

Mayflower Offshore Wind Commercial Project Construction and Operations Plan Scoping Report

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List of Abbreviations and Acronyms

AC	alternating current
AVERT	Avoided Emissions and geneRation Tool
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
CRMC	Coastal Management Resource Council
CRMs	collision risk models
DC	direct current
DPS	distinct population segment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
GW	gigawatts
HAPC	Habitat Area of Particular Concern
HVAC	high voltage alternating current
HVDC	high voltage direct current
ID	identification
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
NAAQS	National Ambient Air Quality Standards

NARW	North Atlantic right whale
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLPSC	Northeast Large Pelagic Survey Collaborative
NMFS	National Marine Fisheries Service
NNSR	Nonattainment New Source Review
NOI	Notice of Intent
NOx	nitrogen oxides
PDE	Project Design Envelope
PDF	portable document format
SHPOs	State Historic Preservation Offices
USFWS	U.S. Fish and Wildlife Service
VHF	very high frequency
VOC	volatile organic compounds
WTG	wind turbine generator

1. Draft Scoping Summary Statement for the Mayflower Offshore Wind Commercial Project Environmental Impact Statement

1.1 Introduction

Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA) under Title 40 of the Code of Federal Regulations (CFR) Section 1501.7(a) require agencies such as the Bureau of Ocean Energy Management (BOEM) to perform certain actions as part of the scoping process, including the following.

- Determining the scope and the significant issues to be analyzed in depth in the Environmental Impact Statement (EIS).
- Identifying and eliminating from detailed study the issues that are not significant.

This document, in combination with the Draft EIS, is intended to satisfy BOEM's obligations under 40 CFR Section 1501.7(a).

On October 28, 2021, Mayflower Wind Energy LLC (Mayflower Wind), submitted a Construction and Operations Plan (COP) for the Mayflower Offshore Wind Commercial Project to BOEM seeking approval to construct and operate up to 147 wind turbine generators (WTGs) with a capacity to generate between 1,600 to 2,400 megawatts (herein referred to as the proposed Project or Proposed Action) offshore of Massachusetts in federal waters. On November 1, 2021, BOEM issued a Notice of Intent (NOI) to prepare an EIS consistent with NEPA regulations (42 United States Code § 4321 et seq.) to assess the potential impacts of the Proposed Action and alternatives (86 *Federal Register* 60270).

The NOI commenced a public scoping process for identifying issues and potential alternatives for consideration in the EIS. The formal scoping period was from November 1 through December 1, 2021. During this timeframe, federal agencies, state and local governments, and the general public had the opportunity to help BOEM identify potential 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 analyze in the EIS, as well as provide additional information. BOEM also used the NEPA scoping process to initiate the Section 106 consultation process under the National Historic Preservation Act (NHPA) (54 United States Code § 300101 et seq.), as permitted by 36 CFR Section 800.2(d)(3), which requires federal agencies to assess the effects of projects on historic properties. Additionally, BOEM informed its Section 106 consultation by seeking public comment and input through the NOI regarding the identification of historic properties or potential effects on historic properties from activities associated with approval of the Mayflower Wind COP. The NOI requested comments from the public in written form, delivered by mail, or through the regulations.gov web portal. The public could also submit oral comments at the three virtual scoping meetings hosted by BOEM.

This scoping report outlines the objectives, methodology, and content of the information provided by interested parties during the scoping period.

1.2 Objective

This report provides a review and catalogue of the information and materials provided to BOEM during the scoping period for the proposed Project. The goal of scoping was to identify substantive comments for consideration in the development of the EIS and categorize them based on the applicable resource areas or

NEPA topics. Section 1.3, *Methodology*, describes the methodology used to identify and categorize comments. This categorization scheme allowed subject matter experts to review comments directly related to their areas of expertise and allowed BOEM to generate statistics based on the resource areas or NEPA topics addressed in each of the comments. In addition, the process demonstrates consideration of the materials received while simultaneously contributing to the development of the EIS.

1.3 Methodology

1.3.1 Terminology

The following terminology is used throughout this scoping report.

- **Submission.** A submission is the entire content submitted by a single person or group at a single time. For example, a 10-page letter from a citizen, an email with a portable document format (PDF) attachment, or a transcript of an oral comment given at a public scoping meeting are each considered to be a submission.
- **Comment.** A comment is a specific statement within a submission that expresses the individual's specific point of view, concern, question, or suggestion. One submission may contain multiple comments.

1.3.2 Comment Submittal

BOEM received comment submissions during the scoping process via the following mechanisms.

- Electronic submissions received via Regulations.gov on docket number BOEM-2021-0062.
- Electronic submissions received via email to a BOEM representative.
- Hard-copy submissions received by mail to BOEM.
- Comments submitted verbally at each of the three public scoping meetings.

While the NOI did not include email as a method for submitting a comment, any submissions received via email that were clearly identified as relating to the proposed Project were considered a valid comment submission.

Three virtual public scoping meetings were held on the following dates as outlined in Table 1-1.

Table 1-1 Public Scoping Meetings

Meeting Date	Time
November 10, 2021	5:00 p.m. Eastern Standard Time
November 15, 2021	1:00 p.m. Eastern Standard Time
November 18, 2021	5:00 p.m. Eastern Standard Time

1.3.3 Comment Processing

1.3.3.1 Compilation of Submissions

BOEM's process for analyzing public comments involved using ICF's commercial web-based CommentWorks[®] software product. Submissions were provided via Regulations.gov, mail, or verbally at the public meetings (Table 2-1). All submissions were downloaded, processed, and imported into CommentWorks[®]. CommentWorks[®] served as the submission database and recorded information about

each submission, including the submitter's name, submission date, submission method, and whether the submitter was an individual, representative of an organization, or from a government entity or agency.

As submissions were entered into CommentWorks[®], they were assigned a submission identification (ID). This ID begins with the Project Docket number, e.g., "BOEM-2021-0062," followed by the submission method, followed by a submission ID number. For the submission method, "DRAFT" indicates the submission was received via Regulations.gov; "EMAIL" indicates the submission was received via email; and "TRANS" indicates the submission was received via a transcript from a public scoping meeting. If the submission was received verbally during a scoping meeting, this "TRANS" is also followed by the date of the meeting. These submission IDs can be found in Appendix A, *List of Submissions and Individual Comments by Resource or NEPA Topic*.

1.3.3.2 Identification of Comments

All submissions and oral testimonies were read to identify individual comments, as defined in Section 1.3.1, *Terminology*. A hierarchical outline was developed to include key issues addressed by the commenters or identified in the NOI. This issue outline was used to code each individual comment within CommentWorks[®] to a specific resource or NEPA topic. Each comment coded received a unique comment ID number. For example, the first comment identified in submission BOEM-2021-0062-DRAFT-0039 was identified as comment BOEM-2021-0024-DRAFT-0039-1. When a comment pertained equally to more than one resource or NEPA topic, it was not coded to multiple topics but instead coded to the most applicable topic. The resource categories are provided in Table 2-2.

Appendix A, *List of Submissions and Individual Comments by Resource or NEPA Topic*, lists all of the submissions received, as well as all of the individual comments that were extracted from each submission, organized by resource or NEPA topic area. The individual comments provided in Appendix A include verbatim comment excerpts as written by the commenters. The purpose of presenting this material in its verbatim form is to preserve the exact words of the commenter as they relate to each issue.

2. Scoping Submission and Comment Summary

2.1 Submissions

BOEM received 51 submissions from the public, agencies, and other interested groups and stakeholders. Table 2-1 shows the number of submissions received via each submission method.

Table 2-1 Distribution of Submissions by Method

Submission Method	Number of Submissions Received
Regulations.gov submissions	35
Email to BOEM representative	4
Verbal submission at a public meeting	12
Mail submission	0
Total	51

The 51 total submissions include the following submissions by federal, state, local, and tribal government entities.

- Three submissions from federal agencies: The National Marine Fisheries Service (NMFS), National Park Service, and U.S. Environmental Protection Agency (EPA).
- Four submissions from state agencies or representatives: Massachusetts Office of Coastal Zone Management, Rhode Island Department of Environmental Management, Rhode Island Coastal Resources Management Council, and New York State Department of State.
- Two submissions from local governments: the town of Nantucket and Martha's Vineyard Commission.

In addition to the federal, state, local, and tribal government entities identified above, 10 submissions came from nongovernmental organizations, 21 were provided by individuals, and 10 were provided by other organizations. The 1 remaining comment was provided by an anonymous commenter.

2.2 Comments

BOEM identified a total of 724 unique comments. Table 2-2 shows the distribution of comments by resource and NEPA topic. Section 2.3, *Definition of Resource Areas and Common Topics Raised*, defines the resource areas to which comments were assigned and summarizes the comments by each topic. The most commonly addressed resource topics included mitigation and monitoring, NEPA and the public involvement process, and commercial fisheries and for-hire recreational fishing.

Table 2-2 Distribution of Comments by Resource or NEPA Topic

Resource	Number of Comments
Air Quality	11
Alternatives	
• Wind turbines	3
• Cables and landfalls	17
• Project relocation	0
• Other comments on alternatives	31
• Alternate technology or energy sources	1
Bats	10
Benthic resources	26
Birds	25
Climate change	18
Coastal habitat and fauna	2
Commercial fisheries and for-hire recreational fishing	44

Resource	Number of Comments
Cultural, historical, and archaeological resources	14
Demographics, employment, and economics	
• Recreation and tourism	4
• Employment and job creation	27
• Other	12
Environmental justice	13
Finfish, invertebrates, and Essential Fish Habitat	41
Land use and coastal infrastructure	1
Marine mammals	46
Mitigation and monitoring	132
Navigation and vessel traffic	6
NEPA/public involvement process	35
Other resources and uses	
• Aviation	0
• Marine minerals	0
• Military	0
• Research activities	0
• Other	1
Other topics not listed	
• Coastal zone consistency	12
• Noise	17
• Materials and waste management	1
• General wildlife	22
• Electromagnetic fields (EMF)	6
• Other	20
Planned activities scenario/cumulative impacts	46
Proposed Action/Project Design Envelope	30
Purpose and need	7
Sea turtles	2
Scenic and visual resources	5
Water quality	4
Wetlands and waters of the United States	1
General support or opposition	32

2.3 Definition of Resource Areas and Common NEPA Topics Raised

The following sections define each of the resource areas or NEPA topics under which the comments were categorized and summarizes the comments by each of the resource areas or topics listed. Comments are summarized, as appropriate, based on concerns that were raised by several commenters. Appendix A, *List of Submissions and Individual Comments by Resource or NEPA Topic*, presents the individual comments that were extracted from each of the submissions, organized by resource area or NEPA topic. The

comment excerpts that only expressed general support or opposition are not included in Appendix A in their verbatim form. Instead, those comments are summarized here in Section 2.3.27, *General Support or Opposition*, and in Appendix A, Section A.2.27, *General Support or Opposition*.

2.3.1 Air Quality

Air quality comments included evaluating emissions from the proposed Project and air permitting regulatory requirements. Comments specific to climate change are described in Section 2.3.6, *Climate Change*.

Topics raised in this category included the following.

- A commenter recommended that air quality impacts should be anticipated during construction with smaller and more infrequent impacts anticipated during decommissioning.
- A commenter requested that BOEM use the term "emissions estimates" or "emissions calculations" as opposed to "modeling" in the Draft EIS when referencing the information contained in Appendix G of the COP to avoid the misconception that air quality dispersion modeling or photochemical modeling was conducted and included in the COP.
- One commenter stated that the COP does not provide a quantitative "air quality impact analysis" to determine if such emissions would adversely affect the air quality resource. The commenter recommended that modeling performed for the Draft EIS should locate receptors at the state seaward boundary to determine whether the National Ambient Air Quality Standards (NAAQS) are protected.
- A commenter recommended that the Draft EIS describe how the proposed Project may advance the reduction of criteria pollutant and greenhouse gas emissions from the onshore power generation sector in the Northeast using EPA's Avoided Emissions and geneRation Tool (AVERT). The commenter also recommended more explicitly describing power sector dynamics in the Northeast when outlining the scenarios estimating avoided emissions.
- One commenter recommended that air quality dispersion modeling be performed and analyzed with respect to relevant air quality standards and/or background concentrations. The commenter recommended that the Draft EIS contain quantitative summary tables comparing the modeled concentrations to the NAAQS, state air quality standards, or other relevant reference measures.
- A commenter requested that BOEM reconsider using the centroid of the Project area for emissions calculations purposes when discussing EPA's Outer Continental Shelf air permit to accurately reflect the requirements of 40 CFR Part 55, because the length of the Lease Area (i.e., Project area) for Mayflower is much larger than EPA has previously used for emissions calculations purposes in other Outer Continental Shelf permitting actions.
- One commenter noted that the offset requirements in Massachusetts's Nonattainment New Source Review (NNSR) permit program at 310 CMR 7.00, Appendix A, applies to sources with potential emissions of 50 tons per year or more of nitrogen oxides (NO_x) or volatile organic compounds (VOC). The commenter recommended that BOEM include the correct threshold of 50 tons per year of NO_x or VOC for NNSR applicability in the Draft EIS, Section 5.1.4 of the COP.
- A commenter recommended that Mayflower Wind demonstrate that ambient impacts would not affect protected Class I areas.
- One commenter stated that the Draft EIS should explore how the proposed Project may advance the reduction of criteria pollutant and greenhouse gas emissions from the onshore power generation sector in the Northeast.
- A commenter requested that the EIS assess the air quality and greenhouse gas impacts of the economic growth that would be spurred by the development of offshore wind projects.

- A commenter stated that Mayflower Wind has not submitted an NOI to EPA to submit an air permit application and, pursuant to 40 CFR Section 55.4(a), Mayflower Wind must submit an air permit application to EPA within 18 months from the submittal date of the NOI.
- The EPA recommended that BOEM, in conjunction with the developer, address and resolve in the Final Air Emissions Report, the conclusions related to air emissions originating in a nonattainment area as described in Section 3.0 of Appendix G of the Mayflower Wind COP, pursuant to the General Conformity regulations 40 CFR part 93 subpart B.

2.3.2 Alternatives

Comments relating to alternatives included the evaluation of alternatives related to WTG locations, cable routing and landfall locations, and alternatives that avoid marine habitat and other sensitive resources. Additional comments related to alternatives and Project design are included in Section 2.3.20, *Proposed Action/Project Design Envelope*.

2.3.2.1 Wind Turbines

Topics raised in this category included the following.

- Commenters requested that Mayflower Wind avoid siting wind turbines and export cables in complex habitats.
- One commenter mentioned that without specifying the minimum and maximum turbine capacities, or the total amount of power to be generated, it is challenging to predict how many of the maximum 149 turbine and substation locations may be required to meet the purpose and need of the proposed Project.
- Commenters requested that the EIS include an alternative that includes adequately sized transit lanes to accommodate east–west vessel traffic.

2.3.2.2 Cables and Landfalls

Topics raised in this category included the following.

- A commenter requested that the EIS confirm that no environmental effects or adverse public health effects would occur because of any of the potential landfall sites associated with the Falmouth export cable corridor.
- Commenters recommended that multiple offshore wind energy proposals, including Mayflower, should use a shared export cable corridor and requested that BOEM evaluate alternatives that use common corridors that are consolidated with adjacent projects.
- Commenters noted that cable projects in the area must avoid certain complex or sensitive habitats designated as Special, Sensitive, or Unique under the Massachusetts Ocean Management Plan and areas of particular concern designated under the Rhode Island Ocean Special Area Management Plan, including North Atlantic right whale core habitat, humpback whale core habitat, areas of hard/complex seafloor, intertidal flats, and eelgrass. Commenters requested that the Draft EIS provide details of how Mayflower Wind Energy will meet the requirements of these plans.
- A commenter recommended that the EIS include a fisheries habitat minimization alternative to ensure that export cable corridor construction and operation avoid and minimize impacts on sensitive and complex habitats. The commenter requested that the alternative evaluate alternate routing of both the Sakonnet and Falmouth cable corridors and could be considered as two separate alternatives or one alternative with sub-alternative options that can be mixed or matched with other identified alternatives. The commenter recommended that BOEM evaluate all potential alternative routes to the Brayton Point Station, including land-based alternatives and

infrastructure upgrades at the Falmouth location to allow for a single landing location as part of this alternative.

- One commenter requested that an alternative be included that evaluates how the different project components associated with the proposed direct current (DC) export option and an alternating current (AC) export option affect resources, particularly impacts on resources that would result from the proposed water withdrawals and discharges. The commenter also requested that the DC export option include a range of all feasible alternatives to the proposed use of seawater withdrawal and discharge for cooling (e.g., closed loop, air cooling).
- A commenter suggested that a cable route alternative be fully explored that would route the cable corridor from the split from the Falmouth export cable corridor to cut between Martha's Vineyard and Nomans Island and reconnect with the planned Brayton Point export cable corridor route just off the Elizabeth Islands. The commenter asked that if such export cable routing was already considered and ruled out, the reasons for the alternative's dismissal should be provided.

2.3.2.3 Other Comments on Alternatives

Topics raised in this category included the following.

- A commenter encouraged BOEM to take the necessary time to develop and present complete information in the Draft EIS to fully describe existing conditions and support a discussion of the likely impacts of each alternative.
- Commenters asked that the EIS include alternatives for each phase of the proposed Project (siting, construction, operation, and decommissioning) to avoid environmental impacts to the extent possible, and include distinct alternatives associated with smallest, largest, and one or more intermediary potential scales in terms of the number of turbines, the number of offshore substations, the total disturbed area of the seafloor, the length of the offshore export cables, the range of inter-array cable layouts, and whether one or two export cable corridors are required.
- One commenter requested alternatives be grouped by Project element: offshore wind farm area, offshore export cable routes and associated corridors, inshore/landside export cable routes, and associated corridors and landfall points. The commenter recommended that the EIS describe how these various alternatives could be used together in all possible combinations, rather than grouped into a limited set of predetermined combinations.
- Commenters requested that the EIS consider micrositing of inter-array and export cables and exclude potential turbine or substation locations as alternatives.
- Commenters requested that the EIS consider alternative(s) for turbine foundation types, including quiet foundation technology and a foundation design other than monopiles to minimize cumulative impacts from pile-driving.
- A commenter suggested that the EIS include a land-based cable-route alternative to Brayton Point power station.
- Commenters requested that a closed-loop cooling alternative be evaluated to avoid impacts on marine life.
- One commenter requested that a DC converter station alternative be evaluated, which would include separate analyses for each feasible cooling option (e.g., closed loop).
- One commenter requested that the comparison of alternatives in the EIS include a comparison of EMF and heat emissions.
- Commenters requested that the EIS include alternatives for siting offshore Project components to avoid and minimize impacts on sensitive habitats (including natural hard bottom complex substrates, submerged aquatic vegetation, dense faunal beds, deep sea corals, and prominent benthic features), marine monuments or sanctuaries, Seasonal Management Areas, Dynamic

Management Areas (created to reduce risk of vessel collision with North Atlantic right whales) that are persistent or extended for more than 3 months in 1 year of the most recent 5 years, Essential Fish Habitat (EFH), and Habitat Areas of Particular Concern (including areas with deep sea corals).

- Commenters recommended that BOEM include alternatives in the EIS to avoid known or predicted North Atlantic right whale habitats, including an alternative that limits the portion of the lease where turbines can be installed, which would result in no turbines in the northern portion of the Lease Area.
- A commenter asked that the EIS include alternative(s) to avoid and minimize adverse effects on NMFS trust resources before identifying mitigation measures.
- One commenter requested that the EIS consider an alternative that would minimize impacts on commercial and recreational fisheries, which could include reduced numbers of turbines and substations; the shortest offshore cable corridor possible; maximizing cable burial depth; seasonal restrictions on construction activities; and excluding project components that have greater overlaps with fishing activity.
- A commenter recommended that the EIS include an evaluation of ways each alternative considered can be designed to avoid, or where unavoidable, minimize direct and indirect impacts on wetlands and other waters to comply with EPA's Clean Water Act regulations issued under Section 404 (b)(1).
- One commenter requested that BOEM wait until the Wildlife and Offshore Wind project is completed in 2027 before building more wind farms in southeastern New England.
- EPA recommended that BOEM evaluate impacts from the deployment of a range of WTG generation capacities.

2.3.2.4 Alternate Technology or Energy Source

Topics raised in this category included the following.

- A commenter requested that alternative energy sources be investigated, including hydrokinetic, offshore solar, or offshore wind that floats.

2.3.3 Bats

Topics raised in this category included the following.

- A commenter stated that the analysis in the COP is insufficient to draw conclusions about bat risk given the paucity of data on bats in the region, lack of survey effort by Mayflower, cursory discussion of impacts on bats from offshore wind turbines, and uncertainties around bat behavior at offshore wind facilities.
- A commenter suggested that BOEM incorporate the available Motus Wildlife Tracking System Data (<https://motus.org>) into the bat analysis.
- A commenter stated that the COP does not include the federally endangered Indiana bat and suggested that BOEM consult with the U.S. Fish and Wildlife Service (USFWS) about including the Indiana bat in the analysis of the affected biological resources.
- A commenter stated that BOEM should consult with USFWS about potential impacts on northern long-eared bats from the offshore components of Mayflower Wind and the EIS should assess potential impacts from offshore components on northern long-eared bats and other cave-hibernating bats.

- A commenter expressed concern with tree clearing for onshore project components and the potential effect of this tree clearing on bats, including the northern long-eared bat.
- A commenter stated that the COP downplays the risk to migratory bats when it states that they are unlikely to be exposed to the WTGs in the Lease Area, and that seasonal use of the Project area by migratory tree bats does not imply low impact given that studies in Europe have shown that exposure of bats to wind turbines can cause significant fatalities.
- One commenter stated that bats can be attracted to offshore wind turbines and that BOEM should account for bats' potential attraction to, and increased risk of collision with, offshore wind turbines and should not rely on bat avoidance to minimize impacts.
- A commenter stated that BOEM should not assume that fewer, larger turbines reduce risks to bats. Insufficient data exist to determine where (if any) a tradeoff exists between decreasing the number of towers versus increasing their height, but current research does not support the claim that fewer, larger turbines would have decreased impacts on bats. The commenter recommended that the EIS note the scientific uncertainty surrounding the degree to which bat mortality may increase with tower height and should adjust the language accordingly regarding bat impacts.
- One commenter stated that the COP does not include any project-specific acoustic survey data and lacks the necessary detail and data to draw conclusions about impacts on bats and that impacts should not be assumed to be low risk.
- A commenter suggested that BOEM analyze impacts on cave hibernating bats, including federally listed species.

2.3.4 Benthic Resources

Comments regarding benthic resources included concerns over changes to habitat, lost benthic resources, and adequacy of benthic survey data. Benthic habitat refers to habitat on the sea floor, including natural structures and vegetation.

Topics raised in this category included the following.

- Commenters expressed concern with impacts on benthic habitats from increased sediments in the water column during construction of offshore cables, as well as the anticipated areal extent, location, and recovery times for seafloor habitats that would be disturbed during construction and cause smothering of habitat. One specific area of concern mentioned included the rocky complex habitat in the Muskeget Channel and Nantucket Sound, as well as areas designated as Habitat Area of Particular Concern (HAPC).
- One commenter expressed concern with the creation of wakes from the presence of wind turbines that change currents and cause sedimentation to be suspended in the water column and cause different bottom contours from the settling of the sediment, which can affect benthic organisms, like scallop larvae.
- A commenter expressed concern with the impacts from scour prevention measures on seabed habitats.
- A commenter expressed concern that the COP does not contain benthic survey data, particularly in areas with hard or complex habitats like the Falmouth Export Cable Corridor cable route through the Muskeget Channel or the cable corridors that lead to the Brayton Point Export Cable Corridor. The commenter stated that absence of data is a serious deficiency and the Draft EIS should not be released until survey data are available.
- One commenter suggested that BOEM and/or NMFS conduct a quantification of benthic habitat types due to its importance of EFH.

- Commenters expressed concern with the slow recovery time for hard bottom, complex habitats, especially along offshore cable routes, as demonstrated by other offshore wind projects (e.g., Block Island Wind Farm), and the Draft EIS should account for the lack of recovery time in the impact assessment.
- A commenter expressed concern with the larger footprint of gravity-based foundations, as opposed to monopile foundations, and the potential greater impact that would result on benthic invertebrates and habitat.
- One commenter requested that the Draft EIS analyze the impacts from the subsea cables installed in the Falmouth Export Cable Corridor and Brayton Point Export Cable Corridor and inter-array cables, which could displace benthic fauna inhabiting the path of cable construction, including Atlantic cod and American lobster.
- A commenter expressed concern with the observed eelgrass beds at the Falmouth Export Cable Corridor landfall area.
- One commenter stated that the EIS should include results of on-site surveys, site-specific habitat information, and characterization of benthic and pelagic communities, including additional details on complex habitats, including submerged aquatic vegetation, hard bottom habitats, and HAPC.
- A commenter suggested evaluating the changes to predator/prey relationships that result from the loss of seabed and associated benthic communities and forage base.
- A commenter requested that any place where bottom sediments would be disturbed be evaluated for sediment contamination to understand the potential for environmental effects associated with contaminant release of previously disposed contaminated materials.

2.3.5 Birds

Bird comments included concerns regarding the modeling of avian risk and data-gathering methods, the location of the proposed Project within the migratory pathways, the risk of collisions, the likely impacts on Endangered Species Act (ESA)-listed species, and the requirements of the Migratory Bird Treaty Act (MBTA).

Topics raised in this category included the following.

- One commenter stated that the modeling in the Avian Exposure Risk Assessment does not account for specific migratory pathways and that the EIS should describe future monitoring that will help fill this gap.
- One commenter stated that relying on the current system of automated radio telemetry receivers to monitor avian risk is inappropriate, as the network of receivers has not been established in the offshore to the degree necessary because the current configuration of very high frequency (VHF) receiving towers does not allow for detailed characterization of flight paths for this species or any protected avian species using this tracking technology. The commenter recommended that the Draft EIS produce a full picture of migratory pathways for songbirds and shorebirds, which could be generated with other technologies (e.g., satellite tracking, bird tagging).
- One commenter stated that the Draft EIS must adequately assess collision risk to seabirds; this must include an analysis, using the most current available science, of flight heights (averages and ranges), avoidance rates, and other relevant avian flight behavior at the very least. The commenter recommended that the Draft EIS also consider the range of turbine specifications that could influence collision risk, including air gap, total rotor swept zone, and turbine height. The Draft EIS must also provide results from BOEM's own analysis of the vulnerability of 177 species of birds that could come into contact with the WTGs.

- One commenter suggested BOEM apply collision risk models (CRMs) to evaluate avian impacts from the proposed Project and be transparent regarding the input parameters use, and that the CRM should consider the difference in daytime and nighttime flight patterns.
- One commenter stated that BOEM cannot assume that larger turbines, further apart, reduces risks to birds because there is no substantial evidence to suggest this; it should be a goal of BOEM to understand the effects of displacement and mortality relative to turbine size and spacing and to include this in the EIS.
- One commenter stated that the Draft EIS should address the habitat loss that birds may experience beyond the footprint of the proposed Project's construction and operation.
- One commenter expressed concern with vessel traffic disrupting marine birds and their prey, and their distribution.
- One commenter expressed concern that no matter what time of year construction activities occur, there will still be birds present around the Project area due to bird species distribution and migration timing; therefore, it may not be possible to avoid bird impacts entirely.
- One commenter stated that the impacts from the onshore components of the proposed Project must include potential impacts on federally listed birds (e.g., piping plover, red knot, and roseate tern).
- One commenter stated the Draft EIS must consider the full scope of impacts on federally protected birds and species that trigger conservation obligations, including ESA-listed birds; birds protected by the MBTA; Birds of Conservation Concern; birds protected under state law; species prioritized for conservation by avian expert partners (including the Atlantic Flyway Shorebird Initiative, Partners in Flight, Atlantic Coast Joint Venture, and the North American Waterbird Plan) and the International Union for Conservation of Nature Red List status; and birds protected under other related statutes, memorandums of understanding, and Executive Orders. The commenter stated that the COP does not provide adequate species-specific impact assessments and the Draft EIS must not rely on the COP and must evaluate the cumulative species-specific impacts in a manner that is appropriate for each species' ecology.
- One commenter stated that the Draft EIS should consider local population-level impacts based on best available science, and that the Marine-life Data and Analysis Team used in the COP is not appropriate for several reasons (e.g., projections are rough estimates of relative density).
- One commenter stated that radio and satellite telemetry and radar monitoring methods should be employed to evaluate risks to species that are likely to use the Project area for migration, and that the species of bird should determine the method use (e.g., radio telemetry is more appropriate for smaller birds). The commenter stated that currently available telemetry data is not sufficient and BOEM should support further telemetry studies and recommended that BOEM should consider marine radar methods to document avian movements in the Project area.
- One commenter stated that—given that there are no studies within the United States that document the responses of local avian populations to offshore wind development in United States' waters—BOEM should adopt a conservative approach in the Draft EIS's avian impact analysis. The commenter recommended that, in doing so, BOEM address the limitations of the survey methods used in the COP to assess avian impacts, including sampling biases in survey methods and the effect of survey efforts on assessment reliability.
- One commenter stated that collision risks to nocturnal migrants have not been properly accounted for in the COP, and BOEM must sufficiently assess collision risks to nocturnal migrants in the Draft EIS.
- A commenter was concerned that BOEM and USFWS may rely on the U.S. Department of the Interior Memorandum M-37050 for interpretation of the MBTA to limit its scope to the

purposeful take of birds, even though it has been successfully challenged in court. The commenter requested that BOEM be consistent with the memorandum of understanding that BOEM signed with USFWS in 2009 to protect migratory bird populations. The commenter recommended that any changes to the evaluation of impacts on migratory birds based on BOEM's interpretation of the MBTA be explained in the EIS.

2.3.6 Climate Change

Climate change comments focused on the urgency to develop renewable energy options to offset the use of fossil fuels and slow climate change and for BOEM to account for the various beneficial and adverse impacts associated with climate change.

Topics raised in this category included the following.

- Commenters expressed support for the proposed Project as a way to shift from fossil fuel energy to clean, renewable energy sources and as a major step in reaching greenhouse gas reduction goals.
- A commenter stated the proposed Project would help establish the infrastructure needed to support development of multiple future offshore wind projects.
- Commenters noted that there would be economic impacts associated with climate change and requested BOEM to account for the economic impacts as they weigh the overall social and economic benefits of offshore wind development.
- A commenter requested BOEM conduct a greenhouse gas emissions reduction analysis that includes all stages of an offshore wind project to understand both what amount of greenhouse gases would be offset by these projects, as well as additional emissions that may be produced.
- A commenter requested a greenhouse gas analysis that evaluates the effects of a loss of seafood availability.
- A commenter requested BOEM to account for climate impacts that would affect species using coastal and marine ecosystems, including marine mammals, turtles, birds, sharks, and fish.
- Commenters noted that the proposed Project would be a key component of meeting the Biden administration's climate goals, which should be accounted for in the EIS including an analysis of the social cost of carbon showing the benefits of reducing carbon emissions.
- A commenter requested that the Draft EIS fully disclose the switchgears to be used for the proposed Project and how they would be monitored for leakage, quantify the potential release of SF6 emissions from the proposed Project over its lifespan, and discuss mitigation for these releases. The commenter also recommended that BOEM consider requiring the best available technology for available switchgears that are SF6-free ("clean-air").
- A commenter requested the Draft EIS analyze whether components of the proposed Project are designed to be durable in the face of sea level rise, storm surges, changes in coastal currents, and severe weather events.
- A commenter stated that there is no science backing up claims that offshore wind projects would solve sea level rise and other climate change impacts.

2.3.7 Coastal Habitat and Fauna

Coastal habitat and fauna comments included those related to areas closer to the shoreline than offshore waters.

Topics raised in this category included the following.

- A commenter stated that they would like to see further confirmation in the Draft EIS that no greenspace would be cleared or otherwise affected in routing of onshore cable, with the possible exception of disturbance of roadside vegetation that does not affect sensitive habitat areas.
- A commenter expressed concern with Muskeget Island due to its habitat importance for various species of birds, as well as the Muskeget vole and northern grey seal.

2.3.8 Commercial Fisheries and For-Hire Recreational Fishing

Fisheries comments discussed economic and social aspects or impacts on commercial fisheries, commercial fishing operations, and for-hire recreational fishing operators.

Topics raised in this category included the following.

- Commenters requested the EIS fully characterize the extent and value of commercial, for-hire, and charter fishing within the Project area including a breakdown of the economic exposure of the proposed Project by state, port, gear type, and fishery. Additionally, commenters requested that the EIS evaluate commercial, for-hire recreational, and private recreational fishing separately but in the same or adjacent sections to illustrate potential impacts on all fishery sectors and describe how all impacts may vary by target species, gear type, fishing location, and type of fishing (commercial or recreational).
- A commenter questioned if installing wind farms would add restrictions and regulations on the fishing industry.
- A commenter noted that while they recognize the importance of domestic energy development to United States economic security, the marine fisheries throughout New England and the Mid-Atlantic, are profoundly important to the social and economic well-being of communities in the northeastern United States and provide numerous benefits to the nation, including domestic food security.
- Commenters requested that BOEM coordinate early and often with NMFS and state agency fisheries staff on the most appropriate data for analysis of potential impacts on fisheries, as well as cooperatively working with the state, fishing communities, and commercial, charter, and recreational interests.
- A commenter recommended impacts on commercial and recreational fisheries from the COVID-19 pandemic be taken into consideration regarding 2020 fisheries data.
- Commenters voiced safety concerns of the commercial and recreational fisherman maneuvering, drifting, or anchoring near turbines and offshore substations and requested the EIS evaluate these safety considerations across different fisheries. In addition, it was noted that fisherman shifting their effort outside of the Project area during construction or operations could put them in areas of higher vessel traffic and gear conflict.
- A commenter noted that fishermen cannot easily relocate to different areas to avoid a windfarm without socioeconomic impacts.
- A commenter requested detailed reporting on the wide dissemination of information on where boulders from seafloor preparation are moved as a mitigation strategy.
- Commenters requested that BOEM accurately characterize the value of commercial fisheries landings within the Project area.
- A commenter urged to not overly rely on ex-vessel value when assessing and weighing impacts across fisheries in the EIS because this data can mask other important information.
- A commenter provided a list of fish and invertebrate surveys from the Sakonnet River and Mt. Hope Bay.

- A commenter stated their concern of BOEM continuing to rely on Automatic Identification System data to characterize fishing activity in most offshore wind analyses because they feel the data are flawed.
- Commenters expressed concern related to the impacts of surveys on commercially harvested fish and listed species.
- A commenter expressed their concern that BOEM does not have an effective way of notifying mariners of survey activities, which can financially harm commercial fishing industry members in the form of lost or damaged fishing gear.
- Commenters requested that the EIS include an analysis of all biological, cultural, and socioeconomic issues related to fisheries and marine resources in the Affected Environment section. The commenters recommended that specific topics may include historic and recent landings, revenue, and effort; fishery participants; changes in transit patterns; and impacts on coastal communities. Commenters recommended that the geographic scope for this analysis be expanded to include vessels that port from outside of the Project area.
- A commenter expressed concern for the operation of small boats from Martha's Vineyard fishing fleet after development of the proposed Project.
- A commenter expressed concern for the potential of North Atlantic right whale (NARW) to become entangled in fishing gear and increase the risk of ship strikes.
- A commenter stated that the EIS should include the best scientific information to characterize fishing operations and evaluate impacts, and include at least 10 years of data history in addition to recent data to accurately reflect both recent operations and annual fluctuations in fishing operations due to changing environmental conditions, market price, and management measures.
- A commenter requested that the EIS thoroughly evaluate both the biological and socioeconomic impacts of the cable corridors to fishery resources, operations, and associated communities, and include alternatives that avoid and minimize impacts on such habitat.
- A commenter requested a quantitative analysis of the potential biological and socioeconomic costs of the proposed Project for fishing industries and their communities be included in the EIS.
- One commenter encouraged BOEM's analysis to demonstrate the potential for fewer impacts on commercial fishing and fisheries habitats associated with installing and operating high voltage direct current (HVDC) versus high voltage alternating current (HVAC) cable technology.

2.3.9 Cultural, Historical, and Archaeological Resources

Comments related to cultural resources include those related to archaeological, historic architectural, or tribal resources or concerns.

Topics raised in this category included the following.

- Commenters asked that BOEM ensure compliance with Sections 106 and 110(f) of the NHPA as well as NEPA, including ensuring adequate consultation with consulting parties, State Historic Preservation Offices (SHPOs), tribal nations, National Historic Lighthouse and National Historic Lighthouse Preservation Act Lighthouse owners, and other stakeholders throughout the EIS process. Commenters also emphasized that BOEM must consider a wide range of potential effects on historic and cultural resources to ensure compliance with these laws, including visual impacts on National Historic Landscapes.
- Commenters stated that BOEM should recognize tribes' sovereign status and provide adequate government-to-government consultation with tribal governments throughout the EIS process.
- Commenters noted that the proposed Project would have an adverse visual impact on Nantucket's historic properties and cultural heritage, including the Nantucket Historic District, and requested

that BOEM select an alternative that preserves the historic integrity of historic properties within Nantucket. Commenters also asked that BOEM consult with the Nantucket Historic District Commission, as well as Nantucket's historic and cultural review boards and stakeholders during any historic or archaeological review.

