Ms. Michelle Morin  
Program Manager  
Office of Renewable Energy  
Bureau of Ocean Energy Management  
45600 Woodland Road  
Sterling, VA 20166  

RE: Docket Number BOEM-2018-0010  
Scoping Comments for the Notice of Intent to Prepare an Environmental Impact Statement for Deepwater Wind South Fork LLC’s Proposed Wind Energy Facility Offshore Rhode Island and Massachusetts  

Dear Ms. Morin,  

We have reviewed the October 17, 2018, Federal Register (FR) Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for Deepwater Wind South Fork LLC’s proposed wind energy facility offshore Massachusetts. An EIS will be prepared by the Bureau of Ocean Energy Management (BOEM) to consider the approval of a Construction and Operation Plan (COP) submitted by Deepwater Wind South Fork LLC, and analyze the construction and operation of an up to 15 wind turbine generator (WTG) wind energy facility offshore Massachusetts and Rhode Island, approximately 19 miles southeast of Block Island, Rhode Island. The WTGs would connect via a transmission cable to a grid in East Hampton, New York, on the east end of Long Island. The project would be located in water depths ranging from 33 to 38 meters (approximately 108 to 125 feet). The project would include submarine cables between the turbines (inter-array cables) and an offshore substation. The project would also include an Operations and Maintenance (O&M) facility located on shore at either Montauk in East Hampton, New York, or Quonset Point in North Kingstown, Rhode Island. According to information provided in the draft COP, the proposed project would involve WTGs spaced approximately 1.3 to 1.6 km (0.8 to 1.0 statute miles) apart within the Lease Area. The WTGs would be located within an area referred to in the COP as the Maximum Work Area (MWA), which would have an approximate buffer of at least 1,000 m (3,280 feet) around the outer edge of the WTG layout. While the MWA would include limited areas outside the boundary of the Lease Area, all WTGs and foundations would be installed within the southern portion of the BOEM Renewable Energy Lease Area OCS-A 0486. Port facilities in New York, Rhode Island, Massachusetts, and Connecticut will support offshore installation activities. Construction for the South Fork Export Cable (SFEC) onshore project component will occur in East Hampton, New York. According to the COP, the New Bedford Marine Commerce Terminal in New Bedford,
Massachusetts, may be used for fabrication, assembly, deployment, and decommissioning activities. The Port of New London, Connecticut, is under consideration as a backup location for additional support.

The NOI commences the public scoping process for identifying issues and potential alternatives for consideration in the Deepwater Wind South Fork COP EIS. Through the NOI, you are requesting information on significant resources and issues, impact-producing factors, reasonable alternatives (e.g., size, geographic, seasonal, or other restrictions on construction and siting of facilities and activities), and potential mitigation measures to be analyzed in the EIS. The Draft COP was also made available with the NOI. While we have conducted a preliminary review of the COP to help inform our scoping comments, specific comments related to sections of the Draft COP or associated reports will be provided to you as part of our cooperating agency role. The NOI invites Federal and state agencies, tribes, and local governments to become a cooperating agency in the preparation of its EIS analyzing the proposed Deepwater Wind South Fork COP. By separate letter, we accepted BOEM’s invitation to participate as a cooperating agency to provide technical assistance for marine resources over which NOAA has legal jurisdiction and special expertise, including commercial and recreational fisheries and conservation of Essential Fish Habitat (EFH), and species protected under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). It is critical that data related to the occurrence and status of these resources, evaluation of effects to them, and development of responsive mitigation are critical elements of the National Environmental Policy Act (NEPA) process which require early identification in the scoping process and full evaluation throughout the NEPA process.

We offer the following comments related to significant issues and information and analyses needs for the EIS related to resources in the project area over which we have special expertise or legal jurisdiction, including associated consultation and authorization requirements.

**Project Purpose and Need**
The EIS for the proposed project must clearly describe the purpose and need for the project. A clearly defined project purpose is essential to the formulation and evaluation of a reasonable range of project alternatives, as required by NEPA. Under the One Federal Decision requirements of E.O. 13807, we have provided comments and our concurrence on the purpose and need drafted for EIS on September 24, 2018.

**Alternatives Analysis**
The “Alternatives Analysis” section of the EIS should include a discussion of the full range of reasonable alternatives to the proposed action, including those that are less damaging to the environment. We believe that the development of project alternatives should consider the balance between energy generation and environmental impacts. The analysis should include development of mitigation measures which follow the sequence of avoidance, minimization, and mitigation of impacts.

A number of alternatives should be considered specific to the proposed project. First, alternative locations within the lease area should be considered, particularly if such locations would minimize impacts to sensitive habitats and other marine resources. An evaluation that considers
the most appropriate location for project siting within the lease area should be included. If alternative locations within the larger lease area are not considered, it will be necessary to provide a detailed explanation and justification as to why other areas within the lease were not evaluated. Further, alternative spacing and layouts for the project within the MWA should be considered under the EIS alternatives analysis. In addition to the proposed spacing alternatives outlined in the COP, the potential need for greater than one-mile spacing should be considered, particularly if such an alternative could minimize environmental impacts in the lease area. Given the extent of sensitive habitats on Cox Ledge and within the MWA, alternatives for micro-siting turbine locations to minimize impacts to these habitats should be considered. Modifications to cable installation and layout should also be evaluated as part of any turbine spacing alternative.

Commercial and recreational fishing are essential components of the existing landscape that must be preserved in the development of the project. Alternatives for turbine layout, location, and spacing, particularly related to impacts on fishing operations and transit, are important considerations for the alternatives analysis in the EIS. Operation of ongoing scientific surveys should also be considered, including our science center surveys, the Northeast Area Monitoring Assessment Program (NEAMAP), and state surveys. We recommend you work closely with the commercial and recreational fishing communities and the U.S. Coast Guard to determine the most appropriate spacing and orientation of the turbines.

