

We appreciate the clarifications, corrections, and new project information provided in the EFH Addendum. We look forward to continued coordination on this project. Should you have any questions about this matter, please contact Alison Verkade at 978-281-9266, or by email at alison.verkade@noaa.gov.

Sincerely,



Louis A Chiarella
Assistant Regional Administrator
for Habitat Conservation

cc: Brian Hooker, BOEM
Brian Krevor, BOEM

Tim Timmerman, USEPA
Tom Chapman, USFWS
Christine Jacek, USACE
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Julia Livermore, RIDEM
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Chris Moore, MAFMC
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New England
Fishery Management
Council



August 24, 2022

Ms. Jill Lewandowski
Office of Environmental Programs
Bureau of Ocean Energy Management (BOEM)
45600 Woodland Road (VAM-OREP)
Sterling, Virginia 20166

RE: Programmatic EIS for New York Bight Wind Leases

Dear Ms. Lewandowski:

Please accept these comments from the New England Fishery Management Council (New England Council) and the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) regarding the Notice of Intent (NOI) to prepare a programmatic environmental impact statement (PEIS) for the region offshore of New York and New Jersey referred to as the New York Bight. BOEM awarded six wind energy leases in the New York Bight in 2022. The proposed action for the PEIS is the adoption of programmatic avoidance, minimization, mitigation, and monitoring measures that BOEM may require as conditions of approval for projects in this area.

The New England Council has primary management jurisdiction over 28 marine fishery species in federal waters and is composed of members from Maine to Connecticut. The Mid-Atlantic Council manages more than 65 marine species¹ in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). In addition to managing these fisheries, both Councils have enacted measures to identify and conserve essential fish habitats (EFH), protect deep sea corals, and sustainably manage forage fisheries. The Councils support efforts to mitigate the effects of climate change, including the development of renewable energy projects, provided risks to the health of marine ecosystems, ecologically and economically sustainable fisheries, and ocean habitats are avoided.

While the Councils recognize the importance of domestic energy development to U.S. economic security, it is important to note that marine fisheries throughout New England and the Mid-Atlantic are profoundly important to the social and economic well-being of communities in the Northeast U.S. and provide numerous benefits to the nation, including domestic food security. We strongly support development of a PEIS for these six lease areas. This could help ensure consistency in approaches across multiple wind projects and could create efficiencies by analyzing impacts more thoroughly earlier in the process than has been done for other existing offshore wind energy leases to date.

¹ Fifteen species are managed with specific Fishery Management Plans, and over 50 forage species are managed as “ecosystem components” within the Mid-Atlantic Council’s FMPs.

The PEIS will analyze the expected impacts of a representative project in the New York Bight. The representative project will be informed by input provided by the lessees on the type of projects they intend to develop. It will be important to define a reasonable and realistic representative project design envelope to help ensure that the impacts analysis in the PEIS is sufficient and to allow project specific NEPA documents to tier off the PEIS. For example, the representative project design envelope should account for technological advances which are reasonably expected to occur between development of the PEIS and construction of projects in these six lease areas. The PEIS alternatives should be broad enough that the document will be useful if advances such as this lead to projects that are different than current industry planning.

We recommend that BOEM provide more details on the process for the project-specific NEPA documents which will follow the PEIS, including for documents which tier off the PEIS and for situations where a more thorough analysis is needed. We recommend that all additional NEPA documents following the PEIS be made available for public comment in draft form to allow for improvements based on public comments before they are finalized. For example, we recognize that NEPA guidelines do not require public comment on draft Environmental Assessments; however, making such documents available for review will be important for transparency.

The PEIS provides an opportunity to focus on the unique characteristics of the New York Bight, including the many important commercial and recreational fisheries which operate in this region. However, the impacts analysis should also consider the cumulative impacts of lease areas in neighboring regions. Specifically, the PEIS should assume eventual full build out of all lease areas along the east coast and should also consider areas which may be leased in the Central Atlantic and the Gulf of Maine in upcoming years. As we have stated in multiple previous comment letters, we are very concerned about the cumulative impacts of the many planned offshore wind energy projects on the fisheries we manage, which are regional in nature and will be impacted by multiple projects.

We recommend that BOEM use this PEIS to adopt programmatic avoidance, minimization, mitigation, and monitoring measures based on the forthcoming final Guidance for Mitigating Impacts of Offshore Wind Energy Projects on Commercial and Recreational Fisheries. Our Councils submitted separate comments on the draft guidance (available [here](#)).

We also recommend that BOEM use the PEIS as an opportunity to consider requirements related to coordinated transmission across multiple projects, for example through shared cable corridors, backbone transmission lines, and in other ways. BOEM should consider how to best build off the ongoing transmission planning work undertaken at the federal level with the Department of Energy and other agencies, as well as state efforts, including by the New York State Energy Research and Development Authority. As we have stated in previous comment letters, the Councils strongly support coordinated transmission. Considering coordinated transmission in the PEIS can help communicate to wind energy project developers that this is a priority of federal agencies and the states that will play a role in reviewing, approving, and procuring energy from offshore wind energy projects.

We look forward to working with BOEM on these important issues. Once the draft PEIS document is available, we may provide more detailed comments and recommendations. Please contact us if you have any questions.

Sincerely,

Handwritten signature of Thomas A. Nies in cursive.

Thomas A. Nies
Executive Director, New England Fishery Management Council

Handwritten signature of Dr. Christopher M. Moore in cursive.

Dr. Christopher M. Moore
Executive Director, Mid-Atlantic Fishery Management Council

cc: J. Beaty, M. Luisi, W. Townsend



New England Fishery Management Council

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Eric Reid., *Chair* | Thomas A. Nies, *Executive Director*

August 22, 2022

Mr. Michael Pentony
Regional Administrator
Greater Atlantic Regional Fisheries Office
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Dear Mike:

Today, my staff electronically sent a preliminary submission of the Southern New England Habitat Area of Particular Concern Framework. The framework proposes to designate a Habitat Area of Particular Concern within and around wind lease areas in Southern New England, including around Cox Ledge, to focus conservation recommendations on cod spawning habitats and complex benthic habitats. This framework will amend the Northeast Multispecies, Scallop, Skate Complex, Atlantic Herring, and Monkfish Fishery Management Plans (FMP).

Upon review of the document, please communicate any comments and/or need for further revisions directly to me in writing. To help expedite the review process, my staff would appreciate if requested changes could be listed and categorized as 'required' or 'suggested.' Please contact me if you have any questions.

Based on conversations with your staff, we anticipate that this action will qualify for a Categorical Exclusion under the requirements of the National Environmental Policy Act. I understand that your staff will prepare a memo to this effect, using information in the framework document as needed. Please let me know if you require our assistance as you prepare this memo.

Sincerely,

Thomas A. Nies
Executive Director



August 22, 2022

Ms. Amanda Lefton
Bureau of Ocean Energy Management
Office of Renewable Energy Programs
45600 Woodland Road (VAM-OREP)
Sterling, Virginia 20166

Re: Draft Fisheries Mitigation Guidance

Dear Ms. Lefton,

Please accept these comments from the New England Fishery Management Council (New England Council), the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council), and the South Atlantic Fishery Management Council (South Atlantic Council) on the Draft Guidance for Mitigating Impacts to Commercial and Recreational Fisheries from Offshore Wind Energy Development.

The New England Council has primary management jurisdiction over 28 marine fishery species in federal waters and is composed of members from Maine to Connecticut. The Mid-Atlantic Council manages more than 65¹ marine species in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). The South Atlantic Council manages 64 marine species in federal waters and is composed of members from North Carolina through Florida. In addition to managing these fisheries, the three Councils have enacted measures to identify and conserve essential fish habitats (EFH), protect corals and other important habitats, and sustainably manage forage fisheries². The Councils support efforts to mitigate the effects of climate change, including the development of renewable energy projects, provided risks to the health of marine ecosystems, ecologically and economically sustainable fisheries, and ocean habitats are avoided.

While the Councils recognize the importance of domestic energy development to U.S. economic security, it is important to note that marine fisheries are profoundly important to the social and economic well-being of communities throughout the U.S. and provide numerous benefits to the nation, including domestic food security.

¹ Fifteen species are managed with specific Fishery Management Plans, and over 50 forage species are managed as "ecosystem components" within the Mid-Atlantic Council's FMPs.

² Two of the South Atlantic Council's Fishery Management Plans are habitat-based plans with over 400 coral species and associated habitat conserved under the Coral, Coral Reefs and Live Hard Bottom Habitat FMP, and two species of the only structural pelagic habitat under the Pelagic Sargassum Habitat FMP.

General comments

Our comments build off our Councils' policies regarding offshore wind energy.³ We are pleased that many recommendations in BOEM's draft guidance align with our offshore wind energy policies and with recommendations we have made in many previous comment letters to BOEM.⁴

We support development of this guidance as it provides clarity on BOEM's recommendations for considering and addressing impacts to fisheries. This guidance also represents a step towards greater consistency across projects, which is very much needed.

While the draft guidance represents an important first step, many details should be further developed, especially regarding financial compensation. It is essential that BOEM work with affected industries and federal and state fisheries agencies to develop these methods. A working group approach may be an effective method for further development. Absent detailed guidance from BOEM, the responsibility for developing methods for estimating compensation falls on the fishing industry and fishing-related agencies and/or wind developers.

BOEM should clarify the objective of the guidance regarding which types of impacts may be compensated. For example, the final guidance should clarify if compensation will be focused only on revenue exposure or if other impacts, such as changes in the value of vessels and limited access permits, will also be eligible for compensation.

BOEM has made it very clear that this guidance does not establish binding requirements for offshore wind energy projects. For example, the draft guidance document states: "This guidance does not have the force and effect of law and does not bind the public or BOEM in any way." With this in mind, we recommend removal or modification of language which weakens BOEM's recommendations. For example, terms such as "in some cases" (page 4), "if necessary" (page 5), "make reasonable efforts" (page 5), "where feasible" (page 5), and "consider" (pages 7, 8, and 9) are unnecessary as the document does not establish any binding requirements. The guidance would be improved by greater use of terms such as "should."

The final guidance will be applied on a project-by-project basis during BOEM's development of terms and conditions in the Record of Decision for individual projects. We recommend that the guidelines be applied to all projects. We understand that BOEM cannot require regional mitigation or mitigation for cumulative impacts unless an individual project's contribution to a regional or cumulative impact can be estimated. We are unaware of any attempts to estimate an individual project's contributions to cumulative effects. We recommend that BOEM provide additional recommendations on how this could be estimated, including how it could be addressed in National Environmental Policy Act (NEPA) documents which analyze the impacts of

³ The New England and Mid-Atlantic Councils worked together on their offshore wind energy policy and adopted the same policy language, which can be found at <https://s3.us-east-1.amazonaws.com/nefmc.org/NEFMC-Offshore-Wind-Energy-Policy-December-2021.pdf> and https://www.mafmc.org/s/MAFMC_wind_policy_Dec2021.pdf. The South Atlantic Council has a standing [Energy Policy Statement](#) which will be reviewed and revised to better address renewable energy development in 2023.