- Commenters felt that the COP Visual Impact Assessment was not adequate and expressed concern over viewshed or visual impacts on historic properties from the proposed Project including impacts on Nantucket. Commenters requested that additional visual assessments be conducted including during different lighting and atmospheric conditions to accurately assess adverse impacts and to develop appropriate avoidance, minimization, and mitigation measures. Other commenters asked for clarification regarding aspects of the Visual Impact Assessment including the heights of the key observation points.
- Commenters identified specific historic properties that they requested be identified in the Area of Potential Effects for the cultural resources analysis including Nantucket Historic District National Historic Landmark, Gay Head Light, Muskeget Island National Natural Landmark, Gay Head Cliff National Natural Landmark. They also noted that all National Historic Landmarks, National Historic Lighthouse Preservation Act Lighthouses, and National Natural Landmarks should be identified on all project maps that show the study area.
- Commenters also asked that Tribal Nations be included in the development of the Marine Archaeological Resources Assessment and the Terrestrial Resources Assessment Volume, as well as an Unanticipated Discovery Plan and that the EIS provide an overview of BOEM and proponent engagement with Tribal Nations and a discussion of issues important to tribes.

2.3.10 Demographics, Employment, and Economics

Comments related to recreation and tourism, as well as employment and job creation and other resources are captured in these subsections.

2.3.10.1 Recreation and Tourism

Topics raised in this category included the following.

- A commenter expressed concern of Nantucket's seasonal tourism economy being affected due to being sensitive to any potential visual impact on the ocean horizon and sunset views.
- A commenter requested that BOEM model and examine the potential for impacts of wind-driven waves from development of the proposed Project and that the Draft EIS consider how changes in waves would affect ocean users. The commenter also requested that Mayflower Wind and BOEM engage in a robust and transparent stakeholder process with coastal and ocean recreation enthusiasts and experts, including sailors, kiteboarders, surfers, and other stakeholders to vet modeling data in relation to potential impacts on wave-riding breaks and other wind-driven activities.
- A commenter stated that federal agencies should consider the existence and location of designated National Natural Landmarks in assessing the effects of their activities on the environment under NEPA (42 USC 4321). The commenter also requested that agencies and organizations that coordinate, fund, or permit projects that could affect National Natural Landmarks be aware of the program and of landmarks in their geographic area for the purposes of environmental planning and decision-making.

2.3.10.2 Employment and Job Creation

Topics raised in this category included the following.

- Commenters stated that the EIS should include a robust analysis of socioeconomic impacts associated with the COP and that BOEM's analysis of socioeconomic impacts should include consideration of incentives to ensure the use of domestic content; Project Labor Agreements, Labor Peace Agreements, and Community Benefits Agreement; use of registered apprentices and other labor-management training programs; protection against worker misclassification and wage theft; neutrality agreements; local hires; and prevailing wage.
- Commenters asked that BOEM ensure beneficial economic impacts are fulfilled by taking efforts to increase job opportunities by creating a high-road offshore wind industry that maximizes the creation of quality, family sustaining, union jobs; expanding domestic manufacturing along a robust domestic supply chain; and delivering community benefits with attention to improving access to displaced energy workers, as well as low-income and minority populations.
- Many commenters pointed out that Mayflower Wind Energy LLC has no Project Labor Agreement or local hire conditions in place and encouraged BOEM to recognize the benefits that such agreements could provide for the local workforce and the economy.
- Several commenters discussed or quoted studies on the regional economic benefits of construction and operations of the proposed Project, including the number of jobs that would be created, estimated new local and state tax revenues each year, and the estimated economic annual output. Commenters anticipated significant positive economic impacts in Massachusetts for decades to come.
- Commenters expressed support for development of offshore wind to address climate change and energy needs in a way that mitigates job impacts for thousands of workers in the various aspects of fossil fuel and other traditional energy sectors.
- A commenter requested that the EIS evaluate plans to support the use and growth of a domestic supply chain to maximize United States employment for the projected life cycle of the proposed Project.
- A commenter requested that the EIS evaluate the programs necessary for training and expanding the domestic workforce with an emphasis on ensuring opportunities for displaced energy workers, as well as fostering equitable access to career pathways in the industry. The commenter requested that particular attention be paid to creating jobs in construction, as well as operations and maintenance for residents of the affected region.
- A commenter felt that the proposed Project would help drive a green and just recovery by creating tens of thousands of jobs in the next decade, establishing the New England region as a hub for clean-tech development and deployment, expanding the market for local renewables, and saving ratepayers billions of dollars.
- A commenter asked how many local workers would actually be hired, the duration of each hire, and how the company plans on hitting the 10,000 job year goal.

2.3.10.3 Other

This category captures other economic topics that may not have been captured in the previous subcategories.

Topics raised in this category included the following.

- A few commenters discussed the local community support Mayflower Wind would provide.
- A commenter expressed concern regarding who would pay the costs associated with Project maintenance and asked if a formal cost/benefits analysis has been performed that could be shared with taxpayers.

- Commenters requested that the EIS consider the economic costs and benefits of the proposed Project, as similarly conducted for oil and gas activities. Comments for BOEM to consider include the following.
 - A comparison of relative costs and environmental impacts of alternative technologies.
 - Fully corroborate statements by developers regarding economics.
 - Use of “multiplier effects” when analyzing the economics of fisheries.
 - The relative impact of the proposed Project on the state of New York and not a dollar-for-dollar comparison.
 - The economic impact of rerouting New York’s transiting vessels around a fully developed Rhode Island/Massachusetts wind energy area.
- A commenter expressed support for PLAs.
- A commenter requested the Draft EIS to quantify health impacts associated with clean energy development using EPA’s COBRA model to estimate the economic benefit of avoided health impacts due to offshore wind development displacing onshore fossil fuel generation.

2.3.11 Environmental Justice

Environmental justice comments included opportunities of the proposed Project to address effects on vulnerable communities that have been historically overburdened by energy production and environmental pollution, as well as suggestions to assess adverse impacts on and benefits on these communities.

Topics raised in this category included the following.

- A commenter expressed support for the proposed Project as part of the influx of renewable energy jobs coming to a more economically disadvantaged area and stated their LGBTQ+ network has begun discussions to encourage job training and education in their population.
- A commenter commended the proposed Project for making an enormous commitment to the economic vitality of the businesses and residents of Massachusetts, including low-income residents.
- A commenter requested that BOEM avoid causing disproportionately negative impacts on local environmental justice populations, which includes low- and moderate-income communities, minority residents, tribal communities, seniors, and those with mobility issues. A few commenters encouraged BOEM to complete and deliver the full scope of benefits that would accrue from approving the proposed Project, include consideration of benefits to environmental justice communities in the socioeconomic analysis, including job creation and funding in communities that have experienced disproportionate levels of environmental degradation and resulting health impacts.
- A commenter urged that a Project Labor Agreement be established for the proposed Project since such agreements provide opportunities and benefits for communities as they offer hiring opportunities to historically marginalized communities, including racial minorities, women, and veterans.
- A few commenters discussed the potential benefit of the proposed Project to environmental justice communities from transitioning from fossil fuels, which deteriorate the lands and health of low-income and minority communities.
- A commenter requested that, when considering environmental justice impacts, BOEM look at how power plants are frequently located in or close to population centers, and disproportionately located in or near communities of color, low-income communities, and Indigenous communities.

- Commenters stated that the EIS should consider Executive Orders 12898, 13985, and 13175 when accounting for impacts on minority and low-income populations of local fishing, coastal, and tribal communities.
- A commenter encouraged BOEM to analyze whether noise, air, and traffic impacts from onshore construction associated with cable landfall and associated project operations within port areas may cause community impacts that should be considered in the environmental justice analysis in the EIS.
- A commenter encouraged BOEM to conduct an EJSCREEN analysis (or some other comparable evaluation tool) to determine if elements of the proposed Project would affect communities with environmental justice concerns and if there are potential environmental justice impacts that should be analyzed and discussed in the EIS. The commenter also encouraged BOEM to identify if any linguistically isolated populations exist in areas that may experience Project impacts so they can be considered during development of community outreach efforts for the proposed Project and requested the EIS include a specific accounting of the outreach for the proposed Project.
- A commenter discussed their appreciation for the proposed Project's commitments to equity and workforce development and requested the need for good planning be put in place with input from potentially affected communities to make sure that the onshore side of things is beneficial and does not cause further inequitable impacts.

2.3.12 Finfish, Invertebrates, and Essential Fish Habitat

Finfish, invertebrates, and EFH comments address fish, crustaceans, and other sea animals (other than sea turtles or marine mammals).

Topics raised in this category included the following.

- Commenters stated that BOEM is responsible for completing all coordination pursuant to Magnuson-Stevens Fishery Conservation and Management Act and recommended that all documentation and coordination be included in the NEPA document.
- The NMFS Greater Atlantic Regional Fisheries Office commented that the proposed Project is anticipated to have major adverse impacts on the Northeast Fisheries Science Center scientific surveys including; 1) exclusion of NMFS sampling platforms from the wind development area, 2) impacts on the random-stratified statistical design that is the basis for data analysis and use in scientific assessments, advice, and analyses; 3) the alteration of benthic, pelagic, and airspace habitats in and around the wind energy development; and 4) potential reductions in sampling outside wind areas caused by potential increased transit time by NOAA vessels.
- Commenters requested that the EIS include a detailed assessment of the effects of the proposed Project on various habitats, including EFH designated under the Magnuson-Stevens Fishery Conservation and Management Act, and a range of alternatives to conserve these habitats and minimize the effects of the proposed Project on EFH and other marine habitats including Habitat Areas of Particular Concern and Species of Concern.
- A commenter requested that studies of "wind turbine syndrome" on fish and other ocean organisms be conducted.
- Some commenters were interested in how the addition of new structured habitat would replace existing habitat types and could displace other species which prefer soft sediments (e.g., flatfish, bivalves).
- A commenter expressed concern that the entirety of the Sakonnet River has been designated as Inshore Juvenile Cod HAPC and any adverse impacts on the Sakonnet River HAPC must be avoided, because it may result in significant long-term cumulative impacts on this stock.

- One commenter was concerned with EFH assessments, particularly the impacts of geological and geophysical surveys on the acoustic environment using “chirp” and “boomer” equipment.
- A commenter noted that the EFH assessment should include analyses of all potential impacts, including temporary and permanent; direct and indirect; and individual, cumulative and synergistic impacts of the proposed Project.
- A commenter stated that impacts from the proposed Project should be predicted using data that reflect natural variability in resource conditions and fishery operations, but also current conditions. They recommended that fisheries and marine resource survey analyses consider at least 10 years of data up to and including data within the past 2 years.
- Commenters requested that the EFH assessment contain the following mandatory elements: (i) a description of the action, (ii) an analysis of the potential adverse effects of the Proposed Action on EFH and the managed species, (iii) the federal agency’s conclusions regarding the effects of the action on EFH, and (iv) proposed mitigation, if applicable (50 CFR § 600.920(e)(3)).
- Commenters stated that an expanded EFH consultation, as described in 50 CFR Section 600.920(f), is necessary for the proposed Project. As part of the expanded EFH consultation, the assessment should also contain additional information, including (i) the results of an on-site inspection to evaluate the habitat and the site-specific effects of the proposed Project, (ii) the views of recognized experts on the habitat or species that may be affected, (iii) a review of pertinent literature and related information, (iv) an analysis of alternatives to the action, and (v) other relevant information.
- Commenters requested that BOEM consult with the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, and NMFS to allow for clear mechanism for fisheries managers to comment and make recommendations regarding the proposed Project. BOEM should share data on fish species that move between and among lease areas. Mayflower Wind should continue to coordinate with other research teams to understand potential impacts on the distribution, abundance, and feeding of key species that currently inhabit areas within and adjacent to the Project area.
- Commenters requested the use of the most current EFH, Habitat Areas of Particular Concern, and Highly Migratory Species designations.
- Commenters requested the EIS analyze the effects on the physical and biological habitat features and the biological consequences of those effects. The commenters recommended that the analysis pay particular attention to impacts on all life stages (adults, juveniles, larvae, eggs) and focus on species and life stages that may be more vulnerable to impacts. They requested that mitigation measures be proposed and analyzed for impacts that are not feasible to avoid or minimize.
- Commenters requested that the analysis address the potential impact of converting unconsolidated soft-bottom and smaller-grained hard habitats that support distinct assemblages of fish and shellfish to artificial structures and masonry/quarry stone that may attract larger predatory species, as well as how that affects the invertebrate communities, establishment of invasive species, and predator–prey relationships.
- Commenters requested that the EIS examine the proposed Brayton Point export cable route through the Rhode Island Coastal Management Resource Council (CRMC) 2011 and 2018 Rhode Island Geographic Location Descriptions because they would likely affect glacial moraine habitat, which supports Essential Fish Habitat for Atlantic Cod fish and winter flounder.
- Commenters stated that installation of cables and foundations for turbines and offshore substations would generate both noise and sediment plumes/contamination, which may affect biological processes for marine species. For example, commenters noted that longfin squid may be negatively affected by the construction sounds and their demersal egg mops could be materially affected by sediment deposition.

- One commenter noted that the proposed Mayflower Wind export cable corridors would cross areas that have been designated HAPC for both juvenile Atlantic cod and summer flounder in Massachusetts and Rhode Island state waters.
- A commenter requested that the EFH assessment include the impacts on recreational and commercial fishing communities that rely on affected species.
- Commenters requested that the discussion for Fish and Wildlife Coordination Act species be designed around an ecological guild model that uses locally important species to evaluate the Project impacts on organisms or populations associated with the various trophic levels and life history strategies exhibited by Fish and Wildlife Coordination Act species known to occupy the Project area as residents or transients.
- Commenters recommended that BOEM coordinate cable transmission that would reduce the number of cable installations required and reduced impacts on habitats or be avoided entirely during certain spawning seasons.
- Commenters requested that the EIS take into consideration already existing negative impacts on fish and EFH in the Project area including pollution, atmospheric deposition, habitat degradation, and other anthropogenic forces.
- Commenters requested that the EFH assessment take into consideration the cumulative impacts from habitat alteration, currents, and changes in predatory-prey relationships, and particular attention should be given to any area designated as an HAPC.
- A commenter was concerned about the lack of site-specific scientific data on Horseshoe crabs, which are prevalent in the Falmouth area.
- Commenters requested that the EIS fully assess whether Project components are likely to introduce or encourage the spread of sea urchin or other invasive species. The commenters recommended that the analysis include the potential for invasive species to be brought into or taken from the Project area on materials or on/in vessels, including in bilge or ballast waters.
- Commenters requested that the EIS consider features less than 0.5 meter in size, as pebbles and cobbles on centimeter scales can offer refuge from flow and predation and provide feeding opportunities for juvenile fish and removing epifauna from these sediments during cable and turbine installation would affect the fish that use these habitats.
- Commenters were concerned about timing of benthic habitat surveys, which would not be conducted until spring 2022, but are necessary to inform both the NEPA analysis and the EFH consultation. They were concerned about the limited early coordination and communication for the proposed Project, particularly related to habitat mapping and data collection. The commenters stated that while some coordination has occurred, there has been limited coordination and data sharing subsequent to acoustic surveys and prior to planned benthic surveys.
- Commenters recommended that the Draft EIS adequately assess the impacts from increased turbidity and sediment deposition on benthic resources, finfish, EFH, and invertebrates during cable installation and require Mayflower Wind to undertake measures to avoid, minimize, and mitigate these impacts
- Commenters requested that the EIS include details about water withdrawal from the jet plow, including where the intake is located relative to the sea floor, the intake velocity, area of bottom potentially affected by the jet plow intake, and an estimate of possible entrainment loss given the total distance expected to be jet plowed, time of year jet plowing would take place, and the demersal species that would likely be present as eggs and larvae during the construction period.
- Commenters requested that the EIS analyze impacts on the following species: Atlantic white shark, horseshoe crabs, Atlantic wolffish, witch flounder, yellowtail flounder, ocean pout, sea urchin, American lobster, butterflyfish, oceanic whitetip shark, giant manta ray, summer flounder,

winter flounder, haddock, monkfish, black sea bass, Atlantic surfclam, pollock, winter hake, little skate, windowpane skate, bluefish, scup, Atlantic sea scallop, yellowtail flounder, ocean quahog, five distinct population segment (DPS) of Atlantic sturgeon, red hake, northern longfin squid, Atlantic sea scallop, albacore tuna, yellowfin tuna, bluefin tuna, blue shark, sandbar shark, white shark, dusky shark, tiger shark, and sand tiger shark, sand lance, striped bass, American shad, alewife, blueback herring, Atlantic menhaden, Atlantic silversides, oyster, blue mussel, tautog, and weakfish.

2.3.13 Land Use and Coastal Infrastructure

Land use and coastal infrastructure comments addressed potential land use conflicts.

Topics raised in this category included the following.

- A commenter noted they will contact BOEM if any of the potential landfall locations are Land and Water Conservation Fund sites, and therefore subject to review for possible conversion, or if any of the proposed onshore locations are Federal Lands to Parks parcels or Urban Park and Recreation Recovery-supported parks.
- The same commenter requested notification if the proposed route and potential landfall of electric transmission infrastructure for the project changes, so they may review the new locations for any potential conflicts.

2.3.14 Marine Mammals

Marine mammal comments included comments on potential impacts on species or their habitat, and noted species listed under the ESA and Marine Mammal Protection Act (MMPA).

Topics raised in this category included the following.

- Many commenters expressed concern that the current status of NARW and expressed concern that the proposed Project would adversely affect NARW, as well as other marine mammals that may be found in the Lease Area. Impacts on marine mammals must be avoided and minimized to the full extent practicable.
- A commenter stated that wind development in persistent NARW aggregation or calving areas pose the greatest concern, and areas outside of aggregation and calving areas are more appropriate—strong mitigation measures would still be needed to protect this critically endangered species.
- A commenter suggested that more research is first needed on potential restrictions for installation, operations, and decommissioning with regard to time of year and related reproduction of marine life. The observer program for protected species should be bolstered and more research is needed on marine debris associated with wind farms.
- Commenters expressed concerned with noise impacts on NARW, and potential for NARW to be displaced and become entangled in crab/lobster gear and increase the risk of ship strikes.
- Commenters requested that the EIS include information on the seasonal abundance and distribution of marine mammals and other marine animals, and recognize that NARW is present year-round in the Project area. The commenters recommended that the EIS include anticipated habitat uses (e.g., foraging, migrating), threats, habitats, and prey that may be directly or indirectly affected by the proposed Project.
- A commenter requested that the EIS specify between species groups (e.g., low-frequency versus mid-frequency cetaceans) of marine mammals and sea turtles. The commenter felt that a broad grouping approach (e.g., all marine mammals) would create uncertainty and gaps in the analysis and would not fully represent the variability of impacts among different taxa.

- Commenters asked that the analysis for marine mammals (including assessments for ESA and MMPA) use the best available scientific information to support any conclusions, including the latest marine mammal stock reports. The commenters recommended that BOEM not use the Duke University habitat-density models as the sole information source from which to estimate marine mammal occurrence, density, and impact.
- A commenter stated that BOEM should analyze large-scale habitat displacement for the NARW.
- A commenter stated that the potential overlap of project construction and in-water activities should be fully evaluated in the EIS, as well as measures to avoid and minimize impacts on sensitive life stages of marine species, including marine mammals. The commenter requested that the evaluation of environmental consequences in the EIS consider how the time of year of construction activities overlap with the presence of important resources.
- A commenter suggested the persistent tidal mixing frontal zone adjacent to Nantucket Shoals be addressed, because the Project area overlaps this area. The commenter noted that these areas are where water masses driven by tidal forces converge and are often important feeding locations and are areas where predators, including marine mammals aggregate seeking the prey.
- NOAA expressed concern with the proposed Project's potential impacts on NOAA's scientific marine resources surveys, and that this issue needs to be address in the EIS.
- Commenters requested that impacts (e.g., vessel strikes) on NARW be avoided and minimized.
- A commenter was concerned with vessel strikes and stated that vessel strikes pose an unacceptable risk in this region, and BOEM must acknowledge that any vessel operating in that region has the potential to strike a NARW. The commenter felt that BOEM has significantly downplayed the risk of vessel strikes to endangered whales in previous offshore wind permitting documents and encouraged BOEM to provide a more robust quantitative analysis.
- Commenters expressed concern with impacts on whale foraging areas and that NARW have shifted their aggregation and feeding areas in recent years due to climate change. The commenters noted that the region south of Nantucket and Martha's Vineyard is now considered a year-round core habitat for foraging NARW, and commenters requested this be factored into BOEM's analysis. A commenter also suggested that further research to determine the extent to which NARW are currently in this area should be undertaken during site assessment.
- A commenter suggested that the analysis account for the Seasonal Management Areas and Dynamic Management Areas that have been established for NARW, because these areas illustrate important NARW areas where wind development should be avoided.
- A commenter suggested that BOEM not rely on the NARW migratory corridor Biologically Important Area as the sole indicator of habitat importance for the species as it is dated (2015) and a new one should be published in December 2021.
- A commenter suggested that BOEM monitor for oceanographic changes caused by large-scale build-out of offshore wind energy that may affect the marine mammal prey base.

2.3.15 Mitigation and Monitoring

Mitigation and monitoring comments included comments on current proposed mitigation and monitoring measures, as well as suggestions for additional mitigation and monitoring strategies.

Topics raised in this category included the following.

- Commenters requested mitigation and monitoring measures be coordinated across the Atlantic Outer Continental Shelf and for BOEM to use monitoring data to inform future projects. Mitigation measures should be based on best management practices informed by the latest science and technology. The commenter recommended that monitoring take an ecosystem-based

approach and be at multiple scales. Additionally, commenters requested ongoing transparency in mitigation and monitoring measures and that monitoring data be reported to other federal agencies, other offshore wind developers, and the public as appropriate.

- Commenters indicated that any mitigation should sequentially follow the full mitigation hierarchy (i.e., first avoid, then minimize, and finally offset impacts) and emphasized that Project infrastructure should be selected to avoid environmental impacts.
- Commenters requested that the EIS include an evaluation of potential impacts on and possible mitigation for avian and bat species, sea turtles, whales, potential greenhouse gas releases, NOAA scientific surveys, and marine habitats. Additionally, a commenter suggested that BOEM identify opportunities to support conservation and habitat restoration.
- A commenter requested that the EIS identify which mitigation measures are included as part of the proposed Project and, thus, evaluated in the analysis, which measures are proposed as required, and which measures are optional and could be implemented by the developer to potentially reduce impacts.
- A commenter requested that results from the Avian Exposure Risk Assessment be used to develop a focused avian monitoring and mitigation plan in the EIS. Commenters suggested that in addition to bird and bat mortality monitoring, monitoring technology such as nanotags and Motus receivers on WTGs, collision detection technology, and deterrent devices like Aircraft Detection Lighting Systems and ultraviolet lighting or ultrasonic noise emitters on WTGs, be used. Additional monitoring techniques for avian and bat species mentioned by commenters include satellite and radio telemetry to track movement, point count surveys, digital video monitoring, and acoustic monitoring to determine impacts; however, commenters indicated that new monitoring technology should be adopted as it becomes commercially available. For impacts that cannot be mitigated or avoided, commenters noted that compensatory mitigation should be provided.
- Commenters felt that mitigation measures from the COP and sampling methods regarding avian and bat collision detection are inadequate and requested that the EIS thoroughly outline BOEM's plan to implement collision detection and minimization measures during operation of the proposed Project and other planning areas.
- A commenter suggested that seasonal restrictions be placed on offshore cable burial and pile-driving to avoid spring and summer spawning seasons for a number of benthic invertebrates and fish that lay demersal eggs, including commercially important species.
- Commenters requested that the EIS include a monitoring and research plan conducted transparently by an independent party to assess and report the effects of the proposed Project on the ocean and coastal ecosystems, including marine and benthic habitats; bats; birds; marine wildlife, including their distributions and spawning sites; fishery resources; disruptions to vessel traffic patterns; and protected species. Commenters recommended that Ecological monitoring be completed prior to construction to develop a baseline, both during construction and post-construction, to understand the effects of offshore wind development on marine and coastal resources.
- Commenters suggested that the monitoring program included in the EIS include chemical and sonic monitoring; turbidity and total suspended solids during construction; benthic habitat recovery after construction; an assessment of the seafloor, currents, and winds; biological and ecological surveys for plankton abundance and wildlife presence and abundance; and coastal resources, such as wetlands.
- Commenters requested that best management practices and mitigation measures for protection of NARW developed for Vineyard Wind be adopted. Additionally, commenters stated that some survey and construction activity, including high resolution geophysical surveys, should be

prohibited during seasons when protected species are known to be present in the Project area and include dynamic restrictions and clearance zones that extend at least 1,000 meters due to the presence of NARW.

- To reduce the risk of collision with NARW, other large marine species, and sea turtles, commenters indicated that vessels should be required to maintain a separation distance of at least 500 meters from NARW, have protected species observers at all times and/or additional monitoring technology such as infrared detection devices, and limit vessels of all sizes to speeds less than 10 knots. Additionally, commenters noted that mandatory reporting for visual observations and acoustic detections of NARW should be required. Commenters noted that all vessels associated with the proposed Project should follow the vessel plan and be equipped with Automatic Identification System at all times to increase transparency.
- Commenters requested that visual and acoustic surveying and monitoring be used to determine the presence of marine wildlife and protected species, especially in the 60 minutes prior to pile-driving. Seasonal and diel prohibitions, physical and acoustic clearance and exclusion requirements, and shutdown requirements should be included in the EIS for situations where NARW are present during the construction of the proposed Project. Commenters noted that near real-time or continuous detection of protected species would be necessary to properly implement the requirements above.
- Commenters indicated that the noise threshold and noise estimates should be determined in the planning stages to inform construction methods and foundation selection. The EIS should include alternatives to require the use of noise-reduction technology and methods to minimize underwater sound levels associated with the construction, operations, and decommissioning of the proposed Project. Additionally, a commenter recommended that sound monitoring stations be established within the Project area to provide real-time data during pile-driving and inform noise thresholds and foundation selection for future projects.
- Commenters requested that the EIS include an evaluation of a regional-scale compensatory mitigation for unavoidable adverse impacts on fisheries habitats and the ecological, economic, or social losses resulting from those impacts, including any loss to fisheries, the seafood industry, and commercial for-hire fishing industry revenue. A commenter noted that compensatory mitigation should be used in addition to avoiding and minimizing impacts on fisheries.
- A commenter indicated that possible mitigation measures for fisheries could include transit lanes of 4 nautical miles, use of available safety technologies and practices for operations, a range of cable burial depths, micrositing of Project infrastructure, monitoring for changes to larval populations, and no surface occupancy areas or no build setbacks in important spawning or habitat areas.
- A commenter recommended that BOEM implement an adaptive management plan to address potential impacts on fisheries and wildlife resources and facilitate outreach to fishing organizations and citizen participation. While commenters felt BOEM should not rely on an adaptive management plan in place of mitigation measures, they requested that BOEM use supplemental mitigation measures if data or monitoring show unexpected negative impacts.
- A commenter requested that the EIS include an evaluation of mitigation measures to avoid impingement and entrapment of marine organisms and benthic larvae inadvertently due to seawater used to cool the DC converter station.
- Commenters requested that the EIS include a plan for responding to unintended and unforeseen effects on the marine environment and wildlife that includes thresholds for modifying the proposed Project's scope and possible decommissioning if the project has unexpected effects.

- A commenter requested that potential impacts due to scour protection on foundations be mitigated through a “nature-based design” approach and that scour protection be surveyed throughout its lifetime to determine impacts.
- The EIS should explore the feasibility of requiring emissions reduction best practices at multiple ports, such as vessel speed reduction requirements, sulfur restrictions in fuel, chemical and waste storage/transfer, dust control, or the use of marine shore power systems.

2.3.16 Navigation and Vessel Traffic

Navigation and vessel traffic comments included comments on the ability to operate and navigate personal or commercial vessel and potential increases of vessel traffic.

Topics raised in this category included the following.

- A commenter requested that the EIS include an analysis of impacts of transit lanes as they relate to fishing economics, production quality, markets, fisheries management, and living marine resources.
- A commenter noted that BOEM coordinate with U.S. Coast Guard to resolve inconsistencies with the Massachusetts/Rhode Island Port Access Route Study with the Massachusetts/Rhode Island Port Access Route Study in terms of traffic and navigation risks associated with the 1-nautical-mile-north/south and 1-nautical-mile-east/west spacing proposed.
- A commenter noted that the EIS should address impacts on radar used by small boats.
- A commenter indicated that preconstruction preparation of the seabed, such as relocating boulders and unexploded ordnance, may cause safety impacts on vessels, including gear or vessel damage, as these obstacles are moved beyond known locations.
- A commenter expressed concern about potential harm to vessels, including required repairs, that move between Nantucket, Martha’s Vineyard and the mainland.
- A commenter requested that the EIS include a vessel traffic plan to minimize the effects of increased vessel traffic due to project construction and operations.
- Commenters requested that a comprehensive communications plan that addresses all Project phases be developed to ensure sufficient outreach to mariners.

2.3.17 NEPA/Public Involvement Process

NEPA and public involvement process comments included how BOEM would comply with the requirements of NEPA and how public stakeholders, state and federal agencies, and tribes would be engaged.

Topics raised in this category included the following.

- Commenters cited the NEPA regulations and provided NEPA information and weblinks to help facilitate the environmental review process and Project planning.
- Commenters noted that the EIS must comply with the applicable and federal laws in order for the Project to be fully compliant under NEPA including identified ESA, MMPA and the Magnuson-Stevens Fishery Conservation and Management Act. Commenters also encouraged BOEM to coordinate with affected states, local communities, federal agencies, and tribes during the development of the Draft EIS.
- Commenters stated that for offshore wind energy to be developed in an environmentally responsible manner, BOEM should ensure meaningful engagement from stakeholders, the highest standards of independent review should be applied, all impacts should be reviewed, decisions

should be made with the best available science, and the limitations of such data or disagreements around data to assess potential impacts should be recognized.

- NMFS recommended that significance criteria definitions be written in a way that presents the range of effects on individual animals to a reader rather than using definitions from other statutes (e.g., the MMPA definition of "level A harassment") and suggested that BOEM carry forward the significance criteria developed by BOEM and NFMS on the South Fork EIS.
- NMFS encouraged early coordination 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 to support Section 7 consultation.
- NMFS provided a summarized list of NOAA's requirements for adopting BOEM's NEPA analysis.
- A commenter recommended that BOEM ensure the Final EIS for this project be updated with current knowledge, science, technology, and practices that may emerge during development of the document.
- A commenter cautioned against replicating the analysis from the Vineyard Wind EIS, despite the project's proximity to the Mayflower Wind project site.
- Several commenters expressed concerns regarding BOEM's public comment process. One commenter stated that an equitable scoping process is necessary for developing a reasonable range of alternatives for evaluation in the EIS. Another commenter stated that the 30-day scoping period was not long enough. Other commenters asserted that more effective stakeholder outreach is needed that is more inclusive and transparent. A commenter stated that BOEM has not sufficiently addressed the collective requests it has already received through the public process on other projects.
- Commenters encouraged BOEM to work cooperatively with NOAA Fisheries, state agencies, and the fishing industry in the analysis of fisheries data and for Mayflower Wind's ongoing and proposed fisheries research to be better coordinated with other offshore wind projects and fisheries science experts.
- A commenter requested that BOEM develop suitable Programmatic EISs by region, with tiered analyses for individual projects or contiguous lease areas to support the identification of suitable mitigation measures and facilitate the analysis of cumulative impacts, which the commenter believed to be applied inconsistently from one project to the next. The commenter expressed concern that offshore wind-related activities in the Mayflower Wind Lease Area that have not been reviewed by BOEM have already taken place and requested that such activities be considered, analyzed, and authorized in a Programmatic EIS.
- One commenter stated that it is unclear how BOEM decides which projects are included in an EIS and expressed concern that whether projects should be considered on an individual or cumulative level, appeared to be based on whichever is more beneficial for the developer and the issue in question.
- A commenter encouraged BOEM to publish all matters of public interest in the *Federal Register*.
- One commenter asserted that BOEM's press release announcing the NOI appeared to be "promotional" and one-sided and expressed concern that the federal goals to achieve 30 gigawatts of offshore energy could affect BOEM's independent review of the proposed Project.
- A commenter recommended that the NEPA process provide an option for BOEM to steer the project applicant toward preferred foundation and turbine types.

- One commenter requested that BOEM require the offshore wind energy proponent to undertake research necessary to ensure that claims as to lack of impact are true and, if not, to address them through mitigation.
- The New York State Department of State requested an invitation to participate as a cooperating agency in BOEM's NEPA review of the Proposed Action.
- Commenters expressed concern that a delay in agreements to purchase the full power-generating capacity of the proposed Project might lead to delays in the proposed construction schedule and noted that such a delay may require BOEM to conduct a revised NEPA analysis.
- NMFS noted that the 2-year timeline to complete the NEPA process includes milestones for issuance of a requested MMPA Incidental Take Authorization to the developer. NMFS stated that the ability to meet timelines for issuance of a requested MMPA Incidental Take Authorization is contingent upon receiving complete and adequate consultation documents and an adequate and complete MMPA Letter of Authorization application and also explained the critical importance of receiving the draft Biological Assessment with the cooperating agency draft of the Draft EIS.
- EPA recommended that the Marine Site Investigation Report and other reports that present information on benthic surveys be made available to the public for review as part of the Draft EIS.

2.3.18 Other Resources and Uses

Comments related to aviation, marine minerals, military, research activities, and other resources are captured in these subsections.

2.3.18.1 Aviation

No topics were raised in this category.

2.3.18.2 Military

No topics were raised in this category.

2.3.18.3 Research Activities

No topics were raised in this category.

2.3.18.4 Other

Topics raised in this category included the following.

- One commenter requested that additional studies be conducted and information provided for the natural resources associated with the Cape Cod onshore and offshore aspects of the proposed Project.

2.3.19 Other Topics Not Listed

This generalized comment category was used to collect other substantive comments. Specific topics included (but were not limited to) coastal zone consistency, noise, materials and waste management, general wildlife, and EMF.

2.3.19.1 Coastal Zone Consistency

Coastal zone consistency comments addressed compliance with state Coastal Zone Management Act and Massachusetts and Rhode Island coastal zone management programs.

Topics raised in this category included the following.

- Commenters indicated that the Massachusetts Ocean Management Plan identifies special, sensitive, or unique marine habitats, including hard/complex seafloor. Similarly, the Rhode Island Ocean Special Area Management Plan identifies areas of particular concern, such as glacial moraines. When evaluating export cable corridor impacts, commenters requested that the EIS reference the Massachusetts Ocean Management Plan and the Rhode Island Ocean Special Area Management Plan to limit submarine cables in areas with unique or sensitive habitat. A commenter indicated that the EIS should explain why it would not be feasible to avoid impacts on special, sensitive, or unique habitat if the export cable corridor cannot be rerouted to avoid these impacts.
- The Rhode Island CRMC, who conducts the review of federal consistency documents prepared pursuant to the Coastal Zone Management Act, indicated that Mayflower Wind will submit a Consistency Certification for the CZMA review of the export cables through Rhode Island geographic location descriptions.
- CRMC indicated that the Consistency Certification as shown in Appendix D3 of the Mayflower Wind COP contains incorrect information. In their comment they referenced multiple resources for application criteria to assist in preparing the Consistency Certification.
- The CRMC indicated that it will begin the federal consistency review with the public release of the Draft EIS, and that this review will lead to a more informed and science-driven decision-making process.
- A commenter noted that the ocean environment should be viewed as dynamic and that conditions can vary over time.

2.3.19.2 Noise

Noise comments included impacts associated with construction, predominantly from pile-driving, and operations.

Topics raised in this category included the following.

- Commenters requested that direct and cumulative noise impacts on marine mammals, sea turtles, fish, and invertebrates be examined in the EIS and impacts assessed should include individual and population-level impacts in behavior.
- A commenter stated that mitigation measures, such as temporal avoidance of migration times, should be thoroughly explored, specifically regarding important forage species like mackerel, herring, squid, and butterfish.
- Commenters welcome Mayflower Wind's inclusion of gravity-based and suction-bucket foundations because these foundations do not require pile-driving and, thus, avoid the noise impacts stemming from that activity and believe BOEM should characterize source noise levels during the installation of gravity-based and suction-bucket foundations, as well as potential exposure levels for in-water species.
- A commenter requested that operation noise on marine life should be studied and addressed as part of the mitigation measures.
- A commenter requested that the EIS assess survey noise, which can induce flight responses, behavioral disturbances, habitat avoidance, and stress responses that reduce feeding rates and reproductive success of marine mammals.
- A commenter requested that the EIS consider the level and potential impacts of vessel-related noise on marine mammals and fish during construction, particularly by continuous underwater noise emitted by dynamic positioning systems.

- A commenter requested that BOEM further study the development of technology to permit acoustic decoupling of the turbine from the mast, recommending the use of direct-drive WTGs as opposed to WTGs that rely on a gear box.
- A commenter suggested that BOEM request new guidelines on thresholds from noise for marine mammal behavioral disturbance from NMFS that are sufficiently protective and consistent with the best available science.
- A commenter suggested that, to date, injury and behavioral zones for sea turtles have not been calculated correctly for other offshore wind projects and recommended that BOEM use NMFS's most recent pile-driving calculator to obtain an accurate injury and behavioral radii for sea turtles during impact and vibratory pile-driving. The commenter recommended that additional studies are needed to determine critical ratios and temporary and permanent threshold shifts so that accurate acoustic threshold limits for anthropogenic sound sources can be added to NMFS's sound exposure guidelines.
- Additional monitoring and avoidance, minimization, and mitigation protocols can be developed to minimize impacts.
- Commenters requested that the EIS consider impacts specifically related to breeding, behavior, and feeding on NARW from noise.
- A commenter recommended that BOEM analyze underwater noise impacts on diving birds as part of the Draft EIS.
- Commenters are concerned with the lack of scientific publications on WTG's and noise and are interested how sound would propagate/dissipate through the water column and seafloor. They recommend the initial use of applicable sound field measurements from other locations to help clearly articulate anticipated pile-driving noise for the proposed Project in the EIS and the Incidental Harassment Assessment.