The proposed export cable landing site options should also be evaluated in the alternatives analysis. The cable corridor alternatives should be evaluated for minimization of impacts to sensitive habitats, impacts related to the methods of construction, and the extent of the route that allows for full cable burial to minimize permanent habitat impacts and potential interactions with fishing gear.

Affected Environment
The “Affected Environment” section of the EIS should cover a sufficient geographic area to fully examine the impacts of the proposed project and support an analysis of the cumulative effects. Within this section, the EIS should include results of on-site surveys, and site specific habitat information including the physical oceanography (temperature, salinity, depth, and dissolved oxygen), plankton and larval distribution, chlorophyll a, and characterization of benthic communities. Additional details should be provided related to sensitive habitats in the project area. This section should also include information on the seasonal abundance and distribution of marine mammals, sea turtles, fish, and invertebrates throughout the area that may be directly or indirectly impacted by the project. It is important that the EIS discuss seasonal changes in the environment and how that influences the distribution and abundance of marine resources. The “Affected Environment” section should also include information on any necessary landside facilities and the staging locations of materials to be used in construction.

Due to the significance of commercial and recreational fisheries issues associated with offshore development, we recommend that “Fisheries Resources” be addressed as a separate section within the “Affected Environment” section. This section should include all of the biological, cultural, and socioeconomic issues related to fisheries resources. Specifically, this section should include an assessment of managed species, their status, and habitat requirements; landings and value of landings and recreational effort; fishery participants including vessels, gear types,
and ports; and potential impacts beyond the vessel owner level (processors, distributors, etc.). This evaluation should cover the immediate project area and adjacent locations.

**Environmental Consequences**

The "Environmental Consequences" section of the EIS should consider impacts resulting from the construction, operation and maintenance, and decommissioning of the proposed facility. Impact descriptions should include both magnitude (negligible, minor, moderate, major) and direction (beneficial or negative). This section should consider all of the individual, direct, and indirect effects of the project, including those impacts that may occur offsite as a result of proposed project, such as construction of landside facilities necessary to construct and support operations of the Deepwater Wind South Fork project. Any conclusions related to the level of project impacts should be fully supported by the analysis in the EIS.

Temporary, long-term and permanent direct and indirect impacts to water quality, protected species, habitats, and fisheries (ecological and economic) throughout construction, operation, and decommissioning should be addressed in the EIS. All activities included in construction of the project should be considered, including the deposition of fill material, dredging, water withdrawals, pile driving, increased vessel traffic, anchoring, and transmission cable installation. The time of year that construction activities occur would also be an important factor in evaluating potential biological, economic, and social impacts of the project. The ecological impacts resulting from the loss of seafloor and the associated benthic communities and forage base should be evaluated. This should include a discussion of the ecological and economic impacts associated with habitat conversion (e.g., soft sediments to hard bottom/artificial reef habitat) from turbine installation. This analysis should also include site-specific benthic data collection and an evaluation of impacts to higher trophic levels due to the loss of prey species. Potential impacts to marine resources associated with construction and operation of the project, such as elevated noise levels, increased vessel traffic, electromagnetic fields (EMF), habitat alteration, and localized changes in currents should be evaluated. Impacts associated with decommissioning of the project should also be included, with details on how decommissioning would occur and be funded as well as the environmental consequences associated with project removal.

In addition to focused evaluations on protected species, fish, invertebrates, and habitats, the “Environmental Consequences” section of the EIS should include a subsection evaluating impacts to commercial and recreational fisheries. The EIS should discuss the economic impacts caused by the temporary or permanent loss of bottom habitat, impacts of any temporary exclusion zones during construction, and potential direct or indirect (i.e., resource distribution or abundance changes) impacts to commercial and recreational fishing activities from project operation. This evaluation should also include any potential displacement of fishing activities and resulting increased fishing pressure in other locations.

As we explain below, with respect to protected species, information and analyses related to the occurrence and condition of and impacts to EFH, Endangered Species Act (ESA) listed species, designated critical habitat, and ESA non-listed marine mammals should be of sufficient detail to support the related consultation and authorization processes under the ESA, Magnuson-Stevens Fishery Conservation and Management Act (MSA) and MMPA. To the extent that an
authorization under the MMPA is required, NMFS intends to adopt BOEM’s EIS to satisfy its independent NEPA obligations.

**Mitigation**
The EIS should include a discussion of mitigation for adverse impacts resulting from the construction and operation of the wind energy facility and associated cable installation. Measures to avoid and minimize impacts such as soft start procedures, noise dampening technologies, construction timing, anchoring plans, or micro-siting should be discussed in detail. The EIS should analyze temporary effects and anticipated recovery times for marine resources within the impacts analysis. While the project should be planned to avoid and minimize adverse effects to the marine environment to the greatest extent practicable, compensatory mitigation should be proposed to offset permanent and temporary impacts. Social and economic losses as well as ecological losses should be considered, particularly any loss of fisheries revenue resulting from the construction and operation of the project. Measures to compensate for potential economic losses should be discussed in the EIS.

**Cumulative Effects**
The EIS should include a complete analysis of the cumulative impacts of the project. This analysis should describe the effects of the proposed project, which in combination with any past, present, and reasonably foreseeable future actions, may result in cumulative impacts on the ecosystem and human environment. This analysis should include a broad view of all reasonably foreseeable activities, including but not limited to, energy infrastructure (including future wind energy projects), sand mining, aquaculture, fisheries management actions, disposal sites, and other development projects. Offshore wind development projects that are in the leasing or site assessment phase should also be evaluated. Specifically, the cumulative effects analysis should consider other existing, proposed or planned energy infrastructure projects in the vicinity of the project including, but not limited to, Bay State Wind, Vineyard Wind, Revolution Wind, and the potential for development of the three Massachusetts Wind Energy Areas that have not yet been leased. Proposed wind development projects offshore New York, New Jersey, and others in the mid-Atlantic region should also be included in the analysis of cumulative effects on marine resources. This is particularly important for migrating species, such as marine mammals, sea turtles, fish, and invertebrates that may use or transit multiple proposed project areas. The potential cumulative impacts on the migration and movements of these species resulting from changes to benthic and pelagic habitats and potential food sources due to the presence of multiple projects should be evaluated in the cumulative effects analysis.