⁴ Recent comment letters from the New England and Mid-Atlantic Councils are available at <https://www.mafmc.org/northeast-offshore-wind>.

individual projects. Cumulative effects will increase in magnitude as more projects are built and our understanding of those impacts will increase over time. These factors will pose challenges for estimating the contribution of early projects to cumulative effects and planning for appropriate mitigation.

The inability to address regional mitigation and cumulative impacts is a serious shortcoming of the guidance. As we have stated in several past comment letters to BOEM, we are very concerned about the cumulative impacts of multiple wind energy projects on the fisheries we manage. The multiple wind energy projects planned along the east coast will have cumulative and compounding effects on our fisheries. The synergistic effects of multiple projects may be more than additive and this may not be sufficiently identified in project-specific documents; therefore, losses may be undercompensated by taking a project-by-project approach.

The guidance should differentiate between commercial and recreational fishing and between fixed and floating wind project installations when discussing expected impacts and mitigation and compensation measures. Inclusion of the for-hire industry for compensation should also be clearly stated throughout the document and not implied when discussing recreational fishing.

Offshore wind technology is evolving, as is our understanding impacts to the fisheries and the need for mitigation. It will be important to update this guidance periodically to ensure continued relevance.

We request that BOEM share publicly the comments received on the draft guidance, including from state and federal agencies. This will help the fishing community reach a common understanding about shared concerns and issues and how to address them.

Project siting, design, navigation, and access

The first step in mitigation is to site projects where fishery interactions are minimized. Overall, we support the recommended cable and facility design elements as they are similar to recommendations in the Councils' offshore wind energy policies. We appreciate use of the phrase "maximize access to fisheries" when describing recommended facility design elements on page 5 of the draft guidance. As stated in multiple previous comment letters, we support use of "larger turbine sizes to reduce total project footprint and meet energy production commitments" (page 6).

The guidance refers to static vs. dynamic cables. We are not familiar with these terms from our review of previous BOEM documents. Additional clarity could be provided by indicating if these terms refer to export cables, interarray cables for fixed foundations, or floating wind interarray cables.

The draft guidance states that dynamic cables "should share corridors and minimize the total cable footprint," where feasible (page 5). It is unclear how this approach could apply to interarray cables as each turbine must be connected to an adjacent turbine. Overall, we support the concept of shared corridors and minimizing overall footprint. This should apply to all cables to the extent possible.

We support the recommendation that “all static cables should be buried to a minimum depth of 6 feet below the seabed where technically feasible” (page 5). The Councils have not endorsed a specific burial depth, but rather have recommended depths that are adequate “to reduce conflicts with other ocean uses, including fishing operations and fishery surveys, and to minimize effects of heat and electromagnetic field emissions.” Assuming a depth of 6 feet is sufficient to address these objectives, we note that several COPs for projects off the Atlantic coast include depths of less than 6 feet within the proposed range. We recommend that all COPs be updated to reflect a minimum cable burial depth of 6 feet based on this guidance. In addition, we suggest clarifying the expectations for burial of interarray floating cables, or at least leaving a placeholder in the guidance that indicates this issue will be addressed as floating projects are designed. Floating cables present specific concerns and their impacts on both fishing operations and seafloor structures should be carefully evaluated.

We strongly support the language in the draft guidance that states “If needed, cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure chiefly ensures that seafloor cable protection does not introduce new obstructions for mobile fishing gear. Thus, the cable protection measures should be trawl-friendly with tapered or sloped edges. If cable protection is necessary in ‘non-trawlable’ habitat, such as rocky habitat, then the lessee should consider using materials that mirror the benthic environment” (page 5). In addition, BOEM is recommending that “facility planning should use nature inclusive designs, where applicable, to maximize available habitat for fish” (page 6). Our Council policies on offshore wind include similar recommendations.

Safety measures

We support the measures in this section of the guidance, many of which are consistent with Council policies.

The final guidance should clarify that all offshore wind energy cables be monitored throughout the life of the project to ensure they remain sufficiently buried or covered to minimize safety risks. Exposed cables should be reported immediately to the Coast Guard and to all mariners.

The draft guidance recommends identifying structures which may be most appropriate for Automatic Information System (AIS) transponders. AIS will be an important tool for safe navigation within wind arrays. Individual transponders for all structures is preferred, but a redundant virtual system should be a minimum requirement in the event of a system failure or service upgrade. The guidance also recommends consideration of lessee-funded radar system upgrades for commercial and for-hire recreational fishing vessels (page 11). Private recreational fishing vessels should have access to the same safety upgrades. In addition, we recommend provision of AIS transceivers for commercial, for-hire, and private recreational vessels, funded by wind energy lease holders.

Environmental monitoring

The Mid-Atlantic and New England Council policies on wind energy provide detailed recommendations on research and monitoring. These recommendations should be incorporated

into the final mitigation guidelines. For example, monitoring should occur for the life of the project and efforts should be coordinated across developers to ensure development of datasets that can be compared across projects. We also recommend that developer-funded data be made publicly available on a timely and regular basis.

Also, NOAA Fisheries and Council staff are currently collaborating to develop benthic monitoring recommendations. Once finalized, these recommendations should be referenced in future versions of the guidance.

The final guidance document should further specify the objectives and the frequency of environmental monitoring. Offshore wind developers should be required to monitor changes in composition and abundance of aquatic species, habitats, and ecosystems at the project and regional scales to understand project-specific and cumulative effects. Monitoring should analyze the duration, intensity, and magnitude of potential impacts to the fishery, the affected community, and to habitats upon which managed fish species depend. Baseline assessments should begin at least 2-3 years prior to construction and operation and continue without interruption throughout the life of the project, including decommissioning. Monitoring plans should be sufficiently detailed to inform short term and cumulative effects to habitats, ecosystems, fishing activities, and marine species. Monitoring plans should be developed in coordination with state and federal agencies with the expertise to develop attainable plans with sufficient scientific rigor. Habitat data should be classified using a standardized system such as the Coastal and Marine Ecological Classification Standard to ensure scientific rigor, coordination and consistency between projects, and data sharing.

Much additional work is needed to develop guidelines for monitoring related to socioeconomic impacts. We recommend convening work groups of state and federal fisheries agencies, BOEM, the fishing industry, and wind developers to further develop this topic. Based on the limitations of available data, it will be challenging to fully assess socioeconomic impacts for all impacted individuals, including commercial and recreational fishery permit holders, captains, crew, and private anglers, as well as employees of shore-side commercial and recreational fishery support businesses related to processing, packing, shipping, bait and tackle shops, and others. Offshore wind impacts could include changes in revenues, costs, travel times, and the value of permits and vessels, as well as many downstream impacts to shoreside businesses and communities, and other impacts. It will be challenging to assess these impacts based on available data and it is not a simple process to change requirements related to socioeconomic data collection. For example, many impacted fisheries, including commercial, for-hire, and private recreational fisheries, do not require precise reporting of catch locations, which will pose challenges for demonstrating impacts from specific wind projects. It will also be challenging to associate impacts with offshore wind energy projects as opposed to other factors such as changes in species distributions, management measures, prices, market demand, environmental conditions, and other factors. We recommend that BOEM consider community vulnerability indices as one aspect of assessing impacts at the community level.

Financial compensation

A compensation fund and process should be established for all wind projects. The draft guidance suggests compensation funds should be “considered” if income losses are “likely.” However, it is impossible to fully estimate the extent of losses before construction. Compensation should be thoroughly planned for given that it will not be possible to avoid all negative impacts to commercial and recreational fisheries, shoreside support businesses, and communities.

Compensation should address all relevant impacts to commercial, for-hire, and private recreational fishing, as well as shoreside commercial and recreational fishery support businesses. Relevant impacts include, but are not limited to, adverse impacts on revenues, costs, travel times, and the value of permits and vessels. It is also important to consider that many individuals other than captains, permit holders, and business owners will be impacted (e.g., crew members, processing plant employees); however, not all individuals will have the documentation necessary to demonstrate the degree of income impacted by specific wind projects.

The draft guidance states “the scope of impacts or losses addressed by compensatory mitigation should be based on the impacts identified in various environmental documents analyzing the potential effects of the action proposed in the lessee’s submitted plans.” The final guidance should clarify which environmental documents may be used (e.g., the Final Environmental Impact Statement for an individual project, or some other documents) and how to address discrepancies in information provided in different documents. We are concerned that reliance on specific documents would preclude compensation that would be supported by a more detailed evaluation (e.g., at the individual vessel or business level) or based on updated information. It is also important to consider that some fisheries information, including information for individual vessels, permits, or businesses, cannot be presented in public documents due to confidentiality requirements.

In addition, environmental analysis documents completed to date have not thoroughly examined all impacts that are relevant for compensation. For example, export cable corridors are not always analyzed with the same level of detail as turbine and substation locations. Different fisheries may be impacted by export cables compared to turbine and substation locations.

Financial planning for vessel owners and limited access permit holders can include the eventual sale of the vessel and/or permits. This represents a separate revenue source than that from landings. If offshore wind energy development results in a loss of access for some fisheries, that will likely reduce the value of fishing vessels and limited access permits. Therefore, it is important to consider how to compensate for these impacts. These impacts will be difficult to quantify as vessels and permits are sold through private entities and data on revenues from these sales are not publicly available. In addition, it is important to consider that individuals with permits in multiple fisheries must sell their permits as a bundle. Therefore, each unique combination of permits may be impacted differently. In some cases, if a vessel’s permit is transferred to a new owner, then the new owner would not have a permit history, and thus, could not be compensated given compensation is based on the owner’s permit history.

The final guidance should describe approaches that will be used to address unexpected impacts. EIS documents generally predict future fisheries conditions based on data from recent years; however, the marine environment is changing, and independent of offshore wind energy development, the value of fishing areas will change over time. Future conditions, especially conditions beyond a few years into the future, are challenging to accurately predict.

The guidance assumes commercial and recreational fisheries and shoreside support businesses will generally adapt and learn to co-exist with offshore wind projects within five years after construction and furthermore suggests a specific rate at which compensation can be phased out. It is important to acknowledge that some aspects of the fisheries, including some individual fishermen and individual businesses, will not adapt as easily or as quickly as others. The five-year time frame and proposed rate of phase-out may not sufficiently address all fisheries impacts and we are concerned that they are not sufficiently justified. This aspect of the guidance will benefit from review and revision as needed after projects are built and actual adaptation rates can be assessed. For example, some fishermen may choose not to fish within wind project areas due to operational logistics, safety, and navigation concerns, and may not be able to make up for these losses by fishing elsewhere given fish distribution, additional costs associated with transit, etc. The final guidance should include guidelines for how the impacts will be mitigated/compensated for if commercial or recreational fishermen are not able to adapt within the specified timeframe or if they choose to no longer fish within the lease areas.