2.3.19.3 Materials and Waste Management

Materials and waste management comments addressed potential risks of hazardous materials.

Topics raised in this category included the following.

- A commenter expressed concern that the maintenance activities of wind turbines, such as part replacements or lubrications, may affect marine species by leaking oils or wastes into the surrounding seawater and polluting marine species living environments.

2.3.19.4 General Wildlife

General wildlife comments included harm or death to multiple types of species due to construction and operation.

Topics raised in this category included the following.

- Commenters expressed concern with the proposed Project's potential impact on species listed under the ESA and MMPA, and encouraged BOEM to use the NOAA-developed ESA Information Needs document in developing the assessment.
- A commenter expressed broad concern with potential impacts on wildlife and habitat from vessel strikes, noise, surveys or monitoring, the presence of wind turbines, activities that may displace species, sediment dispersion or pollutant discharge, project lighting, and electromagnetic fields or heat from inter-array and export cables.

- One commenter expressed concern with potential impacts of an HVDC converter offshore substation platform and DC convertor offshore substation platform on marine species, including potential water temperature impacts and water intakes.
- A commenter expressed concern with wind turbines and their scour protection changing fish distributions and creating artificial reefs, which can affect biodiversity and marine species.
- One commenter stated that to account for ecosystem uncertainty, BOEM should ensure that necessary research and monitoring is carried out to address the substantial uncertainties regarding offshore wind and wildlife interactions. The commenter recommended that BOEM support the comprehensive analysis of baseline data and ongoing data compilation and analyses and undertake a regional approach to data analysis to enhance collaboration with developers, scientists, managers, and other stakeholders.
- A commenter stated that BOEM needs to rigorously review the potential impacts of offshore wind development on wildlife and their habitats, including potential impacts related to future projects at the scale envisioned by offshore wind goals, to ensure appropriate mitigation measures are developed and adopted.
- One commenter suggested that BOEM not use value-laden terms (e.g., beneficial) to describe changes in ecosystems or species and instead should objectively describe the change (e.g., increase, decrease, change).
- A commenter stated that different turbine layouts may not reduce impacts on wildlife because increased spacing results in few turbines and less energy production within a footprint, which means more projects and more space would be necessary to meet state and national energy goals.
- NOAA expressed concern with the proposed Project's potential impacts on NOAA's scientific marine resources surveys, and that this issue needs to be address in the EIS.
- A commenter suggested that the Affected Environment section should include an assessment of species status and habitat requirements, and that the Environmental Consequences section must consider all impact producing factors/potential project impacts on species, including survey and monitoring activities that would occur following COP approval.
- One commenter suggested the persistent tidal mixing frontal zone adjacent to Nantucket Shoals be addressed. The Project area overlaps this area where water masses driven by tidal forces converge; they are often important feeding locations and areas where predators, including marine mammals and sea turtles aggregate seeking the prey.
- A commenter expressed concern about potential impacts on wildlife on Muskeget Island because it is a National Natural Landmark.

2.3.19.5 Electromagnetic Fields

EMF comments addressed the potential impacts of EMF on wildlife.

Topics raised in this category included the following.

- Commenters expressed concern over the potential impacts of project-related EMF on fishery species, benthic invertebrates, and marine mammals (e.g., cables carrying electric current may disrupt migrations of species reliant on magnetic cues for orientation and navigation) and requested these impacts be analyzed in the EIS.
- A commenter requested that BOEM and/or NMFS establish a program for monitoring the effects of EMF from the Project's subsea cables on marine wildlife, including finfish and invertebrates.

2.3.19.6 Other

Topics raised on other themes included the following.

- A commenter discussed the proposed Project's potential effect on local and regional hydrodynamics.
- One commenter commended the proposed Project for selection of two sites that appeared to be previously disturbed.
- A commenter noted it is critically important that the proposed Project demonstrate its commitment to protecting marine and land-based environmental resources, while also meeting its energy production objectives, and they look forward to reviewing more project details when the EIS is published by BOEM.
- Commenters expressed support for wind energy noting fewer impacts on the environment or economy as opposed to energy from fossil fuels.
- A commenter urged BOEM and NMFS to use the best available science prior to issuing permits and also suggested that BOEM require new biological and ecological surveys of all proposed lease areas where data are over 5 years old.
- One commenter requested to make the energy available to affected areas.
- A commenter discussed the downfalls of wind developers securing land fall access rights.
- A commenter stated that more research is needed to (1) compare environmental impacts from installations of wind farms using pile-driving techniques, and (2) environmental impacts resulting from the decommissioning of wind farms.
- Commenters questioned the reliability, longevity, and environmental waste of wind turbines.
- Commenters requested that clear terminology be used in the EIS for readability; duration, magnitude, and direction be specified when characterizing impacts; a full assessment of key impacts for the entire proposed Project be presented; and for BOEM to be transparent as to how impacts are quantitatively and qualitatively assessed. It was also requested for the EIS to identify the thresholds that apply to each impact, declaring that an impact is negligible, minor, moderate, or major.
- A commenter stated if the United States does not develop a robust domestic offshore wind supply chain, surging global demand for offshore wind project components, services, and raw materials could prevent the United States from reaching state and federal offshore wind deployment targets.
- One commenter encouraged BOEM and other evaluators of impacts on natural resources to use the new spatial tool recently released by The Nature Conservancy and share any feedback or questions.
- A commenter supported the idea that there has been insufficient data submitted by the Project proponent and that any EIS prepared by BOEM must sufficiently address the requirements of the Outer Continental Shelf Lands Act or NEPA.
- One commenter requested impacts on the tidal project from Edgartown's Muskeget Channel Tidal Energy Project (2011) be examined in the EIS.
- A commenter requested a resource where citizens from other jurisdictions can also see the comprehensive plan of BOEM on all the wind shore projects.

2.3.20 Planned Activities Scenario/Cumulative Impacts

Comments on planned activities and cumulative impacts suggested that the EIS include the full range of reasonably foreseeable projects, especially all potential offshore wind projects.

Topics raised in this category included the following.

- Commenters requested that the EIS to include the following in its scope of reasonably foreseeable future wind development:
 - The anticipated New York Bight Lease Area.
 - All project-related activities, including the Lease Area, cable corridors, landing sites, and the use of ports outside of the immediate Project area.
 - The Biden administration's goal of building 30 gigawatts (GW) of offshore wind within the next nine years and North Carolina's new commitment for 8 GW of offshore wind by 2040.
 - Any necessary landside facilities and the staging locations of materials to be used in construction.
 - All 16 COPs BOEM recently announced it plans to process by 2025.
 - All existing and planned future projects including all the other wind farms that are planned south of the island of Nantucket and Martha's Vineyard.
- Commenters requested the cumulative impact analysis should consider the impacts from all proposed and potential wind development projects in the region that may have impacts on commercially important marine species; species listed under the ESA and MMPA; visual impacts on historic properties, sites, and districts; recreational uses; and vessel traffic.
- Commenters stated that BOEM must collaborate with state efforts and agencies (e.g., Massachusetts Department of Environmental Protection, Massachusetts Department of Public Utilities, Massachusetts Department of Fish and Game, Massachusetts Office of Coastal Zone Management, Rhode Island Coastal Resources Management Council, and Rhode Island Department of Environmental Management), scientists, nongovernmental organizations, the wind industry, and other stakeholders to use information from monitoring and other research and evolving practices and technology to inform cumulative impacts analyses moving forward.
- A commenter stated that more research is needed first on the cumulative impacts of wind farms.
- Commenters requested that the EIS evaluate the cumulative impacts of multiple projects on fishing operations, such as changes to time and area fished, gear type used, fisheries targeted, and landing ports. One commenter further noted the proposed Project is not to be considered in a vacuum since many other wind farms are proposed throughout the region, and fishing would be affected over a large area if all of these projects are installed.
- Several commenters requested that the analysis of cumulative impacts give more attention to impacts on NARW and other vulnerable marine species from pile-driving noise, increased vessel activity, and overlapping benthic disturbance from multiple projects. Vessel speed restrictions and vessel noise reduction was also urged to be incorporated into cumulative impact analysis. There were also requests for BOEM to prepare a programmatic EIS for NARW to best account for the impacts of the simultaneous development of multiple lease areas and for BOEM to develop regional construction calendars in coordination with its sister agencies that schedule noisy preconstruction and construction development activities in a way that reduces cumulative noise impacts.
- Commenters requested that BOEM conduct technical or quantitative analyses of the cumulative impacts of offshore wind development on bird and bat populations. A few of these commenters further commented that the geographic scope and data used by BOEM to assess cumulative bird and bat impacts in previous analyses was inadequate and requested for BOEM to conduct a thorough review of the literature on migration and select a boundary that better reflects the potential habitat in the EIS.
- Commenters requested for the cumulative effects analysis to consider the impacts of cables from many planned projects given the COP notes that an anticipated total of up to 25 cable crossings

are expected and noted multiple benefits to coordinated transmission planning across multiple projects.

- A commenter recommended the creation of information products to show the planned locations of all export cables (e.g., through the Northeast and Mid-Atlantic Ocean Data Portals) to help stakeholders better understand the potential cumulative impacts of the offshore export cables planned for all projects.
- One commenter noted climate change is an essential consideration in the cumulative effects analysis regarding impacts on several fish species.
- A commenter expressed they have significant concerns about the cumulative impacts of offshore wind development regarding fishery independent surveys.
- Commenters requested for BOEM to clarify its approach to cumulative effects review and ensure robust data collection and monitoring at the proposed Project and regional levels take place to properly assess cumulative impacts.
- A commenter urged BOEM to complete a Programmatic EIS evaluating the cumulative impacts of all reasonably foreseeable offshore wind efforts prior to additional activity.
- One commenter requested for BOEM to analyze the cumulative impacts from the different options in the proposed Project and determine whether the cumulative impacts are reduced based on the option selected.
- Commenters urged BOEM to closely examine the cumulative impacts on demographics, employment, and economics to ensure that they properly reflect the vast potential of offshore wind to create jobs and economic opportunity while generating clean, renewable energy.
- A commenter stated that cumulative effects of offshore wind development may result in long-term, low-intensity beneficial cumulative impacts on wildlife and long-term beneficial impacts on demographics, employment, and economics.
- One commenter stated BOEM should ignore the Trump Administration's repeal of 40 CFR §1508.7, and include a cumulative impacts analysis in the EIS that is consistent with the former 40 CFR Section 1508.7 and noted that although the notice of intent did not expressly require a full cumulative impacts analysis citing to 40 CFR Section 1508.7, BOEM must nevertheless conduct such an analysis.
- A commenter stated BOEM should account for technological changes in future evaluations and urged BOEM to ensure that future cumulative impact models continue to keep pace with technology.
- One commenter requested that BOEM explicitly consider the cumulative effects of offshore wind on oceanographic conditions, including stratification and waves, and the resulting effects on fish habitat, as part of the EIS.
- A commenter requested that the EIS evaluate cumulative impacts of project construction, operation, and decommissioning.
- One commenter recommended that BOEM require procurement of best available technology, i.e., the most efficient and lowest emitting vessels available during the vessel-contracting stage of the project (such as, Tier 4-certified engines or alternative fueled vessels) to reduce long-term cumulative emissions from the vessels used for the proposed Project.

2.3.21 Proposed Action/Project Design Envelope

Proposed Action and Project Design Envelope (PDE) comments included the scope of the PDE and other aspects of the proposed Project.

Topics raised in this category included the following.

- A commenter requested that BOEM coordinate transmission cable corridors across developers to minimize impacts on marine habitats. A commenter also requested that mariner notifications be used for shallow-buried and exposed cables. Additionally, a commenter requested that the EIS explain why two export cable corridors are being considered and whether they would both be required if a new Power and Purchase Agreement requiring the interconnection point at Brayton Point is not available.
- Commenters noted that cables should be buried as much as possible and be remotely monitored due to the dynamic seafloor and to avoid impacts with cable protection materials. Commenters also requested that the EIS include an explanation on how the cable is proposed to remain buried. A commenter representing the Responsible Offshore Development Alliance and the fishing industry has requested a minimum burial depth of 8 to 10 feet. If burial depths cannot be reached, commenters recommend coordination with the fishing industry to design cable-protection methods that are compatible with fishing practices.
- A commenter requested that all project components, including cables, be removed during Project decommissioning.
- Commenters noted that the PDE cannot be so open ended that a meaningful evaluation of the impacts of the design and an analysis of reasonable alternatives becomes difficult. Commenters felt that an analysis based on an overly broad PDE would overestimate effects of the Proposed Action on protected species and habitat, which would result in very conservative mitigation measures.
- Commenters indicated that evaluating only the maximum impacts that could occur within the PDE would miss the opportunity to identify less impactful technology and does not allow for effective evaluation of impacts or benefits associated with different foundation types.
- Commenters requested that the total Project generation capacity be added to the COP and be clearly stated in the EIS as it relates to the Project design.
- A commenter requested that the EIS include an explanation on why an Operations and Maintenance facility based in Vineyard Haven is not being considered as part of the PDE.
- Commenters requested that the EIS evaluate impacts of the cooling systems at the conversion stations associated with the proposed Falmouth export cable corridor, and scour protection needed at foundations and for cable armoring, with consideration given that impacts may differ based on use.
- Commenters indicated that the open-loop cooling system for the converter stations may present conflicts due to its proximity to known cod spawning areas. They suggested using a closed-loop cooling system instead to prevent these impacts.
- A commenter requested that BOEM consider direct-drive generators in wind turbines as an alternative technology instead of gear-box turbines as a means to minimize noise impacts.

2.3.22 Purpose and Need

Purpose and need comments included questions and comments on the purpose and need statement of the EIS.

Topics raised in this category included the following.

- A commenter requested that the amount of power required to meet the project purpose and need be clearly stated in the EIS and the COP, and the impacts analysis should clearly reflect the project size(s) being considered. The commenter also requested the use of PDF “posters” be used in every project since they find the information from them more accessible in this format.

- A commenter stated that the purpose and need for the Project is unclear and explained that since there is no new Power and Purchase Agreement (beyond the existing single 804-megawatt contractual obligation), then there is no required purpose and need for the Brayton Point export cable into Rhode Island state waters. It was suggested that a requirement be set to allow permitting agencies to suggest potential project alternatives that minimize project impacts, while meeting a clearly defined need.
- One commenter felt the purpose and need is narrow and excludes alternatives that fail to meet specific private objectives.
- A commenter stated that it is incumbent upon all resource management agencies to prioritize the functional co-existence of multifarious uses of ocean space and resources, minimize negative impacts while maximizing the integrity and utility of our shared resources, and preserve our economic interests.
- One commenter requested that the EIS include the purpose and need of NMFS' action.

2.3.23 Sea Turtles

Sea turtle comments included biological, structural, or habitat impacts on the species.

Topics raised in this category included the following.

- A commenter suggested that BOEM update the injury and behavioral radii for acoustic impacts on sea turtles from pile-driving activities.
- One commenter stated that the COP seems to discount Kemp's ridley sea turtle as a common species because they are less abundant than loggerheads and leatherbacks; however, the species is expected to occur regularly in the Project area. The commenter also noted that even though no green turtles have been sighted during the Northeast Large Pelagic Survey Collaborative (NLPSC) surveys, the species has been previously sighted in the region and is known to use shallow developmental habitats around eastern Long Island and Cape Cod.
- A commenter expressed concern with the use of Navy OPAREA Density Estimate for sea turtle density estimates because it is outdated and uses NMFS aerial survey data collected prior to 2005. Further, no turtle density modeling has been conducted using the site-specific NLPSC data, and there is concern that there have not been enough sightings data to conduct density modeling for all species during all survey years. The commenter recommended that, due to the limited survey data for turtles obtained during some of the NLPSC campaigns, all turtle data be combined to generate site-specific seasonal and/or annual density estimates for species and species groups where possible.
- One commenter suggested BOEM use more recent Atlantic Marine Assessment Program for Protected Species and other regional data sources, including stranding and tagging data, to determine current sea turtle occurrence in the Project area.
- A commenter suggested that, given that the ability to detect sea turtles during aerial surveys is highly variable, tagging and tracking studies are needed to better understand movement, dive patterns and surface time, and habitat use.
- NOAA expressed concern with the proposed Project's potential impacts on NOAA's scientific marine resources surveys, and that this issue needs to be addressed in the EIS.

2.3.24 Scenic and Visual Resources

Scenic and visual resources comments included specific resources for consideration and requests for how impacts are analyzed in the EIS.

Topics raised in this category included the following.

- A commenter requested that BOEM encourage measures to protect the night sky through mitigation measures and best practices for lighting associated with the proposed Project and notes there are two observatories within the Nantucket Island National Historic Landmark and Loines Observatory and Vestal Street Observatory, whose views of the night sky may be affected by nighttime lighting.
- One commenter expressed support for Aircraft Detection Lighting Systems because they lessen nighttime visual impacts and encourages BOEM to require these systems on the proposed Project and all others in the Lease Area.
- Commenters expressed concerned with the immediate and long-term adverse visual impacts on Nantucket, which they find integral to the character, setting, feeling, and association of Nantucket's historic properties and cultural heritage.
- The National Park Service stated it was unclear whether the Gay Head Light key observation point was established at ground level or at the top story of the structure. If the former, they recommend that the KOP for Gay Head Light be reevaluated at the elevation of the top story, which is an important viewing location historically and for visitors.
- A commenter encouraged measures to protect the night sky and listed ways in which this could be accomplished.

2.3.25 Water Quality

Water quality comments included impacts that should be evaluated in the EIS.

Topics raised in this category included the following.

- A commenter expressed concern with the pieces and parts of wind turbines on water quality.
- Commenters expressed concern with suspended sediments in the water column during drilling and dredging activities and overall impact on water quality from construction, operations, and decommissioning of the proposed Project.
- A commenter suggested evaluating the potential impact of chemical emissions, including the release of chemical residues from wind farm operating materials and corrosion protection systems.
- A commenter expressed concern with general spills of oil from the proposed Project, as well as the potential for oil to be used in the offshore cable (dielectric oil to prevent wire short outs) and the release of that oil in water.

2.3.26 Wetlands and Waters of the United States

Wetlands and waters of the United States comments included close coordination and compliance with laws and regulations and provided references for undisturbed marshes and wetlands in the proposed Project area.

Topics raised in this category included the following.

- A commenter expressed concern with the impacts of onshore construction activities resulting in a change (either permanent or temporary) of cover type within a wetland (e.g., converting a forested wetland to an emergent or scrub/shrub wetland), as well as water quality impacts and erosion or sedimentation impacts on wetlands or waterbodies.
- One commenter noted that wetland delineation would be required for all onshore areas of disturbance, including laydown areas, as well as a Clean Water Act Section 408 review before a permit decision could be issued.

- A commenter stated that the EIS alternatives should include information regarding potential disturbance of wetlands and provide sufficient detail to meet requirements of the Clean Water Act Section 404(b)(1) Guidelines.
- One commenter observed that several proposed interconnection cable routes would cross important wetland habitat and could result in habitat fragmentation, erosion, and impacts on sensitive vegetation and wildlife. The commenter requested that the EIS examine reasonable alternatives and measures to avoid, minimize, and mitigate such impacts.
- A commenter stated that the EIS should fully characterize aquatic resources on or surrounding project sites and include total area of wetland(s), vegetation, sources of hydrology, and areas of any direct or indirect impacts. Streams should be mapped and potential impacts such as crossings, roads, or construction of outfalls should be assessed. The commenter recommended a detailed functional assessment for any potentially affected wetlands to inform avoidance, restoration, and mitigation actions.
- One commenter requested that the EIS describe any locations for land-based activities, as well as any details relating to anticipated construction activities.
- A commenter expressed concerns that all of the proposed cable routes and alternative routes 1, 5, and 6 cross the headwaters or tributaries of the North Landing River, which are all swamp or wetland and have rare species of plants and animals.
- One commenter expressed concern that the loss of previously undisturbed habitat could lead to permanent fragmentation of such habitat.

2.3.27 General Support or Opposition

Many commenters expressed general support for the proposed Project. Some provided comments of support without providing justification. Others were supportive of the proposed Project for specific reasons, which included the following.

- Commenters expressed support for the proposed Project as a way to address climate change and help move toward or meet collective climate and renewable energy goals.
- Commenters expressed support for the proposed Project for providing economic, environmental, and public health benefits.
- Commenters stated that the proposed Project would advance the offshore wind industry and the state of Massachusetts' clean and sustainable energy future.
- Commenters stated that that the proposed Project would contribute toward national, state, and local offshore wind goals/commitments, while also driving development of a domestic offshore wind supply chain.
- Commenters stated that the proposed Project would meet the energy needs and offshore wind commitments of the region.
- A commenter expressed distrust for the alliance between the government and private companies behind wind power.
- Commenters supported BOEM's consideration and commitment to environmental protection.
- A commenter recommended that decision makers take a broader view of the proposed Project and recognize the negative impacts should not shut down a project that could have broad beneficial and positive impacts.

Appendix A. List of Submissions and Individual Comments by Resource or NEPA Topic

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A.1. Index of Comment Submissions Sorted by Submission Number

Table A-1 lists the name and agency or organization affiliation (if any) for each person who provided a scoping submission. The submission identification (ID) number listed below corresponds to the Comment IDs referenced in Section A-2.

Table A-1 List of Submission Identifications, Names, and Affiliations

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0062-DRAFT-0005		SouthCoast LGBTQ + Network
BOEM-2021-0062-DRAFT-0006		Buzzards Bay Area Habitat for Humanity
BOEM-2021-0062-DRAFT-0007		Falmouth Running Club / Cape Cod Marathon
BOEM-2021-0062-DRAFT-0008		Associated Industries of Massachusetts
BOEM-2021-0062-DRAFT-0009		Association to Preserve Cape Cod, Inc.
BOEM-2021-0062-DRAFT-0010	Don Mallinson	
BOEM-2021-0062-DRAFT-0012		Oceana
BOEM-2021-0062-DRAFT-0013		Massachusetts Building Trades Council, AFL-CIO
BOEM-2021-0062-DRAFT-0014		Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands
BOEM-2021-0062-DRAFT-0015	Mark Akselson	
BOEM-2021-0062-DRAFT-0016		Rhode Island Building & Construction Trades Council
BOEM-2021-0062-DRAFT-0017	Leslie Clift	
BOEM-2021-0062-DRAFT-0018		Massachusetts Office of Coastal Zone Management
BOEM-2021-0062-DRAFT-0019	David Dow	
BOEM-2021-0062-DRAFT-0021		New England and Mid-Atlantic Fishery Management Councils
BOEM-2021-0062-DRAFT-0022		New England for Offshore Wind
BOEM-2021-0062-DRAFT-0023		Rhode Island Coastal Resources Management Council
BOEM-2021-0062-DRAFT-0024		Rhode Island Department of Environmental Management
BOEM-2021-0062-DRAFT-0025		Business Network for Offshore Wind
BOEM-2021-0062-DRAFT-0026		Responsible Offshore Development Alliance
BOEM-2021-0062-DRAFT-0027		BlueGreen Alliance
BOEM-2021-0062-DRAFT-0028		New England for Offshore Wind
BOEM-2021-0062-DRAFT-0029		Town of Nantucket
BOEM-2021-0062-DRAFT-0030		The Nature Conservancy
BOEM-2021-0062-DRAFT-0031		New Bedford Port Authority
BOEM-2021-0062-DRAFT-0033		New York State Department of State
BOEM-2021-0062-DRAFT-0034		Martha's Vineyard Commission
BOEM-2021-0062-DRAFT-0035		National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0062-DRAFT-0036		North America's Building Trades Unions
BOEM-2021-0062-DRAFT-0037		National Marine Fisheries Service Greater Atlantic Regional Fisheries Office
BOEM-2021-0062-DRAFT-0038		National Park Service DOI
BOEM-2021-0062-DRAFT-0039		U.S. EPA
BOEM-2021-0062-TRANS-111021-001	David Wallace	
BOEM-2021-0062-TRANS-111021-002	Jerome Virgil	
BOEM-2021-0062-TRANS-111021-003	Kathleen Keating	
BOEM-2021-0062-TRANS-111021-004	Wu	
BOEM-2021-0062-TRANS-111521-001	Jeremy McDermott	
BOEM-2021-0062-TRANS-111821-001	Francis Callahan	
BOEM-2021-0062-TRANS-111821-002	Heidi Richie	
BOEM-2021-0062-TRANS-111821-003	Kelly Schlem	
BOEM-2021-0062-TRANS-111821-004	Susanna Hatch	
BOEM-2021-0062-TRANS-111821-005	Vallerie Oliver	

A.2. Individual Comments by Resource or NEPA Topic

A.2.1 Air Quality

Comment Number: BOEM-2021-0062-DRAFT-0035-02-137

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Air emissions present a similar story to climate emissions, but with the additional dimension of locational benefits to pollution impacts. Based on previous analyses of offshore wind projects, air quality impacts should be anticipated during construction with smaller and more infrequent impacts anticipated during decommissioning. [Footnote 509: Id. at A-45] Previous analyses have shown a "minor beneficial" improvement in air quality is expected from offshore wind development coming online and displacing fossil fuels. [Footnote 510: See e.g., VW1 FEIS, at ES-14.] These impacts, including the beneficial impacts, need to be considered in the Draft EIS.

Comment Number: BOEM-2021-0062-DRAFT-0039-10

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

EPA notes that Section 5.1 of the COP and Appendix G reference terminology for air emissions "modeling." However, the information presented in Appendix G – Air Emissions Report does not contain the results of any air quality dispersion or photochemical modeling analysis. Rather, Appendix G includes emissions estimates for the various project activities using BOEM's Offshore Wind Energy Facilities Emission Estimating Tool (BOEM, 2021). EPA recommends that BOEM use the term "emissions estimates" or "emissions calculations" as opposed to "modeling" in the DEIS when referencing the information contained in Appendix G of the COP to avoid the misconception that air quality dispersion modeling or photochemical modeling was conducted and included in the COP.

Comment Number: BOEM-2021-0062-DRAFT-0039-11

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Appendix G of the COP provides anticipated air emission estimates from construction and operation activities. Emission estimates from construction activities are projected to be significant. As noted above, the COP, however, does not provide a quantitative "air quality impact analysis" to determine if such emissions would adversely affect the air quality resource. Although over the long-term the development of this project and others is expected to result in avoided emissions (as described in Section 6 of Appendix G), there are potential significant shorter-term impacts that BOEM should assess onshore or at the state seaward boundary due to multiple projects being constructed or operating contemporaneously.

Comment Number: BOEM-2021-0062-DRAFT-0039-12

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

To determine air quality impacts, air quality dispersion modeling should be performed and analyzed with respect to relevant air quality standards and/or background concentrations. For ease of public review and understanding, we recommend that the DEIS contain quantitative summary tables comparing the modeled concentrations to the National Ambient Air Quality Standards (NAAQS), state air quality standards, or other relevant reference measures. We also recommend that the modeling performed for the DEIS locate receptors at the state seaward boundary. Locating the receptors at the state seaward boundary provides information on whether the NAAQS are protected and allows States to meet their State Implementation Plan and Coastal Zone Management Act (CZMA) responsibilities, as well as ensure that the air quality within this nearshore area is not adversely impacted by OCS activity. EPA is available to support BOEM with its evaluation of modeling for potential air emissions impacts.

Comment Number: BOEM-2021-0062-DRAFT-0039-13

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Section 5.1.2 of the COP and Appendix G reference emissions that occur "within 25 nautical miles of the Lease Area's centroid." EPA notes that the regulations in 40 CFR part 55 do not define emissions from OCS sources based on the of the lease area. Although EPA has allowed the use of the centroid of the project area for emissions calculations purposes on a case-by-case basis in other OCS permitting actions, project areas for those actions were much smaller than the proposed build out of the entire Mayflower Wind lease area. According to the COP, the length of the lease area (i.e. project area) is 26 nautical miles. EPA recommends that BOEM caveat the use of the concept when discussing EPA's OCS air permit to accurately the reflect the requirements of 40 CFR part 55. In addition, the DEIS should include an evaluation of the appropriateness of the use of the centroid for air emissions calculations purposes. For example, using the centroid principle may result in calculating approximately the same amount of actual emissions as trying to continuously adjust the exact point where a vessel associated with the OCS source is within 25 miles of the OCS source. By using a fixed point, it is possible that Mayflower Wind will actually calculate vessel emissions sometimes slightly more than 25 miles from the OCS source and sometimes less, thus resulting in a slight overestimate of emissions on some days and a slight underestimate of emissions on other days.

Comment Number: BOEM-2021-0062-DRAFT-0039-15

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Section 5.1.4 of the COP incorrectly states that offshore wind projects with Massachusetts designated as the COA will have to acquire emission offsets for every ton of NO_x and VOC forecast by the proposed Project annually if that annual forecast is over the ozone nonattainment threshold of 100 tons per year of NO_x or VOC. The offset requirements in Massachusetts's Nonattainment New Source Review (NNSR) permit program at 310 CMR 7.00, Appendix A applies to sources with potential emissions of 50 tons per year or more of NO_x or VOC. EPA recommends that BOEM include the correct threshold of 50 tpy of NO_x or VOC for NNSR applicability in the DEIS.

Comment Number: BOEM-2021-0062-DRAFT-0039-19

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

EPA's OCS air permit will contain, at a minimum, requirements for emissions control, emissions limitation, monitoring, testing, and reporting for OCS sources constructing and operating at the Mayflower Wind project area. In this effort, Mayflower Wind will need to provide an analysis demonstrating that ambient impacts will not affect protected Class I areas. If this information would benefit BOEM's analysis of air quality impacts for the EIS, we recommend you coordinate with EPA and the applicant to obtain the most recent ambient air impacts analysis and assessment. Please contact Patrick Bird at bird.patrick@epa.gov or 617-918-1287 for assistance.

Comment Number: BOEM-2021-0062-DRAFT-0039-20

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Climate change impact mitigation and overall improvements to air quality due to avoided emissions are important benefits of offshore wind development. The avoided emissions for the project in Section 6.0 of Appendix G of the COP were calculated using EPA's AVOIDED Emissions and gEneration Tool (AVERT) (www.epa.gov/avert). EPA recommends that the DEIS describe how the project may advance the reduction of criteria pollutant and greenhouse gas emissions from the onshore power generation sector in the northeast. Further, we recommend that BOEM use AVERT's analytical benefits, such as PM2.5 avoided emission rates, hourly offshore wind generation profiles, hourly avoided fossil fuel generation and emissions, and county-level criteria air pollutant reductions. These analytical enhancements increase the data available to the public regarding the benefits of offshore wind and they should be presented in the DEIS. While AVERT is intended to be a straightforward tool to use, we request that BOEM contact EPA to ensure proper use of AVERT and accurate reporting of avoided emissions in the DEIS. The EPA contact for AVERT is Colby Tucker (Tucker.WilliamC@epa.gov). We also recommend more explicitly describing power sector dynamics in the Northeast in outlining the scenarios estimating avoided emissions.

Comment Number: BOEM-2021-0062-DRAFT-0039-22

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Conformity refers to the requirement that an agency of the federal government must take into account (*i.e.*, conform to) the provisions of the air pollution prevention and control program (*i.e.*, implementation plan) established by a state or tribe, when any activity proposed for a federal action causes regulated emissions to occur within nonattainment or maintenance areas under state/tribal jurisdiction. Specifically, pursuant to Clean Air Act section 176(c), a federal agency must ensure that any activity it undertakes would not cause new violations of the NAAQS, increase the frequency or severity of existing violations, or delay attainment or interfere with milestones used to mark the progress of attaining or maintaining the NAAQS. The EPA regulations implementing this CAA "conformity" requirement for general federal actions are found at 40 CFR part 93 subpart B. The General Conformity regulations ensure that emissions caused by a non-transportation (*i.e.*, "general") federal action proposed to occur within a nonattainment or

maintenance area will conform to the provisions of the applicable implementation plan for that area, so as not to interfere with the state or tribe attaining or maintaining the NAAQS.

A Federal agency engaging in any activity that will cause new emissions to occur within either a nonattainment or maintenance area may be subject to the General Conformity regulations at 40 CFR part 93 subpart B. If subject to General Conformity, the agency would calculate the annual increase in emissions (*i.e.*, net emissions) of the criteria pollutant(s) that caused the area to be nonattainment (*i.e.*, the relevant pollutants). If the annual net increase in the relevant pollutant(s) caused by the activity would equal or exceed the threshold rates in the tables under 40 CFR 93.153(b)(1) and (b)(2), the federal agency must prepare an analytical demonstration that shows the activity will not cause new violations of the NAAQS in the nonattainment/maintenance area, will not make existing violations worse, and will not delay attainment of the NAAQS within the area, as required by the provisions of the applicable implementation plan.

Section 3.0 of Appendix G of the construction and operations plan includes a discussion of air emissions that may originate in a nonattainment area as part of the Final Air Emissions Report. EPA agrees with the conclusions found in this section and notes that BOEM, in conjunction with the developer, should address and resolve these conclusions in the EIS for this project.

EPA is available to provide technical assistance as necessary to support the EIS. Please contact Gary Rennie at rennie.gary@epa.gov or 617-918-1525 for assistance.

Comment Number: BOEM-2021-0062-DRAFT-0039-9

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Pursuant to Section 328 of the Clean Air Act (CAA), Congress required EPA to establish federal air permitting rules to control air pollution from the outer continental shelf (OCS) in order to attain and maintain ambient air quality standards and comply with the provisions of part C of Title I of the CAA. EPA promulgated permitting rules in 40 CFR Part 55, which establish air pollution control requirements for OCS sources consistent with section 328(a)(1) of the CAA. OCS sources located within 25 nautical miles of a State's seaward boundary are subject to both the federal requirements of Part 55 and the state and local requirements of the corresponding onshore area (COA). Beyond 25 miles, OCS sources are not subject to the state and local requirements of the COA, but rather only federal requirements. EPA has not delegated Part 55 to any states in the northeastern part of the United States and is the permitting authority for New England OCS areas. Permits issued pursuant to 40 CFR Part 55 regulate and restrict air emissions related to construction and operation activities associated with OCS sources, including certain vessels servicing or associated with OCS sources. Permits are required before project construction can begin.

To date, Mayflower Wind has not submitted a notice of intent (NOI) to EPA to submit an air permit application, and thus EPA cannot definitively determine what State will be the nearest onshore area (NOA) to the Mayflower Wind project. However, based on preliminary air permitting meetings with Mayflower Wind, EPA anticipates Massachusetts will be the NOA, and barring any request and demonstration from another State seeking COA designation, Massachusetts will serve as the COA. The Mayflower Wind COP sufficiently characterizes the air permitting obligations for the project and identifies that, for air permitting purposes, requirements shall be the same as would be applicable if the source were located in the COA, *i.e.*, presumably Massachusetts, in this instance.

For EPA to issue a permit under Massachusetts air pollution control regulations, EPA must first have incorporated by reference relevant Massachusetts air pollution control requirements into 40 CFR Part 55.

EPA previously incorporated various Massachusetts air pollution control requirements into 40 CFR Part 55 for purposes of permitting other offshore wind projects. See 83 FR 56259 (November 13, 2018). Due to periodic changes to state regulations, EPA is required to conduct a consistency update from time to time to ensure the incorporated regulations at 40 CFR Part 55 are consistent with the current regulations of the COA. Since the last consistency review, Massachusetts adopted changes to its rules (March, 2021) for Air Pollution Control found in 310 CMR 7.00. Pursuant to 40 CFR 55.12(c), EPA will conduct a consistency review of the onshore regulations in Massachusetts and determine if a consistency update rulemaking is necessary.

Pursuant to 40 CFR Part 55.4(a), Mayflower Wind must submit an air permit application to EPA within 18 months from the submittal date of the NOI. EPA will then issue a draft permit subject to a public comment period no less than 30 days and conduct a public hearing, if deemed necessary. At the conclusion of the public comment period, EPA will address all public comments, make adjustments to the permit as needed and issue a final permit. EPA will provide all relevant permit documents (application, draft permit, fact sheet, supplemental documents, public comments, response to public comments, and final permit) on our CAA permitting website (www.epa.gov/caa-permitting/epa-issued-caa-permits-region-1). The process to issue a final air permit will run in parallel with the NEPA process, and EPA intends to issue a final decision on the OCS air permit no later than 90 days after BOEM's issuance of a Record of Decision. EPA met with representatives from Mayflower Wind on January 25 and October 28, 2021 to discuss the OCS air permit NOI and will continue to work with Mayflower Wind on its OCS air permit application.

Comment Number: BOEM-2021-0062-TRANS-111821-005-3

Commenter: Vallerie Oliver

Commenter Type: Individual

Comment Excerpt Text:

The draft EIS as we will call it must assess the air quality and greenhouse gas impacts of the economic growth that will be spurred by the development of these offshore wind projects, such projects would include increased vehicle and mobile emissions from all the new alleged employment and increased energy use.

A.2.2 Alternatives

No comments were received on this topic.

A.2.2.1 Wind Turbines

Comment Number: BOEM-2021-0062-DRAFT-0021-39

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The COP does not specify a potential range of MW capacities for the turbines, though the physical sizes of the turbines are described. Given rotor diameters ranging from 721.7-918.6 ft, we assume 12-20 MW turbines are being considered.[Footnote 3: See Shields, Matt, et al. 2021. Impacts of turbine and plant upsizing on the levelized cost of energy for offshore wind. Applied Energy. doi: 10.1016/j.apenergy.2021.117189.] Without specifying the minimum and maximum likely turbine capacities, or the total amount of power to be generated, it is challenging to predict how many of the maximum 149 turbine and substation locations may be required to meet the purpose and need of the

project while minimizing negative impacts to the environment and existing uses such as commercial and recreational fishing.