The EIS should evaluate in detail the cumulative impacts on protected species and fisheries resources associated with overlapping construction activity of adjacent projects, including elevated noise levels, increased vessel traffic, displaced fishing effort, and changes in species abundance, among other impacts. Specific information related to the timing of the construction activity and the expected number of proposed construction seasons is important, particularly for evaluating cumulative impacts to marine mammals, sea turtles, and spawning activity of fish and invertebrates.

An assessment of cumulative impacts of existing and proposed transmission cables should also be considered. Based on the proposed wind development projects in this region, there is the
potential for substantial additive impacts associated with the number of required cables. As part of the cumulative effects analysis, measures to minimize the additive impacts should be considered, including the evaluation of designated cable routes and coordination and consolidation with adjacent projects to minimize cumulative impacts.

The cumulative impacts of multiple projects on fishing operations, such as changes to time and area fished, gear type used, and fisheries targeted, should be evaluated in the EIS. It is important to evaluate cumulatively how the projects could affect other fisheries operating outside the project area due to effort displacement, shifts from one fishery to another, and increased fishing effort due to fishing in less productive areas. The EIS should consider the socio-economic impacts on fishing communities that cannot relocate fishing activity due to cultural norms (fishing grounds claimed or used by others), cost limitations (too expensive to travel greater distances to other fishing areas), and other relevant limiting factors. Shifts in fishing behavior, including location and timing, may result in cumulative impacts to habitat as well as target and bycatch species that have not been previously analyzed in fishery management actions. It is important to address this in the EIS, as the analysis should also consider cumulative impacts of this project with existing fisheries management measures. The number and spacing of turbines in relation to adjacent projects should also be considered in detail and modifications should be made to minimize cumulative impacts of adjacent projects on fishing operations and vessel transit.

Given the extent of potential offshore wind development on the outer continental shelf and in this region in particular, the cumulative effects analysis will be a critical component of the EIS. The establishment of a regional monitoring program will be important to help understand potential impacts of wind energy projects and identify potential mitigation measures for any future projects. We support the establishment of a regional scientific research and monitoring framework to better identify and understand cumulative impacts and interactions between marine resources, fisheries, and offshore wind energy. As you are aware, we have been working with state agencies and our Northeast Fisheries Science Center staff to determine primary considerations for a regional monitoring program for wind development on the outer continental shelf and we are encouraged to see ongoing efforts to collaborate and coordinate research priorities. We encourage you to consider monitoring at all scales and take an ecosystem-based approach to assessing monitoring needs of fisheries, habitat, and protected species. This will be important to not only assess the cumulative impacts of project development, but also to help inform any future development. Given our agency expertise in this area, we encourage you work closely with us in the development of any monitoring program.

Endangered Species Act
The following listed species may be found in the Deepwater Wind South Fork project area: Endangered North Atlantic right (Eubalaena glacialis), fin (Balaenoptera physalus), sei (Balaenoptera borealis), and sperm (Physeter macrocephalus) whales; endangered Kemp’s ridley (Lepidochelys kempi) and leatherback (Dermochelys coriacea) sea turtles; threatened North Atlantic distinct population segment (DPS) of green (Chelonia mydas) sea turtles and Northwest Atlantic DPS of loggerhead (Caretta caretta) sea turtles; and five DPSs of Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus). Sea turtles are only present in the project area seasonally, with occurrence largely limited to May - November. More information on these
species is available on our Greater Atlantic Regional Fisheries Office (GARFO) website: https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/index.html. North Atlantic right whale sightings are available at our Northeast Fisheries Science Center webpage: https://www.nefsc.noaa.gov/psb/surveys/. There is no designated critical habitat that overlaps with the lease area.

**ESA Section 7 Consultation**
Under section 7(a)(2) of the ESA, each Federal agency is required to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species. Because the construction, operation, and decommissioning of the Deepwater Wind project may affect ESA-listed species, section 7 consultation is required. It is our understanding that you will be the lead Federal agency for this consultation and that you will coordinate as necessary with any other Federal agencies that may be issuing permits or authorizations for this project so that we can carry out one consultation that considers the effects of all relevant Federal actions (e.g., issuance of permits by the U.S. Army Corps of Engineers and/or the U.S. Environmental Protection Agency) regarding any wind energy facility proposed in the lease area.

**Considerations for the Environmental Impact Statement**
We expect that any environmental documentation regarding a proposed wind facility in the lease area will fully examine all potential impacts to our listed species. The construction and operation of a wind energy facility or installation of electrical cables have the potential to impact listed species and the ecosystems on which they depend. Potential effects of offshore wind energy development on listed species that should be considered by you when making any determinations about construction and operation in the Deepwater Wind South Fork project area include: Potential for an increased risk of vessel strike due to increases in vessel traffic and/or shifts in vessel traffic patterns due to the placement of structures; impacts of elevated underwater noise during any geophysical and geotechnical surveys, pile driving, and other activities; any activities which may displace individuals from preferred habitats, alter movements or feeding behaviors, increase stress and/or result in temporary or permanent injury or mortality; disruption of benthic habitats during construction-related barge anchorage, infrastructure placement, pile driving, or cable route development that may increase the risk of entanglement or change of migratory behavior, alter prey assemblages or result in the displacement of individuals; and any impacts to water quality. The EIS should also consider how any proposed wind farm may displace or alter fishing or vessel activity that may change the risk to protected species from interactions with fisheries or vessels either within or outside the lease area.