We appreciate that the draft guidance acknowledges that shoreside commercial and recreational fishery support businesses may be negatively impacted and could be eligible for compensation. However, the multipliers to evaluate impacts to shoreside businesses appear modest (~1-2% to be used in the revenue exposure calculation) and are lacking a thorough justification. Shoreside multipliers may vary by fishery and we acknowledge that this is an area without a commonly agreed upon methodology for estimation. This section of the guidance could benefit from future research and evaluation.

In regard to the Fisheries Contingency Fund claims process, fishermen should be able to file a claim for income loss after more than two years, given the lengthy data QA/QC process for fisheries data. The guidance references the public availability of state and federal landings records but we suggest clarifying this section. Although summary data are generally available, data for individual fishing vessels are only available to certain analysts or to the vessel owners on request, and not to the general public. At this time, it is difficult to predict the number of claims that will be filed, and therefore the number of data requests NOAA Fisheries or the states may be asked to fulfill. There may be delays in obtaining data required to submit a claim, such that a longer period than two years may be needed, especially in the early years of this process.

For fishing activity where revenue exposure data are not available, more explicit guidance should be provided on how compensation funds will be determined. Recommending “working collaboratively with state and Federal fisheries management agencies regarding all revenue exposure data” in Attachment 1 (page 5) is insufficient. Impacts and compensation to data-poor fisheries must also be considered.

The final guidance should also consider the appropriate steps that will be taken if the guidance is not followed, if sufficient funds are not set aside to compensate for all valid claims, or if valid claims are not paid for any other reasons. To this end, the final guidance should outline an appeals process for disputes between the fishing industry and the offshore wind developers.

Finally, we support creation of one centralized compensation fund managed by a third-party entity to be used by developers for all wind energy projects. This will create efficiencies for affected individuals who wish to file a claim and for partner agencies involved in providing relevant data.

Conclusion

We appreciate the opportunity to provide comments on the Draft Fisheries Mitigation Guidance and look forward to working with BOEM to ensure that wind development minimizes impacts on the marine environment and is developed in a manner that ensures coexistence with our fisheries. Please contact us if you have any questions.

Sincerely,



Thomas A. Nies
Executive Director, New England Fishery Management Council



Dr. Christopher M. Moore
Executive Director, Mid-Atlantic Fishery Management Council



John Carmichael
Executive Director, South Atlantic Fishery Management Council

cc: M. Luisi, W. Townsend

Nantucket Sound Seafood
350 S. Front St
New Bedford, MA 02740

Lang, Xifaras & Bullard
115 Orchard St
New Bedford, MA 02740

To the Habitat Committee,

My name is Allen Rencurrel. I own and operate Nantucket Sound Seafood in New Bedford, MA which specializes in producing locally caught shellfish, including ocean quahogs and surfclams. My company employs 35 people who are involved in harvesting the shellfish, transporting them to my plant and processing the product for distribution. In 2018, prior to the HMA closure we had 37 workers at 5 days per week with a \$28,000.00 weekly payroll. After closure, we are struggling to keep 35 employees at 3 days per week with a \$20,000.00 payroll. I am only one operator that used to fish in the HMA; there are 4 others including Intershell Inc, Sea Watch International, Galilean Seafood, Lamonica Fine Foods and approximately 4 independent vessels who are facing similar economic problems.

A research project conducted with our partner Coonamessett Farm Foundation (CFF) under EFP #19066 took videos with a camera system mounted on the dredge. During the project, we harvested 42,000 bushels with an ex-vessel value of \$883,000, a portion of which funded the research. This was accomplished by sweeping only 3 square km (out of the 2,566 in the HMA) in 104 fishing trips over a 15-month period between June 2020 and February 2022. This surfclam product went to local distributors in Massachusetts. The finished product was worth approximately \$3.5 million. The final retail value generated closer to \$4.2 million in economic stimulation; all from one vessel fishing in 1% of the HMA. We know the whole area cannot be as densely packed with clams, but we do not know enough about where they or the “complex bottom” of pebbles and cobbles may be located and how these two factors interact.

On June 15, 2022, CFF submitted a final report to the Habitat Plan Development Team. This report summarized the research done in the small area granted under the EFP #19066 and their general conclusions for “Phase I” of the research plan agreed upon by the New England Fisheries Management Council. They offered models that explained the relationship of surfclam catch and fish species seen in the videos collected to substrate. They showed how the substrates are distributed with maps and how the coverage of the substrates changes between seasons. We feel as though we have shown that we can gather useful information for managers. But this area cannot be extended to the whole HMA; we need another area to sample to see how the habitats are alike or differ. In cooperation with CFF, we would like to continue with “Phase II” by moving to a new area in Davis Bank East exemption area, and we will conduct our fishing operations in order to more evenly sample the area.

One last point I’d like to make, we are being told that in order to fish this productive area even in a limited capacity, we have to prove a negative; i.e. that we do not have an adverse impact on the seafloor. However, multi-billion-dollar wind companies do not need to do this to build hundreds of turbines on scour pads that will not only disturb the seafloor, but will remain there permanently. These wind companies do not have to comply with NOAA rules like commercial fishermen do. Under the Magnuson-Stevens Fishery Conservation and Management

Act, fisheries should be governed by measures of productivity, not the possibility of “complex” habitat. In the future, we believe that Rose and Crown and Davis Bank East should be designated as distinct surfclam fishing areas that would be open to clamming under a monitoring program similar to the monitoring done under the EFP. Like the surveys used by wind companies, monitoring would take place during fishing activity to identify any adverse impacts and mitigation would then be applied.

Thank you,

Allen Rencurrel

Scott Lang

Chair: Eric Reid
Executive Director: Tom Nies.
To the Habitat Committee.

My name is Louis Lagace. My company is LNA Inc. dba Fishing Vessel "Mariette". My boat is one of the few "independent" vessels still dredging for surf clams on and about the Nantucket Shoals. Vessels I have captained and/or owned have been fishing in this area since 1981. This is over 40 years. Due to the closure of the GSC HMA, on flimsy data at best I will be losing what I have worked for for virtually my entire adult life. My projected gross income for this year, 2022, will be 44% of an average of the last 6 years, if that. This is unsurvivable. Being that I am now 71, I've always planned to retire at some point after transferring full operation of the LNA Inc. to my son who has captained F/V Mariette for over 10 years. This used to be traditional in the commercial fishing industry: fathers to sons and/or daughters for multiple generations as opposed to large corporations controlling everything. This is not a knock on large companies but there needs to be room for smaller operations also working in harmony together. As a result of this closure, there really doesn't seem to be a whole lot for me to pass on. I whole heartedly support continued research of the HMA and offer my vessel in continuing this effort. Thank you. Louis Lagace [Sent from the all new AOL app for iOS](#)



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116

Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

July 27, 2022

Ms. Karen J. Baker
Chief for the Office of Renewable Energy Programs (OREP)
Bureau of Ocean Energy Management
45600 Woodland Road (VAM-OREP)
Sterling, Virginia 20166

Dear Ms. Baker:

I would like to thank you for having your staff brief the Council on offshore wind development at our June 30, 2022 Council meeting. They gave clear explanations of pending activities, including the development of a Programmatic Environmental Impact Statement (PEIS) for the New York Bight as well as for the next steps in the Gulf of Maine. We request that BOEM also develop a PEIS for the Gulf of Maine, but earlier in the process to inform the identification of wind energy areas (WEAs) and eventually lease areas.

The New England Fishery Management Council (Council) has primary management jurisdiction for 28 marine fishery species under nine FMPs in federal waters and is composed of members from Connecticut to Maine. In addition to managing these fisheries, the Council has developed measures to identify and conserve essential fish habitats, protect deep sea corals, and manage forage fisheries sustainably. The Council supports policies for U.S. wind energy development and operations that will sustain the health of marine ecosystems and fisheries resources. While the Council recognizes the importance of domestic energy development to U.S. economic security, it also recognizes that the marine fisheries in the Gulf of Maine, the New Hampshire Seacoast, and the Massachusetts Bay are profoundly important to the social and economic well-being of coastal communities in the Northeast US and provide numerous benefits to the nation, including domestic food security.

The Council has repeatedly expressed concerns over the pace and number of offshore wind projects in development in our region. The speed of this process makes it difficult to conduct a thorough analysis of potential individual and cumulative impacts and provide informed public input. It also makes it nearly impossible to adopt lessons learned from each project. Many fishing businesses, fishery management organizations, and fisheries science and research organizations operate at regional scales. These organizations will be affected by and are trying to engage in the development of multiple offshore wind projects. We are collectively struggling to provide meaningful input on a diverse range of related issues including siting, project design, mitigating impacts to fisheries science, compensation for fishermen, appropriate monitoring strategies, navigational concerns, and possible effects on protected and endangered species. A timely PEIS

would allow for additional time for the public and other stakeholders to engage in offshore wind development in the Gulf of Maine including an additional comment opportunity under NEPA.

Wind Energy Area (WEA) identification in the Gulf of Maine is expected during Quarter 3 2023 and a proposed sale notice is expected during Quarter 4 2023. A PEIS for the Gulf of Maine Planning Area will better support an inclusive, collaborative, and transparent planning effort for wind development in the area. We believe that a PEIS would help BOEM and ocean users better understand the risks and cumulative effects of offshore wind development on important resources. This includes fishing communities and their cultural heritages, fishing and shoreside businesses with portfolios located entirely or largely within the Gulf of Maine, Council-managed commercial and recreational fishery species, deep-sea corals and other sensitive and vulnerable habitat, and endangered and protected species and their designated critical habitat (e.g., North Atlantic right whale, Atlantic salmon, Atlantic sturgeon, sea turtles).

The Council is concerned that the commercial leasing process for the Gulf of Maine will not be adequately informed by development of the state of Maine's research array. The timelines for these two efforts appear to overlap, making it difficult to understand how the research array experience will be considered in future leases. Learning from the research array will be important given that there is less experience worldwide with floating wind technology and its differential impacts on natural resources and other ocean users.

A PEIS prior to identifying WEAs also would provide increased transparency and more thorough review in how potential impacts are identified and evaluated when considering offshore wind development in the Gulf of Maine. This is especially important given the three-year gap between the first Gulf of Maine Intergovernmental Renewable Energy Task Force meeting held in December 2019 and the second task force meeting in May 2022. It is crucial for all stakeholders, especially those likely to be impacted by offshore wind development, to fully understand the types of projects that may be developed as well as any expected impacts.

Specifically, we expect the PEIS to accomplish the following:

- Provide a baseline assessment of important resources in the Gulf of Maine Planning Area, including an accounting of all data sources used to characterize these resources. This will allow all participants in the siting process to understand which data BOEM is using to understand the occurrence, distribution, and current condition of resources.
 - o Importantly, this assessment would allow participants to focus on providing additional or new information to BOEM that is not already being considered, avoiding duplication of efforts across individuals and organizations.
- Evaluate the potential impacts of wind energy development on these resources. This analysis can serve as a foundation for future NEPA analysis of specific leases, should leasing occur in the Gulf of Maine.
 - o The PEIS can identify the magnitude of expected impacts and can thus focus site-specific surveys and environmental reviews more thoroughly on the more moderate and/or major impacts and less on minor or negligible impacts on affected resources. This would frontload the analysis but should create efficiencies later.
- Develop a range of programmatic avoidance, minimization, mitigation, and monitoring measures that could be applied to all future leases, similar to the approach being undertaken for the New York Bight.