Comment Number: BOEM-2021-0062-DRAFT-0033-2

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

1. *An Alternative to the Proposed Action that includes an adequately sized transit lane to accommodate east-west vessel traffic.* New York fishermen should be afforded the same consideration for safe and efficient transit as other maritime users in the RI/MA Wind Energy Areas. During the Coast Guard public meeting in Montauk, NY on April 29, 2019, New York fishermen identified that east-west transit routes are necessary, preferably a northerly and a southerly route, for safe and efficient access through the RI/MA Wind Energy Areas from Long Island ports to fishing grounds. [Footnote 2: See USCG-2019-0131-0021] New York fishermen have consistently expressed the need for east-west corridors to safely transit to and from their traditional fishing grounds, like those off Nantucket and Martha's Vineyard, Massachusetts and south and west of Nantucket Shoals. [Footnote 3: See RODA Fisheries. <https://www.rodafisheries.org/ma-ri-lease-areas>] See attached Table 1 and Figure 1 identifying the yellow transit routes from Port of Montauk, NY crossing through the project area to Nantucket Lightship Closed Area and Lydonia Canyon. Notably, the vessels making these long trips are not equipped with Automatic Identification System (AIS) transponders, and therefore do not appear in most vessel transit analyses. BOEM should consider impacts to New York fishermen separate and in addition to those for fishermen from other States, given the different patterns of vessel transit that may necessitate access to restricted NY-specific routes. BOEM should investigate opportunities to mitigate those impacts through the establishment of transit lanes or other means. Careful consideration is also needed to reduce conflicts that may arise between transiting and actively-fishing vessels when designating this transit lane.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-147

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mayflower Wind should avoid siting wind turbines and export cables in complex habitats.

A.2.2.2 Cables and Landfalls

Comment Number: BOEM-2021-0062-DRAFT-0009-3

Organization: Association to Preserve Cape Cod, Inc.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

According to the COP, three locations in Falmouth have been identified as potential landing sites for the offshore cables: Worcester Avenue (preferred site), Central Park (alternate site) and Shore Street (alternate site). Horizontal directional drilling is proposed for each site to minimize impacts to the beach or existing infrastructure. Although the COP suggests that there is little potential for adverse environmental impacts from the project at these three sites, the EIS should confirm that no environmental impacts, or potential long term adverse public use impacts, will occur at the landing sites.

Comment Number: BOEM-2021-0062-DRAFT-0015-3

Commenter: Mark Akselson

Commenter Type: Individual

Comment Excerpt Text:

There is a better way to bring wind power ashore. It is called “shared transmission.” In essence, this means that offshore wind farms use a pre-determined corridor in which to run cables, as well as a shared landing point. Massachusetts had an excellent candidate for such a shared onshore landing point. Namely, the disused power plant at Brayton Point which is located in an industrially-zoned location far from residential housing and has a pre-existing connection to the grid.

Comment Number: BOEM-2021-0062-DRAFT-0015-4

Commenter: Mark Akselson

Commenter Type: Individual

Comment Excerpt Text:

From an environmental point of view, the use of the aforementioned generator lead option rather than shared transmission is at cross purposes to the stated environmental goals of local, state, and federal government. Running a separate cable from each wind farm to shore and then connecting to the grid results in more materials being used, as well as more construction and environmental impact both onshore and off. The wind power developers don’t like shared transmission because it is more expensive.

Comment Number: BOEM-2021-0062-DRAFT-0015-7

Commenter: Mark Akselson

Commenter Type: Individual

Comment Excerpt Text:

Our politicians agreed to give Vineyard Wind hundreds of millions of dollars in subsidies but did not think it appropriate to force the company to spend a few million dollars extra to find a private landing site away from people. This is not the way the US should be acting to address climate change. For Barnstable, it may already be too late, but there is still time to make the necessary adjustments for the rest of the country.

Comment Number: BOEM-2021-0062-DRAFT-0018-11

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Under the ocean plan the siting standard for cable infrastructure projects requires the proponent to demonstrate that no less environmentally damaging alternative is practicable or that the project will cause no significant alteration of Special, Sensitive, or Unique (SSU) resources. Cable projects in the planning area must avoid certain SSU areas, including North Atlantic right whale core habitat, Humpback whale core habitat, areas of hard/complex seafloor, intertidal flats, and eelgrass. The performance standard in the ocean plan requires that the proponent demonstrate that the public benefits of the project outweigh the potential detriments posed by impacts to SSU resources and that all practicable steps have been taken to avoid damage to the SSU resources and that there will be no significant alteration of the SSU resource

values or interests. The DEIS should provide details of how Mayflower Wind will meet these siting and performance standards.

Comment Number: BOEM-2021-0062-DRAFT-0018-12

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Updated SSU resource maps are currently under public review and are expected to be codified by the end of the year in the 2021 Massachusetts Ocean Management Plan. In preparation of the EIS, Mayflower Wind should refer to the updated SSU maps to determine the project's potential impacts to, or avoidance of, resources and uses mapped in the ocean plan. The EIS should also explain how the project meets the ocean plan's siting and performance standards for cable projects, as described above.

Comment Number: BOEM-2021-0062-DRAFT-0023-9

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

As new offshore wind projects are being advanced through BOEM it has become evident that there is little or no coordination amongst offshore wind developers for the co-location of export cables through common cable corridors to make landfall at desirable points of interconnection that can be supported by existing or soon-to-be-updated electric grid infrastructure. For example, Mayflower Wind has proposed the Brayton Point export cable route (with up to 6 cables) that will go through the Rhode Island 2011 and 2018 GLDs and enter RI state waters via the Sakonnet River and Mount Hope Bay to Brayton Point in Somerset, MA. Just last week BOEM announced proposed changes to the Vineyard Wind South project, now known as New England Wind, that includes an alternative export cable route (Phase 2 OECC South Coast Variant) similar to what Mayflower Wind is proposing for the Brayton Point interconnection. See https://www.regulations.gov/document/BOEM_FRDOC_0001-0579. Both of these proposed export cable routes go through CRMC designated Areas of Particular Concern (glacial moraine) and Essential Fish Habitat for Juvenile Atlantic Cod and Inshore Juvenile Cod HAPC (Habitat Areas of Particular Concern) as identified by the New England Marine Fisheries Council and NOAA NMFS. As noted by NOAA NMFS in their June 1, 2021 scoping comments to BOEM on the Revolution Wind project "Offshore export cable routing alternatives that use common corridors with adjacent projects should be evaluated and discussed. For lease areas that are adjacent to one another, BOEM should develop common cable corridors to both increase efficiency and predictability and reduce resource impacts. Specifically, common cable corridors would lead to efficiencies in planning, project development, and benthic habitat mapping, more predictability and time savings for applicants and resource agencies. In addition, establishing common cable corridors would facilitate comprehensive avoidance and minimization of impacts to marine resources by reducing the number of corridors and allowing for programmatic-level review and comment." See NMFS letter at 5 (<https://www.regulations.gov/comment/BOEM-2021-0029-0035>).

If the two export cable corridors proposed by Mayflower Wind and Vineyard Wind described above were required by BOEM to be consolidated, it would significantly reduce the likely impact from cable installation to Atlantic Cod EFH and HAPC by minimizing the extent of habitat disruption through temporary and permanent alteration. Consequently, the CRMC strongly encourages BOEM to evaluate alternatives for individual OSW project export cable corridors to include consolidated and coordinated export cable corridors.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-20

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, the COP recognizes that the preferred route for the FECC will cross areas that are designated as hard/complex seafloor and which are considered SSU resources in the MA Ocean Plan. [Footnote 118: MWF COP, App. D1 at Att. 1-5, Figure 5.] Where cable routes intersect with hard bottom, complex habitats, impacts can be long-term and/or permanent. [Footnote 119: Vineyard Wind 1 Final EIS at 3-7; Anwar A. Khan & Kevin Smith, Seafloor Disturbance and Recovery Monitoring at the Block Island Wind Farm, BOEM, at 27-28 (March 2020).] Therefore, when installing the FECC, Mayflower Wind should avoid complex, hard bottom habitats. Mayflower Wind has not alleged that it would be infeasible to avoid hard bottom areas in Muskeget Channel when siting the FECC. Further, only to the extent that Mayflower Wind demonstrates that there is no "practicable alternative" to siting the FECC in complex, hard bottom areas; that it will take "all practicable measures to avoid damage" to these resources; and that the public benefits associated with the proposed activity outweigh the public detriments to the SSU resources, [Footnote 120: 301 CMR 28.04(2)(b).] may Mayflower Wind route cables in such areas.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-22

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Because Mayflower Wind has not provided the benthic survey data for the "western option" of the FECC, it is currently impossible to assess whether Mayflower Wind has met this burden. It is also currently questionable whether Mayflower Wind could meet this burden given that it proposes two separate export cable corridors but has not explained why it needs to construct two separate corridors. Mayflower Wind should explain if it would be feasible to avoid impacts to SSU and complex habitats in Muskeget Channel entirely by foregoing installation of the FECC and, instead, only construct one export corridor to the Brayton Point location. Moreover, if Mayflower Wind claims that it is too expensive to route the cable around complex habitats in Muskeget Channel, then it should explain why cost is not an obstacle to constructing two separate export cable corridors but is an obstacle to rerouting the FECC to avoid complex habitats. Finally, to the extent that Mayflower Wind is able to demonstrate that there is no alternative to routing the FECC across hard bottom, complex areas, Mayflower Wind should minimize the length of hard bottom habitat traversed to reduce impacts.

BOEM should not proceed to issue the Draft EIS until the benthic survey data on the "western option" of the FECC route through Muskeget Channel is provided. Assuming this data is provided, as part of the Draft EIS, BOEM should assess impacts to complex habitats from the FECC placement and whether alternate routes or seasonal restrictions on cable installation would minimize or mitigate impacts to complex habitats. Further, BOEM may only authorize the Mayflower Wind project if Massachusetts determines that the placement of the FECC is consistent with the MA Ocean Plan, including its provisions relating to SSU resources and "complex/hard seafloor" and the avoidance of such areas. [Footnote 121: See 15 C.F.R. §§930.50-930.66; see also 16 U.S.C. §1456 (Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried

out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-23

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Brayton Point Export Cable Corridor in Rhode Island State Waters

As noted previously, the BPECC will traverse an area of the RI SAMP. Pursuant to the regulations governing the RI SAMP, certain locations are designated as "areas of particular concern" in the RI SAMP area. [Footnote 122: 20-05-11.10. Regulatory Standards, 650 RI ADC 20-05-11.10.] The regulations describe the following areas of particular concern:

Glacial moraines are important habitat areas for a diversity of fish and other marine plants and animals because of their relative structural permanence and structural complexity. Glacial moraines create a unique bottom topography that allows for habitat diversity and complexity, which allows for species diversity in these areas and creates environments that exhibit some of the highest biodiversity within the entire Ocean SAMP area. The Council also recognizes that because glacial moraines contain valuable habitats for fish and other marine life, they are also important to commercial and recreational fishermen. Accordingly, the Council shall designate glacial moraines as identified in Figures 3 and 4 in § 11.10.2 of this Part as Areas of Particular Concern. [Footnote 123: Id. at 11.10.2(C)(3).]

Thereby, the regulation identifies a number of glacial moraines as areas of particular concern.[Footnote 124: Id. at 11.10.2(C), Figure 3.] Pursuant to the regulations, large-scale offshore developments, including offshore wind facilities, "shall avoid areas designated as areas of particular concern." [Footnote 125: Id. at 11.10.1(B).] Moreover, large scale offshore developments, as well as underwater cables, are "presumptively excluded" from areas of particular concern and this exclusion is only rebuttable "if the applicant can demonstrate by clear and convincing evidence that there are no practicable alternatives that are less damaging in areas outside" of the area of particular concern, or that "the proposed project will not result in a significant alteration to the values and resources" of the area of particular concern. [Footnote 126: Id. at 11.10.2(B).] Additionally, "when evaluating a project proposal, the RI Council shall not consider cost as a factor when determining whether practicable alternatives exist." [Footnote 127: Id.] Further, "[a]pplicants which successfully demonstrate that the presumptive exclusion does not apply to a proposed project because there are no practicable alternatives that are less damaging in areas outside" of the area of particular concern "must also demonstrate that all feasible efforts have been made to avoid damage" to the resources and values of areas of particular concern and that "there will be no significant alteration" of the resources and values of the areas of particular concern.[Footnote 128: Id. The regulations further provide that the RI Council recognizes that moraine edges are important to commercial and recreational fishermen and that where it is determined that there is a significant adverse impact, the RI Council "will modify or deny activities that would impact these areas." Id. at 11.10.1(H). Additionally, the RI Council "will require assent holders for offshore developments to employ micro-siting techniques in order to minimize the potential impacts of such projects on these edge areas." Id]

Comment Number: BOEM-2021-0062-DRAFT-0037-16

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The proposed Mayflower Wind project is located within hard bottom and submerged aquatic vegetation (SAV) complex habitats that are Essential Fish Habitat (EFH) for a number of managed fish species and trust resources for which NMFS has conservation responsibilities. While the lease area and portions of the proposed cable routes appear to be dominated by soft-bottom habitats, substantial portions of both proposed cable routes overlap with highly complex habitats. Of particular concern is the proposed cable route in Rhode Island waters (i.e. the Sakonnet River and Mount Hope Bay), and the northern portion of the Falmouth cable corridor. Although the minimization of impacts should be considered in the development of all alternatives, given the complexity of habitats within the cable corridors and the importance of these habitats to NOAA trust resources, it will be critical for you to consider a discrete alternative specific to reducing impacts to fisheries habitats that are more sensitive and vulnerable to impacts. Of particular concern are impacts to complex habitats and habitat used by early life history stages of Atlantic cod. We recommend the Fisheries Habitat Impact Minimization Alternative focus on avoiding and minimizing impacts to sensitive habitats from export cable construction and operation.

Comment Number: BOEM-2021-0062-DRAFT-0037-17

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Both proposed export cable routes are located within sensitive habitat areas. The Sakonnet River and Mount Hope Bay are known to support complex habitats and sensitive, early life history stages of southern New England Atlantic cod. Despite Atlantic cod populations being at historically low levels throughout the region, larval and young of the year (YOY) cod abundances within the Sakonnet River and Mount Hope Bay have been increasing over the last two decades (Langan et al. 2020). In addition, the northern portion of the Falmouth export cable route includes both SAV and hard bottom complex habitats. These areas have been identified as an HAPC for juvenile Atlantic cod and summer flounder. The complex habitats used by Atlantic cod, and other species, are vulnerable to disturbances or alterations that can impact the physical and biological components of these habitats that provide complexity. Impacts to the physical (e.g. three-dimensional structure, crevices) and biological (e.g. epifauna) components may be long-term or permanent, typically taking years to decades to recover. Thus we consider it critical to evaluate an alternative that is focused on minimizing adverse impacts of the project to sensitive, early life history stages of Atlantic cod.

Our ability to provide you with specific details and technical assistance related to this proposed alternative is limited by the habitat data available to us. While the offshore benthic habitat reports were made available to us with the publication of the NOI, there is no site-specific information or data provided for the proposed Sakonnet River cable corridor, or the currently proposed alternate route for the Falmouth cable corridor. We understand that site-specific data will be collected in Spring 2020. While we appreciate that an alternate corridor will be evaluated on the western side of Muskeget Channel that may minimize the impacts to complex habitats identified with the Channel, the desktop information provided in Figure 6-20 of the COP Volume 2, indicates a substantial portion of the alternate route west of the main Channel and large portions of the cable corridor through Rhode Island waters are likely to be complex habitat. This is consistent with our understanding of the habitat types found within Muskeget Channel and the Sakonnet River.

The Fisheries Habitat Impact Minimization Alternative should evaluate all feasible measures to avoid and minimize impacts to complex habitats for both of the proposed cable corridors. This habitat alternative should evaluate alternative routing of both the Sakonnet and Falmouth cable corridors and could be

considered as two separate alternatives or one alternative with sub-alternative options which may be mixed or matched with other identified alternatives.

Comment Number: BOEM-2021-0062-DRAFT-0037-18

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

All potential alternative routes to the Brayton Point Station connection should be evaluated, including land-based routing alternatives. Given the narrow width of the Sakonnet River, substantial impacts to adjacent complex habitats resulting from turbidity and re-deposition of sediments would be expected to occur even if the upcoming benthic surveys were able to identify discrete areas of soft bottom habitats for cable micrositing. The EIS should fully evaluate alternatives to the proposed in-water routing of the cable through the Sakonnet River. This may include over-land routing, alternative in-water routing (e.g. through the West Passage), or infrastructure upgrades at the Falmouth location to allow for a single landing location.

Comment Number: BOEM-2021-0062-DRAFT-0037-19

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

This alternative or sub-alternative should focus on alternative routing to avoid and minimize impacts to complex habitats in Muskeget Channel as well as mapped SAV beds at the proposed landfall locations. This may include evaluation of all identified cable routes in and around Muskeget Channel, including the western corridor, to identify the least damaging alternative to complex habitats in Muskeget Channel. This should also include evaluation of an expanded corridor north of the channel to shore to allow for micrositing of the cable to reduce impacts to complex habitats. It will be critical for this alternative to identify ways to avoid impacts to the eelgrass bed identified at both potential landing locations. This should include routing the cable corridor outside the eelgrass bed to avoid permanent impacts to this important habitat.

Comment Number: BOEM-2021-0062-DRAFT-0037-20

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Mayflower Wind has proposed an Offshore Converter Station (OCS) and one direct current (DC) submarine export cable bundle in place of using alternating current (AC) submarine cable bundles for transmitting energy onshore from the lease area. Of particular concern for fisheries resources are the proposed water withdrawals required for the OCS, including the potential for impingement or entrainment of early life stages of marine species, heated effluent discharge, and differences in electromagnetic fields (EMF) emission levels. Currently, the COP only presents a review of scientific studies on the effects of EMF to resources associated with AC and DC cable export options. The COP includes a limited evaluation of the differences in effects between AC and DC cables for EMF, and no evaluation of the differences in generated heat, or of the proposed seawater cooled OCS. An alternative should evaluate not only the differences in the project components that would be necessary for the proposed DC export option and an AC export option, but also how the different project components associated with each option would affect resources. It will be particularly important to evaluate the expected impacts to resources that

would result from the proposed water withdrawals and discharges. Additionally, the DC export option should also include a range of all feasible alternatives to the proposed use of seawater withdrawal and discharge for cooling (e.g. closed loop, air cooling, etc.).

Comment Number: BOEM-2021-0062-DRAFT-0037-24

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Offshore export cable routing alternatives that use common corridors with adjacent projects should be evaluated and discussed. For lease areas that are adjacent to one another, BOEM should develop common cable corridors to increase both efficiency and predictability and reduce resource impacts. Specifically, common cable corridors would lead to efficiencies in planning, project development, and benthic habitat mapping, more predictability and time savings for applicants and resource agencies. In addition, establishing common cable corridors would facilitate comprehensive avoidance and minimization of impacts to marine resources by reducing the number of corridors and allowing for programmatic-level review and comment.

Comment Number: BOEM-2021-0062-DRAFT-0039-8

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Cable Routing: The DEIS alternatives analysis should contain an analysis of cable route alternatives from the lease area to shore and whether overall project impacts to complex habitats and eelgrass can be avoided or minimized. We recommend that the DEIS explore whether the Brayton Point Offshore Export Cable Corridor (OECC) can be rerouted to further avoid/reduce impacts. Based on a quick desktop investigation it appears that is the case. Namely, one could route the cable corridor from the point where the cable splits from the Falmouth OECC to then cut between Martha's Vineyard and Nomans Island and reconnects with the planned Brayton Point OECC route just off the Elizabeth Islands. This routing is more direct and would be approximately 10 nautical miles shorter than the proposed route. The DEIS should fully explore this alternative and if it was already considered and ruled out the reasons should be provided. The likely reduction in impacts associated with 10 nm miles less trenching, plowing, and cable placement should be explored in the DEIS.

A.2.2.3 Project Relocation

No comments were received on this topic.

A.2.2.4 Other Comments on Alternatives

Comment Number: BOEM-2021-0062-DRAFT-0012-27

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Separate from the overarching requirements described above, Oceana encourages BOEM to include alternatives specific to each phase of the project (siting, construction, operation, and decommissioning) to

ensure the environmental effects of the project are avoided and if not avoided then mitigated or minimized.

Comment Number: BOEM-2021-0062-DRAFT-0012-28

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Some areas of the oceans have higher levels of protections due to their importance to fisheries, wildlife, or other reasons. Offshore wind development should not occur in marine monuments or sanctuaries; habitat areas of particular concern including areas that include deep sea corals; Seasonal Management Areas (SMAs), or persistent Dynamic Management Areas (DMAs) created to reduce risk of vessel collision with NARWs. When SMAs or persistent DMAs cannot be avoided, the most stringent mitigation measures will be required.

Comment Number: BOEM-2021-0062-DRAFT-0012-29

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The NARWs travel from Canada to Florida on a regular basis. The NARW calves are born in southern waters and they travel north to feed, aggregate, socialize and grow in seasonally important areas including Cape Cod Bay, the Great South Channel, and more recently the Gulf of St. Lawrence. Predicting NARW abundance and presence is the subject of considerable research but remains difficult. Regardless, the agencies must include alternatives in the EIS to avoid known or predicted NARW habitats, not just in seasonal construction mitigation but outright avoidance of the area.

Comment Number: BOEM-2021-0062-DRAFT-0012-31

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The environmental effects of leasing and development were explicitly bifurcated in the NEPA process that uses an EA to assess the impact of leasing but not development. Now the process is considering the effects of development and the agencies must seriously consider a No Action alternative that avoids all effects of offshore wind development in this area. As with all leases, it is important to note that the lease for this project included no guarantee that development will be permitted. The importance of the area south of the islands to NARWs should require strong consideration of whether these areas are appropriate for future offshore wind development.

Comment Number: BOEM-2021-0062-DRAFT-0012-33

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should include alternatives to avoid development of offshore wind in 1) Seasonal Management Areas and 2) in areas where persistent or long-duration DMAs are established and extended for more than three months in any one year of the most recent five.

Comment Number: BOEM-2021-0062-DRAFT-0012-34

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As discussed above, a wide range of areas of the ocean have been designated by fisheries managers for their importance in supporting sustainable fisheries including EFH for spawning, breeding, feeding and growth, and HAPC, a subset of EFH that are important, sensitive to human-induced environmental degradation, threatened by development, or rare. Further, some areas have been identified as deep-sea coral areas under the deep-sea coral Research and Technology Program and support slow-growing corals in temperate and deep habitats. [Footnote 12: 16 U.S.C. 1884] The EIS should explore these habitat areas in and around the project site and include alternatives to avoid these areas, particularly HAPCs. If the areas cannot be avoided, alternatives should be developed to minimize the frequency, intensity, and duration of the effects with clear requirements to monitor the effects.

Comment Number: BOEM-2021-0062-DRAFT-0019-6

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

BOEM should wait until the WOW (Wildlife & Offshore Wind) project is completed in 2027 before building more wind farms in southeastern New England

Comment Number: BOEM-2021-0062-DRAFT-0021-10

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The EIS should analyze multiple distinct alternatives associated with smallest, largest, and one or more intermediary potential scales of this project in terms of the number of turbines which might be installed, the number of offshore substations, the total disturbed area of the seafloor, the length of the offshore EECs, and whether one or two ECCs are required. The final selected combination of parameters need not match exactly with an analyzed alternative but must be within the analyzed range. The EIS should acknowledge that different combinations of these parameters will result in different levels of impacts. When describing alternatives that represent small or intermediate scales of the project, details should be provided on how determinations will be made regarding which locations to avoid. The impacts of the different foundation types should also be clearly articulated. For example, a greater area of seafloor habitat will be altered with gravity base structures, but more substantial acoustic impacts will be associated with the installation of monopiles. The DEIS should also describe the range of inter-array cable layouts under consideration and estimate the differences in impacts associated with cabling designs. All the choices described above have implications for habitat, fisheries, and other environmental impacts. It will be important to clearly outline an appropriate range of possible scenarios, especially if the project size is unknown at the time of EIS completion.

Comment Number: BOEM-2021-0062-DRAFT-0021-11

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

A mix of bottom types exist at the project site, including along the potential cable corridors. The EIS should include a habitat minimization alternative which would include micro-siting of inter-array and export cables and exclude potential turbine or substation locations with the goal of minimizing impacts to sensitive habitats including submerged aquatic vegetation, [Footnote 4:It should be noted that all areas with submerged aquatic vegetation were designated habitat areas of particular concern for summer flounder through Amendment 12 to the Mid-Atlantic Council’s Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (<https://www.mafmc.org/sf-s-bsb>). This is not acknowledged in the COP, though other habitat areas of particular concern are acknowledged.] hard bottom, and complex topography. Habitats at the offshore site are identified as being mostly sand and muddy sand except “for a few distinct areas of more coarse sediment found in well-defined rippled scoured depressions” (COP Vol 1, p. 4-9). Areas of glacial moraine along the export cable corridor (i.e., at Browns Ledge and Southwest Shoal) are of concern. Details should be provided on how determinations about micrositing will be made and what flexibilities exist to site turbines, substations, and cables (including inter-array and export cables) to minimize impacts to marine habitats.

Comment Number: BOEM-2021-0062-DRAFT-0021-15

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The EIS should also consider an alternative which would minimize impacts to commercial and recreational fisheries. This could include reducing the number of turbines and substations installed; using the shortest offshore cable corridor possible; maximizing cable burial depth; seasonal restrictions on construction activities; and excluding turbine, substation, and cable locations that have greater overlaps with fishing activity. We recommend working with affected fishermen to understand the locations of greatest concern.

Comment Number: BOEM-2021-0062-DRAFT-0024-5

Organization: Rhode Island Department of Environmental Management

Commenter Type: State Agency

Comment Excerpt Text:

The EIS should include project alternatives to mitigate potential fish habitat impacts through avoidance. This could include a land-based cable-route alternative to Brayton Point power station.

Comment Number: BOEM-2021-0062-DRAFT-0026-36

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

RODA, and our members, have repeatedly raised concerns regarding the ability of vessels to safely navigate throughout the multiple areas identified and sold to offshore wind developers by BOEM. The

EIS must include an alternative for reasonable transit lanes as consistently requested by fisheries operators since long before the submission of this COP, and BOEM must fully evaluate such transit lanes cumulatively across the Southern New England OSW lease areas. As the agency in charge of offshore wind permitting, leasing, and sales, BOEM has the authority, and responsibility, to fulfill this mandate and ensure the safety of all vessels operating in and around the WEAs. For the commercial fishing gear types found in the Mayflower Wind project area, 1x1 nautical mile (nm) spacing between turbines is too narrowly spaced for most fishing operations. Thus, if spacing remains prohibitive, resulting in full (or even majority) functional fishing closures, access to viable and safe transit options becomes the single most important mitigating factor to the project design.

BOEM's responsibility does not end once the sale is completed or a COP is approved, and it must consider a developer's proposed layout as only that—a proposal. To be clear, fisheries operators and experts neither requested nor agreed to the New England developers' proposed 1x1 nm turbine spacing without additional transit corridors laid out in the joint developer's "agreement" for the entire MA/RI lease block. [Footnote 11: See <https://static1.squarespace.com/static/5a2eae32be42d64ed467f9d1/t/5dd3d3e476d4226b2a83db25/1574163438896/Proposed+1x1+layout+from+RI-MA+Leaseholders+1+Nov+19+%281%29.pdf>.] And to repeat, BOEM and USCG's analyses of fishing vessel transit in the New England lease areas to date have been replete with missing information, unfounded conclusions, lack of cumulative-scale analysis, and absent or incorrectly referenced citations. The need for safe transit lanes of 4 nm has been raised time and again by fishermen and other fisheries experts, and the proposal RODA submitted to BOEM on behalf of our members in January 2019 remains urgent. The full history of these requests is detailed in RODA's comments to BOEM on the Vineyard Wind SEIS and South Fork DEIS.

Comment Number: BOEM-2021-0062-DRAFT-0030-15

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM affirmatively determining that an alternative that uses a foundation design other than monopiles is the preferred alternative is also one way to achieve minimization of cumulative impacts from pile driving activities associated with multiple projects that may overlap both temporally and spatially.

Comment Number: BOEM-2021-0062-DRAFT-0030-27

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Open loop cooling systems of this kind have long been shown to harm aquatic life and valuable commercial and recreational species from entrainment and impingement of particularly zooplankton, eggs, larvae, and juvenile fish and invertebrates. Entrainment losses can be significant for certain species and represent an adverse impact under the Clean Water Act. The intake velocity for the cooling water that will be utilized is of particular concern because of the relative uncertainty of whether important foraging species, ichthyoplankton, copepods, and larvae can escape the proposed intake flow. Because of these impacts, combined with the impacts of thermal pollution, states like Rhode Island, Massachusetts and New York have been phasing out legacy industrial open loop cooling systems and have imposed restrictions on construction of new ones. [Footnote 13: New York State Department of Environmental Conservation (2011) CP-#52/Best Technology Available (BTA) for Cooling Water Intake Structures. https://www.dec.ny.gov/docs/fish_marine_pdf/btapolicyfinal.pdf.]

Given the proximity of this proposed converter station to known cod spawning areas and given the emphasis that state and federal agencies have placed on rebuilding cod populations, the proposed open loop cooling system is inconsistent with long standing goals of NOAA and the New England Fishery Management Council. Permitting under the National Pollution Discharge Elimination System program for the technology used at this converter station will be managed by EPA Region I and permitting staff will undoubtedly be looking to the draft EIS for data, analysis and reports to allow for the proper evaluation of Sunrise Wind's proposed use of once through cooling. Not only should BOEM require that the project proponent provide species specific entrainment and impingement values to be evaluated as part of the EIS review, BOEM should evaluate the environmental impact of a closed loop cooling alternative as a more protective approach, in the same way as previous EIS's have added new alternatives for Fisheries Habitat layouts and other project aspects. For the open loop cooling the project proponent should provide a baseline pelagic ichthyoplankton characterization report, a comprehensive fishery impact assessment that examines species life histories (such as larval stage duration, longevity, fecundity, mortality at various larval stages, etc.), a net present value of projected entrainment losses associated with the use of the proposed technology, and a monitoring and reporting plan specific to the impacts related to the use of an open cycling cooling technology.

A simpler and more protective approach would be for Mayflower Wind, to pivot to a closed loop cooling technology now. This move would send a signal all developers for other projects that may require cooling systems for AC to DC conversion stations, to simply and smartly plan for closed loop cooling from the start.

As we have observed at Block Island Wind Farm, fouling organisms quickly colonize offshore wind turbine foundations. Thus, closed loop cooling would have an additional benefit of alleviating the need for routine underwater maintenance to remove fouling of open loop cooling water intake pipes. Propensity for fouling and clogging of open loop cooling systems and its potential impact on system reliability seems like a risk that could easily be avoided with adoption of a closed loop cooling alternative.

Comment Number: BOEM-2021-0062-DRAFT-0030-5
Organization: The Nature Conservancy
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should individually evaluate the impact of each foundation technology identified by the project applicant and the best alternative should be selected as the preferred alternative;

Comment Number: BOEM-2021-0062-DRAFT-0030-8
Organization: The Nature Conservancy
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5) Converter station cooling water intake and discharge should be carefully evaluated along with alternatives like closed loop cooling.

Comment Number: BOEM-2021-0062-DRAFT-0033-3

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

2. Such an alternative would be in accordance with EPA Phase I rule (40 CFR § 125.84) and would evaluate avoiding adverse impacts associated with water intakes and thermal discharges (e.g., entrainment, impingement, physical, chemical, and thermal effects to aquatic organisms, temperature changes to receiving waters, and potential to become an attractive nuisance).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-141

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Quiet foundation technology should be included among the reasonable alternatives examined in the Draft EIS.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-143

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Preferred foundation type (Section III): - Gravity-based and suction bucket foundations (known as "quiet" foundations) offer significant environmental benefits over pile driven foundations and may enable flexibility in construction timing and decreased noise mitigation requirements.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-146

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Mayflower Wind should use a closed loop cooling system, rather than an open loop cooling system, to avoid impacts to marine life, including eggs, larvae, juvenile fish, and invertebrates. Given the proximity of Mayflower Wind to cod spawning areas, the use of an open loop cooling system for Mayflower Wind is especially inappropriate.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-177

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

F. The Draft EIS Must Consider a Reasonable Range of Alternatives

An EIS must "inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." [Footnote 39: 40 C.F.R. § 1502.1.] This requirement has been described in former regulations as "the heart of the environmental impact statement." [Footnote 40: 40 C.F.R. § 1502.14 (repealed 2020).] The courts describe the alternatives requirement equally emphatically, citing it as the "linchpin" of the EIS. [Footnote 41: *Monroe County Conservation Council v. Volpe*, 472 F.2d 693 (2d Cir. 1972).] Even under current regulations, the agencies must therefore "[e]valuate reasonable alternatives to the proposed action, and, for alternatives that the agency eliminated from detailed study, briefly discuss the reasons for their elimination." [Footnote 42: 40 C.F.R. § 1502.14(a).] Consideration of alternatives is required by (and must conform to the independent terms of) both sections 102(2)(C) and 102(2)(E) of NEPA. Quiet foundation technology should be included among the reasonable alternatives examined. This technology, which is further discussed below, is practicable and will reduce noise impacts to the North Atlantic right whale and the broader marine ecosystem by avoiding much of the noise that poses harm to species during construction. As discussed more fully in Section II.G, it should be included as a separate alternative that can be compared against more impactful alternatives like pile foundations.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-183

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

G. BOEM Should Analyze the Environmental Impacts from Quieter Foundations and Monopile Foundations as Separate Alternatives

Our organizations recommend that the EIS analyze the impacts from "quieter" gravity-based and suction bucket foundations separate from those of monopile foundations, to clearly illuminate the pros and cons of the various foundation types on the area's wildlife and existing uses. As offshore wind development's PDE portrays the greatest expected impact, it will be necessary to add a section that teases apart the impacts from these very different technologies. BOEM should consider how to present several scenarios (e.g., 100% use of quieter foundations, 100% use of monopile foundations, a mix of quieter and monopile foundations) to allow the public to understand how various impacts could be decreased by adopting a particular alternative. Clearly identifying impacts by foundation type will also help develop relevant agency minimization, mitigation, and monitoring requirements.

Comment Number: BOEM-2021-0062-DRAFT-0037-12

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The "Alternatives" section of the EIS should consider and evaluate the full range of reasonable alternatives to the proposed action, including those that would minimize damage to the environment. The analysis must include development of one or more reasonable alternatives to avoid or minimize adverse effects to environmental resources, including NMFS trust resources. The regulations published by the Council on Environmental Quality provide: "[t]he primary purpose of an environmental impact statement prepared pursuant to section 102(2)(C) of NEPA is to ensure agencies consider the environmental impacts of their actions in decision making. It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of *reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment* (emphasis added)." When signing the Record of Decision (ROD), BOEM and NMFS will have a duty to identify an environmentally preferable alternative recognizing that agencies can develop alternatives that meet the purpose and need while avoiding and minimizing adverse environmental impacts. Indeed, the fundamental purpose of NEPA as implemented by the CEQ regulations is to fully and fairly discuss and disclose, to both the public and decision-makers, means and measures, including alternatives, to avoid and minimize adverse impacts. Compensating for unavoidable adverse impacts through development of compensatory mitigation measures should be viewed as mitigation of last resort. Avoidance and minimization must be considered and fully and fairly evaluated through the alternatives development process before reaching that point. BOEM's purpose and need statement and screening criteria cannot be so narrowly focused to eliminate from full consideration reasonable alternatives that also minimize and avoid adverse effects.

For more vulnerable and difficult-to-replace resources such as natural hard bottom complex substrates (particularly those with macroalgae and/or epifauna), submerged aquatic vegetation (SAV), dense faunal beds (e.g., cerianthid beds), shellfish habitat and reefs, other biogenic reefs, and prominent benthic features, alternatives that avoid and minimize impacts to these habitats should be evaluated and given full consideration. Compensatory mitigation should be provided for unavoidable adverse effects. Inherent to this is the necessity to conduct high-resolution benthic habitat mapping that characterizes and delineates all habitats in the lease area and within all potential cable corridor areas. To facilitate efficient review of the alternatives, we recommend the EIS discussion of the alternatives and comprehensive analyses associated with each be grouped into the three corresponding elements of the proposed project: (1) wind farm area; (2) offshore export cable routes and associated corridors; and (3) inshore export cable routes and associated corridors and landfall points. The proposed project should have multiple alternatives for each element that could be "mixed and matched" in the final selection of the single and complete project.

Comment Number: BOEM-2021-0062-DRAFT-0037-13

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The proposed Mayflower Wind project would be located just off the southwestern edge of Nantucket Shoals, a bathymetric feature that supports tidal mixing fronts. These fronts are areas of sharp discontinuities in water mass characteristics driven by converging tidal forces and are important feeding locations for many species because small plankton prey items are often concentrated there by physical

forces. Nantucket Shoals is a demonstrated foraging hotspot for marine mammals [footnote 2:<https://www.masscec.com/marine-mammal-and-sea-turtle-surveys>] , sea turtles [Footnote 3:Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R. D. Kenney, C. W. Clark, A. N. Rice, B. Estabrook and J. Tielens. 2016. Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles. US Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.], and birds [Footnote 4: White, T. P., Veit, R. R., & Perry, M. C. (2009). Feeding ecology of long-tailed ducks *Clangula hyemalis* wintering on the Nantucket Shoals. *Waterbirds*, 32(2), 293-299.]. In particular, the Shoals and adjacent waters, which overlap the Mayflower lease area, are areas with persistent North Atlantic right whale aggregations [Footnote 5: Quintana-Rizzo, E., Leiter, S., Cole, T. V. N., Hagbloom, M. N., Knowlton, A. R., Nagelkirk, P., ... & Kraus, S. D. (2021). Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development in southern New England, USA. *Endangered Species Research*, 45, 251-268.]with observations of feeding and surface active groups during most months of the year with sightings of adults, juveniles, and calves occurring at various times throughout those months. Given the imperiled state of right whales and the location of the Mayflower lease area, an alternative that would minimize overlap of the proposed project with important habitat for North Atlantic right whales should be evaluated in the EIS.