It is our understanding that you will develop a Biological Assessment (BA) to support your eventual request for ESA section 7 consultation and that this document will be independent from the NEPA document. We also understand that the BA and the NEPA document are likely to evaluate effects of activities consistent with a design envelope and are likely to take a “maximum impact scenario” approach to assessing impacts to listed species that may occur. We encourage early coordination with us to determine which impact producing factors should be analyzed based on a “worst case” or “maximum impact” scenario and which parts of the design envelope would need to be narrowed to carry out a reasonable analysis that would support your request for section 7 consultation.
We encourage you to work with Deepwater Wind to develop a project schedule that minimizes potential impacts to North Atlantic right whales. Marine mammal responses to sound can be highly variable, depending on the individual hearing sensitivity of the animal, the behavioral or motivational state at the time of exposure, past exposure to the noise which may have caused habituation or sensitization, demographic factors, habitat characteristics, environmental factors that affect sound transmission, and non-acoustic characteristics of the sound source, such as whether it is stationary or moving (NRC 2003). While BOEM and Deepwater Wind will need to consider effects to all listed species, given the imperiled status of right whales, minimizing exposure of individual right whales to activities that could result in harm, harassment, injury, or mortality is critical. In addition, the EIS should consider requiring the development of minimization and monitoring measures that minimize the risk of vessel strike and exposure to potentially harassing or injurious levels of noise to marine mammals, sea turtles, and Atlantic sturgeon.

**Marine Mammal Protection Act**

Section 101(a) of the MMPA (16 U.S.C. 1361) prohibits persons or vessels subject to the jurisdiction of the United States from taking any marine mammal in waters or on lands under the jurisdiction of the United States or on the high seas (16 U.S.C. 1372(a)(1), (a)(2)). Sections 161(a)(5)(A) and (D) of the MMPA provide exceptions to the prohibition on take, which give us the authority to authorize the incidental but not intentional take of small numbers of marine mammals, provided certain findings are made and statutory and regulatory procedures are met. Incidental Take Authorizations (ITAs) may be issued as either (1) regulations and associated Letters of Authorization (LOA) or (2) an Incidental Harassment Authorization (IHA). LOAs may be issued for up to a maximum period of 5 years; IHAs may be issued for a maximum period of 1 year. We also promulgated regulations to implement the provisions of the MMPA governing the taking and importing of marine mammals (50 Code of Federal Regulations (CFR) part 216) and published application instructions that prescribe the procedures necessary to apply for incidental take authorization. U.S. citizens seeking to obtain authorization for the incidental take of marine mammals under NMFS’ jurisdiction must comply with these regulations and application instructions in addition to the provisions of the MMPA.


Because activities associated with the construction, operation, and decommissioning of the South Fork Wind Farm (SFWF) have the potential to result in the harassment\(^1\) of marine mammals, we

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\(^1\) Harassment, as defined in the MMPA for non-military readiness activities (Section 3(18)(A)), is any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment) or any act of pursuit, torment, or annoyance that has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns (Level B harassment). Disruption of behavioral patterns includes, but is not limited to, migration, breathing, nursing, breeding, feeding or sheltering.
anticipate that a request for authorization pursuant to section 101(a)(5) of the MMPA may be submitted to us by the project proponent. We must therefore be able to conclude the EIS contains an adequate evaluation of the direct, indirect, and cumulative impacts on all marine mammals that may be present in the project area. Specifically, the EIS must include an analysis of the impacts of elevated underwater noise on marine mammals resulting from pile driving, site characterization surveys, and other project-related activities; the risk of vessel strike due to increases in vessel traffic and/or changes in vessel traffic patterns; any activities that may increase the risk of entanglement; any activities that may result in the displacement of individuals or changes to migratory behavior; any activities that may result in altered prey assemblages or changes in feeding behavior; and any other activities that may result in harassment, injury or mortality.

Since the issuance of an ITA would allow for the taking of marine mammals, consistent with provisions under the MMPA and incidental to an applicant’s lawful activities, NMFS, in accordance with 40 CFR 1506.3 and the Memorandum of Understanding for implementing One Federal Decision under Executive Order 13807, intends to adopt this EIS associated with its decision to grant or deny Deepwater Wind South Fork, LLC’s request for an ITA pursuant to section 101(a)(5)(A) or (D) of the MMPA. When we serve as a cooperating agency and we are adopting another agency EIS, we ensure all resources under our jurisdiction by law and special expertise are sufficient, considered, and addressed in the lead agency EIS. This is part of our role as a cooperating agency per 40 CFR 1501.6 and in determining whether the EIS is suitable for adoption per 40 CFR 1506.3 and NOAA’s Policy and Procedures\(^2\). A summary of NOAA’s adoption requirements is below and the policy and procedures are available at [https://www.nepa.noaa.gov/docs/NOAA-NAO-216-6A-Companion-Manual-01132017.pdf](https://www.nepa.noaa.gov/docs/NOAA-NAO-216-6A-Companion-Manual-01132017.pdf).

We may adopt all or portions (e.g., specific analyses, appendices, or specific sections) of NEPA document prepared by another federal agency, regardless of cooperating agency status, if the action addressed in the adopted document (or portion) is substantially the same as that being considered or proposed by NOAA and NOAA determines the document (or portion) satisfies 40 CFR 1506.3. Subsequently, we must determine BOEM’s EIS addresses the following to be considered adequate for adoption for the issuance of ITAs:

- The other agency EIS (or portion thereof) fully covers the scope of our proposed action and alternatives and environmental impacts.
- An adequate evaluation of the direct, indirect, and cumulative impacts on marine mammals and the marine environment, including species listed under the ESA.
- An adequate discussion of the MMPA authorization process necessary to support implementation of the action.
- A reasonable range and evaluation of alternatives to the proposed action, including a no action alternative and alternatives to mitigate adverse effects to marine mammals, including species listed under the ESA.
- There is a thorough description of the affected environment including the status of all marine mammals species likely to be affected.