- More specifically, the PEIS could identify any significant issues, potential alternatives, and draft mitigation measures that should be considered during the NEPA and leasing process and analyze how those impacts would be avoided, minimized, or mitigated.
- Evaluate the benefits and costs of adopting programmatic avoidance, minimization, mitigation, and monitoring measures.
- Consider whether there are areas in the Gulf of Maine that should not be leased for offshore wind development.
- The PEIS should include a focused, regional cumulative analysis of offshore wind development within the Gulf of Maine (e.g., a regional analysis of potentially multiple lease areas for offshore renewable energy in the Gulf of Maine). A realistic discussion of the cumulative impacts of multiple projects needs to be provided to the public so there is an understanding of the scale of development that is anticipated in this area.

A deliberate, open, and information-driven process for commercial wind leasing and development in the Gulf of Maine is essential. The wind energy area siting phase for any region, including the Gulf of Maine, represents a critical early opportunity for avoiding impacts through scaling development appropriately and locating development areas in locations that will limit effects on resources and users. We expect that a PEIS would facilitate identification of areas that should not be leased. It would also improve the transparency of the BOEM decision-making process. Ideally this will result in more consistency in the decisions made for offshore wind in the Gulf of Maine and perhaps allay fishing industry concerns about the unpredictability of the process.

We will continue to provide our expertise in both the commercial and research leasing processes and look forward to continued partnerships with BOEM and other regional organizations as this work progresses.

Please contact me if you have any questions.

Sincerely,



Eric Reid
Chair

cc: Michael Pentony, GARFO
Dr. Chris Moore, MAFMC



June 28, 2022

Bridgette Duplantis
Bureau of Ocean Energy Management
Office of Leasing and Plans
1201 Elmwood Park Boulevard
New Orleans, LA 70123

Re: Central Atlantic Call for Information and Nominations

Dear Ms. Duplantis,

Please accept these comments from the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) and the New England Fishery Management Council (New England Council) regarding the call for information and nominations on possible commercial wind energy leasing off the U.S. Central Atlantic coast (the Call). The Bureau of Ocean Energy Management (BOEM) will consider information received in response to this Call to determine whether to schedule a competitive lease sale or to issue a noncompetitive lease for any portion of the six Call Areas.

The New England Council has primary management jurisdiction over 28 marine fishery species in federal waters and is composed of members from the coastal states of Maine to Connecticut. The Mid-Atlantic Council manages more than 65 marine species¹ in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). In addition to managing these fisheries, both Councils have enacted measures to identify and conserve essential fish habitats, protect deep sea corals, and sustainably manage forage fisheries. The Councils support policies for U.S. wind energy development and operations that will sustain the health of marine ecosystems and fisheries resources. While the Councils recognize the importance of domestic energy development to U.S. economic security, we note that the marine fisheries throughout New England and the Mid-Atlantic, including within the Central Atlantic Call Areas and in surrounding areas, are profoundly important to the social and economic well-being of communities in the Northeast U.S. and provide numerous benefits to the nation, including domestic food security. As described below, we are especially concerned about overlap of the Call Areas with locations of known and likely deep sea coral presence.

Overlap with Deep Sea Coral Habitat and Deep Sea Coral Protection Areas

Deep sea corals form important and sensitive habitats. Most deep sea corals are slow-growing and fragile; therefore, damage caused by the installation, maintenance, operations, and decommissioning of offshore wind energy projects must be avoided. As the Mid-Atlantic Council stated in a [letter to BOEM in December 2021](#) and during the February 2022 Central Atlantic Task Force meeting, all Frank R. Lautenberg Deep Sea Coral Protection Areas, including the discrete and broad zones, must be excluded from all stages of offshore wind energy planning and development. The entirety of Call Area E and part of Call Area F overlap with the Frank R. Lautenberg Deep Sea Coral Protection Area broad zone. Placing wind energy structures in these areas, which include known and likely coral presence

¹ Fifteen species are managed with specific Fishery Management Plans, and over 50 forage species are managed as “ecosystem components” within the Mid-Atlantic Council’s FMPs.

(Figure 1), would negate protections established by the Mid-Atlantic Council after a multi-year, thorough, transparent, and stakeholder driven process. The New England Council adopted a very similar deep sea coral protection area south of Georges Bank, implemented in 2021. Combined, these areas clearly indicate the high value the Councils place on conserving canyon and slope habitats over an extensive geographic area from the North Carolina/Virginia border to the Hague Line. In addition, placing wind energy structures in these protected sensitive habitats would run counter to the federal administration's goal to conserve 30 percent of America's lands and waters by 2030 through the America the Beautiful initiative.

In the Mid-Atlantic, the Frank R. Lautenberg Deep Sea Coral Protection Areas were defined based on a combination of records of coral presence² and habitat suitability modeling.³ This information is summarized in Figure 1. The Mid-Atlantic Council focused on structure-forming corals when defining these areas; however, the restrictions on fishing effort also benefit other corals and other habitat types within these areas.⁴ The fishing prohibitions in these areas became effective in January 2017 and include prohibitions on use of all bottom-tending commercial fishing gears (including, but not limited to bottom-tending otter trawls, bottom-tending beam trawls, hydraulic dredges, non-hydraulic dredges, bottom-tending seines, bottom longlines, pots/traps, and sink or anchored gillnets), with exemptions for transit, lobster trap gear, and red crab trap gear (81 Federal Register 90246, 12/14/2016; 50 CFR § 648.372). The prohibitions are not fishery-specific and the same restrictions apply to all discrete zones and in the broad zone.⁵

The Frank R. Lautenberg Deep Sea Coral Protection Areas extend as far south as the boundary between the Mid-Atlantic Council and the South Atlantic Council. Deep sea corals are present south of this boundary, as shown in Figure 1. We are also concerned that export cables connecting wind energy projects in Call Areas E and F to shore would cross the shelf break and would detrimentally impact sensitive habitats in those areas. Therefore, we recommend removal of the entirety of Call Areas E and F from further consideration for offshore wind energy development.

The Call announcement notes "BOEM recently funded a study that synthesized data and modeled deep-sea coral and hardbottom habitats on the OCS offshore the U.S. southeast Atlantic coast, including the deep-sea portions of the Call Area. BOEM will consider this study during Area Identification." No additional information is provided. No data, habitat information, or model results are provided. We are unaware of what information will be considered or how it will be used. It is

² NOAA National Database for Deep Sea Corals and Sponges (Database version: 20211110-0). <https://deepseacoraldata.noaa.gov/>. NOAA Deep Sea Coral Research & Technology Program.

³ Kinlan, B.; Poti, M.; Dorfman, D.; Caldow, C.; Drohan, A.; Packer, D.; Nizinski, M. (2016). Model output for deep-sea coral habitat suitability in the U.S. North and Mid-Atlantic from 2013 (NCEI Accession 0145923). Threshold Logistic Outputs for Alcyonacea. NOAA National Centers for Environmental Information (NCEI). <https://www.ncei.noaa.gov/archive/accession/0145923>.

A description of how this model was used to define the Frank R. Lautenberg Deep Sea Coral Protection Areas can be found in section 6.3.2.4 of the Environmental Assessment for the Deep Sea Corals Amendment, available at <https://www.mafmc.org/actions/msb-am16>.

⁴ For more information, see <https://www.mafmc.org/actions/msb-am16>.

⁵ Although these restrictions were implemented through Amendment 16 to the Mackerel, Squid, and Butterfish Fishery Management Plan, they apply to all bottom tending gear, not just for the mackerel, squid, and butterfish fisheries (with specific exclusions for American lobster, red crab, and transiting).

unclear if this information is different than that considered by the Mid-Atlantic Council when the Frank R. Lautenberg Deep Sea Coral Protection Areas were developed. The public should be given the opportunity to provide recommendations for the Call Areas based on the results of this study.

When considering currently available data on coral habitats, it is important to note that most historical coral records are presence-only and largely reflect areas that have been prioritized for deep sea coral and other benthic habitat surveys. Therefore, a lack of coral records and modeled suitable coral habitat should not necessarily be interpreted as a lack of coral presence. Many shelf and slope areas within the Call Areas and within the Frank R. Lautenberg Deep Sea Coral Protection Areas have not been adequately surveyed for the presence of deep sea corals. The habitat suitability model shown in Figure 1 relies heavily on historical records, thus a lack of modeled suitable habitat in a given area does not necessarily indicate the absence of corals or poor habitat suitability. In addition, this model does not extend as far south as the southern end of Call Area F and this should not be interpreted to mean that coral habitat is not present outside the modeled area. As previously stated, we have no knowledge of the BOEM-funded coral habitat study beyond the information provided in the Call; however, we suspect these same data limitations will impact BOEM's study. Therefore, we urge BOEM to take a precautionary approach to protecting sensitive coral habitats by excluding the entirety of Call Areas E and F from further consideration.

Overlap with Fisheries

Portions of all Call Areas overlap with important commercial and recreational fishing areas, including, but not limited to, commercial fishing for surf clams and *Illex* squid, commercial and recreational fisheries for highly migratory species, and the recreational fishing areas referred to as the [Prime Fishing Grounds of New Jersey](#). We defer to the National Marine Fisheries Service on the appropriate data for considering overlap with commercial and recreational fisheries.

As we have stated in past comment letters to BOEM, fisheries importance should not be measured solely based on dollar value or volume of landings. Other factors including, but not limited to, number of participants, impacted communities, seasonal importance, and use (e.g., a lower value species harvested for bait in a higher value fishery) must also be considered. Areas with notable fishery overlap must be excluded from leasing, especially considering that fisheries will be impacted by the many other wind energy projects already in development along the East Coast. We are very concerned about cumulative impacts from offshore wind energy development on commercial and recreational fisheries.

General Process Concerns

As we have stated in several previous comment letters to BOEM, we are concerned about the pace and scale of offshore wind energy development along the East Coast. We understand the desire by the federal administration, many states, and the public to replace fossil fuels with renewable energy. However, as you are well aware, more than 25 offshore wind energy projects along the east coast are already in various stages of planning and environmental review. We have been disappointed with the level of environmental review for these projects to date. In addition, we have found it challenging to effectively engage in the wind energy development process at the current pace while fulfilling our existing fisheries management missions. We know many other stakeholders have also found it challenging to track recent developments and provide input into the process.

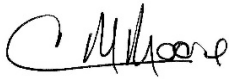
Considering the scale of currently leased areas along the East Coast, it is concerning that BOEM has not demonstrated a specific goal for energy production to which these Call Areas will contribute. BOEM should seek input from states on expected demand and the realistic technical capabilities to meet that demand.