Comment Number: BOEM-2021-0062-DRAFT-0037-15

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

We recommend BOEM evaluate in the EIS an alternative that limits the portion of the lease where WTGs can be installed, which would result in no WTGs in the northern portion of the lease area. This alternative would reduce project overlap with some of the highest documented densities of North Atlantic right whale aggregations in the lease area as well as reducing overlap with areas of high frontal zone activity. This alternative would restrict the construction of structures above water in the northern portion of the lease area and would reduce the potential effects from the physical presence of structures. It may also reduce potential exposure of right whales to construction noise and reduce overlap of construction and maintenance/operations vessel traffic with whales. We consider this a reasonable alternative that should be evaluated in the EIS and are eager to work with you in the development of this alternative, including refinement of the portion of the lease that should be restricted from construction of WTGs.

Comment Number: BOEM-2021-0062-DRAFT-0037-22

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The analysis of this alternative should address how each project component of the two different options (DC versus AC) would affect fisheries resources and the species that depend on those resources for food. Further, the DC converter station alternative should include separate analyses for each feasible cooling option (e.g. closed loop). This analysis should address not only what resources and habitats would be impacted, but also include a temporal component for each project element by specifying the duration of the identified impact and any expected recovery timeframes. For example, the proposed DC option requires only one cable and foundation with a seawater cooled converter station that will operate for the life of the project, resulting in a single cable installation but continuous impacts from water withdrawals and effluent discharges over the life of the project; whereas a closed loop cooling option could eliminate

the need for continuous water withdrawals and discharges; versus an AC option that may require multiple cables or additional in-water structures with associated construction and operation impacts.

Comment Number: BOEM-2021-0062-DRAFT-0037-23

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

In addition, the EMF and heat emissions are expected to vary between the DC and AC options and this should be analyzed in detail in the EIS and any differences in impacts should be clearly identified and considered in the evaluation of the different alternative options. The alternative should fully evaluate how each option (DC versus AC) would affect the resources in the project area considering both the duration and extent of each identified impact.

Comment Number: BOEM-2021-0062-DRAFT-0039-3

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

We also strongly encourage BOEM to take the necessary time to develop and present complete information in the DEIS to fully describe existing conditions and support a discussion of the likely impacts of each alternative.

Comment Number: BOEM-2021-0062-DRAFT-0039-34

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The DEIS should explain how project activity on and offshore will comply with EPA's Clean Water Act regulations issued under Section 404 (b)(1), referred to as "EPA's 404 (b)(1) Guidelines." The DEIS should include an evaluation of ways each alternative considered can be designed to avoid, or where unavoidable, minimize direct and indirect impacts to wetlands and other waters. The evaluation of direct and indirect impacts should fully consider both temporary and permanent impacts.

Comment Number: BOEM-2021-0062-DRAFT-0039-6

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Consideration of a reasonable range of alternatives in the DEIS is a critical part of the NEPA process. We recommend that BOEM evaluate a range of alternatives for the various elements of the Mayflower Wind project including the offshore export cables, inter- array cables, landfall locations, and the overall configuration and number of the wind turbine generators(WTG) within the lease area. Our experience with previous projects demonstrates that is important for the DEIS to fully consider alternatives in the DEIS to allow for the development of a project that meets the project purpose and need while also avoiding, minimizing, and offsetting impacts to the greatest degree possible consistent with the input of state and federal stakeholders. The alternatives analysis should also analyze the potential for different ranges of overall impacts associated with the deployment of a range of WTG MW generation capacities.

Comment Number: BOEM-2021-0062-DRAFT-0039-7

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Lease area: We recommend that BOEM take a comprehensive look at the biological characteristics of the lease area and consider input from key state and federal agencies and stakeholders to determine whether a Habitat Impact Minimization alternative (Habitat Alternative) should be developed for analysis in the DEIS. In the past we have recommended a fisheries habitat alternative due to complex bottom habitat present in the lease area. We recommend that BOEM evaluate whether a habitat alternative is warranted for the Mayflower project dictated by the presence marine organisms in the project area. Such an alternative should be informed by studies and location specific characterizations that can then be used to evaluate and compare the impacts of the alternatives. Consideration of this type of information to inform alternatives development at the DEIS stage, not later in the process when opportunity for public comment is past, will allow for a transparent discussion of the overall layout and size of the project within the design envelope.

A.2.2.5 Alternate Technology or Energy Source

Comment Number: BOEM-2021-0062-TRANS-111821-005-6

Commenter: Vallerie Oliver

Commenter Type: Individual

Comment Excerpt Text:

Not thoroughly investigating alternatives to these turbines, you have stated some sort of pile alternatives but what about hydrokinetic, offshore solar or offshore wind that floats instead.

A.2.3 Bats

Comment Number: BOEM-2021-0062-DRAFT-0035-02-120

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

I. Impacts to Bats

Little data exist on bats and offshore wind energy, although research has shown that bat fatalities are common at land-based wind facilities [Footnote 409: Arnett, Edward B., and Erin F. Baerwald. 2013. "Impacts of Wind Energy Development on Bats: Implications for Conservation." In *Bat Evolution, Ecology, and Conservation*, 435–56. New York, NY: Springer New York. https://doi.org/10.1007/978-1-4614-7397-8_21.] with the potential for cumulative impacts to cause population-level declines. [Footnote 410: Frick, W. F., E. F. Baerwald, J. F. Pollock, R. M. R. Barclay, J. A. Szymanski, T. J. Weller, A. L. Russell, S. C. Loeb, R. A. Medellin, and L. P. McGuire. 2017. "Fatalities at Wind Turbines May Threaten Population Viability of a Migratory Bat." *Biological Conservation* 209: 172–77. <https://doi.org/10.1016/j.biocon.2017.02.023>; Population-Level Risk to Hoary Bats Amid Continued

Wind Energy Development: Assessing Fatality Reduction Targets Under Broad Uncertainty. EPRI, Palo Alto, CA: 2020. 3002017671; Friedenber, N. A., & Frick, W. F. (2021). Assessing fatality minimization for hoary bats amid continued wind energy development. *Biological Conservation*, 262, 109309. <https://doi.org/10.1016/J.BIOCON.2021.109309> How bats use the offshore environment is not well understood, although a report prepared by Peterson et al. (2016)[Footnote 411: Peterson, Trevor S, Steven K Pelletier, and Matt Giovanni. 2016. "Long-Term Bat Monitoring on Islands, Offshore Structures, and Coastal Sites in the Gulf of Maine, Mid-Atlantic, and Great Lakes—Final Report." Topsham, ME, USA. Prepared for the U.S. Department of Energy.] for DOE found that bats were present at all surveyed locations in the Mid-Atlantic, Gulf of Maine, and Great Lakes, with bats detected up to 130 km (70.2 nm) from the mainland in the Mid-Atlantic. [Footnote 412: Id.]BOEM should be conservative in its impact analysis, as bats have been detected offshore near the Project, [Footnote 413:See, e.g., Sunrise Wind COP, Figure 4.4.7-2 at 4-433.] there is increasing evidence that bat migration and foraging in marine environments is a relatively common phenomenon, [Footnote 414:MWF COP, Appendix I2 at 3-4.] and a lack of available information on impacts to bats from offshore wind does not indicate impacts are unlikely.

The analyses in Mayflower Wind's COP are insufficient to draw conclusions about bat risk. Mayflower Wind has not conducted boat-based acoustic bat surveys offshore or bat surveys at the onshore facilities, nor has Mayflower Wind presented pre- and post-construction monitoring plans. Although the COP states that "[o]verall, the Project is anticipated to result in only low or very low effects to bats" [Footnote 415:MWF COP, Appendix I2 at 6-1.] and that direct impacts from offshore operations will be "limited to a few individuals[.]" [Footnote 416: MFW COP, Vol. II at 6-74.] given the paucity of data on bats in the region, the lack of survey effort by Mayflower, the cursory discussion of impacts to bats from offshore wind turbines, and the uncertainties around bat behavior at offshore wind facilities, there are not enough data at this time to support such a conclusion about potential impacts to bats from Mayflower Wind's development.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-122

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

2. BOEM Should Incorporate Available Motus Wildlife Tracking System Data into Their Analysis

Although more tracking and acoustic monitoring studies are needed, there is increasing evidence that bats regularly use the offshore environment. BOEM should leverage information on bat presence offshore, including data submitted to the Motus Wildlife Tracking System, [Footnote 424: Bird Studies Canada. 2018. "Motus Wildlife Tracking System." 2018. <https://motus.org/>.] an international network of researchers using coordinated automated radio-telemetry arrays to study small flying organisms' movements, including bats (this system is also discussed above in Section IV.H, Impacts to Birds). Motus contains data on bat movements, including along the Atlantic coast, which could inform which species need to be considered in BOEM's analyses. Even though there are currently relatively few tagged bats included in Motus, the existing data indicate potential bat use offshore in and around Mayflower's Wind Project Area (Figure 1). [See original attachment for Figure 1: The colored lines indicate paths of tagged bats in Motus, with each color representing a different species. Flight paths are created from at least 3 consecutive tag bursts at a single location. Image is a screen capture from Motus (accessed November 19, 2021).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-123

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. BOEM Should Consult with USFWS About Including the Indiana Bat in Analyses of Affected Biological Resources

The COP does not include the federally endangered Indiana bat (*Myotis sodalis*) in its analysis, stating that Indiana bats are no longer considered to be present in Massachusetts. [Footnote 425: MFW COP, Appendix I2 at 4-11.] The COP cites a Bat Conservation International website [Footnote 426: Bat Conservation International. "Indiana myotis." <https://www.batcon.org/bat/myotis-sodalis/>] to support this claim. [Footnote 427: *Id* at Vol. II at 6-56 and Appendix I2 at 4-11] However, the cited source does not support this claim—in fact, Bat Conservation International’s site explicitly includes Massachusetts in a list of regions in which Indiana bats are found and Massachusetts—including eastern Massachusetts—is included in the range map for the species. [Footnote 428: Bat Conservation International. “Indiana myotis.” <https://www.batcon.org/bat/myotis-sodalis/>]

Furthermore, in 2015, a tagged Indiana bat was detected on Cape Cod and Nantucket after potentially crossing Long Island Sound [Footnote 429: The tagged Indiana bat tracked across Long Island Sound is labeled as "Indiana Bat 2403" in Motus and was detected on September 20, 2015; Bird Studies Canada 2018.] (Figure 2), [see original attachment for Figure 2: The red line indicates the path of a tagged Indiana bat in Motus. The tagged animal is labeled as "Indiana Bat 2403" and was detected on September 20, 2015. Flight paths are created from at least 3 consecutive tag bursts at a single location. Image is a screen capture from Motus (accessed November 19, 2021).] north of the Project Area. Given the proximity of this detection to Mayflower Wind and the cross-water movements made by the tagged bat (between Cape Cod and Nantucket and potentially over water on its path between Indiana and Cape Cod), the COP should be revised to cover Indiana bats and BOEM should consult with USFWS about potential impacts to Indiana bats and these impacts should be analyzed in the Draft EIS. [Footnote 430: There are not many bats included in Motus, so although only a single Indiana bat was detected potentially crossing Long Island Sound, this does not necessarily indicate that Indiana bats are rarely present in the area.]

Additionally, Indiana bat calls can be difficult to distinguish from those of certain other *Myotis* species, [Footnote 431: Fraser, E. E., Silvis, Alexander., Brigham, M. R., & Czenze, Z. J. (2020). Bat Echolocation Research: A handbook for planning and conducting acoustic studies. *Second Edition*; Britzke, E. R., Murray, K. L., Heywood, J. S., & Robbins, L. W. (2002). Acoustic identification. *The Indiana Bat: Biology and Management of an Endangered Species*, 221–225; See also Peterson et al. 2016, where the authors used a single identification ("MYSP" for *Myotis* species) to cover bat calls offshore that could potentially belong to little brown bats, northern long-eared bats, eastern small-footed bats, and Indiana bats] and *Myotis* calls may be classified as "high frequency, unknown species" during acoustic surveys. [Footnote 432: Empire Wind COP, Appendix R, p. R-15; Peterson et al. 2016, Table 2-1.] Should future Mayflower Wind acoustic surveys detect unidentified high frequency calls during acoustic surveys for bats, it would be inappropriate to dismiss the possibility of Indiana bat presence based on acoustic data alone.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-124

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4. Potential Impacts to Cave-hibernating Bats, Including the Federally-listed Northern Long-eared Bat, from Offshore Components of the Project Should Be Assessed

The Mayflower Wind COP indicates that exposure of cave-hibernating bats to the offshore Project Area is expected to be insignificant to unlikely [Footnote 433: MFW COP, Vol. II at 6-73 and 6-74.] and therefore risk to these bats from project operations is low. The COP makes this determination by understating the potential frequency of cave bats in the offshore environment and by narrowly focusing on select data to inaccurately state that *Myotis* (a genus of cave bats) species have not been detected further than 11.5 km offshore in the Mid-Atlantic [Footnote 434: Id at Vol. II at 6-58.] and that cave bats do not occur far offshore, with movements limited to between offshore islands and the mainland. [Footnote 435: *Id.* at Vol II. at 6-73 and at 6-60, Table 6-25.]

Peterson et al. (2016) detected *Myotis* calls at several Mid-Atlantic sites further offshore than 11.5 km, including at the Chesapeake Light Tower in Virginia, 24.8 km from the mainland. [Footnote 436: Peterson et al. 2016, Appendix A.] Furthermore, bat calls classified as high frequency, unknown species were detected as far as 130 km offshore. While it is not possible to attribute these unknown calls to species, high frequency, unknown species calls can include *Myotis* species.

Although bat activity does seem to decline with distance from shore, [Footnote 437: Peterson et al. 2016.] acoustic survey efforts in the Mid-Atlantic identified *Myotis* calls at 63% of sites surveyed and *Myotis* species were present at 89% of sites surveyed across the Gulf of Maine, Mid-Atlantic, and Great Lakes, [Footnote 438: *Id.*] including at remote sites like the Chesapeake Light Tower in Virginia, 24.8 km from the mainland. [Footnote 439: *Id.* at Appendix A.] Furthermore, bat calls classified as high frequency, unknown species were detected as far as 130 km offshore. [Footnote 440: *Id.* at Figure 3-4.] While it is not possible to attribute these unknown calls to species, high frequency, unknown species calls can include *Myotis* species. Motus data also indicate that Indiana bats, little brown bats (*M. lucifugus*), and eastern small-footed bats (*M. leibii*)—all cave-hibernating bat species—have made cross-water flights near Cape Cod (see Figure 1). [Footnote 441: Bird Studies Canada 2018.]

The presence of the federally threatened northern long-eared bats on both Martha's Vineyard and Nantucket indicates that this species can cross open water and the species has been tracked making long distance flights over water in the Gulf of Maine. [Footnote 442: Bird Studies Canada 2018.] Furthermore, a northern long-eared bat was acoustically detected 34 km offshore around South Fork Wind Farm. [Footnote 443: Sunrise Wind Farm COP at 4-431 and Figure 4.4.7-2.] Although Mayflower Wind's COP claims that impacts to northern long-eared bats would be insignificant, [Footnote 444: MFW COP, Vol. II at 6-73 and 6-74.] given the presence of northern long-eared bats detected nearby in the offshore environment, [Footnote 445: Sunrise Wind Farm COP at 4-438 and Appendix P at 42-43.] BOEM should be conservative in its risk analysis. BOEM should consult with USFWS about potential impacts to northern long-eared bats from the offshore components of Mayflower Wind and the Draft EIS should assess potential impacts from the offshore components of the Project on northern long-eared bats and other cave-hibernating bats.

Although these comments focus on impacts from the offshore components of the project, Mayflower Wind should take particular care during tree-clearing activity associated with the onshore project components, as the project proponents have not conducted any bat surveys at the onshore facilities

[Footnote 446: MFW COP, Appendix I2 at 5-6.] and northern long-eared bat maternity colonies have been identified adjacent to the transmission line corridor. [Footnote 447:*Id.* at Vol. II at 6-62.] Although Mayflower Wind must conduct tree clearing consistent with the final 4(d) rule for northern long-eared bats, [Footnote 448: Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-Eared Bat, 81 Fed. Reg. 1,900 (Jan. 14, 2016).] environmental groups consider the 4(d) rule to be under-protective and have challenged the 4(d) rule in court. Furthermore, as noted in the COP, [Footnote 449: MFW COP, Appendix I2 at 4-12.] USFWS was recently ordered by a federal court, following a remand of the agency's threatened listing in 2020, [Footnote 450: *Ctr. for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020).] to complete a rulemaking to determine whether the northern long-eared bat warrants listing as an endangered species under the ESA, with the final rule due in late 2022.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-125

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5. Seasonal Use of the Project Area by Migratory Tree Bats Does Not Imply Low Impact

Mayflower Wind's COP significantly downplays the risk to migratory bats, claiming that they are "unlikely to be exposed to WTGs in the Lease Area[.]" [Footnote 451: MFW COP, Vol. II at 6-73.] The COP describes bat use of the offshore environment, and therefore collision risk, to be seasonal. [Footnote 452: MFW COP at 6-59 and Appendix I2 at 6-1.] BOEM should note in its analyses that the best available science on bats and wind energy interactions from both land-based wind energy in North America and from offshore wind energy in Europe indicates that seasonal exposure of bats to wind turbines can cause significant fatalities.

The majority of migratory tree bats fatalities from land-based wind energy occur during the spring and fall migration period. [Footnote 453: Arnett, E. B., Brown, W. K., Erickson, W. P., Fiedler, J. K., Hamilton, B. L., Henry, T. H., Jain, A., Johnson, G. D., Kerns, J., Koford, R. R., Nicholson, C. P., O'Connell, T. J., Piorkowski, M. D., & Tankersley, R. D. (2008). Patterns of Bat Fatalities at Wind Energy Facilities in North America. *Journal of Wildlife Management*, 72(1), 61–78. <https://doi.org/10.2193/2007-221>; Arnett, Edward, Manuela Huso, Michael Schirmacher, and John Hayes. 2011. "Altering Turbine Speed Reduces Bat Mortality at Wind- Energy Facilities." *Frontiers in Ecology and the Environment* 9 (4): 209–14. <https://doi.org/10.1890/100103>.] Despite this predominantly seasonal exposure, demographic modeling for hoary bats (*Lasiurus cinereus*), the bat species most frequently killed by land-based wind turbines in North America, shows that the 2014 land-based wind energy build out is sufficient to cause a 90% decline in hoary bat populations over the next 50 years (associated with a 22% risk of extinction if widespread mitigation measures are not adopted) [Footnote 454: Frick et al. 2017] and that wind energy buildout can cause population-level declines during the lifetime of Mayflower Wind. [Footnote 455: Friedenber and Frick 2021.] Although this research focused on hoary bats, Frick et al. (2017) caution that other migratory tree bats, such as eastern red bats (*L. borealis*) and silver-haired bats (*Lasionycteris noctivagans*) which also experience high levels of fatalities at land-based wind facilities, might also experience population-level declines. This is of particular note as all three species of migratory tree bats have been detected in acoustic surveys offshore near Mayflower Wind [Footnote 456: Sunrise Wind Farm COP, Appendix P at 94.] and represented the majority of bat passes. [Footnote 457: *Id.* at Appendix P at 94 and Revolution Wind Farm COP at 516.] With limited research available on bats offshore, BOEM cannot dismiss the evidence from land-based wind that seasonal interactions with turbines can cause significant impacts on migratory tree bats. Beyond the survey efforts near Mayflower Wind Farm, in offshore bat surveys of the Great Lakes, Gulf of Maine, and Mid-Atlantic, migratory tree

bats were widespread, with eastern red bats detected at 97% of all surveyed sites (and 100% of sites in the Mid-Atlantic), including the most remote fixed site (41.6 km from mainland) and potentially on shipboard surveys over 100 km offshore. [Footnote 458: Calls were identified to the eastern red bat/tri-colored bat/evening bat frequencies on shipboard surveys 129 km offshore in the Mid-Atlantic. Peterson et al. 2016.] Eastern red bats alone accounted for 40% of all detected bat activity offshore. Hoary bats and silver-haired bats had less total activity offshore but were still widespread, found at 95% and 89% of all sites, respectively. [Footnote 459: Id.] Data in Motus also indicate eastern red bats and hoary bats have made cross-water flights near Cape Cod (see Figure 1). [Footnote 460: Bird Studies Canada 2018.]

Furthermore, seasonal exposure of *Nathusius's pipistrelle* (*Pipistrellus nathusii*) to expected build out of turbines in the North Sea during their late summer/autumn migration was considered sufficient exposure as to affect *Nathusius's pipistrelle* populations, triggering operational curtailment measures between August 15 and October 1. [Footnote 461: Boonman, M. (2018). Mitigation measures for bats in offshore wind farms: Evaluation and improvement of curtailment strategies.] This further belies claims that seasonal exposure of bats precludes significant impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-126

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

6. BOEM's Risk Analysis Must Account for Likely Attraction by Bats to Offshore Wind Turbines

Bats, especially migratory tree bat species like the eastern red, hoary, and silver-haired bats, are believed to be attracted to land-based wind turbines [Footnote 462: Cryan, Paul M., P. Marcos Gorresen, Cris D. Hein, Michael R. Schirmacher, Robert H. Diehl, Manuela M. Huso, David T. S. Hayman, et al. 2014. "Behavior of Bats at Wind Turbines." Proceedings of the National Academy of Sciences of the United States of America. National Academy of Sciences. <https://doi.org/10.2307/43189889>; Cryan, P. M., & Barclay, R. M. R. (2009). Causes of Bat Fatalities at Wind Turbines: Hypotheses and Predictions. *Journal of Mammalogy*, 90(6), 1330–1340. <http://www.jstor.org/stable/27755139>; Arnett et al. 2008; Horn, J. W., Arnett, E. B., & Kunz, T. H. (2008). Behavioral Responses of Bats to Operating Wind Turbines. Source: *The Journal of Wildlife Management*, 72(1), 123–132. <https://doi.org/10.2193/2006-465>; Kunz, T. H., Arnett, E. B., Erickson, W. P., Hoar, A. R., Johnson, G. D., Larkin, R. P., Strickland, M. D., Thresher, R. W., & Tuttle, M. D. (2007). Ecological Impacts of Wind Energy Development on Bats: Questions, Research Needs, and Hypotheses. In *Ecology and the Environment* (Vol. 5, Issue 6); Ahlén, I. (2003). Wind turbines and bats- a pilot study.] and have been recorded altering flight paths to approach turbines. [Footnote 463: Cryan et al. 2014.] Although no scientific consensus exists on why bats are attracted to onshore wind facilities, theories include that bats may perceive turbines as trees to roost in and bats may seek insect prey that congregate near turbines. [Footnote 464: Id.] This attraction behavior puts bats at increased risk for collision with turbine blades and whether such behavior could occur at offshore wind turbines merits careful consideration. The COP also notes that bats could potentially be attracted to offshore components of Mayflower Wind Farm (including turbines) which could increase collision risk. [Footnote 465: MFW COP at 6-61 and Appendix I2 at 3-3.] Therefore, when preparing the Draft EIS, BOEM should account for bats' potential attraction to, and increased risk of collision with, offshore wind turbines and should not rely on bat avoidance to minimize impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-127

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

7. BOEM Should Not Assume that Fewer, Larger Turbines Reduce Risks to Bats

When analyzing impacts to bats, BOEM should not assume that fewer, larger turbines reduce risk to bats. Although no research has been done on tower height and bat fatalities in the offshore environment, research onshore has shown that bat mortality increases with tower height, [Footnote 466: Barclay, Robert M.R., E.F. Baerwald, and J.C. Gruver. 2007. "Variation in Bat and Bird Fatalities at Wind Energy Facilities: Assessing the Effects of Rotor Size and Tower Height." *Canadian Journal of Zoology* 85 (3): 381–87. <https://doi.org/10.1139/Z07-011>; Rydell, Jens, Lothar Bach, Marie-Jo Dubourg-Savage, Martin Green, Luisa Rodrigues, and Anders Hedenström. 2010. "Bat Mortality at Wind Turbines in Northwestern Europe." *Acta Chiropterologica* 12 (2). Museum and Institute of Zoology at the Polish Academy of Science : 261–74. <https://doi.org/10.3161/150811010X537846>.] meaning that development approaches that favor fewer, larger turbines could be detrimental to bats. [Footnote 467: A meta-analysis by Thompson et al. 2017 found no relationship between turbine height and bat fatalities, but cautioned that research was needed to understand how turbines in excess of 140 m in height might affect bat fatalities. Given this, it is inappropriate to rely on this research to support statements that fewer, larger turbines would reduce bat fatalities. Thompson, M., J.A. Beston, M.Etterson, J.E. Diffendorfer, S.R. Loss. 2017. "Factors associated with bat mortality at wind energy facilities in the United States." *Biological Conservation* 215: 241-245.] A study on northwestern European wind facilities found that bat fatalities increased with tower height and rotor diameter [Footnote 468: Rydell et al. 2010.] and a meta-analysis of North American wind facilities found that bat fatalities increased exponentially with tower height (although this study did not find that rotor diameter affected fatalities). [Footnote 469: Barclay et al. 2007.] Insufficient data exist to determine where (if any) a tradeoff exists between decreasing the number of towers vs. increasing their height, but current research does not support the claim that fewer, larger turbines would have decreased impacts on bats. Therefore the Draft EIS should note the scientific uncertainty surrounding the degree to which bat mortality may increase with tower height and should adjust the language accordingly regarding bat impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-161

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Impacts to bats (Section IV.I):

- The Mayflower Wind COP, which does not include any project-specific acoustic survey data, lacks the necessary detail and data to draw conclusions about impacts to bats and therefore bat risk should not be assumed to be low.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-163

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM's impact analyses must account for the potential for bats to be attracted to offshore wind facilities; the impact analyses should also not assume that pre-construction bat activity will correlate with post-construction bat fatalities.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-164

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM should analyze impacts to cave-hibernating bats, including federally listed species, from offshore components of Mayflower Wind.

A.2.4 Benthic Resources

Comment Number: BOEM-2021-0062-DRAFT-0018-14

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Cable laying for Mayflower Wind will impact water quality and benthic habitats within and adjacent to the proposed offshore cable and inter-array cable routes. Total Suspended Solids (TSS) concentrations of 100 mg/L are predicted to extend to a maximum of 1,214 ft (370 m) from the cable route center lines and affect a cumulative area of 4,569 acres (1,849 hectares) for the entirety of the export cable and inter-array cable routes. Modeled sediment concentrations exceeding 50 mg/L are predicted to be generally limited to the first 16 ft (5 m) above the seafloor, although they can reach 33 ft (10 m) above seafloor in the case of the inter-array cables. Around the horizontal directional drilling hole, TSS levels exceeding 100 mg/L are predicted at a maximum distance of 118 ft (36 m), affecting a cumulative area equal to or less than 1 acre (0.4 hectare). Sediment deposition depends upon the installation method(s) ultimately chosen as well as the sediments in the area of construction but in general will be from 0.5 to 5 millimeters in depth and from 20 m to 250 m away from the project's centerline.

Comment Number: BOEM-2021-0062-DRAFT-0018-15

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

The EIS should fully describe the anticipated areal extent, locations, and expected recovery times for seafloor habitats that will be disturbed during the construction of the offshore export and inter-array cables for the project. These areas include anchor scour area, cable trenching, sediment drape footprint,

hard cover placed to protect the cables, impacts to hard/complex seafloor, and other disturbances to habitats identified after consultation with agencies.

Comment Number: BOEM-2021-0062-DRAFT-0021-33

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

We are concerned about impacts to rocky complex habitat resulting from constructing up to five offshore export cables through the Muskeget Channel and Nantucket Sound. Appendix M of the COP acknowledges targeted sampling is needed in the region including within the Muskeget Channel because of “the complex, heterogeneous habitat noted in the northern portion of the proposed export cable route” (COP Appendix M, Attachment 1, p. 2). Coastal areas off Massachusetts to a depth of 20 meters, including Muskeget Channel and the remainder of the offshore export cable corridor headed to the landfall site, are designated by the New England Council as a Habitat Area of Particular Concern for juvenile Atlantic Cod.

Comment Number: BOEM-2021-0062-DRAFT-0021-35

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The nature of these repeated effects over time should be accounted for in the analysis of impacts to habitats and fishes. As described above, we also have concerns about sedimentation which could occur at the turbine and substation foundations due to the wake effect.

In the context of both cable and turbine installation, any place where the bottom sediments will be disturbed must be evaluated for sediment contamination to understand the potential for environmental effects associated with contaminant release. Two obvious sources of contamination are dredged spoils from inshore, nearshore, or harbor maintenance and disposal of onshore materials (including waste). For many years, such disposal was not evaluated carefully and not regulated as it is today. As a result, sediments and other material with unacceptable levels of heavy metals and persistent organic pollutants (POPS) were disposed in ocean waters and may remain in locations where they could be disturbed. These sources of contamination need to be assessed and managed as part of the offshore wind development process.

Comment Number: BOEM-2021-0062-DRAFT-0031-3

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

The construction of wind turbine foundations and the on-site erection of wind turbine towers may make seawater turbid and introduce additional objects on the seabed (blocking effect), which can cause damages to the benthic fauna and flora and block sunshine into the water.

Comment Number: BOEM-2021-0062-DRAFT-0031-7

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

Wind turbines create wakes and changes to the currents in the areas they are located. These changes to the current cause sedimentation to be suspended in the water column and cause different bottom contours due to the settling of that sedimentation. One particular study used satellite images to measure the suspended particulate matter concentrations for offshore wind turbines. The study found that there were clear “sediment plumes are associated with the wakes of individual turbine monopiles of offshore wind farms.” They concluded that the sediment plumes “are 30–150 m wide, and several km in length” and in some cases as far as 10km downstream. The study went on to say that the “environmental impact of these wakes and the source of the suspended material are still unclear, but the wake size warrants further study. The underwater light field will be affected by increased suspended sediments and the turbid wakes could significantly impact sediment transport and downstream sedimentation.” Further “the spatial extent is considerable and the turbidity change may be persistent (repeating each current reversal), warranting further research on their environmental impact. Changes in the underwater light field affect for example primary production and visual predation. The observed wakes suggest changes in sedimentation patterns that could potentially cause bathymetric modification.” Turbid wakes associated with offshore wind turbines observed with Landsat 8, Quinten Vanhellemont Kevin Ruddick, Royal Belgian Institute for Natural Sciences (RBINS), Operational Directorate Natural Environment, Received 14 November 2013, Revised 17 January 2014, Accepted 18 January 2014. Scallops are filter feeders. Any change in the suspended sediment in the water will have an impact on scallop population and distribution.

Comment Number: BOEM-2021-0062-DRAFT-0031-8

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

Under the Scallop Research Set-Aside Program, researchers from the University of Massachusetts Dartmouth School of Marine Science and Technology (“SMAST”) and the Woods Hole Oceanographic Institution (“WHOI”) modeled scallop larval flow around wind turbines located and laid out according to the plans for Vineyard Wind. The preliminary results showed that the turbines can significantly enhance the mesoscale eddy circulation and turbulent mixing within and around the turbine area, reducing the horizontal larval dispersion and pushing the larvae offshore. See C. Chen et al., Assessing Potential Impacts of Offshore Wind Facilities on Regional Sea Scallop Larval and Early Juvenile Transports, NOAA Grant Number: NA19NMF450023 (May 6 and 12, 2021) (hereinafter, “Share Day Report”)

The Share Day Report explained the model output in the following way: The preliminary results show that the flow field significantly changed with turbines. The flow tended to push the larvae offshore during the 2010 and 2013 simulation period. The turbines produced mesoscale flows and enhanced vertical mixing within and around individual turbines, which considerably reduced the horizontal dispersion around the wind energy development area. In those two years, a large number of larvae were advected into the Nantucket Lightship Closed Area. Although larval behaviors play a critical role in the larvae dispersal and settlement by altering the flow-induced advection experienced at different depths, the turbines seem to significantly change vertical mixing and horizontal advection as well as horizontal turbulent dispersion.

Drs. Chen et al. have not yet modeled what might happen to scallop larvae from windfarms Hudson South. Taking the lessons from Southern New England, the larvae would seem to be “push[ed] ... together and advected ... as a group.” If these New York Bight larvae are affected by wind farms according to the modeling, they may settle and grow, just in a different place, or only some may. There may be density dependent negative impacts on these small scallops as they are pushed together, or else, they may be advected onto less hospitable ocean bottom. With this sort of uncertainty, the UN precautionary principle signals erring on the side of the resource. In this instance, a 5 mile buffer may be the minimum empirically indicated. For its part the Share Day Report characterizes the changes in ocean circulation as occurring on a “mesoscale” level. Merriam-Webster on-line defines “mesoscale” as “of intermediate size; *especially* : of or relating to a meteorological phenomenon approximately 10 to 1000 kilometers in horizontal extent.” <https://www.merriam-webster.com/dictionary/mesoscale>

Comment Number: BOEM-2021-0062-DRAFT-0034-2
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

- Impacts of scour prevention measures on seabed habitat, along with checkered nature of contiguous habitat at the base of the turbines

Comment Number: BOEM-2021-0062-DRAFT-0035-02-12
Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the area of the Mayflower Wind contains mostly non-complex habitats, the path of at least one of the two proposed export cable corridors, the Falmouth Export Cable Corridor (FECC), which will connect the Mayflower Wind to Falmouth, MA, contains more complex substrate types. Similar to the lease area, in the southern portion of the FECC, most substrates observed were non-complex, with 87 percent of samples containing sand or muddy sand. Three samples in the southern FECC area contained more complex unconsolidated-gravelly/gravelly-muddy sand substrate. [Footnote 83: MWF COP at 6-132, 6-133.] However, the northern portion of the FECC is more heterogeneous and complex habitats were observed at many sites along the northern FECC, [Footnote 84: Id.; MFW COP App. M at 3-4, 6-1.] with the following substrates observed: (1) shell reef; (2) fine/very fine sand; (3) medium sand; (4) very coarse/coarse sand; (5) sandy gravel; (6) pebble/granule; and (7) gravel pavement. [Footnote 85: Id.; MWF COP App. M at 3-4. “Gravel pavement” is used to describe areas where boulders, cobbles, and/or granule/pebbles combined comprise 80 percent or more of the substrate. MWF COP App. M at 4-5.] South of the Nantucket Sound Main Channel, coarse unconsolidated, gravelly samples are predominant. [Footnote 86: MWF COP App. M at 4-6.] The samples where “gravelly pavement” were observed are located mainly in the Muskeget Channel, and south of the landing site in Falmouth, MA. [Footnote 87: MWF COP App. M at 4-8, 4-9. For the Vineyard Wind South project, Vineyard Wind South also plans for its offshore export cable corridor to cross Muskeget Channel and is in the general vicinity of the FECC. The Vineyard Wind South COP notes that the cobble and pebble substrates in the Muskeget Channel area of the offshore export cable corridor correspond to the “most productive habitats” of the OECC, “with the highest number of invertebrate species and observations of fish” and that in parts of the Muskeget Channel area, hard bottom areas cover the full width of the proposed OECC. Vineyard Wind South COP Vol. II-A at 5-10, Vol. III at 6-85. The export cable corridor for Vineyard Wind 1 also traverses Muskeget Channel. See VW1 FEIS at 2-32.]