- There is a thorough description of the environmental impacts of the proposed action and alternatives, including direct, indirect, and cumulative impacts on marine mammals and projected estimate of incidental take.
- Identification and evaluation of reasonable mitigation measures to avoid or minimize adverse impacts to marine mammals, including species listed under the ESA.
- The listing of agencies consulted.

As part of our review, we must also determine if your EIS meets the requirements of 40 CFR Part 1500-1508, specifically basic requirements for an EIS as described in 40 CFR 1506.3.

**Magnuson Stevens Fishery Conservation and Management Act**
The MSA requires federal agencies to consult with the Secretary of Commerce, through NMFS, with respect to “any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any essential fish habitat (EFH) identified under this Act,” 16 U.S.C. § 1855(b)(2). Pursuant to the MSA, each fishery management plan (FMP) must identify and describe EFH for the managed fishery, and the statute defines EFH as “those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity” 16 U.S.C. § 1853(a)(7) and § 1802(10). NOAA’s regulations further define EFH adding, among other things, that “necessary means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem” 50 CFR § 600.10.

As currently described in the NOI, this facility will be constructed and operated in an area described and identified as EFH for fish managed under the New England Fishery Management Council (NEFMC), the Mid-Atlantic Fishery Management Council (MAFMC), and NMFS. Fish managed under the fishery management plans include the Northeast multispecies, sea scallop, Atlantic salmon, monkfish, Atlantic herring, spiny dogfish, northeast skates, small-mesh multispecies, red crab, bluefish, Atlantic mackerel, squid, butterfish, Atlantic surfclam and ocean quahog, summer flounder, scup, black sea bass, and Atlantic highly migratory species.

The most up-to-date EFH and Habitat Areas of Particular Concern (HAPC) designations should be used in your evaluation of impacts to EFH. The NEFMC Omnibus EFH Amendment 2 was approved on January 3, 2018, and implemented April 9, 2018. EFH and Habitat Areas of Particular Concern (HAPC) for 28 species managed by the NEFMC have been modified under the Omnibus Amendment. The EFH mapper can be used to query, view, and download spatial data for the species managed by the New England and Mid-Atlantic Councils and for Highly Migratory Species. The EFH mapper can be accessed from our habitat website at [https://www.habitat.noaa.gov/protection/efh/efhmapper/](https://www.habitat.noaa.gov/protection/efh/efhmapper/).

You should also be aware that the Final Amendment 10 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP) went into effect on September 1, 2017. This amendment to the FMP contains several changes to the EFH designations for sharks and other highly migratory species. More information can be found on our website at [https://www.fisheries.noaa.gov/action/amendment-10-2006-consolidated-hms-fishery-management-plan-essential-fish-habitat](https://www.fisheries.noaa.gov/action/amendment-10-2006-consolidated-hms-fishery-management-plan-essential-fish-habitat).
EFH Assessment

Due to the potential for substantial adverse effects to EFH from the proposed project, an expanded EFH consultation as described in 50 CFR § 600.920(f) should be included within the EIS. The EFH final rule published in the Federal Register on January 17, 2002, defines an adverse effect as: “any impact which reduces the quality and/or quantity of EFH.” The rule further states that:

An adverse effect 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 ecosystems components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from action occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The EFH Assessment must contain “a description of the action; an analysis of the potential adverse effects of the action on EFH and the managed species; the federal agency’s conclusions regarding the effects of the action on EFH; and proposed mitigation, if applicable” 50 CFR § 600.920(e)(3). As part of the expanded EFH Assessment, additional information including results of on-site inspections, views of recognized experts, a review of pertinent literature, an analysis of alternatives, and any other relevant information should be included.

Project specific information should be addressed in the expanded EFH Assessment such as identification and characterization of sensitive habitat types; an evaluation of habitat impacts that may result from proposed construction methods; pre-, concurrent, and post-construction monitoring; and proposed decommissioning procedures.

The EFH expanded consultation process allows the maximum opportunity for NOAA Fisheries Service and the Federal action agency to work together to review the action’s impacts on EFH, and to develop EFH consultation recommendations. The EFH consultation is a separate review mandated pursuant to the terms of the MSA, although you may use the NEPA document as the vehicle within which to present the EFH assessment. Should the EFH Assessment be included in the EIS, it should be contained within a separate section of the document and be clearly identified as an EFH assessment.

The expanded EFH Assessment should include a detailed evaluation of the anticipated impacts of construction, operation, and decommissioning on EFH and sensitive life stages. The project area is located on Cox Ledge, which is known to contain complex hard bottom habitats that may be more vulnerable to impacts. According to the South Fork Wind Farm COP, the project area has a highly variable and patchy distribution of benthic habitats, including sand sheets, sand with mobile gravel, and patchy cobbles and boulders on sand. The EFH Assessment should include full delineation, enumeration, and characterization of all habitat types, including sensitive habitats that may be impacted by the project. The proposed project area overlaps with EFH for species and life stages that depend on these offshore habitats and inshore estuaries and embayments.
Some species and life stages that may be more vulnerable to impacts of construction and operation are designated in the project area. Additional analysis should be included for federally managed species and life stages that may be more vulnerable to impacts of the projects, such as inmobile species, larvae, or demersal eggs. While the EFH Assessment in the COP sufficiently characterizes the habitat requirements by life stage for species with EFH designated in the project area, there was limited analysis on potential impacts of the project to spawning habitat and activity. For example, Atlantic cod spawn in this region between late fall and early spring. Similar to longfin squid, Atlantic cod aggregate during spawning events, making this critical life stage more vulnerable to construction activities. Disruption of spawning behavior over a prolonged period could potentially compromise reproductive success and subsequent recruitment over the short- or long-term. An evaluation of potential impacts of the project on spawning activity in the area should be included in the EFH Assessment along with results of Deepwater Wind’s 2018-2019 reconnaissance surveys to identify cod spawning aggregations in the region. Species and life stages that depend on benthic habitats such as demersal eggs (e.g., squid mops, ocean pout and winter flounder eggs) may be more susceptible to turbidity, bottom disturbance, and burial due to accretion of suspended sediment. Sessile species (e.g., Atlantic scallops) and fish with early life stages that depend on benthic habitats may also be vulnerable to construction activities. While it will be important to assess impacts on all federally managed species with designated EFH in the project area, the EFH assessment should include additional analysis of the more sensitive habitats and life stages in both the offshore and inshore project areas.