We are also concerned that this Call asks for public input on potential future wind projects which will require technology that does not currently exist. The Call notes “technoeconomic feasibility concerns with areas beyond 1,300 meters in water depth” and states that Call Areas E and F extend eastward to between the 2,500 and 2,600-meter bathymetric contour. Wind energy projects in these areas will likely require floating foundations, a technology which is in development but not currently in use. Lastly, it has also not been demonstrated that the onshore grid can accommodate this scale of energy input, which is an ongoing challenge for many existing East Coast leases.

In conclusion, we are concerned about the scale of these Call Areas, their technological feasibility, and in particular we are concerned about potential negative impacts on deep sea corals and cumulative impacts on commercial and recreational fisheries.

We look forward to further engaging with you on this issue. Please contact us if you have any questions.

Sincerely,



Dr. Christopher M. Moore

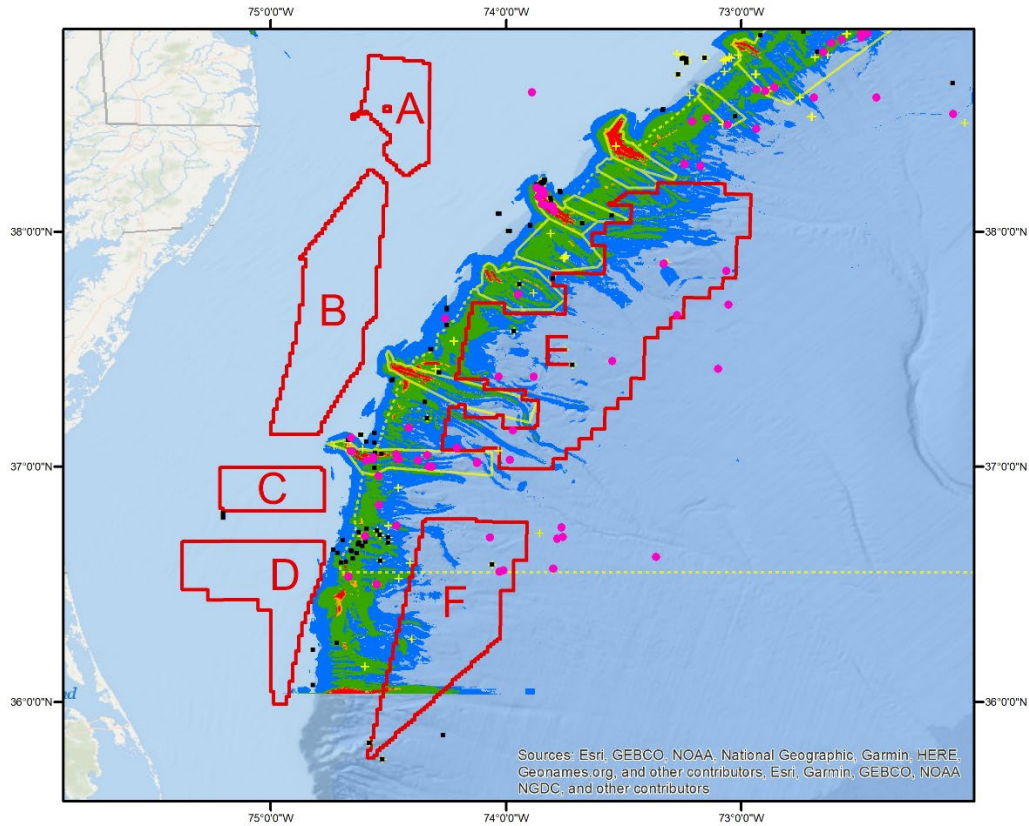
Executive Director, Mid-Atlantic Fishery Management Council



Thomas A. Nies

Executive Director, New England Fishery Management Council

cc: J. Beaty, M. Luisi, W. Townsend, J. Bennett, A. Lefton, T. Nies



Legend

- Central Atlantic Call Areas
- Frank R. Lautenberg Deep Sea Coral Protection Areas**
- Discrete Deep-Sea Coral Zones
- Broad Deep-Sea Coral Zone
- Deep-Sea Coral and Sponge Records**
- ▲ Black Coral
- Gorgonian and Alcyonacean Coral
- + Sea Pen
- Stony Coral
- Alcyonacea Coral Habitat Suitability Likelihood**
- Medium-Low
- Medium
- High
- Very High

Figure 1: BOEM Central Atlantic Call Areas, Frank R. Lautenberg Deep Sea Coral Protection Areas, modeled coral habitat suitability for Alcyonacean corals (gorgonian and non-gorgonian outputs combined; expected to be the best predictor of habitat suitability for structure-forming corals),⁶ and historical records of known coral presence with structure forming corals highlighted.⁷ “Gorgonian and Alcyonacean Coral” includes soft coral, gorgonian coral, and stoloniferan coral.

⁶ See footnote 3.

⁷ See footnote 2.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

June 24, 2022

Michelle Morin
Chief, Environmental Branch for Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road, VAM-OREP
Sterling, Virginia 20166-4281

Dear Ms. Morin:

We reviewed the Draft Essential Fish Habitat (EFH) Assessment, received April 25, 2022, for the proposed Revolution Wind, LLC offshore wind energy project. The project includes the construction, operation, maintenance, and decommissioning of a commercial scale offshore wind energy facility, known as the Revolution Wind Farm (RWF) within Lease Area OCS-A-0486, located 15 statute miles southeast of the Rhode Island within the Rhode Island/Massachusetts Wind Energy Area. The RWF project proposes construction of up to one hundred (100) wind turbine generators (WTGs) with a 8 to 12 MW generation capacity, and two (2) offshore substations (OSS) with a submarine cable network connecting the WTGs and the OSS to shore-side facilities. The project also includes the construction and installation of the Revolution Wind Export Cable (RWEC) using alternating current to export energy from the RWF to a new Interconnection Facility to link the RWEC to the electrical grid. RWEC includes an offshore component located in federal waters (RWEC-OCS) and a component located in Rhode Island State territorial waters (RWEC-RI). The two RWEC circuits will total 83.3 miles in length (23 and 18.6 miles for each RWEC-OCS and RWEC-RI segment per circuit, respectively). In addition to the EFH assessment, we reviewed the Fisheries and Benthic Habitat Monitoring Plan, preliminary Draft Environmental Impact Statement (DEIS) for cooperating agency review, and Construction and Operation plan (COP).

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Fish and Wildlife Coordination Act require federal agencies to consult with us on projects such as this that may adversely impact EFH, federally-managed species, their prey, or other resources under our purview. Because the project involves EFH, the consultation process is guided by the EFH regulatory requirements under 50 CFR 600.920, which mandates the preparation of EFH assessments and generally outlines your obligations.

At this time we do not have enough information to comment on the impacts of the proposed project on living marine resources or to provide recommendations to avoid, minimize and mitigate adverse effects on EFH and other marine resources. You have not yet provided a complete EFH assessment in accordance with the mandatory and additional information requirements for such assessments pursuant to 50 CFR 600.920(e). A complete EFH assessment is a prerequisite to begin the EFH consultation process as specified in 50 CFR 600.920(i)(2). For all projects, but especially for a project of this size and complexity, each individual project action and component must be specifically identified and described, and a rigorous evaluation of the potential impacts of those actions and components on EFH, federally-managed species, their prey, or other resources under our purview must be undertaken. While we appreciate the efforts



that you have made to have this draft EFH assessment mirror the EFH Assessment Template for Offshore Wind Energy Projects being developed by our staff with the assistance of the Volpe Institute, the current draft document does not fully describe the proposed action or evaluate fully the potential adverse effects of the proposed action on EFH. This letter outlines additional information we require to consult on this project.

EFH INFORMATION REQUESTED

Evaluation of Impacts to Essential Fish Habitat

Scope of EFH Impact Analysis: We understand you allow lessees to use a Project Design Envelope (PDE) in the preparation of their COP, and that in your National Environmental Policy Act (NEPA) documents you analyze the maximum impacts that would occur from the range of design parameters presented in the COP. As we have stated previously, this approach is not appropriate for the EFH consultation and is inconsistent with the EFH regulations because it does not allow for a clear description of the proposed action and its effects on EFH. However, the current document states that: “For this EFH consultation, BOEM assumes Revolution Wind would select the design alternative resulting in the greatest potential impact on EFH.”

CFR 600.920(e) lays out the requirements for the preparation of an EFH assessment, which includes the requirement for you to include in your assessment an analysis of the potential adverse effects on designated EFH and the site-specific effects of the project. In accordance with 50 CFR 600.910(a),

“Adverse effect” means any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.”

Further, CFR 600.920(d) requires that you use the best available scientific information in your assessment of the effects of an action on designated EFH and the measures you can take to avoid, minimize, or offset such effects. The use of the maximum impact analysis does not allow for an evaluation of potential adverse effects, nor measures that can be taken to avoid, minimize, or offset such effects, for the different design parameters that may actually be selected.

As we have discussed, for the EFH consultation, BOEM must assess the potential adverse impacts that would occur as a result of the range of design parameters under consideration. This is inclusive of both potential alternative layouts and various design parameters associated with project activities (e.g., scour protection). Without this assessment, it is not possible to provide appropriate, site-specific EFH conservation recommendations for the project. Any recommendations provided based on the analysis of a maximum impact design would then also be based upon the maximum potential adverse effects and may or may not ultimately be applicable to the final selected design parameters. This could lead to the need for reinitiation of

consultation once the final design is determined and/or precautionary EFH conservation recommendations. It would be most efficient for the process, and consistent with the EFH regulations, if the EFH assessment analyzed potential impacts from the range of proposed design parameters, rather than a maximum impact scenario.

Additionally, the EFH assessment does not address any mitigation measures to offset adverse effects to EFH, nor does it address any of the alternatives put forward in the NEPA process. Two of these alternatives, specifically the Habitat Impact Minimization Alternative (“Habitat Alternative”) and the Higher Capacity Turbine Alternative, would result in substantial reductions in habitat impacts and adverse effects to EFH. The EFH assessment should include an evaluation of mitigation to offset any unavoidable adverse effects to EFH, as well as alternatives that would avoid or minimize adverse effects. We welcome the opportunity to discuss this with you further, as it is an important issue with implications for future projects, as well as the Revolution Wind project.

Analysis Approach, Criteria and Methodology: The current assessment and evaluation uses methods and criteria that are not appropriate or applicable in the analysis of project impacts to designated EFH and other NOAA-trust resources. We appreciate that you have included the impact terminology and definitions (i.e., short-term, long-term, and permanent) we recommended. However, in many instances the terminology has not been appropriately applied, particularly considering the distribution of highly complex habitats that will be impacted by development of this lease area on Cox Ledge. For example, the document states that: “project construction and installation will generate short-term, and generally direct effects on EFH...” This statement does not acknowledge or consider that the habitat conversion that will occur during construction and installation of the proposed project will result in long-term to permanent effects on EFH. While the document does acknowledge the indirect effects of such long-term to permanent impacts during the operations and maintenance of the project and for the placement of cable protection, it does not fully address the direct, long-term to permanent effects of habitat conversion during the construction and installation of the wind turbines and sub-station.