While Mayflower Wind's COP contains the benthic survey data along the proposed route of the FECC, the COP does not contain survey data for all of the alternative routes it has considered for the FECC route through Muskeget Channel, including the western option of the FECC, which is Mayflower Wind's preferred route through Muskeget Channel. [Footnote 88: See MWF COP at 2-6, App. M at 3-3, 3-6, 3-7, 4-8, 4-9.] The COP also does not contain benthic survey data for the second of the two export cable corridors, the Brayton Point Export Cable Corridor (BPECC), which will connect the Mayflower Wind Farm to Brayton Point in Somerset, MA, and it is unclear whether Mayflower Wind has yet conducted such a survey. [Footnote 89: See MWF COP at 6-133.] The lack of benthic survey data for the preferred route of the FECC in the Muskeget Channel and for the BPECC are serious deficiencies in Mayflower Wind's COP and BOEM should not issue a Draft EIS until Mayflower Wind presents complete benthic survey data on its proposed export cable corridors. [Footnote 90: Under BOEM's regulations, the COP must include "[t]he results of the biological survey with supporting data" including a "description of the results of biological surveys used to determine the presence of live bottoms, hard bottoms, and topographic features, and surveys of other marine resources." 30 C.F.R. §585.626 (emphasis added). The regulations also require the COP to describe sensitive biological resources or habitats that could be affected by the proposed offshore wind development, including "hard bottom habitat." 30 C.F.R. §585.627.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-145

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Impacts to benthic resources, finfish, invertebrates, and essential fish habitat (Section IV.E):- To ensure that the Draft EIS accurately evaluates impacts, BOEM and/or the National Marine Fisheries Service should conduct a (1) quantification of benthic habitat types and an (2) acoustic telemetry study of cod spawning distribution and habitat in the area of the Mayflower Wind.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-149

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM should require Mayflower Wind to provide complete benthic survey data on the two proposed offshore export cable corridors before BOEM proceeds to issuance of a Draft EIS.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-16

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In a study of the Block Island Wind Farm, non-complex habitats, consisting mainly of sand and mud, demonstrated a high rate of recovery. [Footnote 101: Anwar A. Khan & Kevin Smith, Seafloor Disturbance and Recovery Monitoring at the Block Island Wind Farm, BOEM, at 27-28 (March 2020), available at https://espi.boem.gov/final%20reports/BOEM_2020-019.pdf.] Conversely, complex habitats

have been shown to take longer to recover from offshore wind construction. In the Block Island study, 0% of complex habitat areas, containing mainly cobbles and pebbles, had completely recovered from baseline conditions after the wind farm had been in operation for nearly two years. [Footnote 102: Id.] The COP recognizes the slow recovery time for hard bottom, complex habitats, especially in the planned routes of the export cable corridors. [Footnote 103: MWF COP at 6-159, 6-197.] Given the importance of complex habitats to many species' reproduction and survival, in the Draft EIS, BOEM must adequately assess the impacts to complex habitats from the project and, as part of its analysis, account for the demonstrated lack of recovery for complex habitats from offshore wind projects.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-187

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

One of the primary environmental considerations for gravity-based foundations in particular is the impact to the benthos. Gravity-based foundations require more seabed preparation and scour protection relative to monopile foundations. BOEM must therefore carefully consider how potential negative impacts to the benthos, particularly designated essential fish habitat for large numbers of species, can be avoided, minimized, mitigated, and monitored. Local-scale impacts should be avoided by micro-siting foundations away from sensitive species and habitats. The substrate where the project is to be sited is predominantly sand, mud, and gravel; [Footnote 55: Id. at Figure 2, p. 108.] thus, the potential impacts from introducing significant levels of rocky scour should be carefully considered, particularly on sand lance and benthic invertebrates that form a significant foundation of the trophic pyramid in sand and mud benthos.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-25

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. Other Impacts Specific to the Offshore Export Cable Corridors and Inter-Array Cable

The Draft EIS should sufficiently analyze the impacts from the subsea cables installed in the FECC and BPECC and inter-array cable. Installation of subsea cables can result in mortality, injury, or displacement of benthic fauna in the path of cable installation. [Footnote 133: VW1 FEIS at 3-27.] Static subsea cable installation would result in temporary displacement of species inhabiting the cable route, including Atlantic cod and American lobster. [Footnote 134: Id.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-28

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Cable laying also results in resuspension and deposition of sediments and increased turbidity. Where displaced sediment is thick enough, benthic species can be smothered, resulting in mortality. Sediment deposition can increase mortality rates for benthic eggs and larvae. [Footnote 139: Wilber, D.H., and D.G. Clarke. Biological Effects of Suspended Sediments: A Review of Suspended Sediment Impacts on Fish

and Shellfish with Relation to Dredging Activities in Estuaries. North American Journal of Fisheries Management 21, 855-875 (2001).] The installation of the cable is also likely to result in increased turbidity, which is more likely to affect benthic species than pelagic species. For organisms that are unable to escape the increased sediment plumes, impacts may range from mortality to reduced fitness. [Footnote 140: Id.; Berry, W.J., N.I. Rubinstein, E.K. Hinchey, G. Klein-MacPhee, and D.G. Clarke, Assessment of Dredging Induced Sedimentation Effects on Winter Flounder (*Pseudopleuronectes americanus*) Hatching Success: Results of Laboratory Investigations, Proceedings of the Western Dredging Association Technical Conference and Texas A&M Dredging Seminar, Nashville, Tennessee, (June 5-8, 2011).] Turbidity may further displace mobile juvenile and adult finfish species, which could expose them to increased predation and reduce prey availability. [Footnote 141: Wilber, D.H., and D.G. Clarke, Biological Effects of Suspended Sediments: A Review of Suspended Sediment Impacts on Fish and Shellfish with Relation to Dredging Activities in Estuaries, North American Journal of Fisheries Management 21, 855-875 (2001); VW1 FEIS at 3-54.] Additionally, suspended particles, which result from cable laying, and dredge and fill activities have been found to result in moderate impacts to juvenile Atlantic cod HAPC. [Footnote 142: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, NEFMC & NMFS, at 110 (October 2017). However, the overall impact levels from utility lines to juvenile Atlantic cod HAPC remain unknown. Id.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-32

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Given the importance of complex, hard bottom habitats in the northwestern and north-central portions of the Mayflower Wind Farm to overfished Atlantic cod reproduction and growth and other vulnerable groundfish species; Atlantic cod spawning site fidelity in complex habitats; and the lack of recovery for complex habitats from offshore wind construction, as demonstrated by research at the Block Island Wind Farm, it is crucial that the Mayflower Wind Draft EIS fully consider and analyze these issues and all available information on Atlantic cod habitat as part of its impact analysis. However, as noted previously, Mayflower Wind's COP does not contain benthic survey data for the preferred "western option" route of the FECC through the Muskeget Channel or for the BPECC route. Because it will be impossible to adequately assess impacts to benthic resources without this data, BOEM must not proceed to issue a Draft EIS until this data is provided by Mayflower Wind. [Footnote 154: See 30 C.F.R. §585.626 (Under BOEM's regulations, the COP must include "[t]he results of the biological survey with supporting data" including a "description of the results of biological surveys used to determine the presence of live bottoms, hard bottoms, and topographic features, and surveys of other marine resources").]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-33

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As part of the EIS for South Fork Wind, BOEM and NMFS have worked to quantify benthic habitats in the area of South Fork Wind as either complex or non-complex and to assess the areal extent of impacts to complex habitats. [Footnote 155: See SFWF DEIS at 3-16, 3-34.] BOEM should conduct a similar quantification of habitat types in the Mayflower Wind Farm and export cable corridor areas to ensure that its evaluation of impacts to EFH and benthic resources in the Draft EIS is as complete and accurate as

possible. The Draft EIS should also provide a more particularized and species-based analysis of the impacts to EFH corresponding with complex habitats in the areas of the Mayflower Wind Farm, FECC and BPECC, specifically including overfished species. For the Revolution Wind project, BOEM is funding an acoustic telemetry study to better understand the distribution and habitat of spawning cod. [Footnote 156: See Revolution Wind Farm (RWF) COP at 394.] BOEM should consider conducting a similar study in complex, hard bottom habitat areas of the BPECC and FECC and including it in the analysis for the Mayflower Wind Draft EIS to fully measure the project's impacts on Atlantic cod.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-34

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Because of the importance of complex, hard bottom habitats to Atlantic cod and other species, BOEM should require Mayflower Wind to avoid siting WTGs and the FECC and BPECC in complex, hard bottom areas, to the greatest extent possible. BOEM must also ensure that avoiding siting in complex habitats would result in fewer acres of complex habit disturbed by WTG construction and cable burial, which would decrease the overall impacts to EFH and benthic resources. Moreover, as part of the permitting process, Rhode Island and Massachusetts must certify that Mayflower Wind's planned BPECC and FECC are consistent with the regulations in the RI SAMP and MA Ocean Plan regarding complex habitats and glacial moraines, as well as eelgrass beds. [Footnote 157: See 15 C.F.R. §§ 930.50-930.66; 30 C.F.R. §§585.627-628; see also 16 U.S.C.§1456 (Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs). The COP notes that the FECC will make landfall in an area with observed eelgrass beds. MWF COP at 6-115, 6-118. Like hard/complex seafloor, eelgrass is also designated as an SSU resource in the MA Ocean Plan. See. 2015 Massachusetts Ocean Management Plan, MA Executive Office of Energy and Environmental Affairs--Office of Coastal Zone Management, at 2-7 (January 2015).]

Comment Number: BOEM-2021-0062-DRAFT-0035-63

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

1. Complex Habitats

In general, benthic habitats can be classified based on their level of physical complexity, ranging from relatively simple habitats to more complex habitats. [Footnote 78: Peter J. Auster and Richard W. Langton, The Effects of Fishing on Fish Habitat, National Undersea Research Center for the North Atlantic & Great Lakes and Maine Department of Marine Resources, at M-6, M-36 (May 1998).] Habitats where sand and mud substrates are predominant are low in physical complexity and considered non-complex or "simple" habitats. Conversely glacial moraine and coarse sediment are classified as more complex habitats because boulders, cobbles, and pebbles are predominant in such areas. [Footnote 79: Id.] These more complex habitats provide a heterogeneous variety of hard surfaces and fine material that provide habitat for many different species. More specifically, glacial moraine habitats are complex habitats that are composed of consolidated and unconsolidated geologic debris that is directly deposited by glacial movement. [Footnote 80: South Fork Wind Benthic Habitat Mapping to Support Essential Fish

Habitat Consultation, Inspire Environmental, at 15, June 16, 2020, available at https://www.boem.gov/sites/default/files/documents/about-boem/AppN2_SFW_HabitatMapping_Report_2020-06-16.pdf; VWS COP Vol. III at 6-85.] In the contiguous United States, glacial moraines are mainly limited in distribution to the outer continental shelf near New England. [Footnote 81: Id.]

Comment Number: BOEM-2021-0062-DRAFT-0035-64

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Based on site-specific benthic grabs and seafloor imagery captured by the Sediment Profile and Plan View Imaging (SPI/PV) survey, most substrate in the lease area of the Mayflower Wind was classified as mud, sandy mud, and muddy sand. Several samples were classified as fine/very fine sand. Two samples in the lease area were classified as unconsolidated-gravelly/gravelly-muddy sand. Overall, the lease area is mostly considered soft bottom habitat with few complex features. [Footnote 82: MWF COP at 6-132, 6-133.]

Comment Number: BOEM-2021-0062-DRAFT-0035-65

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the area of the Mayflower Wind contains mostly non-complex habitats, the path of at least one of the two proposed export cable corridors, the Falmouth Export Cable Corridor (FECC), which will connect the Mayflower Wind to Falmouth, MA, contains more complex substrate types. Similar to the lease area, in the southern portion of the FECC, most substrates observed were non-complex, with 87 percent of samples containing sand or muddy sand. Three samples in the southern FECC area contained more complex unconsolidated-gravelly/gravelly-muddy sand substrate. [Footnote 83: MWF COP at 6-132, 6-133.] However, the northern portion of the FECC is more heterogeneous and complex habitats were observed at many sites along the northern FECC, [Footnote 84: Id.; MFW COP App. M at 3-4, 6-1.] with the following substrates observed: (1) shell reef; (2) fine/very fine sand; (3) medium sand; (4) very coarse/coarse sand; (5) sandy gravel; (6) pebble/granule; and (7) gravel pavement. [Footnote 85: Id.; MWF COP App. M at 3-4. "Gravel pavement" is used to describe areas where boulders, cobbles, and/or granule/pebbles combined comprise 80 percent or more of the substrate. MWF COP App. M at 4-5.] South of the Nantucket Sound Main Channel, coarse unconsolidated, gravelly samples are predominant. [Footnote 86: MWF COP App. M at 4-6.] The samples where "gravelly pavement" were observed are located mainly in the Muskeget Channel, and south of the landing site in Falmouth, MA. [Footnote 87: MWF COP App. M at 4-8, 4-9. For the Vineyard Wind South project, Vineyard Wind South also plans for its offshore export cable corridor to cross Muskeget Channel and is in the general vicinity of the FECC. The Vineyard Wind South COP notes that the cobble and pebble substrates in the Muskeget Channel area of the offshore export cable corridor correspond to the "most productive habitats" of the OECC, "with the highest number of invertebrate species and observations of fish" and that in parts of the Muskeget Channel area, hard bottom areas cover the full width of the proposed OECC. Vineyard Wind South COP Vol. II-A at 5-10, Vol. III at 6-85. The export cable corridor for Vineyard Wind 1 also traverses Muskeget Channel. See VW1 FEIS at 2-32.]

Comment Number: BOEM-2021-0062-DRAFT-0035-66

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While Mayflower Wind's COP contains the benthic survey data along the proposed route of the FECC, the COP does not contain survey data for all of the alternative routes it has considered for the FECC route through Muskeget Channel, including the western option of the FECC, which is Mayflower Wind's preferred route through Muskeget Channel. [Footnote 88: See MWF COP at 2-6, App. M at 3-3, 3-6, 3-7, 4-8, 4-9.] The COP also does not contain benthic survey data for the second of the two export cable corridors, the Brayton Point Export Cable Corridor (BPECC), which will connect the Mayflower Wind Farm to Brayton Point in Somerset, MA, and it is unclear whether Mayflower Wind has yet conducted such a survey. [Footnote 89: See MWF COP at 6-133.] The lack of benthic survey data for the preferred route of the FECC in the Muskeget Channel and for the BPECC are serious deficiencies in Mayflower Wind's COP and BOEM should not issue a Draft EIS until Mayflower Wind presents complete benthic survey data on its proposed export cable corridors. [Footnote 90: Under BOEM's regulations, the COP must include "[t]he results of the biological survey with supporting data" including a "description of the results of biological surveys used to determine the presence of live bottoms, hard bottoms, and topographic features, and surveys of other marine resources." 30 C.F.R. §585.626 (emphasis added). The regulations also require the COP to describe sensitive biological resources or habitats that could be affected by the proposed offshore wind development, including "hard bottom habitat." 30 C.F.R. §585.627.]

Comment Number: BOEM-2021-0062-DRAFT-0037-27

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Within this section, the EIS should include results of on-site surveys, site-specific habitat information, and characterization of benthic and pelagic communities. Additional details should be provided related to all habitat types located within the project area with a particular focus on complex habitats, including SAV, hard bottom habitats, and Habitat Areas of Particular Concern (HAPC).

Comment Number: BOEM-2021-0062-DRAFT-0037-38

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The ecological impacts resulting from the loss of seabed and the associated benthic communities and forage base and changes to predator/prey relationships should be evaluated. This should include a discussion of the ecological and economic impacts associated with habitat conversion from WTG installation, offshore substations, cable installation, and scour and cable protection. This analysis should also include site-specific benthic data collection and an evaluation of impacts of the project on different habitat types and fisheries resources that rely on them.

Comment Number: BOEM-2021-0062-DRAFT-0037-4

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Benthic habitat data collection is not yet completed for this project. Additional surveys are planned along the proposed export cable routes, both of which overlap with sensitive habitats, including Habitat Areas of Particular Concern (HAPC) for juvenile Atlantic cod and submerged aquatic vegetation. While we appreciate that additional surveys are being conducted, in part, to identify potential routes that minimize impacts to complex habitats in Muskeget Channel, it is our understanding that the benthic surveys will not be conducted until spring 2022. This habitat information will be necessary to inform both your NEPA analysis and the EFH consultation.

Comment Number: BOEM-2021-0062-DRAFT-0037-78

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The Mayflower Wind project is proposed to include two cable corridors, both of which overlap with unique and complex habitats, including hard bottom habitats and SAV. Impacts to complex habitats are known to result in long recovery times and are potentially permanent. Loss of these important habitats may result in cascading long term to permanent effects to species that rely on this area for spawning and nursery grounds and the fisheries and communities that target such species. The evaluation of impacts from project construction and operation should evaluate the potential for recovery and the anticipated recovery times based on the habitat type and components that would be impacted. The analysis should fully consider the potential impacts of proposed action to complex habitats in the lease area and cable corridor. Complex habitats may be permanently impacted or take years to decades to recover from certain impacts and this variability in recovery times by habitat type and components should be fully discussed and analyzed in the document.

A.2.5 Birds

Comment Number: BOEM-2021-0062-DRAFT-0018-8

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

While the AERA estimates the number of various Atlantic seabirds that might have negative interactions with the proposed Mayflower wind farm (COP Appendix I1, Table 3-3), the modeling from which the values are derived does not take into account specific migratory pathways. The EIS should describe future monitoring that will help fill this data gap. CZM suggests that Mayflower Wind consult the Atlantic Marine Bird Cooperative's "Recommendations on BOEM Avian Survey Guidelines" [1] as it prepares its long-term avian monitoring plan.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-100

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Many species of conservation obligation, including ESA-listed Red Knot and Piping Plover, migrate over the Atlantic Ocean. Relying on the current system of automated radio telemetry receivers to monitor risk is inappropriate, as the network of receivers has not been established in the offshore to the degree necessary. Additionally, automated radio telemetry does not adequately estimate flight height, though there are efforts underway to fill this information gap. Remote tracking studies that rely on the Motus passive very high frequency (VHF) radio tracking system do, however, provide that Piping Plovers migrate nocturnally over open water, "directly across the mid-Atlantic Bight, from breeding areas in southern New England to stopover sites spanning from New York to North Carolina...at altitudes of 288 m (range of model uncertainty: 36-1,031 m)," putting this ESA-listed species at high risk of collision with turbines. [Footnote 366: Id.] The current configuration of VHF receiving towers does not allow for detailed characterization of flight paths for this species or any protected avian species using this tracking technology, and therefore, BOEM should take a conservative approach in the Draft EIS when evaluating potential impacts (cumulative or otherwise) to Piping Plover, Red Knot, and other species which may fly through the Project Area and other wind development areas expected in the foreseeable future.

It is imperative that BOEM supports further tracking efforts, and we recommend the construction and maintenance of a full network of telemetry receiving towers throughout the offshore environment to inform risk analyses. It is important to note that the VHF transmitters widely deployed along the coast have a limited lifespan. New solar-powered ultra-high frequency transmitters, which include on-board battery support for transmitting at night, should be the future focus for incorporating this technology.

The Draft EIS must produce a full picture of migratory pathways for songbirds and shorebirds. This could be realized with the addition of satellite tracking information from Movebank and the National Aeronautics and Space Administration's Icarus project for larger bodied shorebirds, additional research and tagging of priority bird species using radio and satellite telemetry technology as appropriate, and an expansion of the radio telemetry receiver network in the offshore environment. While we recognize the unlikelihood of implementing and completing new tracking studies prior to the publication of the Draft EIS, these knowledge gaps should be filled expeditiously to inform future offshore wind operation and siting processes. In addition, there should be a commitment to, and process outlined for, addressing unforeseen impacts through compensatory mitigation (see Section IV.H.11 on compensatory mitigation for birds). The Draft EIS should use the data currently available to calculate the risk to these migratory birds, especially in regard to turbine height, and provide for impacts these migratory birds over the life of the project and cumulatively over all projects in the Atlantic OCS.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-102

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Collision Risk for Seabirds

The Draft EIS must adequately assess collision risk to seabirds. This must include an analysis, using the most current available science, of flight heights (averages and ranges), avoidance rates, and other relevant avian flight behavior at the very least. The Draft EIS must also consider the range of turbine specifications that could influence collision risk, including air gap, total rotor swept zone, and turbine height.

The Draft EIS must also provide results from BOEM's own analysis of the vulnerability of 177 species of birds that could come into contact with the WTGs in the cumulative OCS Wind Development Areas (WDAs) in the foreseeable future and incorporate this analysis into the cumulative impacts conclusions within the Draft EIS. [Footnote 367: Robinson Willmot J, Forcey G, Kent A. 2013. The Relative Vulnerability of Migratory Bird Species to Offshore Wind Energy Projects on the Atlantic Outer Continental Shelf: An Assessment Method and Database. Page 294. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs OCS Study BOEM 2013-207.] In doing so, the Draft EIS must be transparent in presenting the high level of uncertainty in the results, including high and low estimates for population-level cumulative impacts. Much of the high uncertainty in these models is a result of highly variable concentrations of seabirds throughout the year. The Draft EIS needs to be explicit about these seasonally higher risks and not rely on annual averages. Many tubenoses, for example, congregate outside the breeding season near upwellings and other locations of high productivity. Such concentrated flocks, if occurring within the turbine array, could produce significantly large collision events, even if such events are relatively rare. The Draft EIS should consider this variability of large concentrations of birds even in short periods of time in its analysis of seasonal abundance when calculating risk to birds.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-103

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c) Collision Risk Models

We expect that BOEM will apply collision risk models (CRMs) to evaluate avian impacts from the Project. While limited, CRMs are one of the only tools available to hypothesize potential impacts to birds from collision in the offshore environment. As such, CRMs provide a mechanism for testing outcomes (e.g., observed collision rates) against the model predictions (e.g., expected collision rates), and BOEM must address the need to collect the data necessary to test these hypotheses. We appreciate how BOEM addressed our concerns in the Final EIS for Vineyard Wind 1 and reiterate our expectation that BOEM's collision risk analysis in the Draft EIS be complete and transparent.

The Draft EIS should include a CRM-driven analysis for all species of conservation obligation which may occur within 20 km of the Project footprint and for which a current CRM would be appropriate, even if the species has not been documented within the footprint of the Project. This should include a recent stochastic derivation of the Band model, such as the McGregor (2018) [Footnote 368: McGregor RM, King S, Donovan CR, Caneco B, Webb A. 2018. A Stochastic Collision Risk Model for Seabirds in Flight:61. <https://tethys.pnnl.gov/sites/default/files/publications/McGregor-2018-Stochastic.pdf>.] version.

BOEM must be transparent in its CRM application. These models are extremely sensitive to the input parameters. A study by Cook et al. (2014) found that estimations of avoidance and collision risk from Band models were highly sensitive to the flux rate (total number of birds passing through the wind farm), corpse detection rate, rotor speed, and bird speed. Factors such as weather (i.e. wind speed and visibility) and habitat use would also affect the accuracy of these estimates, as such factors would greatly influence

avian flight patterns and behavior. [Footnote 369: Cook ASCP, Humphreys EM, Masden EA, Burton NHK. 2014. The Avoidance Rates of Collision Between Birds and Offshore Turbines. *Scottish Marine and Freshwater Science* 5:263.] Therefore, the Draft EIS must provide the inputs used in its analysis for public comment and transparency. Providing CRM results without transparency to the inputs and analytical process would never be acceptable from a scientific perspective and, therefore, should not be acceptable from BOEM. Providing inputs would show whether BOEM followed the guidance provided by Band in assessing collision risk. These details regarding inputs should include, but not be limited to, avoidance behavior, flight height, flight activity, flux rate, corpse detection rate, rotor speed, bird speed, and collision risk.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-104

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, CRMs should consider differences in daytime and nighttime flight patterns. As Band himself stipulates:

For some species typical flight heights are dependent on the season, and in such a case it will be best to use seasonally dependent typical flight heights in assessing collision risk for each month, rather than average flight heights across the year...Flight activity estimates should allow both for daytime and nighttime activity. Daytime activity should be based on field surveys. Night-time flight activity should be based if possible on nighttime survey; if not on expert assessment of likely levels of nocturnal activity...collision model[s] should take both day and night flights into account. Where there is no nighttime survey data available, or other records of nocturnal activity, for the species in question, (or for other sites if not at this site), it should be assumed that the Garthe and Hüppop/ King et al. 1-5 rankings apply. These rankings should then be translated to levels of activity at night which are respectively 0%, 25%, 50%, 75% and 100% of daytime activity. These percentages are a simple way of quantifying the rankings for use in collision modelling, and they may to some extent be precautionary. [Footnote 370: Band, B. 2012. Using a collision risk model to assess bird collision risks for offshore windfarms. SOSS report for The Crown Estate, Norway.

https://www.bto.org/sites/default/files/u28/downloads/Projects/Final_Report_SOSS02_Band1ModelGuide.pdf.]

There are new derivations of the Band model under development, namely the 3-D CRM for seabirds by the Shatz Energy Research Center [Footnote 371: Seabird Distribution in 3D: Assessing Risk from Offshore Wind Energy Generation, Shatz Energy Research Center (2020), <https://schatzcenter.org/2020/04/seabird3dstudy/>.] and stochastic CRM specific to ESA-listed species in southern New England from the University of Rhode Island. [Footnote 372: Transparent Modeling of Collision Risk for Three Federally-Listed Bird Species to Offshore Wind Development, US Fish and Wildlife Service with University of Rhode Island (Oct. 29, 2020)

https://www.boem.gov/sites/default/files/documents/environment/environmental-studies/Transparent-modeling-of-collisionrisk-for-three-federally-listed-bird-species-to-offshore-wind-development_1.pdf.]

These models should be applied, once available, in BOEM's assessments of avian impacts for future offshore wind developments, as they will be better able to incorporate variation in input parameters.

Moreover, collision risk models provide a starting point, not an end point, from which to predict cumulative, population-level impacts across wind farms in the Atlantic OCS. CRMs are not found to be reliable in predicting mortality:

Siting and permitting decisions for many European offshore wind facilities are informed by collision risk models, which have been created to predict the number of avian collisions for offshore wind energy facilities. However, these models are highly sensitive to uncertainties in input data. The few empirical studies at land-based wind facilities that have compared model-estimated collision risk to actual mortality rates found only a weak relationship between the two, and due to logistical difficulties, the accuracy of these models has not been evaluated in the offshore environment. [Footnote 373: Allison, T. D., Diffendorfer, J. E., Baerwald, E. F., Beston, J. A., Drake, D., Hale, A. M., Hein, C. D., Huso, M. M., Loss, S. R., Lovich, J. E., Strickland, M. D., Williams, K. A., & Winder, V. L. (2019). Impacts to wildlife of wind energy siting and operation in the United States. *Issues in Ecology*, vol. 21, Ecological Society of America.]

BOEM should pursue studies to not only verify CRM utility in the offshore environment, but should also move toward viable collision detection requirements for the Project and future offshore wind developments.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-105

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

6. BOEM Cannot Assume that Larger Turbines, Further Apart, Reduces Risks to Birds

There is no substantial evidence to suggest that larger turbines, spaced farther apart, reduce risks to birds, and it should be a goal of BOEM to understand the effects of displacement and mortality relative to turbine size and spacing.

Studies, like those from Krijgsveld et al. (2009), [Footnote 374: Krijgsveld KL, Akershoek K, Schenk F, Dijk F, Dirksen S. 2009. Collision Risk of Birds with Modern Large Wind Turbines. *Ardea* 97:357–366. Netherlands Ornithologists' Union.] Smallwood and Karas (2009), [Footnote 375: Smallwood KS, Karas B. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. *The Journal of Wildlife Management* 73:1062–1071.] and Johnston et al. (2014), [Footnote 376: Johnston, A., A.S.C.P. Cook, L.J. Wright, E.M. Humphreys, and N.H.K. Burton. 2014. Modeling Flight Heights of Marine Birds to More Accurately Assess Collision Risk with Offshore Wind Turbines. *Journal of Applied Ecology* 51, 31-41.] which suggest that fewer, larger turbines reduce avian collision risk, are based on turbines less than 5 MW. Conversely, studies by Loss et al. (2013), [Footnote 377: Loss SR, Will T, Marra PP. 2013. Estimates of bird collision mortality at wind facilities in the contiguous United States. *Biological Conservation* 168:201–209.] Choi et al. (2020), [Footnote 378: Choi DY, Wittig TW, Kluever BM. 2020. An evaluation of bird and bat mortality at wind turbines in the Northeastern United States. *PLOS ONE* 15:1–22. Public Library of Science.] and Huso et al. (2020) [Footnote 379: Huso MMP, Conkling TJ, Dalthrop DH, Davis M, Smith H, Fesnock A, Katzner T. 2020. Bigger not necessarily better for wind turbines: Wildlife mortality scales with energy production. In review.] find that bird deaths not only increase with turbine size, but also suggest that the number of bird deaths from collision with wind turbines is proportional to the number of MW produced in a wind farm.

As turbines increase in size, they are more likely to encroach on airspace occupied by nocturnal migrants [Footnote 380: Id.] while not necessarily avoiding airspace occupied by relatively lower flying foraging marine bird species. Turbulence above and below the rotor swept zone can also affect flight performance. If this should make birds more susceptible to physical interactions with turbines, then larger turbines would only increase that risk. Additionally, limiting risk evaluations to the rotor swept zone neglects the risk of collision from the tower itself and turbulence around the rotor swept zone.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-106

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The size of turbines has grown substantially over the past decade, and this trend is expected to continue. For comparison with neighboring proposed projects, Vineyard Wind expects to use turbines of up to 16 MW nameplate capacity in its Park City Wind (Phase One) Project, with a potential rotor swept diameter of 255 m and maximum potential height of 319 m. [Footnote 381: VWS COP, Volume I, Table S-1, p. S-4.] In Phase Two of the Vineyard Wind South project, Vineyard Wind proposes to use turbines up to 19 MW in nameplate capacity, which could reach a maximum height of 357 m above sea level, with a rotor swept diameter of 285 m. [Footnote 382: VWS COP, Volume I, Table S-2, p. S-9.] University of Virginia is currently developing 200 m long blades to power a 50 MW turbine, with a potential rotor swept zone of approximately 400 m. Given that the tower height would need to be more than 200 m in height to accommodate rotor blades of this size, turbines could soon reach heights greater than 400 m above sea level.

It will be important for BOEM to consider the full range of possible turbine parameters expected for the Project. Any changes to the project design envelope, especially those that result in changes to the rotor swept zone or maximum blade tip height, could require additional review under NEPA.

Suggestions that increased spacing (1 nm) between turbines would reduce risks to birds from both collision and displacement is unfounded, as offshore wind farms in Europe do not provide this level of spacing, and therefore, there is no operational comparison to be made. Instead, increased spacing means fewer turbines and less energy production within the footprint of the project, so more projects (and more space) will be necessary to meet state and national energy goals. Furthermore, greater space between turbines may increase collision risk if species vulnerable to collision end up using the wind farm more frequently. Unfortunately, these are all unknowns until these configurations are developed and operational. BOEM should require and approve a monitoring plan to answer these questions.

The Draft EIS should include a risk assessment, considering the full range of the potential rotor swept zone provided in the COP, to assess 1) impacts from collision and barrier effects to migrating birds, and 2) potential increased habitat loss that may need to occur in order to reach offshore wind energy goals.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-107

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

7. The Draft EIS Cannot Ignore the Habitat Loss that Birds May Experience Beyond the Footprint of the Project's Construction and Operation

As we have mentioned above and in previous comments, BOEM should not limit the impact assessment to the project footprint.

Terns use upwellings and ocean turbulence as ecological cues to locate important foraging areas offshore. In addition to project construction's disruption of foraging fish breeding communities on the ocean floor, the turbine monopiles can mimic these cues, even when foraging fish are not present. According to recent

research, "[t]he structures themselves may provide artificial foraging cues (or ecological trap) by which terns will ignore important upwellings in favor of investigating turbulence created by the turbine structure." [Footnote 383: Lieber L, Langrock R, Nimmo-Smith WAM. 2021. A bird's-eye view on turbulence: seabird foraging associations with evolving surface flow features. *Proceedings of the Royal Society B: Biological Sciences* 288:rsob.2021.0592, 20210592.]

Birds are not only disturbed from foraging, staging, roosting, and nesting habitat in the immediate footprint of construction. We know that kittiwakes—a species which occurs within the Project Area—can be displaced up to 20 km from operating wind farms. [Footnote 384: Peschko V, Mendel B, Müller S, Markones N, Mercker M, Garthe S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. *Marine Environmental Research*:105157.] We also know that, while birds may congregate more frequently in areas outside of the Project Area, they may continue to pass through the WEA, putting them at greater risk of collision. We simply do not know the full extent of habitat loss that marine birds will experience as a result of the Project, nor do we know the rate at which birds that continue to forage in the area will be lost to collision. Though flight-initiation distances are highly variable, nesting and foraging shorebirds can be disturbed from coastal anthropogenic activities more than 200 m away. [Footnote 385: Glover HK, Weston MA, Maguire GS, Miller KK, Christie BA. 2011. Towards ecologically meaningful and socially acceptable buffers: Response distances of shorebirds in Victoria, Australia, to human disturbance. *Landscape and Urban Planning* 103:326–334.] Diving marine birds may also be heavily impacted from the noises associated with pile driving. [Footnote 386: Anderson Hansen K, Hernandez A, Mooney TA, Rasmussen MH, Sørensen K, Wahlberg M. 2020. The common murre (*Uria aalge*), an auk seabird, reacts to underwater sound. *The Journal of the Acoustical Society of America* 147:4069–4074.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-109

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, vessel traffic can disrupt wintering marine birds, [Footnote 387: Mendel B, Schwemmer P, Peschko V, Müller S, Schwemmer H, Mercker M, Garthe S. 2019. Operational offshore wind farms and associated ship traffic cause profound changes in distribution patterns of Loons (*Gavia* spp.). *Journal of Environmental Management* 231:429–438.] and construction activities can have impacts to birds and their prey which will not end immediately after construction—these are modifications to the habitat which will not return to a healthy state until long after construction activities. [Footnote 388: Perrow MR, Gilroy JJ, Skeate ER, Tomlinson ML. 2011. Effects of the construction of Scroby Sands offshore wind farm on the prey base of Little tern *Sternula albifrons* at its most important UK colony. *Marine Pollution Bulletin* 62:1661–1670.] Given the avian distribution off the coast of southern New England, it is likely that marine bird communities will be heavily disturbed during construction activities.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-110

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Construction activities from the cable laying and pile driving will likely impact birds, regardless of timing. Beach nesting birds, like Piping Plover, American Oystercatcher, Least Tern, Herring Gull, Double-crested Cormorant, and Common Tern, may be present in and around the Project Area from

March through September; Northern Gannet, Red Knots, Semipalmated Sandpiper, and Black-bellied Plover may be affected by construction activities in spring and fall. Marine birds, such as shearwater and petrel, will be present around the Project during the winter. If the construction of cable routes is timed to avoid beach nesting birds, then it will likely impact wintering seabirds. While it may not be possible to avoid impacts entirely, the Draft EIS needs to be transparent in addressing these impacts and provide a path to mitigate these impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-111

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While Roseate Tern, Piping Plover, and Red Knot may fly through the WEA, the Draft EIS must also consider the potential impacts of developing the Project to these ESA-listed species onshore. Piping Plover or tern chicks within 100 m of onshore construction activities will require the developer to hire a spotter to prevent the chicks from encountering harm during activities. Additionally, no construction activities may be allowed on the beach or intertidal zone within 100 m of Piping Plover chicks or nests, as this would starve breeding plovers of necessary foraging habitat. Migrating Red Knots and other shorebirds rely on the mudflats along the coasts of Long Island and southern New England coast to rest and refuel during their fall migration. Common and Roseate Terns rely on these same mudflats to stage August-October. The Draft EIS must consider the impacts of building out the Project to these species, even when the activities associated with development fall outside the offshore Project Area.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-157

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Impacts to birds (Section IV.H):

- The Draft EIS should consider impacts to avian species of conservation obligation, including but not limited to birds protected by Endangered Species Act, the Migratory Bird Treaty Act, BOEM's Memorandum of Understanding with the U.S. Fish and Wildlife Service, and the International Union for Conservation of Nature.
 - The Draft EIS must be transparent in its use of collision and displacement risk assessments for the project and acknowledge limitations of these assessments.
-

Comment Number: BOEM-2021-0062-DRAFT-0035-02-5

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Many birds with high risk of displacement from wind turbines experience these effects from greater than 1 nm from the turbine array. Foraging guillemot and kittiwake, for example, are known to exhibit macro-avoidance behavior during the breeding season, up to 9 and 20 km, respectively, from the turbine array.

[Footnote 66: Peschko V, Mendel B, Müller S, Markones N, Mercker M, Garthe S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. *Marine Environmental Research*:105157.] Presumably, greater spacing between turbines, and thus a larger cumulative development footprint overall, would only increase displacement impacts for these species. Alternatively, if species vulnerable to collision are less likely to exhibit macro-avoidance for layouts with greater space between turbines, the collision risk would be greater as a result.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-89

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

1. The Draft EIS Must Consider the Full Scope of Impacts to Federally Protected Birds and Species that Trigger Conservation Obligations

BOEM must ensure that the Draft EIS retains consideration of the full range of potential impacts on all bird species known to forage or rest in or near the Project, or migrate through the area, including those species protected under the Migratory Bird Treaty Act (MBTA) and the ESA as well as species of birds covered under obligations for conservation of birds under the Fish and Wildlife Conservation Act as amended in 1988, [Footnote 323: 16 U.S.C. 2901-2911 (1988), <https://www.fws.gov/laws/lawsdigest/FWCON.HTML>.] Executive Order (EO) 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds" (January 17, 2001), [Footnote 324: Exec. Order No.13186, 3 C.F.R. 1 (Jan. 10, 2001), https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/ReqEO13186migratorybirds.pdf.] North American Waterbird Conservation Plan, [Footnote 325: North American Waterbird Conservation Plan, Waterbird Conservation for the Americas, Version 1. <https://www.fws.gov/migratorybirds/pdf/management/northamericawaterbirdconservationplan.pdf>.] the U.S. Shorebird Conservation Plan, [Footnote 326: Brown, S., C. Hickey, B. Harrington, and R. Gill, eds. 2001. *The U.S. Shorebird Conservation Plan*, 2nd ed. Manomet Center for Conservation Sciences, Manomet, MA.] the Memorandum of Understanding (MOU) between the Department of the Interior U.S. Minerals Management Service and the Department of the Interior U.S. Fish and Wildlife Service (USFWS) regarding implementation of EO 13186, [Footnote 327: Memorandum of Understanding Between the Department of the Interior U.S. Minerals Management Service and the Department of the Interior U.S. Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds" (Jun. 4, 2009). https://www.boem.gov/Renewable-Energy-Program/MMSFWS_MBTA_MOU_6-4-09-pdf.aspx] the United Nations Convention on the Conservation of Migratory Species of Wild Animals (CMS), [Footnote 328: Convention on the conservation of migratory species of wild animals, Bonn, 23 June 1979. <https://www.cms.int/en/convention-text>.] and BOEM, Department of Interior (DOI), USFWS, and NOAA membership in the IUCN, [Footnote 329: IUCN Member List, <https://www.iucn.org/about/members/iucn-members>.] hereinafter collectively referred to as the "conservation obligations."