The EFH Assessment should also include a detailed analysis of the effects of construction activity and potential impacts on EFH. Results of acoustic modeling for installation of the proposed turbine foundation types should be included in the EFH Assessment. The acoustic analysis should be specific to fish and invertebrates and assess the extent of anticipated impacts from sound effect and particle motion. The extent of area associated with mortality, impairment, and behavioral responses in fish and invertebrates should be evaluated and illustrated. Potential impacts of elevated noise levels to spawning activity will also be important to address in the NEPA analysis and EFH Assessment. The EFH Assessment in the South Fork COP does include an evaluation of water withdrawals from cable installation using existing ichthyoplankton and zooplankton data, and this analysis should be included in the EIS and EFH Assessment to evaluate the expected impacts to sensitive life stages. Should dredge material be required for gravity based foundations, specific information on the type of material and where and how it will be obtained should also be included in the EFH Assessment. Information related to the time of year and duration of proposed construction activities will be necessary to evaluate the extent of impacts, as habitat use, species, and life stages present will depend on temporal and seasonal factors.

Impacts to EFH from project operations should also be evaluated in detail in the EFH Assessment including habitat alteration and any localized hydrodynamic changes. The EFH Assessment in the COP focuses the evaluation of impacts from the presence of the foundations on seafloor disturbance, and does not evaluate how this habitat alteration would impact pelagic habitats. Potential impacts on migration and movement through the project as a result of habitat alteration should also be evaluated in the EFH Assessment. In addition, hydrodynamic modeling of changes in localized flow and currents from project operation should be used to assess potential impacts to larval distribution and settlement in the region. Juvenile settlement and
habitat use on the outer continental shelf remains a data gap that should be addressed, particularly for evaluation of cumulative impacts of the offshore wind projects. Impacts to EFH associated with noise from project operation and EMF from cable transmission should also be addressed. As part of your analysis, it is also important to discuss any potential effects from the project on food sources (both benthic and pelagic) of species with designated EFH in the project area, as impacts to these food sources would be an impact to EFH. Decommissioning procedures and the potential impacts to EFH should also be included in the EIS.

As part of the expanded EFH assessment, an alternatives analysis and any proposed mitigation measures should be discussed in detail. For all potential impacts evaluated in the EIS, alternatives for avoiding and minimizing adverse effects to EFH should be clearly identified and analyzed. Mitigation measures such as soft start, noise dampening technologies, sequencing construction timing, and micro-siting and anchoring plans to avoid sensitive habitats, should be included in the EFH assessment. Proposed mitigation and monitoring plans, particularly for unavoidable impacts, should also be included in the EIS. The EIS should include a discussion of both site-specific mitigation and monitoring as well as regional scale monitoring efforts to assess cumulative impacts of adjacent projects. We encourage you to coordinate with us during the development of the expanded EFH assessment to ensure the information we will need is addressed in the assessment.

**Fish and Wildlife Coordination Act**
The Fish and Wildlife Coordination Act (FWCA) provides authority for our involvement in evaluating impacts to fish and wildlife from proposed federal actions that may affect waters of the United States. The FWCA requires that wildlife conservation be given equal consideration to other features of water resource development programs through planning, development, maintenance and coordination of wildlife conservation and rehabilitation. The Act does this by requiring federal action agencies to consult with us "with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof in connection with such water-resource development" 16 USC 662. One of the reasons that Congress amended and strengthened the FWCA in 1958 was that it recognized that “[c]ommercial fish are of major importance to our nation[,]” and that federal permitting agencies needed general authority to require “in project construction and operation plans the needed measures for fish and wildlife conservation” S.Rep. 85-1981 (1958). Our FWCA recommendations must be given full consideration by federal action agencies.

Your consultation with us under the FWCA may occur concurrently with your EFH consultation under the MSA. Overlap exists for the many MSA species currently managed through the New England and Mid-Atlantic Fishery Management Councils. The list of Council-managed species can be found on the Council websites: https://www.nefmc.org, and http://www.mafmc.org. NOAA does not, however, manage all project area species under the MSA. For example, we manage important project area species, including American lobster, striped bass, and shad and river herring, through Interstate FMPs with the Atlantic States Marine Fisheries Commission. A list of Commission species and plans can be found on their website at http://www.asmfc.org. Additionally, we manage numerous protected species in the project area under the ESA and/or the MMPA, including large whales, sea turtles and sturgeon. Information on these protected resources can be found on our GARFO protected resources website at
We anticipate that all of these species will be included in your impact assessments, both in the consultation document(s) and in its NEPA document (some of which may be concurrent). We also expect the assessment to include impacts to the recreational and commercial fishing communities that rely on these species. We should note the behaviors and habitat needs of diadromous and estuary-dependent fishes (associated with cable route locations) may not be represented by a discussion solely of the surrounding marine fishes in the wind turbine area. The discussion for FWCA species should be designed around an ecological guild model that uses locally important species to evaluate the project impacts to organisms or populations associated with the various trophic levels and life history strategies exhibited by FWCA species known to occupy the project area as residents or transients. Focus should be on issues surrounding particular species, life history stages, or habitat components that would be most susceptible to the various potential project impacts.