Further, the analysis relies heavily on perceived beneficial effects that may occur as a result of the “reef effect” from the addition of artificial substrates and does not adequately address the adverse effects of such artificial substrates, particularly given the existing natural, highly complex habitats that occur in the project area. The EFH assessment should fully evaluate and assess the direct, indirect, individual, and cumulative adverse effects to EFH of each project component and activity. While it is appropriate to discuss the potential for any identified beneficial habitat effects that may be expected as a result of the proposed project, such effects should be assessed in context with the expected adverse effects to EFH for managed species.

It also appears that the EFH effects analysis for each species is based on the total calculated impact areas rather than designated EFH for the species within the project impact areas (i.e., the assessment does not appear to be refining mapped EFH by the habitat text descriptions). While we do not need the impacts to each species’ designated EFH to be individually calculated, the assessment should include an evaluation of how each identified project impact will affect different habitat types and species (including prey species). That evaluation is not included in the current draft of the EFH assessment. The impacts to each habitat type need to be quantified

and fully assessed for each component of the project. For example, deposition of suspended sediments will occur as a result of cable laying activities. Soft and hard sediment habitats will be affected differently by the sediment deposition, and the differences between the effects should be quantified and fully evaluated. Without information on the extent and location of impacts by habitat types, it is not possible to evaluate avoidance or minimization measures that could be employed to reduce adverse impacts to EFH.

Additionally, an analysis should be provided for each adverse effect to EFH that is identified. The current document presents the calculated impacts that are expected to occur for multiple project activities (e.g., pile driving, seabed preparation, etc.), however there is limited analysis of how such impacts would affect designated EFH, Habitat Areas of Particular Concern (HAPCs), or sensitive species and life history stages. For example, the document indicates the spatial extent of expected impacts that may result from pile driving for each type of hearing group (e.g., fish with swim bladder involved in hearing, eggs and larvae, invertebrates, etc.) and identifies the managed species and life history stages that belong to each hearing group. However, there is limited to no analysis of how such identified impacts would affect EFH or managed fish species. Of particular concern is the potential for adverse effects to Atlantic cod spawning aggregations which have been positively detected within the lease area as part of an ongoing study funded by your agency. The EFH assessment does not discuss the overlap of the proposed project with this known cod spawning activity or provide a meaningful assessment of how the identified impacts may affect this sensitive life history stage.

Effects to Cox Ledge and Site-Specific Fisheries Resources: The EFH assessment also does not fully consider the location of the proposed project in the region, particularly that the project overlaps with Cox Ledge. It appears that portions of the EFH assessment may have been copied from other assessments done for other projects without the evaluation being tailored to the actual project site. For example, there are multiple references to expected impacts to Mid-Atlantic resources, but there is no mention of the proposed project's overlap and proximity to Cox Ledge in Southern New England. Cox Ledge is an area of particularly complex and unique habitat conditions that support a wide range of marine resources. Also, while the document provides information on the habitat types that occur in the project area, the distribution and complexity of the habitats within the lease area is not well described. Because the intent of the EFH consultation is to evaluate the direct, indirect, individual and cumulative effects of a particular federal action on EFH and to identify options to avoid, minimize, or offset the adverse effects of that action, it is necessary to fully characterize and assess the effects of project activities to determine appropriate measures to protect and conserve EFH for managed species. The document should be revised to fully evaluate and analyze potential effects to designated managed fish species EFH and HAPCs, consistent with the requirements under the EFH regulations.

Additional Information Needed

As discussed above, the approach to the EFH assessment and evaluation of potential adverse effects of the project to EFH needs to be revised to align with the EFH regulations. The EFH assessment should clearly present the extent of habitat types within the project area and evaluate all potential project impacts that could occur to such habitats. This includes:

- the location of where impacts will occur for each impact type;
- the extent of each habitat type that will be impacted for each impact type;
- an evaluation of any potential avoidance and minimization measures to reduce the identified impacts, including an alternatives, and an assessment of the extent of habitat impacts that would be avoided or minimized; and
- discussion of mitigation.

As you develop the revised EFH assessment, include citations of relevant and currently accepted literature to support your determinations and to inform the evaluation of identified avoidance and minimization measures that may reduce adverse impacts to EFH. The revised EFH assessment should be an independent analysis of the best available information, and not simply reference analyses from the applicant's COP.

Furthermore, the effects of identified and calculated project impacts, by habitat type, should be fully assessed. This assessment should focus on vulnerable and sensitive: 1) habitats; 2) species; and 3) life history stages. The potential impact of the project to vulnerable and sensitive resources must be fully evaluated for the specific project area. For example, in the context of seafloor preparation activities, the potential adverse effects to EFH resulting from the disturbance of not just habitats, but also sensitive life history stages that occur within the project area should be fully evaluated (e.g., Atlantic cod spawning aggregations).

Below is a list of additional information needed for us to initiate consultation for this project. This list should assist you in revising the EFH assessment.

List of information necessary for a complete EFH assessment:

General Issues and Updated Analysis Needs:

- All necessary information related to impacts of the project on EFH, federally-managed species, their prey, or other resources under our purview needs to be included or extensively summarized in the document rather than referencing the COP or other documents.
- Information included in the EFH assessment should be consistent with the information in the NEPA document including the description of the proposed project and the associated actions such as surveys and other activities.
- All impacts should be rigorously evaluated, including individual, cumulative, and synergistic direct and indirect effects.
- Modeling results (or extensive summaries of modeling results) should be integrated in the EFH assessment to investigate potential impacts to EFH and species. For example, how will hydrodynamic changes, such as changes to velocities, temperatures, and stratification impact EFH and species.
- There is an inadequate discussion and analyses of sensitive habitats/life stages. Of particular concern is a lack of a comprehensive discussion of the potential impacts of the project on a known Atlantic cod spawning aggregation within the lease area. Potential impacts that may occur as a result of each project component and/or activity to this spawning aggregation area should be fully evaluated and described. This evaluation should consider both direct and indirect impacts.

- There is a lack of robust analysis of impacts of particle motion and vibrations on fish, invertebrates, and their habitat. Please see Roberts et al. (2015)¹, Roberts and Elliot (2017)², Hawkins et al. (2021)³, and others to update the analysis.
- All tables and figures cited in the Table of Contents should be included in the document.

Mapping and Habitat Information Needs:

- A figure depicting the multibeam backscatter and identified large boulders throughout the lease area should be included in the document.
- A figure detailing important habitat areas, such as areas where Atlantic cod spawning activity have been detected should be included. The proposed project WTG/OSS and inter-array cable layout should be included in this figure(s).
- A figure detailing known or delineated shellfish beds and/or shellfish leases located in the project area.

Project Design and Construction Methodology:

- The EFH assessment should evaluate the full range of potential alternatives to the proposed action.
- The scope and range of the PDE for each project component should be included in the updated assessment. The EFH assessment should evaluate the full range of the design parameters and assess the impacts to EFH for each project component.
- Detailed information on the proposed turbine locations and their proximity to complex habitats should be provided. Potential impacts to complex habitats from turbines, scour protection, and vessel anchoring should be fully assessed. Include an analysis of the impacts that would occur from cable routing to and from the turbine location.
- Detailed information on each method of cable installation proposed. An assessment of impacts to EFH for each method proposed should be included for all habitat types.
- Specific information related to how the cable will be laid through any identified HAPC and a full and complete assessment of the anticipated impacts. The EFH assessment should also describe in detail how impacts to HAPC will be avoided, minimized, and offset.
- Detailed information related to the proposed use of cable and scour protection. Specifically, the extent of area to be covered by the protection, the type of protection to be used, a description of habitats to be impacted, and all locations where cable protection is anticipated to be necessary.
- Information related to vessels proposed for construction and maintenance, including potential impacts to benthic habitat from vessel anchors or spuds. Proposed plans to avoid and minimize impacts to sensitive habitats from vessel anchoring should also be provided.
- Information related to the proposed dredging for the project, including plans for material disposal and dredging associated with any O&M port facilities and HDD activities.

¹ Roberts, L., Cheesman, S., Breithaupt, T. and Elliott, M., 2015. Sensitivity of the mussel *Mytilus edulis* to substrate-borne vibration in relation to anthropogenically generated noise. *Marine Ecology Progress Series*, 538, pp.185-195.

² Roberts, L. and Elliott, M., 2017. Good or bad vibrations? Impacts of anthropogenic vibration on the marine epibenthos. *Science of the total environment*, 595, pp.255-268.

³ Hawkins, A.D., Hazelwood, R.A., Popper, A.N. and Macey, P.C., 2021. Substrate vibrations and their potential effects upon fishes and invertebrates. *The Journal of the Acoustical Society of America*, 149(4), pp.2782-2790.

- Provide additional information related to the sediment dispersal modeling, including the grain sizes used for each modeling exercise, and how impacts to various habitats were considered.
- Provide additional information related to any hydrodynamic modeling and anticipated impacts to EFH and sensitive life stages. This should include an evaluation of WTGs/OSS as well as scour and cable protection.

Pile Driving and Noise Impacts (for each potential type of foundation/pile and installation method):

- A summary of proposed pile driving activities for this project, including an acoustic analysis for each pile installation method, which evaluates the timing, duration, and spatial extent of underwater sound, particle motion, and vibration during pile installation, and a threshold analysis which examines the thresholds of these impacts on physiological injury, mortality, and behavior for relevant life stages of EFH species (fish and invertebrates).
- A map with depth contours and habitat type with a delineation of the location, intensity, and areal extent of acoustic impacts (sound, particle motion, vibration) expected within and outside of the project area. This should include the radial distance from pile driving to threshold boundaries of physiological injury, mortality, and behavioral impacts for EFH species (fish and invertebrates). Detailed information on avoidance, minimization, and mitigation measures for pile driving impacts (for both sound and particle motion), and an adaptive monitoring plan to ensure target attenuation levels are met throughout the duration of the project.
- A schedule for the time of year proposed for pile driving activities and an analysis of the impacts of scheduled activities to relevant life stages of EFH species (fish and invertebrates). This should include a full review of the literature related to noise effects on Atlantic cod, and the best available information on the spatial and temporal distribution of cod aggregations within and adjacent to the project area.
- An evaluation of normal operational noise for one turbine and for the entire wind energy facility, including an acoustic analysis which evaluates the timing, duration, and spatial extent of underwater sound and particle motion, vibration, and a full threshold analysis which examines the thresholds of these impacts on physiological injury, mortality and behavior for relevant life stages of EFH species (fish and invertebrates). This should include a full review of the literature related to noise, particle motion, and vibration effects on species (and habitats) within and adjacent to the project area.
- Each element described in this section should also be applied to the evaluation of potential impacts on habitats and species outside of the project area, including HAPCs.