Comment Number: BOEM-2021-0062-DRAFT-0035-02-90

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As we have commented to BOEM before, we are aware that the DOI and the USFWS are now relying on a new rule (the January 7 rule) [Footnote 330: 50 C.F.R. § 10 (2021).] which codifies an illegal interpretation of the MBTA and limits its scope to the purposeful take of birds. [Footnote 331: U.S. Department of the Interior, “The Migratory Bird Treaty Act Does Not Prohibit Incidental Take,” Memorandum M- 37050 (Dec. 22, 2017), <https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf>.] Our organizations strongly oppose this rule as contrary to the plain language and intent of the law, and we urge BOEM to continue to implement its MBTA responsibilities as all administrations have done, previous to the 2017 Jorjani Opinion M-37050, with explicit recognition that incidental take is prohibited. This would also be consistent with the current administration’s recently proposed rule, [Footnote 332: 86 F.R. 24573 (2021).] intended to revoke the January 7 rule, and is additionally consistent with the memorandum of understanding that BOEM signed with USFWS in 2009 to protect migratory bird populations. [Footnote 333: Memorandum of Understanding Between the Department of the Interior U.S. Minerals Management Service and the Department of the Interior U.S. Fish and Wildlife Service Regarding Implementation of Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” (Jun. 4, 2009). https://www.boem.gov/Renewable-Energy-Program/MMSFWS_MBTA_MOU_6-4-09-pdf.aspx .] Recognizing incidental take as prohibited, and producing a Draft EIS consistent with this interpretation of the MBTA, is vital to maintain regulatory certainty and to create consistent expectations for developers and other stakeholders. If DOI’s new interpretation changes BOEM’s analysis and associated requirements for impacts to migratory birds in any way, a detailed description and explanation of such changes must be included in the Draft EIS. We note that signatories of these comments (Natural Resources Defense Council, National Wildlife Federation, and National Audubon Society), together with many other organizations and states, successfully challenged DOI’s unlawful reinterpretation of the MBTA in court [Footnote 334: National Audubon Society v. U.S. Department of Interior, No. 18-cv-08084 (S.D.N.Y 2019).] and expect BOEM and USFWS to respect the court’s ruling.

The MBTA states, "[u]nless and except as permitted by regulations . . . it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill . . . any migratory bird." [Footnote 335: Migratory Bird Treaty Act of 1918, 16 U.S.C. § 703 (1918).] For decades, the DOI has interpreted the MBTA to encompass "incidental takes" of migratory birds, including from wind turbines. It was not until the 2017 Jorjani Opinion M-37050 that the DOI limited the MBTA’s legal scope to only include actions that purposely take migratory birds. [Footnote 336: United States Department of Interior, The Migratory Bird Treaty Act Does Not Prohibit Incidental Take, Memo M-37050 (Dec. 14, 2017), <https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf>.] However, on August 11, 2020, the United States District Court for the Southern District of New York found that "the Jorjani Opinion’s interpretation runs counter to the purpose of the MBTA to protect migratory bird populations." [Footnote 337: Natural Resources Defense Council v. United States DOI, 2020 WL 4605235, at *6 (S.D.N.Y. Aug. 11, 2020).] The court found that the statute’s unambiguous text makes clear that killing a migratory bird "by any means or in any manner," regardless of how, is covered by the statute. [Footnote 338: Id. at 28.] As such, the district court struck down the Jorjani Opinion as unlawful, restoring the MBTA’s protections for migratory birds from incidental takes. [Footnote 339: Id. at 42-44] The unlawful reinterpretation does not relieve BOEM or USFWS from their obligations for conservation of birds under the aforementioned federal laws, EO and MOU, as well as MBTA.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-91

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to ESA-listed species (i.e. rufa Red Knot, Piping Plover, and Roseate Tern), at a minimum, the Draft EIS should include analyses of the following priority species, which are likely to use the Project array, to fulfill BOEM's conservation obligations:

- Least Tern, Gull-billed Tern, Black Skimmer, Band-rumped Storm Petrel, Fea's Petrel, Cory's Shearwater, Manx Shearwater, and Audubon's Shearwater are all marine birds occurring in the Atlantic OCS listed as USFWS Birds of Conservation Concern under the Fish & Wildlife Conservation Act, 1988 amendment. [Footnote 340: U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>]

- American Golden-plover, Bicknell's Thrush, Bobolink, Buff-breasted Sandpiper, Pectoral Sandpiper, Chimney Swift, Connecticut Warbler, Semipalmated Sandpiper, Solitary Sandpiper, Upland Sandpiper, and Whimbrel are all trans-Atlantic migrating birds and USFWS Birds of Conservation Concern [Footnote 341: Id.] with documented migratory paths through the Atlantic OCS, [Footnote 342: Sorte FAL, Fink D. 2017. Projected changes in prevailing winds for transatlantic migratory birds under global warming. *Journal of Animal Ecology* 86:273–284.] and should therefore be prioritized for studies concerning risks to nocturnal migrants. ? Black-legged Kittiwake, Horned Grebe, Leach's Storm-petrel, Long-tailed Duck, Atlantic Puffin, and Chimney Swift are classified by IUCN as Vulnerable.

- Black Scoter, Common Eider, Semipalmated Sandpiper, Blackpoll warbler, Razorbill, and Sooty Shearwater are classified by IUCN as Near Threatened.

- Red Knot, Semipalmated Sandpiper, and Buff-breasted Sandpiper are classified by the CMS as Endangered.

Further, the following trans-Atlantic migrating birds have documented routes through the Atlantic OCS WEAs, and should therefore be prioritized in the Draft EIS for analysis of impacts to nocturnal migrants: [Footnote 343: Id.]

-American Golden-Plover

-Bicknell's Thrush

-Blackpoll Warbler

-Bobolink

-Buff-breasted Sandpiper

-Chimney Swift

-Connecticut Warbler

-Pectoral Sandpiper

-Semipalmated Sandpiper

-Solitary Sandpiper

-Upland Sandpiper

-Whimbrel

-White-rumped Sandpiper

-Ipswich Sparrow [Footnote 344: Crysler ZJ, Ronconi RA, Taylor PD. 2016. Differential fall migratory routes of adult and juvenile Ipswich Sparrows (*Passerculus sandwichensis princeps*). *Movement Ecology* 4:3.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-92

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Many of the species which may migrate through the Project area are also protected under various state regulations, in addition to the federal ESA and the MBTA. Therefore, the Draft EIS should consider impacts to species protected under Rhode Island and Massachusetts endangered species laws, as well as the species of greatest conservation need designated under the states' Wildlife Action Plans. However, the states' endangered species lists do not consider all vulnerable species which occur in federal waters off Rhode Island's coast. Many species that occur in the the Project area are not considered vulnerable by the state, because they do not occur frequently in state jurisdiction, but are protected under other state laws. Razorbill and Atlantic Puffin, for example, are both considered threatened in the state of Maine, and occur regularly within and around the planned Project area and are predicted to be highly vulnerable to habitat loss from offshore wind. [Footnote 345: Robinson Willmot J, Forcey G, Kent A. 2013. *The Relative Vulnerability of Migratory Bird Species to Offshore Wind Energy Projects on the Atlantic Outer Continental Shelf: An Assessment Method and Database*. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs OCS Study BOEM 2013-207.] Additionally, recent research suggests that similar species are sensitive to underwater noise [Footnote 346: Anderson Hansen K, Hernandez A, Mooney TA, Rasmussen MH, Sørensen K, Wahlberg M. 2020. The common murre (*Uria aalge*), an auk seabird, reacts to underwater sound. *The Journal of the Acoustical Society of America* 147:4069–4074] and may experience physiological impacts from construction. Black-legged Kittiwake are additionally highly sensitive to displacement from offshore wind [Footnote 347: Peschko V, Mendel B, Müller S, Markones N, Mercker M, Garthe S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. *Marine Environmental Research*:105157.] and are documented near the Project.

BOEM should additionally consider species prioritized for conservation by avian expert partners, including the Atlantic Flyway Shorebird Initiative, Partners in Flight, Atlantic Coast Joint Venture, and the North American Waterbird Plan. Along with ESA-listing and IUCN Redlist status, the species included on these initiative priority lists are of high national and international conservation concern. Their priority status by these entities highlights their vulnerability and is further indicative of the need for enhanced mitigation and conservation measures to ensure their survival.

The COP does not provide adequate species-specific impact assessments, even for ESA-listed species, Piping Plover, rufa Red Knot, and Roseate Tern. The Draft EIS must not rely on the COP for its evaluation of impacts and must evaluate the cumulative species-specific impacts in a manner that is appropriate for each species' ecology.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-93

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

2. The Draft EIS Should Consider Local Population-level Impacts Based on the Best Available Science

In evaluating impacts to vulnerable species, BOEM must consider local population-level impacts in addition to flyway-wide impacts.

The COP uses the Marine-life Data and Analysis Team (MDAT) results to evaluate the total proportion of avian populations impacted by the Project. This is inappropriate for several reasons. For one, the MDAT projections are rough estimates of relative density in the Atlantic OCS—they are not intended to assess avian habitat use at the project scale and they cannot be interpreted as population proportions. Mayflower Wind’s digital aerial surveys have the potential to provide a higher resolution picture of relative density, but these are also inappropriate to interpret as population proportions. Limitations of these analyses are provided in the sections below.

BOEM should instead consider the population-level impacts of the project to potentially affected local populations, based on the best available science.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-94

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. BOEM Should Base Its Impact Analyses on Methods Appropriate for Each Species that Triggers Conservation Obligations

Radio and satellite telemetry and radar monitoring methods should be employed to evaluate risks to species which are likely to use the Project area for migration. Many species use Monomoy National Wildlife Refuge, Nantucket, and Muskeget, among other islands along the southern New England coast, during migration. Many nocturnally migrating passerines from across North America convene along New England’s southern coast and Cape Cod prior to beginning their southward trans-Atlantic migration in the fall. Beach nesting birds, like Piping Plover, American Oystercatcher, and Roseate Tern, may cut across the Project Area to reach breeding grounds along New England in the spring and on their return flights south. These interactions are fleeting, however, and would not be adequately captured using transect survey methods. Adults and sub-adults may occur in the Project area in the spring and summer to forage. Therefore, any transect surveys are likely to underestimate the impacts to these populations.

Satellite telemetry technology, supplemented with pressure sensors, should be prioritized for large-bodied birds, as this is the best method for gathering fine scale movement data and flight altitude. The COP has included results from a satellite telemetry-based study on gannet, scoter, and loon movement along the Atlantic OCS. [Footnote 348: Spiegel, C.S., A.M. Berlin, A.T. Gilbert, C.O. Gray, W.A. Montevecchi, I.J. Stenhouse, S.L. Ford, G.H. Olsen, J.L. Fiely, L. Savoy, M.W. Goodale, and C.M. Burke. 2017. Determining Fine- scale Use and Movement Patterns of Diving Bird Species in Federal Waters of the Mid- Atlantic United States Using Satellite Telemetry. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2017-069.] However, this information is available for other taxa. Radio telemetry is appropriate for smaller bodied birds, including songbirds, but

it should be reserved for these species, and the network of receiving stations in the offshore will need to be expanded significantly in order to evaluate the level of interaction between birds and the Project. We expect that the Draft EIS will include an evaluation of all relevant telemetry and radar data available for birds which may enter the Project Area (on and offshore), work with Mayflower Wind LLC to expand these monitoring methods to evaluate impacts from the Project, and outline these requirements within the Draft EIS.

Furthermore, radio telemetry data currently available do not adequately cover the Project area or full life cycle of sensitive species that may be impacted. The current array of telemetry receiving stations are not far enough offshore to track avian use of the Project Area. Additionally, tagged Roseate Terns have been limited to breeding individuals. These individuals forage closer to shore, as they are tied to nesting locations. However, in April and May, breeding age terns have returned to New England, but have not yet begun egg laying, and therefore spend a great proportion of time over water and potentially further offshore. Non-breeding subadult individuals will also return to the region and are similarly unencumbered by nests or chicks. BOEM should help fund further telemetry studies that incorporate these other life stages, time periods, and appropriate geographic scope, and incorporate these results in the Draft EIS for this and future project impact evaluations.

We also recommend BOEM require marine radar methods to document trends in avian movements within and around the Project. Despite the high value of telemetry technology to document changes in migratory routes and species distributions, the application of telemetry technology is generally limited in the number of species and sample sizes included. Marine radar can complement telemetry data to better document the quantity and timing of birds flying through the Project Area. This is particularly valuable for understanding impacts to nocturnal migrants.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-95

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4. The Draft EIS Should Account for the Limitations in the Survey Methods Used to Assess Mayflower Wind for Avian Species Present

Given that there are no studies within the United States that document the responses of local avian populations to offshore wind development in United States' waters, BOEM should adopt a conservative approach in the Draft EIS's avian impact analysis. In doing so, BOEM must address the limitations of the survey methods used within the COP to assess avian impacts.

a) Limitations of Avian Surveys to Make Species-specific Assessments for Vulnerable Species

The authors of the Mayflower Wind COP base their exposure assessment primarily on raw data from the developer's digital aerial surveys of the Project area, Massachusetts Clean Energy Center (MassCEC) aerial surveys (conducted 2011-2015), and MDAT projections (data collected 1978-2016). [Footnote 349: MFW COP, Appendix I1, Table 2-3, p. 3] Neither MassCEC or MDAT data collection methods provide sufficiently high resolution results to assess changes in distributions of birds as a result of the proposed project, nor is the data from these products recent enough to provide accurate assessments of species present. The developer's high-resolution digital aerial surveys could feed into high resolution avian distribution models, however they would need to be conducted for several years before and after construction and be expanded beyond the project boundary to adequately assess impacts. Both aerial and vessel surveys have limitations and associated biases.

Transect surveys are most appropriate for larger bodied species that spend a great deal of time during the day within the survey area, but many species are not adequately detected using transects survey methods. Aerial surveys cannot appropriately address impacts to species that are potentially vulnerable to offshore wind but rarely occur in and around the WEA. This is true for species for which populations are low enough that even small levels of take can have population-level effects (e.g., endangered Black-capped Petrel) or species for which interactions with the WEA may be relatively rare but theoretically could result in large take levels under particular circumstances (e.g., nocturnal trans-Atlantic migrants encountering the WEA during inclement weather or Northern Gannets that migrate through the Sound in large numbers during just 1-2 weeks each spring). Transect surveys are less appropriate for assessing risk to migrants, as the surveys are generally not repeated frequently enough to catch migration events. Migration behavior is a dynamic response to endogenous and exogenous factors that requires oversampling to ensure that infrequent events are not missed by chance alone.

Additionally, smaller avian taxa are difficult to distinguish at the species level during transect surveys. Alcids are rarely attributed to species using personned or digital aerial surveys. *Sterna* terns and small gulls are rarely attributable to species using any survey method (i.e. aerial or vessel), and vessel surveys frighten away many marine birds. Additionally, Roseate Terns are known to use the offshore environment at night during staging periods [Footnote 350: Loring, P., Ronconi, R., Welch, L., Taylor, P. and Mallory, M., 2017. Postbreeding dispersal and staging of Common and Arctic Terns throughout the western North Atlantic. *Avian Conservation and Ecology* 12:20.] and migration [Footnote 351: Loring, P., Paton, P., McLaren, J., Bai, H., Janaswamy, R., Goyert, H., and Sievert, P. 2019. Tracking offshore occurrence of Common Terns, endangered Roseate Terns, and threatened Piping Plovers with VHF arrays, Sterling (VA): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM.] but transect surveys do not evaluate nocturnal activity for obvious safety reasons. Therefore, a comprehensive monitoring plan must include transect surveys in concert with additional methods to assess potential changes in distribution or migratory patterns before and after Project construction. Telemetry (e.g., radio and/or satellite telemetry as appropriate) and marine radar monitoring methods must also be employed as they serve different (though complementary) objectives for different suites of species.

Much of the purpose of these surveys is to collect background information regarding spatial trends which can be compared against data collected post-construction. Personned aerial surveys cannot be completed safely at wind development areas post-construction. We recommend that BOEM work with the developer to institute survey protocols pre- and post-construction that can address these limitations and include these requirements in the Draft EIS. As marketed, digital aerial surveys allow for surveys that fly at higher altitudes than personned surveys, reducing safety risks, while also allowing for surveys to be continued after wind farms have been constructed. While this is true given the current 12-15 MW turbines under consideration by the offshore wind farms with publicly available construction and operation plans, the 200 m turbine blades in development in Virginia [Footnote 352: Institute of Energy for Southeast Europe, *Blades, Longer Than Two Football Fields, Could Help Bring Offshore 50 MW Wind Turbines to the World* <https://www.iene.eu/blades-longer-than-two-football-fields-could-help-bring-offshore-50-mw-wind-turbines-to-the-world-p2488.html> (visited Apr. 29, 2021).] will challenge the potential for even digital aerial surveys post-construction. Additionally, digital aerial survey technology is relatively new and its reliability for attributing observations to species and characterizing flight altitude has not yet been tested or published. As of now, it appears that federally endangered Roseate Terns can be distinguished from other *Sterna* tern species for at least some proportion of occurrence events. However, the reliability of these photo identifications has not been verified. Additionally, Common Terns are considered a species of concern in Massachusetts. Records from Normandeau suggest that digital aerial photos of this species are less distinguishable from other *Sterna* terns (namely Arctic and Forster's Tern). This is similarly true for storm petrel and alcid species, making it difficult to understand how these species distributions may be influenced by the development of the WEAs under consideration. Therefore, the rate of misidentification

for Roseate Tern and other species should be tested and published, and these rates should be incorporated into density estimates.

The MDAT predictive models, while excellent for estimating broad-scale, relative patterns of avian abundance along the Atlantic, are not of suitable resolution for reliably estimating distribution at a local scale. The MDAT models are wholly inappropriate for use in impact assessments and should only be used for broad scale planning purposes (such as determining Call Areas). Furthermore, even as it relates to broad scale evaluations, BOEM's own report indicates that the MDAT models are not suitable for predicting distribution and abundance for a rare and narrowly distributed species. [Footnote 353: Curtice C., Cleary J., Shumchenia E., Halpin P.N. 2018. Marine-life Data and Analysis Team (MDAT) technical report on the methods and development of marine-life data to support regional ocean planning and management. Prepared on behalf of the Marine-life Data and Analysis Team (MDAT). Accessed at: <http://seamap.env.duke.edu/models/MDAT/MDATTechnicalReport.pdf>.] As a result, when these and other data deficiencies [Footnote 354: The BRI spring tern surveys failed to identify any Roseate Terns. However of the total of 23 terns found, 22% were unidentified, and a high proportion of unidentified terns (86%) were noted in transit surveys to and from the lease area. The unpublished nanotag study did not include Motus receivers within the area, potentially skewing data results.] are factored into the biological assessment, the density of ESA species within the Project area is likely to be underestimated.

The core of the Roseate Tern's breeding range, which overlaps with the Project, is small [Footnote 355: Nisbet. I.C.T., M. Gochfeld, and J. Burger. "Roseate Tern (*Sterna dougallii*).” In *The Birds of North America*, version 2.0. A. F. Poole, Ed. Ithaca: Cornell Lab of Ornithology, 2014.] and therefore a conservative approach for this species and others that may be impacted by these surveys is required by the Draft EIS. Adults and sub-adults may occur in the Project Area in the spring and summer to forage, while individuals of all ages likely cross the Project Area in the late summer and fall to reach their staging grounds on Cape Cod. Roseate Tern use of this area, and other wind development projects in the Atlantic OCS, should be a priority in pre- and post-construction monitoring so that true impacts to the population from collision and displacement can be properly measured and compensated.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-96

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Sampling Biases in Survey Methods

As stated above and in previous comments to BOEM, raw data from transect surveys is not appropriate for addressing potential environmental impacts. The Draft EIS must address the biases of each monitoring method used in the COP and Draft EIS and present published results from the associated studies that account for imperfect detection. Distance sampling is the most obvious method to address imperfect detection in transect surveys and we recommend that BOEM and developers incorporate this accepted method into their survey protocols. [Footnote 356: Bradbury G, Trinder M, Furness B, Banks AN, Caldow RWG, Hume D. 2014. Mapping Seabird Sensitivity to Offshore Wind Farms. *PLOS ONE* 9:e106366. Public Library of Science.] Personned and digital aerial surveys, as well as vessel surveys, are unable to reliably distinguish between similar-looking species in all cases. Digital area surveys may be able to attribute observations to species more frequently, but so far there are no peer-reviewed publications which document the reliability of this method. Vessel surveys, while occasionally better for attributing observations to species, are biased against species which sit on the water (sea ducks, waterbirds, alcids) and are more likely to flee from approaching vessels. [Footnote 357: Henkel LA, Ford RG, Tyler WB, Davis JN. 2007. Comparison of aerial and boat-based survey methods for Marbled

Murrelets *Brachyramphus marmoratus* and other marine birds: 8.] Because of these biases, it would be inappropriate to assess the Project using raw data alone. It is also inappropriate to base an impact analysis on lumping the data together into species groups if species-specific extrapolations are available and statistically sound. The Draft EIS must not rely on the presentation of raw lumped data and instead rely on models produced from these standardized collection methods and by species when appropriate.

Currently the COP does not provide any adequate risk assessments for passerines and shorebirds, other than potentially those assessed by Loring et al. through radio telemetry. [Footnote 358: Loring PH, McLaren JD, Goyert HF, Paton PWC. 2020. Supportive wind conditions influence offshore movements of Atlantic Coast Piping Plovers during fall migration. *The Condor* 122. Available from <https://doi.org/10.1093/condor/duaa028> (accessed February 9, 2021).] Except for phalarope, shorebirds and passerines do not spend a significant time in the offshore environment but could potentially experience significant interactions with turbines during migration. Therefore, survey methods are not appropriate for evaluating risk to these species groups. While risk evaluations to loons, seaducks, and gannets incorporated distribution results from satellite transmitter studies, this type of evaluation was not extended to terns, gulls, cormorants, or other seabirds.

The COP also relied on flight heights discerned from the Northeast Atlantic Seabird Catalog to assess collision risk. Flight height estimates from vessel surveys are generally biased low and should not be relied on to estimate average flight height. [Footnote 359: Harwood AJP, Perrow MR, Berridge RJ. 2018. Use of an optical rangefinder to assess the reliability of seabird flight heights from boat-based surveyors: implications for collision risk at offshore wind farms. *Journal of Field Ornithology* 89:372–383.] Radar, LiDAR, and pressure sensor technologies should be relied upon in the Draft EIS and the limitations of each data collection method should be explicit within the Draft EIS.

It is also critical to note the extreme amount of sampling bias across much of the data used in the MDAT avian density models referenced in the COP. Not only do the data used in this model include vessel and aerial surveys which come with the sampling bias described above, but there is no standardization across data sources.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-97

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c) Effect of Survey Effort on Assessment Reliability

The Normandeau surveys are too temporally and spatially limited to detect changes in avian distribution from the Project. Both the MassCEC surveys and MDAT data will be nearly 10 years old by the time of construction. Some species may experience displacement for up to 20 km from an offshore wind turbine array. [Footnote 360: Peschko V, Mendel B, Müller S, Markones N, Mercker M, Garthe S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. *Marine Environmental Research*:105157.] Therefore, any EIS must include information of avian distribution and occurrence for a minimum of 20 km surrounding the Project Area to completely understand which species may be impacted by developing the Project. Annual and seasonal variations in avian movement are also not well captured during the limited survey period, and therefore BOEM should work with developers to continue surveys over the southern New England planning areas, including a 20 km buffer, to capture this variation, beginning as soon as possible. Surveys should be repeated frequently enough to cover within and between seasonal and annual variation in avian distribution, so that changes in distribution caused by offshore wind development can be discerned from other sources.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-98

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5. The Draft EIS Should Address Collision Risk for Species Most at Risk of Collision and be Transparent in Its Use of Collision Risk Models

The Draft EIS should include a collision risk analysis, including risk to birds as they migrate through the Project, on species that occur within a 20 km radius of the WEA and that trigger conservation obligations: ESA-listed endangered and threatened species, state-listed threatened, endangered, and species of concern, and IUCN-listed endangered, threatened, and near threatened. These species include, but are not limited to Roseate Tern, Piping Plover, Red Knot, Common Tern, Least Tern, American Oystercatcher, and Upland Sandpiper. The Draft EIS should include the most recently available scientific information.

Based on MDAT models, the Project may not likely have consistent impacts to avian populations during operation. However, these MDAT distribution models have limited reliability across species, and better methods for predicting impacts have not yet been applied in the offshore environment in the United States. Additionally, while collision events during migration are likely to occur less frequently, these events have the potential to have large, population-level consequences during a short time period. All the current lease areas and call areas occur within migratory pathways for trans-Atlantic migratory songbirds and shorebirds. BOEM's EIS needs to evaluate this cumulative risk, as the likelihood of large migratory collision events will increase as the total offshore wind footprint increases.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-99

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

a) Collision Risk for Passerines and Other Nocturnal Migrants

Collision risks to nocturnal migrants have not been properly accounted for in the COP. BOEM must sufficiently assess collision risks to nocturnal migrants in the Draft EIS. As addressed above, migration events are relatively infrequent, and, therefore, survey transects of the Project Area are not appropriate for characterizing collision risk to nocturnal migrants. Likewise, radar studies conducted on Block Island, [Footnote 361: Mizrahi D, Fogg T, Magarian V, Elia P, Hodgetts D, La Puma D. 2010. Radar Monitoring of bird and bat movement patterns on Block Island and its coastal waters. Report prepared for State of Rhode Island Ocean Strategic Area Management Plan.] while helpful in characterizing migration timing, do not reach the Project Area and are based on a limited number of years. The Draft EIS must consider migration timing, variations in flight height, and the distance from shore at which nocturnal migrants reach maximum migration height. The Draft EIS should contain a full analysis of these study results and not rely on a simple summary of the raw data to inform its collision risk analysis for nocturnal migrants. In general, efforts to understand these impacts should rely on a combination of radar, telemetry, survey, and acoustic monitoring, and should not be based on a single technology alone.

When incorporating radio telemetry methods, receiving stations need to be installed in the offshore environment in such a way that avian movement in and around the WEAs can be adequately assessed.

BOEM should ensure the monitoring protocols for automated radio telemetry currently in development by NYSERDA and USFWS [Footnote 362: Gulka, J., E. Adams, A. Gilbert, P. Loring, and K.A. Williams. 2021. Stakeholder Workshop: Guidance Document for Deploying Automated Radio Telemetry Stations on Offshore Wind Turbines and Buoys. Report for New York Energy Research and Development Authority. 10 pp. Available at <https://briwildlife.org/offshore-motus-guidance/>; Gulka, J., E. Adams, A. Gilbert, E. Jenkins, P. Loring, and K.A. Williams. 2021. Stakeholder Workshop: Online Study Design Tool for Informing Offshore Deployment of Automated Radio Telemetry Stations. Report for New York Energy Research and Development Authority. 11 pp. Available at <https://briwildlife.org/offshore-motus-guidance/>] are followed. We applaud this interagency effort to develop robust, scientifically sound monitoring protocols and to test the feasibility of floating receiving stations. BOEM needs to help financially support the efforts to further this technology, adopt these methods into regional monitoring protocols for offshore wind development, and ensure the success of this technology moving forward. Data from these efforts should be incorporated into this Draft EIS and other impacts analyses into the future.

Acoustic monitoring is especially inappropriate on its own to characterize the community of nocturnal migrants within the Project Area. We recognize that BOEM is considering acoustic monitoring as a standardized monitoring method. However, evidence indicates that Empidonax flycatchers and vireos, two of the most abundant nocturnal migrant groups, do not emit nocturnal flight calls, and therefore, would not be accounted for using acoustic monitoring. [Footnote 363: Evans WR, Rosenberg KV. 2000. Strategies for bird conservation: The Partners in Flight planning process; Proceedings of the 3rd Partners in Flight Workshop; 1995 October 1-5; Cape May, NJ:9.] Additionally, acoustic monitoring does not adequately assess flux—a necessary value for assessing collision risk and estimating population-level impacts.

La Sorte and Fink (2017) [Footnote 364: Sorte FAL, Fink D. 2017. Projected changes in prevailing winds for transatlantic migratory birds under global warming. *Journal of Animal Ecology* 86:273–284.] document the flights of species of migratory birds that migrate over the Atlantic Ocean: American Golden-Plover, Bicknell's Thrush, Blackpoll Warbler, Bobolink, Buff-breasted Sandpiper, Connecticut Warbler, Pectoral Sandpiper, Semipalmated Sandpiper, Solitary Sandpiper, and White-rumped Sandpiper. Two species classified by USFWS as Birds of Conservation Concern, Upland Sandpiper and Whimbrel, also cross the Atlantic Ocean during migration. We do not currently know what Mayflower Wind's turbine specifications will be. While there is evidence to suggest that nocturnal migrants typically fly above the rotor swept zone for current wind turbines in operation, we also know that nocturnal migrants fly lower, potentially within the rotor swept zone, during inclement weather and cross winds. [Footnote 365: Van Doren BM, Horton KG, Stepanian PM, Mizrahi DS, Farnsworth A. 2016. Wind drift explains the reoriented morning flights of songbirds. *Behavioral Ecology* 27:1122–1131. 262 COP Volume II, p. 19.]

Comment Number: BOEM-2021-0062-DRAFT-0035-57

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Many birds with high risk of displacement from wind turbines experience these effects from greater than 1 nm from the turbine array. Foraging guillemot and kittiwake, for example, are known to exhibit macro-avoidance behavior during the breeding season, up to 9 and 20 km, respectively, from the turbine array. [Footnote 66: Peschko V, Mendel B, Müller S, Markones N, Mercker M, Garthe S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. *Marine Environmental Research*:105157.] Presumably, greater spacing between turbines, and thus a larger

cumulative development footprint overall, would only increase displacement impacts for these species. Alternatively, if species vulnerable to collision are less likely to exhibit macro-avoidance for layouts with greater space between turbines, the collision risk would be greater as a result.

A.2.6 Climate Change

Comment Number: BOEM-2021-0062-DRAFT-0012-3

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Addressing climate change is important for oceans, wildlife, and our future. By shifting from fossil fuel energy to clean, renewable energy sources, the United States can help address this crisis. Oceana was pleased to see the Biden Administration's goal to deploy 30 GW of offshore wind power by 2030 while protecting biodiversity and cultural resources, including imperiled marine life such as the critically endangered North Atlantic right whale (NARW).

Comment Number: BOEM-2021-0062-DRAFT-0025-6

Organization: Business Network for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

A recent IPCC Report found that immediate, rapid and large-scale reductions in greenhouse emissions are necessary to limit warming to 1.5°C or even 2°C. With every incremental temperature increase, changes in extremes continue to magnify. Every additional 0.5°C of warming causes increases in the intensity and frequency of hot extremes, including heatwaves, heavy precipitation, and agricultural and ecological droughts in some regions, according to the report. The Mayflower Wind project would be a major step in reaching those greenhouse emission reduction goals, and it would help establish the infrastructure need to support development of multiple future offshore wind projects in parallel.

Comment Number: BOEM-2021-0062-DRAFT-0025-7

Organization: Business Network for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

In addition, climate change leads to significant economic impacts and supply chain disruptions. More frequent and intense storms result in property damage and losses to business. Heat waves that stress electric grid infrastructure led to power outages that close businesses and cause loss of inventory from spoilage and other damages. As the impacts of climate change become more prevalent, as projected by the IPCC report, these damages will increase. Mitigation of climate change results in avoided damages and the associated costs to homeowners, businesses, and the government. BOEM must account for these economic impacts from climate change as they weigh the overall social and economic benefits of offshore wind development, including the Mayflower Wind project.

Comment Number: BOEM-2021-0062-DRAFT-0026-9
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

RODA unequivocally supports efforts to address climate change, there is little to no information from BOEM on the net greenhouse gas (GHG) reductions and what mitigative benefits to climate change are offered by the proposed projects. Any such analysis should include all stages of an OSW project, from surveying to decommissioning of turbines. This should be specific to the materials used for a project as the larger projects would require more source materials, potentially having a greater environmental impact, and different materials carry their own ramifications. A simple approach to calculate net carbon dioxide emissions from OSW projects has been developed and concluded that OSW had lower net carbon dioxide emissions compared to fossil fuels but it was higher than that onshore wind. [Footnote 3: Wang & Sun. 2012. Life cycle assessment of CO2 emissions from wind power plants: Methodology and case studies. *Renewable Energy*. 43: 30-36.]

The carbon emissions of an OSW project itself may be difficult to calculate without knowing how much of the grid will actually be in operation. It is also important to understand both what amount of GHG would be offset by these projects, as well as what additional emissions may be produced.

Activities associated with renewable energy including OSW will contribute to carbon emissions and more information is needed as to the scale of this contribution. Resource-intensive activities associated with production of turbine components and batteries will have further impacts. Some available literature considers much of the carbon dioxide emissions associated with construction and operations to be mitigated by recycling of the turbines after decommissioning. However, it will be impossible to know whether components will be recycled after the Mayflower Wind project is decommissioned if this information is not included in the EIS.

Finally, a GHG analysis must evaluate the effects of a loss of seafood availability. In a recent study comparing the GHG emissions of three sources of animal protein, wild-caught seafood had the lowest impact in each of the categories of GHG emissions, energy use, air pollution, and water pollution. It is estimated that if just two people with high meat consumption replaced that meat with fish, it would save the emissions equivalent of about driving 6,000 miles over the course of a year. [Footnote 4: Peter Scarborough et al. 2014. Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK, *Clim. Change* 125(2): 179–192.] Carbon emissions associated with seafood production in countries with less stringent environmental regulations (i.e. outside the U.S.) are higher than those of domestic seafood; reduced availability or prohibitive pricing of products will drive consumers to replace sustainable U.S. seafood with higher-carbon proteins.

Comment Number: BOEM-2021-0062-DRAFT-0030-1
Organization: The Nature Conservancy
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Climate change is one of the greatest challenges facing humanity in the 21st century. In order to achieve the carbon reduction goals necessary to mitigate the devastating effects of a changing simultaneously replacing almost all of the coal and gas-fired power plants with a new set of emissions free resources. The Conservancy recognizes that along the Atlantic coast of the U.S., offshore wind offers incredible potential to generate clean, renewable energy nearby to the cities and communities that need it most. The

Conservancy believes that expansion of the nascent offshore wind industry in the U.S. is one of several essential actions needed to set us on the path toward attaining regional and national decarbonization goals. For its part, the Mayflower project is intended to generate at least 804MW (of the total 1,600-2,400mw project proposed) towards the Commonwealth's required procurement of 4,000 MW by 2027 on the way toward Massachusetts' commitment to achieve net zero emissions in 2050.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-133

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

VI. BOEM Must Identify the Climate and Air Quality Benefits

Climate change will result in a wide range of significant adverse environmental impacts in the Project Area. As identified by BOEM in a previous environmental analysis for an offshore wind project, these impacts include:

- "alter[ation of] ecological characteristics of benthic habitat, EFH [essential fish habitat], invertebrates, and finfish, primarily through increasing water temperatures." [Footnote 493: E.g., SFWF DEIS at 3-15.]

- ocean acidification, contributing to "reduced growth or the decline of reefs and other habitats formed by shells" and to "the reduced growth or decline of invertebrates that have calcareous shells" and "lead to shifts in prey distribution and abundance." [Footnote 494: E.g., Id. at E3-4, 3-15, E2-7.]

- ocean warming, which affects coastal habitats and "influence[s] finfish and invertebrate migration and may increase the frequency or magnitude of disease." [Footnote 495: E.g., Id. at 3-6.]

These climate impacts affect a broad range of species utilizing coastal and marine ecosystems including marine mammals, turtles, birds, and fish. A number of impact-producing factors (IPFs) in previous offshore wind environmental reviews are related to climate change. For instance, "increased storm frequency and severity during breeding season can reduce productivity of bird nesting colonies and kill adults, eggs, and chicks." [Footnote 496: E.g., Id. at E2-7.] These same IPFs may result in "changes in nesting and foraging habitat abundance and distribution, and changes to migration patterns and timing." [Footnote 497: E.g., Id. at H-45.] For sea turtles, climate change is altering existing habitats, rendering some areas unsuitable for some species and more suitable for others. [Footnote 498: E.g., Id. at H-68.] These IPFs also have the potential to "result in impacts on marine mammals" including physiological stress and behavioral changes," [Footnote 499: E.g., Id. at E3-15, E3-17.] as well as "reduced breeding, and/or foraging habitat availability, and disruptions in migration." [Footnote 500: E.g., Id. at E3-19.] These impacts must be accounted for in the Mayflower Wind Draft EIS.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-135

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The buildout of offshore wind is a key component of meeting the climate and clean energy goals of the Biden Administration. These benefits should be accounted for in the Mayflower Wind Draft EIS. As explained in prior comments to the agency, if 22 GW of offshore wind displaced coal generation, over a 30-year period this would result in a net reduction in carbon dioxide (CO₂) emissions of 2.89 billion tons.

[Footnote 502: Comments of National Wildlife Federation et al. Submitted in Response to the Bureau of Ocean Energy Management Draft Environmental Impact Statement for the Deepwater South Fork Wind Farm and South Fork Export Cable Project, 86 Fed. Reg. 1520 (January 8, 2021) (submitted Feb. 22, 2021) at 9-13.] If these 22 GW offshore wind energy were displacing gas, it would still be displacing nearly 1.5 billion tons of CO₂ emissions and significant methane emissions. The climate benefits would only increase with the new Biden Administration's offshore wind goal of 30 GW, future development in the newly identified WEAs in the New York Bight, and North Carolina's new commitment for 8 GW of offshore wind by 2040.