**Fisheries Management Comments**
Species important to both commercial and recreational interests are found within the lease area and the MWA. The COP adequately identifies the species and fisheries that may be affected by the proposed operations. However, more information on highly migratory species should be included in future analysis of project activities since such fisheries are not fully captured in vessel trip reports (VTRs) available from the Greater Atlantic Regional Fisheries Office and are instead found in VTRs available from our Southeast Regional Office and the large pelagic survey. Also, lobster and Jonah crab operations are not fully captured in available VTR data, as lobster vessels are not required to submit VTRs unless issued another Federal permit. NMFS uses dealer landings as the most accurate source of economic data for the fishery. However, since dealer data do not include area fished, joining VTR and dealer data is necessary to get area-specific landings and revenue data. This should be pursued in future analysis for this project to ensure that landings and associated revenues are most accurately presented.

Updated data are available that more accurately characterize fishery operations in general, including VTR data through 2017 and vessel monitoring system (VMS) data through 2016. Such data should be used to characterize all fisheries across a broader timeframe to represent potential operations that may be affected. For example, 2014 data are used for most fisheries, but 2016 VMS data are used for the squid fishery. The absence of 2016 and 2017 VTR data, for example, excludes two years in which squid were much more abundant near shore, which may affect fishery importance within the lease area. On occasion, the COP recognizes the limitations of some data sources (see Appendix A of our April 11, 2018, comment letter to BOEM, available at: [http://www.mafmc.org/northeast-offshore-wind](http://www.mafmc.org/northeast-offshore-wind)), yet uses those data in a way that fails to recognize those limitations. For example, Figure Y-9 shows very little squid fishing effort during 2014, but that was before VMS was required for the squid fishery. Therefore, 2014 VMS data do not represent all squid operations that may have occurred in the area. In justifying conclusions regarding the impacts of this project, the COP and subsequent EIS should avoid using data that are not consistent with or do not recognize such limitations.

A thorough analysis of fishery landings and revenue is necessary to fully evaluate the impacts of this project on fishery resources, individual vessel owners/operators, and associated fishing
communities. The COP presents a comprehensive analysis of affected fisheries and associated fishing communities using average landings and revenues from 2006-2015. However, the COP and subsequent EIS should recognize that using average landings and revenue reduces the importance of an area to a fishery or resource. Because species availability changes yearly and can periodically increase substantially in a particular area, using a combined 10-year average may diminish the importance of any one year’s landings. Further, characterizing landings and revenue within the Rhode Island/Massachusetts (RI/MA) Wind Energy Area (WEA) as a proportion of total regional (Maine through North Carolina) landings and revenue is misleading and underestimates the importance of this area to vessels that fish exclusively within this area. This is because not all fisheries operate in this area and some are more focused in other regions such as the Gulf of Maine. Care should be taken to put operations into the proper context in future analysis to avoid mischaracterizing the importance of operations within the WEA or the MWA.

Additional analysis regarding the reliance on fishing within the lease area and MWA should be pursued in the anticipated EIS to evaluate the degree to which some individuals and communities may be affected by this project. This will be necessary to improve the accuracy and utility of the socioeconomic analysis. Although the current COP includes discussion of primary affected ports, reliance upon absolute revenues masks impacts to communities that are more reliant upon operations within the MWA. For example, page 3-12 of the COP indicates that Pt. Judith, RI, is a primary port affected because average revenues affected by the corridor ($2.12 million) are high compared to other ports. However, the proportion of total port value affected (5.67 percent) is much smaller than that of North Shoreham, which had only $45,301 in average revenue from the corridor, but relied upon that revenue for a greater proportion (21 percent) of total port value. Therefore, the impacts of this project on particular communities may be overlooked if revenues are the primary metric used to evaluate impacts.

The COP includes a discussion of both species-specific and aggregated FMP landings and revenue, but seemingly does not accurately characterize landings by FMP. For example, the total of average landings of individual species in Table Y-2 is substantially higher than average FMP landings of species managed under the same FMP in Table Y-3 for both large-mesh Northeast groundfish and squid/mackerel/butterfish species. This same issue occurs in comparing individual species landings in Table Y-7 with FMP landings in Table Y-8 for the study corridor. This may affect the ranking of FMPs affected by this action, as discussed in section 4.6.5 and presented in Tables 4.6-22 and 4.6-24 of the COP.

In the current version of the COP, no information exists discussing the current status of stocks that may be affected by this action. This information is available through our Status of the Stocks report (see https://www.fisheries.noaa.gov/national/population-assessments/fishery-stock-status-updates) and should be included in the EIS. In addition, information related to the proposed construction season is important in evaluating potential impacts of the project, and characterization of the species and life stages expected to be most impacted during those seasons should be discussed in the EIS. While we welcome the use of Northeast Fisheries Science Center (NEFSC) trawl survey data, these surveys are conducted twice a year and may not be conducive to catching certain species, such as squid and lobster, based on gear type and season. Therefore, they represent an incomplete assessment of abundance for particular species. The
information provided also appears to be limited only to spring and fall seasons. The duration and timing of construction and decommissioning activities should also be discussed with respect to their potential biological, economic, and social impacts to the affected environment.