Fisheries and Benthic Monitoring Plan

We have also reviewed the fisheries and benthic monitoring plan for this project, dated October 2021. As currently proposed, we have significant concerns about the lack of monitoring of project impacts to existing, native complex habitats and the ability of the design to detect changes that may occur as a result of the proposed project. Specifically, the plan currently focuses the monitoring of “hard bottom” to WTGs and relocated boulders. There is no proposed monitoring to assess changes or impacts of the proposed project to the expanse of existing, natural complex habitats that are identified to occupy nearly half of the lease area. Further, it is

not clear that there is adequate sampling or replication to detect meaningful changes (i.e., the statistical power of the study to detect changes). A power analysis for each hypothesis to be tested should be included in the monitoring plan. The power analysis should specify the significance level, effect size, statistical power, and the minimum sample size estimated to be necessary to achieve that power. Further, while some of the proposed monitoring studies include a single year of baseline data collection, others are proposed to rely on previously obtained data. The proposed lack of multi-year, and seasonal, pre-construction data collection will place unnecessary constraints on the study's ability to distinguish between annual and seasonal variability and changes related to the project construction and operation. A further point is that all fisheries and habitat data should be stored in a publicly accessible database to facilitate data sharing and transparency rather than just being presented in a written summary report.

We also note that there is currently no incorporation of methods to evaluate changes in the distribution, abundance, composition of managed fish species, including sensitive life history stages, that may occur in response to the proposed impacts and changes to benthic habitats. The fisheries and benthic monitoring plan should address potential effects to managed fish species by habitat type, particularly for species and life history stages with specific benthic habitat associations. The monitoring plan should evaluate the changes in the community composition, and species distribution and abundance that may occur as a result of specific project components (e.g., WTGs, scour and cable protection, etc.) and construction development activities (e.g inter-array cable installation, WTG operation, etc.) effects on habitats, particularly for potential impacts that may occur as a result of the proposed development on the complex habitats of this lease are on Cox Ledge.

Further, while multiple monitoring surveys/hypotheses are focused on soft-sediment habitat changes, there is heavy reliance on SPI/PV imagery for evaluating the effects of the project to these benthic habitats. Although valuable information may be obtained by such a method, evaluating changes in the benthic community structure is critical to understanding the scope and effect of the proposed project for managed fish species. We recommend that infaunal grab sampling be included as a component to assess changes in the benthic community composition and structure for all soft bottom monitoring surveys.

We have included a spreadsheet of detailed comments as an attachment to this letter. The spreadsheet includes a separate sheet with comments we previously provided on the Fisheries Monitoring Plan submitted for our review in 2020. We have also included comments related to how the 2021 plan addresses the comments we provided on the 2020 plan, and additional comments related to the fisheries specific components of the October 2021 plan. Once you have reviewed our comments, a meeting with us should be scheduled to discuss our concerns so they can be addressed and incorporated into the fisheries and benthic monitoring plan prior to the initiation of our EFH consultation.

Conclusion

In summary, additional information related to the evaluation of adverse effects to EFH and the identification of sensitive and vulnerable habitats, species, and life history stages, comprehensive modeling (results and summaries of modeling) of changes to hydrodynamics, sediment movement, and the project design parameters and construction methodology is needed to

complete the EFH assessment. A completed EFH assessment that incorporates this information is necessary for us to be able to initiate consultation with you under 50 CFR 600.920(i)(2) and to provide appropriate EFH conservation recommendations for this project. Accordingly, we seek to extend the consultation process pursuant to 50 CFR 600.920(i)(5) so that you may provide us with better information for our evaluation of impacts and the development of EFH conservation recommendation.

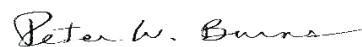
Upon receipt of a complete EFH assessment, our consultation can be initiated and we will review the assessment and develop EFH conservation recommendations. Consistent with the timeline under FAST 41, we expect you to provide us with an updated EFH assessment with the Notice of Availability of the DEIS and, provided this assessment has the information necessary to do so, we expect to initiate our consultation no later than November 1, 2022. We hope the information provided will help inform and guide you as the lead federal agency to ensure we receive the necessary information to complete our consultations in a timely and effective manner. If you have any questions regarding the EFH consultation process, please contact Alison Verkade at alison.verkade@noaa.gov.

Information Needs for the Biological Assessment

Staff from our Protected Resources Division (PRD) have reviewed the draft Biological Assessment (BA) received on April 25, 2022. The BA is incomplete and requires substantial revision before ESA consultation can be initiated. Detailed comments are being transmitted via e-mail; we note that many of the significant issues in the BA are similar to those highlighted above regarding the EFH assessment. For additional information regarding the ESA consultation and our comments on the BA, please contact Julie Crocker (Julie.Crocker@noaa.gov or 978-282-8480).

Thank you for the opportunity to comment on this important project and we look forward to working collaboratively with you to address these information needs.

Sincerely,



Peter Burns
Chief, Ecosystems Management Branch
Habitat and Ecosystem Services Division

Enclosure:

Revolution Wind Fisheries Research and Monitoring Plan Comments

cc:

Katherine Segarra, BOEM
Brian Krevor, BOEM
Brian Hooker, BOEM
Trevis Olivier, BOEM
Cheri Hunter, BSEE
Michele Desautels, USCG
Timothy Timmermann, USEPA
Christine Jacek, USACE
Naomi Handell, USACE
David Simmons, FWS
Lisa Engler, MACZM
Jeffrey Willis, RICRMC
Thomas Nies, NEFMC
Christopher Moore, MAFMC
Lisa Havel, ASMFC
Julie Crocker, NMFS
Andy Lipsky, NEFSC

Section Number	Section Name	Doc Page Number	NMFS Comment
General		General to Plan	Power analyses should be conducted for each response variable of interest, e.g., length, condition, diet.
General and Appendix 4		General to Plan and Appendix 4	Recommend adding additional years of post-construction monitoring for all studies. Results of power analysis for lobster and crab ventless crab survey (Appendix 4) indicate that power increases approximately 5% for each additional year of post-construction sampling.
4.0	Survey Methods	General to Section	A minimum of 3 years of baseline data are needed to assess interannual variability (Petruny-Parker et al. 2015). Recommend at least 3 years of pre-construction sampling. The benefit of this in terms of statistical power should be assessed with power analysis.
4.1, 4.2, 4.4	Trawl Survey, RWF Ventless Trap Survey, State Water Ventless Trap Survey	15-48; 55-61	Please provide evidence or a rationale to suggest that the reference or control sites identified will be outside the zone of influence of the wind farm. Current information suggests that wind wake effects and effects on hydrodynamics may extend 10s of kms from the boundary of wind farms (Christianset et al. 2022; Dorrell et al. 2022).
4.1.3	Trawl Survey Methods	23	Edit sentence: "The trawl survey will be executed using the trawl net that was designed by the Northeast Trawl Advisory Panel for the NEAMAP trawl survey." Should be edited to read "The trawl survey will be executed using the trawl net used for the VIMS NEAMAP trawl survey." If there are any modifications or deviations from that net, they must be identified.
4.1.3	Trawl Survey Methods	24	In section on biological sampling: For macroscopic maturity calls there is no physical sample that can be retained/revisited/ used for QA/QC. Some level of QA/QC should be outlined (at least initially), either with photographic images or histological samples. Analysts will likely question use of such data without some sort of QA/QC.
4.1.3	Trawl Survey Methods	25	In section on stomach contents analysis: It's good to see they're planning to use a 2-stage cluster sampling estimator (%Wk) to derive the average mass/percent of prey relative to other prey. This is our standard given the sampling design of the Bottom Trawl Survey. The sample size of 200 stomachs should be per predator-season-area. Please describe how 200 stomachs were determined to be adequate for assessing BSB and summer flounder diet by season and area. Ensure the focus is on season-area differences in prey composition. Please describe how you will account for changes in diet that are attributable to normal seasonal changes vs those attributable to wind farm development. The multivariate tests chosen are commonly used for these purposes, but will need to follow a relatively balanced design which can be challenging when sampling fish diets. There are other tests to consider if planning to address diet differences such as principle coordinate analysis, canonical correspondence analysis, etc.
4.1.5	Data Management & Analysis	28	In first sentence please add: "that is compatible with NEFSC data storage. An objective of this project is to enable sharing and use of this data with NEFSC scientists and the wider public."
4.1.5	Data Management & Analysis	28	We need the data digitally, not just in a report form.
4.1.5	Data Management & Analysis	30	For the paragraph starting with "If desired, absolute abundances ..." If it's VIMS survey gear, the abundance estimation protocol would be the same as for VIMS NEAMAP
4.2.2	Gradient Study Design and Procedures	48-49	The rationale for conducting the ventless trap gradient study during the operational phase only should be provided. The rationale for excluding the collection of baseline data should also be provided.
4.4	State Water Ventless Trap Survey – Export Cable	65-71	A clear statement of the study objectives is needed in Section 4.4. The questions or hypotheses this study will address should be provided. These questions/hypotheses should be directly linked to Section 4.4.4 Data Management and Analysis where it should be clearly stated how each analysis will address each question/hypothesis.
4.5	Benthic Monitoring	General to Section	The limited focus of the hard bottom monitoring to WTGs and areas where boulders are relocated is not sufficient for a project that is located on Cox Ledge and in a lease area where nearly 50% of the lease area is characterized as complex. The plan should be revised to include monitoring the response of existing, natural complex habitat to project development. This should include monitoring complex habitats adjacent to project activities and areas of complex habitats that are/will be disturbed during project construction. This should be done in addition to the proposed monitoring of areas where boulders are relocated. However, the boulder relocation monitoring should be expanded to include monitoring of the impact of the complex habitats where boulders were relocated from and monitoring of the habitats where boulders were relocated to, rather than focus solely on monitoring the individual relocated boulders and individual "undisturbed" boulders located well outside of potential project impact areas.
4.5	Benthic Monitoring	General to Section	There are no power analyses are included for any of the proposed benthic monitoring surveys. A power analysis should be completed for each of the proposed surveys.
4.5	Benthic Monitoring	General to Section	The proposed benthic (hard and soft sediment) habitat monitoring does not include sufficient baseline data collection. A minimum of 2 to 3 years of baseline data should be collected to account for natural variation. The monitoring plan should be updated to include sufficient baseline data collection.
4.5	Benthic Monitoring	General to Section	In multiple instances the proposed benthic monitoring plan references "forthcoming" benthic habitat maps, "preliminary" habitat mapping results, and "in progress" habitat mapping. The monitoring plan should be updated to include the final benthic habitat mapping that is consistent with NMFS Recommendations for Mapping Fish Habitat.
4.5.1	Hard Bottom Monitoring	63-67	Monitoring of changes in natural hard bottom habitats is focused on epifaunal growth on >1 m diameter boulders that will be relocated from IA cable corridors during seabed preparation for cable laying and how that differs from changes in established growth on boulders that are not moved. Given the differences in the colonization of bare boulders (species comp, speed of recovery, etc) vs added growth on "control" boulders the objectives of this survey need to be clarified.
4.5.1	Hard Bottom Monitoring	63-67	The focus of the hard bottom monitoring survey is to compare habitat "quality" (rugosity, epifaunal growth) in disturbed areas where boulders are relocated to undisturbed areas where seabed preparation activities did not occur. However, it is not clear how the full potential of indirect effects to adjacent "undisturbed" habitats will be considered in the selection of undisturbed area. Further, the proposed sampling protocol and metrics will provide very little information on the effects of seabed preparation and boulder relocation to existing habitats. The monitoring plan should be revised to assess effects of the seabed preparation and boulder relocation activities within the existing, natural complex habitats the activities occur within and adjacent to, as well as the effects of relocated boulders the the existing habitats where they are placed.
4.5.1	Hard Bottom Monitoring	63-67	A secondary objective of the hard bottom monitoring survey is to "characterize overall changes to the physical attributes of the hard bottom habitat resulting from seabed preparation for cable installation." We agree that this is an important objective, however there are no clear sampling protocols provided beyond assessing relocated boulders. The monitoring plan should be revised to include the monitoring of existing, natural hard bottom habitats within, and adjacent to, project disturbance areas.
4.5.1	Hard Bottom Monitoring	63-67	Definition of what habitat types constitute the habitat strata would be helpful in this section. Figure 18 illustrates backscatter intensity, but the text refers to "hard" vs "soft" bottom. Please provide further clarification on the proposed methods for selection habitat strata.
4.5.1	Hard Bottom Monitoring	63-67	Please provide additional details on the proposed sampling approach for each of the proposed hard bottom monitoring surveys. Specifically, please clarify the study design, proposed stations, samples, replication, and metrics proposed to be used for each survey. It also appears that there may be discrepancies between this and subsequent sections of the document. Please ensure all sections use consistent terminology and address each component of the proposed monitoring plan.
4.5.2.1	Survey Design Overview	68	We also note that for soft bottom habitats the plan states: "The benthic habitats along the RWEC are already documented in sufficient detail, and no additional pre-construction benthic monitoring will be conducted." We are not aware of any data within the RWEC that would provide sufficient pre-construction baseline data collection to support a soft-bottom monitoring plan along the RWEC.