A quantitative analysis of the potential biological, social and economic costs of the project to fishing industries and their communities should be included in the EIS. Such an analysis should address potential costs associated with reduced fishing revenues as a result of short-or long-term effort displacement, impacts on catch rates, changes to species composition, potential impacts of construction activity on spawning success and future recruitment, and permanent or short-term changes to EFP during construction, operation, and decommissioning the project. Opportunity costs such as revenue lost by fishing effort that is displaced into less productive areas, including vessels displaced out of the project area and those already fishing in an area into which displaced vessels move, and the potential for poor recruitment resulting from construction activities should be assessed. This is a critical analysis as even marginal changes in costs could be costly for some fisheries. Similarly, analysis of the affiliated non-market social impacts of such activities need to be included in the EIS. The EIS should provide a detailed analysis of how the presence of the project and turbine spacing would affect fishing gear operation, including the ability for vessels to maintain maneuverability and minimize risk of fouling gear with other gear or with the turbines. Specifications of all gear types operating in the project area should be compiled and incorporated into this analysis. This analysis should consider both fishing vessels and survey vessels, including state and federal fisheries surveys.

Effects and Impacts on Federal Fisheries Surveys & Stock Assessments
The NEFSC has indicated that this project in conjunction with other foreseeable offshore wind developments would result in the exclusion of potential sampling area for a variety of critical federal fisheries independent surveys carried out by NMFS. This project would have direct impacts on the federal multi-species bottom trawl survey (BTS) conducted on FSV Henry Bigelow, the surfclam/ocean quahog clam dredge survey conducted on chartered commercial fishing platforms, the integrated benthic/sea scallop habitat survey, and the shelf-wide Ecosystem Monitoring Survey (Ecomon). Any untovable areas (and their vicinities) along the submarine cable routes would create additional exclusions to current sampling protocols. Please note that these comments do not cover potential impacts to marine mammal and sea turtle survey operations as NEFSC has not evaluated potential effects and impacts on these surveys, e.g., some aerial surveys are currently performed at low elevations that would now be affected by proposed turbine/blade maximum heights.

The federal bottom trawl survey is conducted two times per year, has been running for over 50 years, and is the single longest running standardized survey of its kind internationally. Data collected from the bottom trawl survey support a significant scientific enterprise, including the assessments of approximately 63 fish stocks conducted by the NEFSC. The federal surfclam/ocean quahog survey is conducted on an annual basis and the data from this survey are necessary to perform quantitative stock assessments used to establish catch limits for the clam dredge fishery. The NEFSC integrated benthic/sea scallop survey provides data necessary to perform a quantitative stock assessment used to establish catch limits for the commercial scallop fishery. NEFSC's EcoMon survey program is one of the longest continuous ecosystem monitoring programs at the Center with zooplankton monitoring beginning in 1977. The survey
provides important hydrographic data with many applications. Larval fish and eggs from the surveys are used to calculate estimates of spawning stock biomass and overall fish biodiversity.

Based on preliminary analysis, the area covered by turbine footings would result in either a loss of sampling area and/or require the development of new alternative survey methodologies and protocols. The development of changes in survey methods may include the design, experimental evaluation, and calibration with existing survey methods; and would be subject to peer review processes consistent with federal fisheries stock assessment processes. While the area of the South Fork Wind Farm may not on its own result in a substantive loss of sampling area for these federal surveys, taken in conjunction with the impending development of other foreseeable future lease developments, the removal of large areas of habitat available to these surveys would have deleterious impacts on federal survey operations and would have consequent impacts on a multitude of fisheries stock assessments.

Based on standard operating practices conducted by the NOAA Office of Marine & Aviation Operations, wind turbine arrays would preclude safe navigation and safe and effective deployment of mobile survey gear on NOAA ships. It is anticipated that NMFS chartered commercial vessel survey operations would similarly be affected.

NEFSC has not conducted the required analyses to determine the full range of impacts of these sampling area exclusions on the myriad of stocks dependent on these data streams. Some examples of likely impacts include the following: removal of sampling area from assessments may reduce the precision on stock assessment indices of abundance and the accuracy of assessment indices due to survey availability effects; impacts due to required changes in random survey design protocols; and efforts to design and conduct new survey methodologies and protocols that could effectively sample in wind energy areas would also impact precision due to the time to build robust/usable time series. Additionally, any environmental impacts due to the construction and operation of wind farms could result in impacts to survey gear performance, gear efficiency, and availability, e.g., increased sedimentation and water clarity impacts on video or drop-camera survey operations; lighting effects on fish behavior. In addition, any displacement of vessels due to changes in transit corridors or displacement of recreational/commercial fishing effort could further exacerbate the availability of sampling area for NOAA survey operations. In addition, as project monitoring plans are further considered and developed we urge that a regional approach be employed; and due to the impacts on existing fisheries survey operations, the design of future site/regional monitoring programs are coordinated with the NEFSC. We encourage you to work closely with our agency in your evaluation of potential impacts to our survey operations and consequent impacts to fisheries stock assessments.

**Conclusion**

Thank you for the opportunity to provide comments during this important scoping process. We will continue to support the Administration's efforts to advance offshore renewable energy through our participation in the offshore wind development regulatory and planning processes. As we engage in these processes, we are committed to implementing our national strategic goals to maximize fishing opportunities while ensuring the sustainability of fisheries and fishing communities, and to recover and conserve protected species while supporting responsible fishing
and resource development. We are committed to working with you to provide the necessary expertise and advice to avoid areas of important fishing activity, sensitive habitats, and to minimize impacts to fisheries and protected species and assist in providing the science that supports their management.

Should you have any questions regarding these comments, please contact Sue Tuxbury in our Habitat Conservation Division at (978) 281-9176 or susan.tuxbury@noaa.gov. For questions regarding ESA and section 7 comments, please contact Julie Crocker in our Protected Resources Division at (978) 282-8480 or Julie.Crocker@noaa.gov. For questions regarding MMPA Incidental Take Authorizations, please contact Jordan Carduner in the Office of Protected Resources at (301) 427-8483 or jordan.carduner@noaa.gov.

Sincerely,

Michael Pentony
Regional Administrator

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Reference