Section Number	Section Name	Doc Page Number	NMFS Comment
4.5.2.2	SPI/PV Approach	68	While we appreciate the information that can be obtained using SPI, the lack of incorporation of benthic grabs to allow for the assessment of community composition changes and/or recovery substantially limits the utility of the data collected and post-construction monitoring in evaluating the effects of the project for benthic species and NOAA-trust resources. We recommend grab samples be incorporated into the proposed monitoring.
4.5.3.2	Acoustic and Video Collection	75	We appreciate the use of both forward and down-facing paired video and still cameras for the ROV survey. Please further clarify the sampling protocol for the ROV surveys. In particular, it is not clear how the video and imagery will be used in the proposed analysis.
4.5.5.1	Hard Bottom Video and Acoustics	77	Additional information on the proposed metrics, and rationale for the metrics proposed, should be provided. For example, for the boulder relocation it is stated that "qualitative details of habitat characteristics and quality, including categorical levels for presence of fish and decapods, presence of refuge areas surrounding substrate, and percent cover of emergent fauna," will be completed in addition to the mapping and quantification of "rugosity, boulder height and the ratio of hard bottom to soft bottom habitat." The value of the listed "qualitative" metrics is not clear. For monitoring impacts, recovery, and assessing changes to benthic habitats evaluating changes in benthic community structure is an important element. How benthic communities will respond to large-scale OSW development in this region is currently unknown. While, it is expected that seafloor rugosity and changes in the distribution of hard and soft sediments will change during project development, it is the effects of those changes to benthic and demersal species that is not well understood and should be a primary focus of the benthic monitoring plan. This is particularly true for this project that is located on Cox Ledge and includes a significant amount of natural complex habitats. We recommend that the proposed monitoring be revised to focus on benthic and demersal community structure effects and recovery of complex habitats within and adjacent to project activities.
4.5.5.2	Soft Bottom SPI/PV	77-78	It is stated that the substrate and biotic components of CMECS will be used to characterize sediments and biota observed in the SPI/PV imagery. We recommend the modified substrate CMECS definitions we have included in the NMFS Recommendations for Mapping Fish Habitat be included and all species be identified to the lowest feasible taxonomic group and quantified.
4.5.5.2	Soft Bottom SPI/PV	78	It is stated that replicate images will be summarized into a single value per analytical metric per station. Additional information on how this will be achieved for substrates should be provided.
4.5.5.3	Summary of Statistical Analysis	79	This section states that "mean macrobenthic cover and relative abundance of native versus non-native species and species composition (identified to the LPIL)" would be analyzed for the hard bottom surveys. Section 4.5.5.1 does not mention any of these metrics with the exception of "percent cover of emergent fauna" for the boulder relocation survey, and the identification of "non-native organisms...key epifauna, and quantifying biomass of the dominant member of the epifaunal communities" for the WTG specific survey. Please clarify what metrics are proposed and the statistical analyses that are proposed.

Section Number	Section Name	Doc Page Number	NMFS Comment on 2020 Plan	NMFS Comment on 2022 Plan
Section 4.1.2	Sampling Stations	15	The document references the complex habitat found in this area and that sampling will not be possible by trawl in all areas of the lease. What are the plans for additional sampling methods in areas where trawling is not possible.	Not addressed by this version of the monitoring plan
General	General	General	Given that the European studies have demonstrated that effects are greatest closest to the turbines, we would recommend choosing a gear or method that allows you to sample as close to the turbine as possible and a sampling design such as before-after-gradient that incorporates distance as a factor in your study.	BAG used for ventless trap survey, but not finfish trawl survey.
Section 4.1.2	Sampling Stations	16	Please clarify what is meant by the "spatial scale of project impacts"	
Section 4.1.2	Sampling Stations	16	What criteria will you use to choose between simple stratified and stratified random? This should be decided before the start of the study.	Sampling will not be distributed throughout the RWF Project area, but rather a subset of the project area that is outside of the documented boulder areas. Therefore, the trawl survey is not spatially balanced or random, but is in fact biased and not representative of the entire project area.
Section 4.1.2	Sampling Stations	16	Please indicate the level of power and effect size that a sample size of 20 is able to detect.	Sampling is now reduced to 15 trawl tows/area/season/year. Indicates 80% power to detect a 33% temporal decrease for species with CV <= 1.2 and ~40% temporal decrease for species with CV <= 2.0
Section 4.1.5	Data Management and Analysis	19	Please clarify what is meant by a BACI statistical model. Does this refer to analysis of variance (ANOVA)?	Addressed. Edited to clarify statistic model. A GLM or GAM with a 90% CI calculated for the BACI contrast.
Section 4.1.5	Data Management and Analysis	19	Rather than "identical", suggest using the phrase "statistically indistinguishable".	Correction made
Section 4.1.5	Data Management and Analysis	19	The wording in the statistical analysis section is confusing. If you are planning to conduct analysis of variance (ANOVA) following a BACI design, then it should be stated that the main effects in your model are time period (before and after) and location (treatment and control). With this model, you will be primarily interested in the main effects and the interaction effect.	Clarification made. The contrast that will be considered is between the average temporal change at the wind farm compared to the average temporal change at the reference.
Section 4.1.5	Data Management and Analysis	20	Recommend conducting prospective power analysis using some of the data sets listed at the beginning of the document.	Addressed. Power analyses that used data from BIWF and NEFSC trawls were conducted and reported. The RW trawl study seeks to achieve a power of 0.8.
Section 4.1.5	Data Management and Analysis	20	In reference to the following text, if there is insufficient trawlable habitat to conduct a powerful enough study to detect effects, then I would suggest using a sampling method other than a bottom trawl. This should not be a reason to conduct a study of low power. Increasing frequency will not address the issue of statistical power at the level desired. "If greater sampling intensity is required, and it is not possible to increase the number of samples collected in a season (e.g., due to limited amounts of trawlable habitat), increasing the frequency of surveying (e.g., 6 rather than 4 surveys per year) may be considered."	Addressed. This text that this comment addressed is no longer in the document. An adaptive sampling strategy is proposed that will use data collected early on to assess statistical power. If needed, sampling will be adapted based on this assessment.
Section 4.2	Ventless Trap Survey - Lobster and Crabs	21	Please use either "control" or "reference" consistently throughout the document.	Not addressed. Control and Reference are both still used.
Section 4.2.1	Survey Design and Procedures	22	Please clarify what is meant by "direct effects"	Not addressed. The text still refers to "direct effects" but these are not specifically defined. This section provides some background on EMF and sediment plumes but a clear objective is not stated. It would be helpful to have a sentence clearly stating the objective of the study.
Section 4.2.1	Survey Design and Procedures	22	"We are currently conducting a power analysis". Please provide the results and interpretation for this power analysis.	Addressed. Power analysis that used data from the SNECVTS were conducted and reported. The RW ventless trap study seeks to achieve power of 0.8.
Section 4.2.2	Ventless Trap Trawl Methods	25	Please indicate how many grid cells will be sampled.	Addressed. 15 grid cells in the impact and 10 grid cells in the control will be sampled in the RW ventless trap study.
Section 4.2.4	Data Management and Analysis	28	The wording in the statistical analysis section is confusing. If you are planning to conduct analysis of variance (ANOVA) following a BACI design, then it should be stated that the main effects in your model are time period (before and after) and location (treatment and control). With this model, you will be primarily interested in the main effects and the interaction effect.	Addressed. The contrast that will be considered is between the average temporal change at the wind farm compared to the average temporal change at the reference.
Section 5	Data Sharing Plan	29	Is a fish pot survey part of this study?	
Section 5	Data Sharing Plan	29	The text indicates that data will be shared upon request. Recommend placing these data on an existing data portal or creating a data portal that stakeholders can access.	
Global			Recommend including all measures related to protected species from the South Fork FMP, including any additional measures from EFPs/LOAs.	
Global			The monitoring plan should include that information collected for any incidentally caught Atlantic sturgeon will follow the NEFOP Observer Program protocols, not the ASM protocols. ASM collects far less information on incidentally captured sturgeon than NEFOP Observers. Given that the fisheries monitoring for the project is being conducted as scientific research and not as fishing, the observer coverage for incidentally captured sturgeon during the research should follow the more rigorous information and sample collection (i.e. fin clip for genetics analysis) used by NEFOP Observers rather than the less rigorous information collection and no sample collection of the ASM program that was set up specifically for the Multispecies FMP.	
Section 4.1.3	Trawl Survey Methods	18	The FMP mentions that "...contracted scientists will follow the sampling protocols described for At-Sea Monitors (ASM) in the Observer On-Deck Reference Guide (Northeast Fisheries Science Center, 2016)..." - how will information be shared/communicated if sampling of a protected species occurs?	
Section 4.1.3	Trawl Survey Methods	18	The paragraph pertaining to reporting protected species interactions should apply to all sampling methods in the FMP.	
Section 4.2	Ventless Trap Survey	20	Add text on reporting protected species interactions, see comment above, with additional measures: Report if line and/or trawls are missing, mark buoy/endline per instructions from NOAA GARFO PRD, 1700lb breaking strength buoy/end lines should be used.	