These climate benefits can also be monetized using the social cost of carbon to illustrate differences between the social benefits of a project and the relative social cost of the alternatives. The social and environmental costs of greenhouse gas emissions are readily quantifiable and BOEM should consider them in evaluating project impacts and impacts of alternatives. For example, the Interagency Working Group on Social Cost of Carbon has produced estimates for the social cost of carbon in order to "allow agencies to incorporate the social benefits of reducing CO₂ emissions into cost-benefit analyses of regulatory actions that impact cumulative global emissions." [Footnote 503: Interagency Working Group on Social Cost of Carbon, United States Government, Technical Support Document: - Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866 at 2 (July 2015 revision), available at <https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf>.] The working group presents values for social costs from 2015 to 2030, assuming discount rates of 5%, 3%, 2.5% and the 95th percentile of the 3% discount rate. [Footnote 504: Id.] These values range from \$11 to \$212 (in 2007 dollars) per metric ton of CO₂. [Footnote 505: Id.] These values could be used to monetize the costs imposed by the net greenhouse gas emissions associated with failing to procure the full 22 GW of offshore wind. Using the working group values, annual climate costs of procuring electricity from 22 GW of coal rather than 22 GW of offshore wind range (assuming a 50% capacity factor in both cases) range from just over \$1 billion/year (in 2007\$) using a 5% discount rate and the 2020 social cost of carbon [Footnote 506: 23.9 million metric tons CO₂ * \$12/ton CO₂ * (22 GW/6 GW) = \$1.05 billion (2007\$).] to more than \$8.3 billion/year (in 2007\$) using a 2.5% discount rate and the 2050 social cost of carbon of \$95/ton. [Footnote 507: 23.9 million metric tons CO₂ * \$95/ton CO₂ * (22 GW/6 GW) = \$8.3 billion (2007\$).] These social benefits would increase when calculated for 30 GW of offshore wind.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-136

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Even absent direct quantification through the social cost of carbon, there are adverse economic impacts from climate change that exist and should be accounted for in the Mayflower Wind Draft EIS. These impacts include, as noted in previous BOEM analysis:

- Property or infrastructure damage and increased insurance costs and reduced economic viability of coastal communities resulting from sea level rise and increased storm severity/frequency;
- Damage to structures, infrastructures, beaches, and coastal land, with numerous economic impacts resulting from erosion and deposition of sediments;
- Adverse impacts on commercial and for-hire fishing, individual recreational fishing, and sightseeing resulting from ocean acidification, altered habitats, altered migration patterns, and increased disease frequency in marine species.[Footnote 508: SFWF DEIS at E3-29.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-2

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As a general matter, BOEM should also take immediate measures to address data uncertainty related to the influence of climate change on coastal and marine species and habitats (e.g., range shifts).

Acknowledging global climate change as a potential cumulative impact is not enough. BOEM should act expeditiously to obtain additional empirical data on current shifts in species and habitat distributions and work to improve its predictive modeling of future species distributions and factor this information into offshore wind project siting, construction, and operations to account for uncertainty related to climate-induced dynamic shifts in distribution (e.g., marine mammals, birds, forage fish, and sharks). [Footnote 65: 40 C.F.R. § 1502.21(b) (Explaining the propositions that the agency has an obligation to obtain information essential to a reasoned choice among alternatives, unless the cost of doing so is unreasonable).]

Comment Number: BOEM-2021-0062-DRAFT-0035-54

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As a general matter, BOEM should also take immediate measures to address data uncertainty related to the influence of climate change on coastal and marine species and habitats (e.g., range shifts).

Acknowledging global climate change as a potential cumulative impact is not enough. BOEM should act expeditiously to obtain additional empirical data on current shifts in species and habitat distributions and work to improve its predictive modeling of future species distributions and factor this information into offshore wind project siting, construction, and operations to account for uncertainty related to climate-induced dynamic shifts in distribution (e.g., marine mammals, birds, forage fish, and sharks). [Footnote 65: 40 C.F.R. § 1502.21(b) (Explaining the propositions that the agency has an obligation to obtain information essential to a reasoned choice among alternatives, unless the cost of doing so is unreasonable).]

Comment Number: BOEM-2021-0062-DRAFT-0039-14

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

• Section 5.1.3.2.10 and Appendix G of the COP indicate that emissions of sulfur hexafluoride (SF6) are expected from gas-insulated switchgears on the WTGs and the offshore substation platforms (OSPs). SF6 is the most potent known greenhouse gas, with the potential to trap infrared radiation approximately 23,000 times more effectively than carbon dioxide. SF6 is also a very stable chemical, with an atmospheric lifetime of 3,200 years. Thus, a relatively small amount of SF6 can have a significant impact on global climate change. The DEIS should fully disclose the switchgears to be utilized for the project, how they will be monitored for leakage, and should quantify the potential release of SF6 from the project over its lifespan. Mitigation for these releases should also be discussed. We also recommend that BOEM consider requiring the best available technology for available switchgears that are SF6-free ("clean-air"),

especially given that there are projected to be a significant number of switchgears for the Mayflower project and the switchgears will be operating in a harsh marine environment thereby increasing the potential for gas leakage.

Comment Number: BOEM-2021-0062-DRAFT-0039-23

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

EPA recognizes the long-term potential benefits of the proposed large-scale renewable energy project with respect to greenhouse gas reductions and climate change mitigation. The discussion in the DEIS should address greenhouse gas emissions, and, if allowed by the state's programs, the contribution of the project towards meeting individual state GHG reduction goals, where they exist. In addition, given the potential impacts associated with climate change, the DEIS should analyze whether components of the project are designed to be durable in the face of sea level rise, storm surges, changes in coastal currents and severe weather events.

Comment Number: BOEM-2021-0062-TRANS-111521-001-1

Commenter: Jeremy McDermott

Commenter Type: Individual

Comment Excerpt Text:

I am the Vice President for Policy and Government Affairs at the Northeast Clean Energy Council, we are an organization of about 200 member companies that are focused on driving the clean energy transition across New England and New York, and I wanted to just offer a couple of perspectives on the process and wanted to ensure that BOEM is looking at the environmental review process to consider the positive impacts of a project like the Mayflower project as well as the potential negative impacts, and I think as the previous caller indicated, offshore wind is a huge element of meeting our climate protection and clean energy goals here in Massachusetts and across the country, and it is important because a lot of these projects are moving forward and have tremendous amounts of investment behind them and it is a huge piece of our ability to achieve these policy goals.

When you say take a step back, one of the biggest impacts that a project, an offshore wind project or any clean energy project will have is on the substantial reduction of greenhouse gas emissions, you know, as it displaces older and dirtier sources of electricity.

Comment Number: BOEM-2021-0062-TRANS-111821-002-1

Commenter: Heidi Richie

Commenter Type: Individual

Comment Excerpt Text:

Mass Audubon strongly supports the responsible development of offshore wind. We see it as vital to addressing the challenges that are faced by the impacts of climate change that we are already seeing evident effecting both people and nature. Rising seas and coastal erosion are accelerating and inundating not only our cities and towns but also the beaches and salt marshes where threatened birds like Roseate Tern and Salt Marsh Sparrow breed.

Mass Audubon stated the bird report found that 43 percent of the state's breeding birds are my highly vulnerable to the effects of climate change. Furthermore, excess carbon in the atmosphere is also causing

ocean acidification and disrupting food chains throughout marine ecosystems, threatening the survival of a wide range of species from the severely endangered North Atlantic Right Whale to our lobster fishery.

Comment Number: BOEM-2021-0062-TRANS-111821-003-1

Commenter: Kelly Schlem

Commenter Type: Individual

Comment Excerpt Text:

I want to stress that climate change is real and sea level rise and large storms are already impacting our neighborhood.

Comment Number: BOEM-2021-0062-TRANS-111821-004-3

Commenter: Susanna Hatch

Commenter Type: Individual

Comment Excerpt Text:

Nearly all New England states have mandated emission limits, offshore wind is absolutely critical to meeting those mandates

Comment Number: BOEM-2021-0062-TRANS-111821-004-8

Commenter: Susanna Hatch

Commenter Type: Individual

Comment Excerpt Text:

We applaud BOEM for initiating the environmental review of Mayflower Wind which will be an important part of our region's effort to mitigate the most severe impacts of climate change.

Comment Number: BOEM-2021-0062-TRANS-111821-005-1

Commenter: Vallerie Oliver

Commenter Type: Individual

Comment Excerpt Text:

Look, all of us want what is best for the planet and climate, and a lot of promises are made about this being clean and sustainable. And it would solve sea level rise and all these other things but there is no science so far backing up these claims in anyway which is why we filed our lawsuit.

A.2.7 Coastal Habitat and Fauna

Comment Number: BOEM-2021-0062-DRAFT-0009-4

Organization: Association to Preserve Cape Cod, Inc.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP reports that the onshore export cables in Falmouth will be installed underground within area roadway layouts or other disturbed areas, and that none of the cable routes will affect "substantial areas of natural habitat or vegetation communities." APCC supports utilization of roadways and disturbed areas for the onshore routing in order to avoid impacts to greenspace and natural habitats. We would like to see

further confirmation in the EIS that no greenspace will be cleared or otherwise affected in routing the onshore cable, with the possible exception of disturbance of roadside vegetation that does not impact sensitive habitat areas.

Comment Number: BOEM-2021-0062-DRAFT-0038-6

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

Muskeget Island is an isolated and low 320-acre sandy island lying 20 miles south of Cape Cod and five miles northwest of Nantucket Island. Triangularly shaped, it is 1.3 miles long with an average width of less than a third of a mile. It has an interesting physiographical feature in the form of a narrow, mile-long sand spit, which arcs southeasterly, then easterly from the western edge of the island. Its flattish terrain is interrupted by scattered sand dunes up to 15 feet high. Minor features are two small brackish ponds and small areas of salt marsh. Its principal vegetation consists of beach grasses and low maritime shrubs, plus some dense patches of rather high growing poison ivy.

Geologically, the island is considered part of the terminal end moraine, marking the maximum extent of the last (late Wisconsin) ice sheet that covered the Northeast. The surface of this moraine has been and still is constantly changed by the work of wind and waves. Muskeget Island's most important aspect is that it is the only known habitat of the Muskeget vole; and it is the southernmost breeding station for the northern grey seal, a species which has been gradually extending its breeding range southward from Canada. The island also supports an enormous nesting population of herring and black-backed gulls. Waterfowl and several other interesting species also use the island, including the short-eared owl, oyster catchers, and black skimmers.

Gay Head Cliffs NNL is also in the project area. However, NPS does not believe the Mayflower Wind Project has the potential to impact this NNL and the reasons it was designated.

A.2.8 Commercial Fisheries and For-Hire Recreational Fishing

Comment Number: BOEM-2021-0062-DRAFT-0012-1

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana has engaged as a stakeholder in the management of U.S. fisheries and interactions with endangered species, with a particular interest in effective bycatch minimization and reduction, if not elimination, of fishing gear entanglement-related death, injury, and harm to protected species, including the NARW. In addition, Oceana is interested in seeing the reduction, if not elimination, of vessel strike-related death, injury, and harm to NARWs. For these reasons, in 2019, Oceana launched a binational campaign in the United States and Canada to urge the respective governments to effectively enforce environmental laws to protect this critically endangered species and Oceana is currently campaigning to protect these whales from their two biggest threats—entanglement in fishing gear and vessel strikes.

Comment Number: BOEM-2021-0062-DRAFT-0018-1

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

The EIS should fully characterize the extent and value of commercial, for-hire, and charter fishing within the Mayflower Wind project footprint (i.e., the lease area and cable corridors). The characterization should include a breakdown of the economic exposure of the proposed project by state, Massachusetts port, gear type, and fishery. This characterization will inform efforts to avoid, minimize, and mitigate impacts to the commercial and for-hire fishing industry of Massachusetts and other affected states.

Comment Number: BOEM-2021-0062-DRAFT-0021-1

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

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 species [Footnote 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.] 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 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 Mayflower Wind project area 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.

Comment Number: BOEM-2021-0062-DRAFT-0021-18

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

BOEM should coordinate early and often with NOAA Fisheries on the most appropriate data for analysis of potential impacts to fisheries, including fishing and transiting locations, as well as socioeconomic impacts. The EIS should clearly and repeatedly acknowledge the limitations of each data set, should include recent data, and analyze multiple years of data (e.g., 10 years) to capture variations in fisheries and environmental conditions. Important data limitations should be supplemented with stakeholder input. Summary information on Council-managed fisheries is also available on the Council websites, www.mafmc.org, and www.nefmc.org, at fishery management plan-specific links, typically via annual fishery information reports (MAFMC) or recent plan amendment or framework documents (both councils).

Comment Number: BOEM-2021-0062-DRAFT-0021-19

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Important caveats regarding fisheries data for 2020 should be taken into consideration given most commercial and recreational fisheries were severely impacted by the COVID-19 pandemic (e.g., severely reduced market demand, lower prices, social distancing restrictions, and reduced fishing effort for many species) and the data collection programs were also negatively impacted (commercial fishery discard surveys, shore-side recreational catch sampling, and for-hire sampling).

Commercial, for-hire recreational, and private recreational fishing will all be impacted by this project in different ways. Therefore, they should be considered separately, but in the same or adjacent sections of the document. These projects will affect both for-hire and private recreational fishing. Describing both types of recreational fishing in the same section of the document would make linkages between biological and fishery conditions easier to explain and understand. If applicable, the EIS should consider aquaculture separately from commercial and recreational fishing. Aquaculture is distinct from wild capture fisheries in many ways. For example, gear is installed in the water long term, there is a different management and regulatory process, and different environmental impacts.

Comment Number: BOEM-2021-0062-DRAFT-0021-20

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The EIS should describe how all impacts may vary by target species, gear type, fishing location (e.g., from shore, mid-water, on different bottom types, near structures such as shipwrecks, other artificial reefs, or boulders) and commercial or recreational fishing (including recreational fishing from shore, private vessels, party/charter vessels, and tournaments).

Comment Number: BOEM-2021-0062-DRAFT-0021-24

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Commercial and recreational fishermen may not be able to take full advantage of any increased availability of target species due to concerns about safely maneuvering, drifting, or anchoring near turbines and offshore substations. The proposed 1x1 nm grid layout of the projects will not eliminate all safety concerns. Safety considerations will vary based on weather, gear type, vessel size, and specific fishing practices which can vary by target species. Although some fishermen may have experience fishing near the five turbines off Block Island or the two CVOW pilot project turbines off Virginia, this may not prepare them for fishing safely within the Mayflower Wind project, which could include up to 147 turbines. The EIS should evaluate these safety considerations and their potential variations across different fisheries. In addition, if fishermen shift their effort outside the project area during construction or long-term operations, this could put them in areas of higher vessel traffic and gear conflict.

Comment Number: BOEM-2021-0062-DRAFT-0021-25

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Fishermen choose where to fish based on many factors including the location of target species and species they wish to avoid, where regulations allow, where they can fish the most efficiently, and where they plan to land their catch based on market and regulatory factors. For these reasons, fishermen cannot easily

relocate to different areas to avoid a windfarm without socioeconomic impacts. Fishermen who choose to fish outside of this project area for safety, economic, or other reasons may not be able to recoup the loss of landings and revenue by shifting effort elsewhere.

Comment Number: BOEM-2021-0062-DRAFT-0021-26

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Relocation of boulders and sand wave clearance that cannot be avoided by micro-siting along the export cable corridor, as described in the COP (Vol. 1 p. 3-54), will cause disruptions in fishing activity. This type of seafloor preparation is expected to occur along 10% of both export cable corridors, especially in Muskeget Channel and Nantucket Sound (COP Vol. 1, p. 3-94). Fisheries that target boulders (e.g., some recreational fisheries and some commercial fisheries using gear types such as pots/traps) will be impacted if boulders are removed from fishing areas. It could take several trips to find their new locations. In addition, a loss of attached fauna is expected when boulders are moved. Recovery may take multiple years and the initial re-colonizing organisms may differ from those displaced during movement from the original location. [Footnote 7: For example, see Guarinello, M. L., & Carey, D. A. 2020. Multi-modal Approach for Benthic Impact Assessments in Moraine Habitats: a Case Study at the Block Island Wind Farm. Estuaries and Coasts. doi:10.1007/s12237-020-00818-w.] While the relocated boulders may eventually continue to attract fishery species, relocation is not a negligible impact on the fleet. Other fisheries, such as commercial mobile gear fisheries, will be impacted if boulder relocation creates new potential snags in areas that were previously clear. Detailed reporting on and wide dissemination of information on where boulders are moved to should be required as a mitigation strategy.

Comment Number: BOEM-2021-0062-DRAFT-0021-28

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

BOEM should work with NOAA Fisheries to ensure that the most appropriate data (e.g., vessel trip reports for commercial and for-hire recreational fisheries) are used to identify catch that occurred in the vicinity of the project area and to describe the most impacted ports and communities based on where that catch was landed. Landings and revenues are both important metrics to consider. Models exist to estimate the amount of fisheries revenue generated from within the project area; however, it is important to acknowledge that changes in transit patterns will also have economic impacts which will be challenging to accurately quantify.

Comment Number: BOEM-2021-0062-DRAFT-0021-29

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The entire Massachusetts Wind Energy Area (denoted as the “Kirkpatrick Study Area”), which covers > 740,000 acres, 17% of which is the Mayflower lease area, was used to estimate recreational fishing activity in the COP (COP Appendix V, Section 3.2.3). The COP acknowledges that although certain popular fishing spots are well known (e.g., Appendix V Table 3-14), data on precise locations of private recreational fishing effort within the project area are generally lacking. Marine Recreational Information

Program (MRIP) data cannot provide information on recreational fishing effort within this project area specifically; however, it can provide information on private and for-hire recreational fishing trips that occurred primarily in federal waters and returned to docks in southern Massachusetts, Rhode Island, Connecticut, and other areas deemed relevant to this project. Vessel trip report data can provide more detailed information on the locations of for-hire fishing effort.

Comment Number: BOEM-2021-0062-DRAFT-0021-31

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Commercial and recreational fisheries provide a wide range of benefits to coastal communities; not all are captured by looking only at financial metrics. The EIS should not overly rely on ex-vessel value when assessing and weighting impacts across fisheries. Focusing on ex-vessel value can mask other important considerations such as the number of impacted fishery participants, the use of a lower value species as bait for a higher value species, or a seasonally important fishery. In addition, the EIS must acknowledge that ex-vessel value does not account for impacts to fish processors and other fishery support businesses, nor does it address other sectors of the economy, consumer benefits, or the economic impacts of recreational fisheries.

Comment Number: BOEM-2021-0062-DRAFT-0023-6

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

As noted above, the proposed Brayton Point export cable route through the CRMC 2011 and 2018 GLDs will likely impact glacial moraine habitat, which due to its geologic complexity supports Essential Fish Habitat for Atlantic Cod fish. The CRMC requests that BOEM ensure that the EIS accurately characterize the value of commercial fisheries landings attributable to Rhode Island-based vessels and the Charter/For-hire fishing activities within the Mayflower Wind project area to be inclusive of the wind farm and proposed cable corridor routes.

Comment Number: BOEM-2021-0062-DRAFT-0023-7

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

In addition, the EIS should accurately characterize the economic exposure of Rhode Island ports, gear types and fisheries, as well as for other affected states. This information is necessary to inform state and federal agency efforts to avoid, minimize and mitigate impacts to the commercial and Charter/For-hire fishing industry from the Mayflower Wind project.

Comment Number: BOEM-2021-0062-DRAFT-0023-8

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

BOEM should encourage Mayflower Wind to work cooperatively with the state and commercial, charter and recreational fishing interests, as well as NOAA and state agency fisheries staff, to avoid and minimize impacts to these fishery activities and the marine habitats that support these fisheries. Any proposed fisheries mitigations plans must be developed in collaboration with the CRMC, including the CRMC Fishermen's Advisory Board as part of Rhode Island's federal consistency review.

Comment Number: BOEM-2021-0062-DRAFT-0024-3

Organization: Rhode Island Department of Environmental Management

Commenter Type: State Agency

Comment Excerpt Text:

The DMF monitors fish and invertebrate abundance in the Sakonnet River and Mt. Hope Bay and has three surveys regularly sampling near the proposed cable route:

Coastal Trawl Survey (<http://www.dem.ri.gov/programs/marine-fisheries/surveys-pubs/coastal-trawl.php>)

Narragansett Bay Seine (<http://www.dem.ri.gov/programs/marine-fisheries/surveys-pubs/narrabay-seine.php>)

Rhode Island Lobster Ventless Trap Survey (<http://www.dem.ri.gov/programs/marine-fisheries/surveys-pubs/lobster-ventless.php>)

Please refer to the hyperlinked websites for survey methodologies.

The seine survey samples at fixed locations from May – October annually, with a focus on juvenile fish (Figure 1). The trawl survey samples at fixed stations on a monthly basis year-round, in addition to seasonal random sampling throughout RI state waters.

Refer to Figures 2-13 for mean annual abundance from the two surveys for Atlantic cod, black sea bass, summer flounder (fluke), scup, tautog, and winter flounder.

Both Atlantic cod (Figures 2-3) and black sea bass (Figures 4-5) demonstrate recent increases in overall relative abundance; while fluke (Figures 6-7), scup (Figures 8-9) and tautog (Figures 10-11) remain variable. Winter flounder has been consistently in decline (Figures 12-13).

The Rhode Island Lobster Ventless Trap survey has documented high catch per trap (or catch per unit effort) of lobsters in some years where the Sakonnet River has been selected for randomized sampling (Figure 14).

The Sakonnet River also supports a substantial commercial harvest of whelk (both channeled and knobbed) (Figure 15).

According to the NOAA Fisheries EFH mapper (available at https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3), the Sakonnet River is documented as:

Juvenile Atlantic cod Habitat Area of Particular Concern (HAPC) under the New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment 2

Summer flounder HAPC (due to submerged aquatic vegetation) by the Mid-Atlantic Fishery Management Council

Essential Fish Habitat (EFH) for the following 28 species' life history stages: [See original attachment for table of species and life history stages.]

Comment Number: BOEM-2021-0062-DRAFT-0026-1

Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

BOEM, like most OSW developers, is taking an unpredictable approach to minimizing conflicts between offshore wind energy (OSW) and fisheries and has not offered a plan for ongoing collaboration with the fishing industry.

Comment Number: BOEM-2021-0062-DRAFT-0026-11
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

Fishery management measures make it difficult to predict future fishing patterns because they are modified frequently based on variations in stock size and distribution. This also means that a short snapshot of fishing activity is not representative of the long-term needs of individual fisheries.

The continued reliance on Automated Identification System (AIS) data to characterize fishing activity in most OSW-related analyses, particularly those regarding at-sea safety and fishing behavior, is concerning. AIS is not required on commercial fishing vessels less than 65 feet in length. The large majority of fishing vessels operating in all existing OSW lease areas are smaller.

Nor are AIS-equipped vessels required to utilize it past 12 nm from shore. Any analysis reliant on AIS data therefore suffers from the fatal flaws of entire size classes of vessels not included in the dataset and significant spatial limitations. RODA and the fishing industry as a whole have repeatedly raised this issue with BOEM, USCG, and directly to OSW developers, yet AIS continues to be utilized and promoted as the main dataset to describe fishing patterns.

Comment Number: BOEM-2021-0062-DRAFT-0026-3
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

The “divide and conquer” approach, in lieu of furnishing factual and accessible information, inflicts further harm to the social fabric of our fishing communities. These communities can—and want to—work together with BOEM to solve important and tangible problems but only if those in positions of power afford them the ability to do so authentically.

Comment Number: BOEM-2021-0062-DRAFT-0026-30
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

Currently, the process for submitting geological and geophysical (G&G) survey information in Site Assessment Plans (SAP) does not allow for environmental review of the impacts of survey activities. BOEM requires the submission of G&G information in SAPs for both wind energy areas and cable routes, [Footnote 14: 30 C.F.R. § 585.610.] but survey activities undertaken pursuant to the collection of this mandated information are not explicitly governed or authorized under any EA. Because survey information is collected before BOEM reviews a SAP, [Footnote 15: Notably, the public does not have

an opportunity to comment on a SAP or even see a draft until after BOEM's approval.] there is no formal process for evaluating the environmental impacts of survey activities. However, the G&G survey equipment is known to cause harm to commercially harvested fishes [Footnote 16: See, e.g., van der Knaap, Inge, et al. "Effects of a seismic survey on movement of free-ranging Atlantic cod." *Current Biology* (2021). <https://doi.org/10.1016/j.cub.2021.01.050>. While this study examines the effects of the low-frequency-sound pulses associated with oil and gas site characterization, it is unclear to what extent how those differ from sound and vibrations produced by current generation OSW surveys, as available public information spans a vast range of possibilities and we are unable to identify any instance in which BOEM has authoritatively disclosed this information.] and the marine environment, [Footnote 17: See Kunc HP, McLaughlin KE & R Schmidt. "Aquatic noise pollution: Implications for individuals, populations, and ecosystems." *Proceedings of the Royal Society B: Biological Sciences* (2016). <https://doi.org/10.1098/rspb.2016.0839>] is used in a manner that displaces commercial fishing activity, and results in loss of or damage to fishing gear. Numerous RODA members have reported observing population-scale impacts to harvested species, particularly pelagic species including squids but also demersal species like whelks, after periods of OSW survey vessel activity. In recent years, the scientific literature on acoustic impacts to commercially harvested stocks has broadened, and the best available science now corroborates the experiences of our members, showing that acoustic impacts from OSW projects and seismic surveys have localized and population-scale impacts to harvested species and their habitat.

Comment Number: BOEM-2021-0062-DRAFT-0026-32

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

It is unclear whether developers and their contractors are required to disseminate notices to mariners describing survey activities for the development of a SAP, [Footnote 20: When notices do occur, they take the form of developers distributing "Notices to Mariners" via emailed PDFs to inform fishermen of on-the-water activity on a periodic basis. As RODA has informed BOEM in the past, this is simply not an effective means of notifying fishing vessel captains and crews as they do not access PDFs either while preparing for a trip or while underway. Repeatedly, fishermen have requested developers to improve the basic dissemination of this critical project information. There remains an urgent need to support RODA in working with developers and the regulatory community to improve these communication streams.] and currently are not required to develop mitigation and compensation plans for gear lost as a result of pre-SAP surveys. U.S. commercial fishermen regularly report G&G survey vessels operating erratically, failing to adequately communicate with commercial fishing vessels operating on fishing grounds, failing to issue accurate notices describing their planned activity, and occasionally causing gear loss. BOEM thus allows and even requires, without permitting, activities undertaken by OSW lessees and their contractors that cause significant financial harm to commercial fishing industry members in the form of lost or damaged fishing gear. Further, it allows the leasing of OSW project areas and permitting of activities that result in this destruction and loss without the establishment an adequate gear loss compensation program. Current approaches are piecemeal, administered poorly by developers, and often only developed long after survey operations begin, if at all. [Footnote 21: While there are instances in which our members have reported expedient processing of gear loss claims by certain developers, overall there remains significant confusion and consternation that OSW developers are unilaterally tasked with developing, arbitrating, and paying gear loss claims without any external, independent oversight or standardization.] While there are instances in which our members have reported expedient processing of gear loss claims by certain developers, overall there remains significant confusion and consternation that OSW developers are unilaterally tasked with developing, arbitrating, and paying gear loss claims without any external, independent oversight or standardization.] RODA has called for the development of a uniform gear loss

compensation program without any response or action from BOEM or the states. Such an approach is the norm in other industries, including oil and gas, but here follows the common OSW trend of limited regulation and oversight. This must be addressed before leasing decisions that would require additional survey activities. Continuing an unchecked, “Wild West” style survey effort for site characterization not only harms biological resources and impacts the fishing industry, but the cumulative impacts of all these surveys may cause irreparable damage to the marine environment.

Comment Number: BOEM-2021-0062-DRAFT-0031-4
Organization: New Bedford Port Authority
Commenter Type: Other

Comment Excerpt Text:

Berkenhagen et al.[Footnote 1: Decision bias in marine spatial planning of offshore wind farms: Problems of singular versus cumulative assessments of economic impacts on fisheries, Jörg Berkenhagen, et al. Marine Policy Journal, 2009] indicated that the offshore wind farm constructions would induce a substantial effect on fisheries. In particular, the opportunities to catch valuable species would be considerably reduced.

Comment Number: BOEM-2021-0062-DRAFT-0031-9
Organization: New Bedford Port Authority
Commenter Type: Other

Comment Excerpt Text:

All of this scientific research and data goes to the notion that the true extent of the impacts of these turbines on fisheries is unknown. What is known is that they clearly have an impact and that impact extends far beyond the immediate vicinity of the turbine.

BOEM’s approach to this matter is to address site specific issues and focus primarily on the environmental impacts of the construction and installation. This approach ignores the potential environmental impact of the project on the fishery well into the future. When faced with questions regarding fisheries impact, BOEM responds with questions and requests for proof of impact from the fishing industry. Everything submitted by the proponent is treated as gospel and information submitted by the fishing industry is treated as speculation. Respectfully, it is all speculation. Nothing in the lease or any previously issued EIS adequately requires the proponent or BOEM to follow up to make sure that their assumptions or representations regarding the impact of the project on fisheries.

BOEM is charged with avoiding “conflicts among users” and the “prevention of interference with reasonable uses.” With the placement of WEAs in active and valuable fishing grounds, BOEM has not acted to avoid conflict. It should at the very least act to prevent interference with a multi billion dollar industry and the livelihood of thousands of people.

Comment Number: BOEM-2021-0062-DRAFT-0033-4
Organization: New York State Department of State
Commenter Type: State Agency

Comment Excerpt Text:

3. Analysis of potential behavioral and physiological impacts to commercially and recreationally important finfish and invertebrate species: Potential impacts include those resulting from noise, vibrations, project vessel traffic, altered water quality, altered sediment chemistries, altered circulation

patterns, lighting, electromagnetic/magnetic fields, heat transfer, entrainment/impingement, and thermal discharges. Additionally, the effect of turbine and cable installation and operation and their potential to alter existing or create new habitats should be evaluated and their potential to induce regime shifts due to changing food sources. BOEM should identify measures that minimize individual and population-level impacts to these biological resources, such as construction measures (e.g., avoid hard bottom habitats, minimize disturbance to complex benthic habitat, time-of-year and time-of-day restrictions, use of soft-start and bubble curtains during pile driving) and operational measures (e.g., nature-inclusive designs, maintaining adequate cable burial depths).

Comment Number: BOEM-2021-0062-DRAFT-0033-5
Organization: New York State Department of State
Commenter Type: State Agency

Comment Excerpt Text:

4. An economic impact analysis for commercial and recreational/for-hire fishermen, including direct and indirect exposure and downstream induced economic effects to seafood processing, ship repair, and other shore-based industries should be provided in the EIS. COP Volume II and Appendix V identify New York interests in the Lease Area and along the export cable routes by highlighting the importance of the Montauk, NY fishing port in value and volume of commercial landings.

Comment Number: BOEM-2021-0062-DRAFT-0033-7
Organization: New York State Department of State
Commenter Type: State Agency

Comment Excerpt Text:

BOEM's analysis should demonstrate the potential for fewer impacts to commercial fishing and fisheries habitats associated with installing and operating high voltage direct current (HVDC) versus alternating current (HVAC) cable technology (as the two technologies are included in the Project Design Envelope).

Comment Number: BOEM-2021-0062-DRAFT-0034-10
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

The Martha's Vineyard fishing fleet consists mostly of small boats, often manned by a single operator with no crew. In order for fishing to continue within the development, there needs to be assurance that a small boat with an individual operator will be able to continue as before the development. A statement from USCG that the boats may still use the area, as long as they carry crew, would not help. Will these small boat owners be able to safely continue to ply their trade? Will they be able to purchase insurance for the extra liability? Impacts and mitigation need to be thoroughly addressed in the DEIS.

Comment Number: BOEM-2021-0062-DRAFT-0034-5
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

- Construction and Operation impacts to fisheries:

o Although the NOI includes considerable data from the larger ports, mention of Martha's Vineyard and Nantucket is very limited. No documented, dedicated outreach took place to solicit input from the Martha's Vineyard Fisherman's Preservation Trust. The DEIS should include much more on Martha's Vineyard fishing. Martha's Vineyard's economy depends upon the vacation industry, which depends on maintaining the picturesque fishing fleet of small boats. This is also paramount to our cultural heritage. The iconic small boat fishermen and fisherwomen of Martha's Vineyard need assurance of coexistence and/or appropriate mitigation.

Comment Number: BOEM-2021-0062-DRAFT-0034-6

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

The DEIS should include much more data and should thoroughly explore impacts, possible avoidance of conflict, and a mitigation plan of substance – for demersal, pelagic, and highly migratory species, and ultimately MV fisherman. The review should include the reality that some of the impacts may not be fully realized until years, even decades from now. A mechanism that ensures a retrospective assessment of fish stocks/inventories takes place multiple times between 3 and 10 year time horizons, should be included.

Comment Number: BOEM-2021-0062-DRAFT-0037-28

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The "Affected Environment" section should also include all of the biological, cultural, and socioeconomic issues related to fisheries and marine resources that may be affected by this project, including species that live within, or seasonally use, the immediate project area and adjacent locations.

Comment Number: BOEM-2021-0062-DRAFT-0037-30

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The discussion of the affected commercial and recreational (party/charter and private angler) fisheries should assess landings, revenue, and effort; fishery participants, including vessels, gear types, and dependency upon fishing within the project area; potential impacts beyond the vessel owner level (e.g., shoreside support services such as dealers, processors, distributors, suppliers, etc.); and coastal communities dependent on fishing.

Comment Number: BOEM-2021-0062-DRAFT-0037-31

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Our offshore wind socioeconomic impacts page (available at: https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development?utm_medium=email&utm_source=govdelivery) can help identify important commercial and recreational fisheries, while the status of many species can be found on our individual species pages

(available at: <https://www.fisheries.noaa.gov/find-species>), and recent trends can be found on our Stock SMART page (available at: <https://www.st.nmfs.noaa.gov/stocksmart?app=homepage>). Information that can help characterize communities engaged in fishing activity can be found on our website describing social indicators for coastal communities (available at: <https://www.fisheries.noaa.gov/national/socioeconomics/social-indicators-coastal-communities>) and should be integrated into the EIS.

Comment Number: BOEM-2021-0062-DRAFT-0037-44

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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 biological impacts to marine species caused by the temporary or permanent loss/conversion of bottom habitat (i.e., resource distribution, productivity, or abundance changes) and direct or indirect socioeconomic impacts to commercial and recreational fishing activities and support businesses from project construction and operation such as loss of access to important fishing areas due to the presence of structures (WTGs, substations, cables, scour protection). This evaluation should also include any potential displacement of fishing activities and resulting changes to catch rates and increased gear conflicts, bycatch, and fishing pressure in other locations. When structuring the fishery socioeconomic impact evaluation, you should address all of the elements identified in the checklist we provided in January 2021, or explain why specific elements on that checklist were not included in the EIS. As noted above, our fishery socioeconomic impact summaries can and should serve as the foundation for this analysis in the EIS, although additional project-specific analysis may be necessary to address particular impacts or mitigation/compensation arrangements with affected fisheries.

Comment Number: BOEM-2021-0062-DRAFT-0037-62

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS should also consider how any proposed wind farm may displace or alter fishing or existing vessel activity that may change the risk to protected species from interactions with fisheries or vessels either within or outside the lease area, including potential risks of interactions with recreational fishing activity around foundations and entanglement in marine debris that may become ensnared on the foundations.

Comment Number: BOEM-2021-0062-DRAFT-0037-63

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Additionally, the EIS should consider effects of any surveys that may occur following potential COP approval that may affect listed species (e.g., gillnet, trap/pot, trawl surveys to characterize fisheries resources), as well as any pre- or post-construction monitoring that may affect listed species. For further information on effects to consider, please refer to the ESA Information Needs document.

Comment Number: BOEM-2021-0062-DRAFT-0037-85

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

We also expect the assessment to include impacts to the recreational and commercial fishing communities that rely on these species.

Comment Number: BOEM-2021-0062-DRAFT-0037-87

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Species important to both commercial and recreational interests are found within the project area and associated cable corridors. The COP adequately identifies most species and fisheries that may be affected by the proposed operations based on a fairly comprehensive overview of available information and associated limitations. It also provides a good explanation of the potential historic and future outlook of some affected species, including potential range shifts and population trends. As referenced in the COP, our socioeconomic impact summary reports for this project [Footnote 28: Please note that our socioeconomic impact summary reports break the Mayflower Wind Project into two areas based on areas previously identified by BOEM. Therefore, to get complete information on the potential commercial fishery impacts, users must review both Mayflower Wind 1 (northern portion of lease area 0521) and Mayflower Wind 2 (southern portion of lease area 0521, or 0521 remainder) reports. We will update these reports to reflect the correct areas soon.] (available at

https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/WIND/WIND_AREA_REPORTS/Mayflower_Wind_1.html#Revenue_by_Port and

https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/WIND/WIND_AREA_REPORTS/Mayflower_Wind_2.html) indicate that Atlantic herring, silver hake (whiting), scup, longfin squid, Jonah crab, skates, and monkfish are the primary commercial fisheries affected in terms of landing amounts and fishery revenue. This is similar to the 2008-2018 data summarized in the COP based on a data request using the same underlying methods. The project area and surrounding waters (statistical area 537) are particularly important to the Jonah crab fishery, which may be underrepresented in existing data sources.

Comment Number: BOEM-2021-0062-DRAFT-0037-89

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

There is an insufficient number of party/charter vessel trips within the lease area to present available VTR data without compromising confidentiality protections outlined in the MSA. Private angler recreational catch data are not collected with sufficient area precision to determine the amount of catch inside a particular wind project area. Despite these limitations, the project area is likely to affect important regional recreational fisheries and a discussion of party/charter and private angler catch should be included in the EIS. Any requests for fishery data should be submitted to nmfs.gar.data.requests@noaa.gov.

Comment Number: BOEM-2021-0062-DRAFT-0037-90

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office
Commenter Type: Federal Agency

Comment Excerpt Text:

BOEM should use information from all available and appropriate sources to characterize fishing operations and evaluate the potential impacts of the proposed project on private anglers, commercial and party/charter fishing vessels, and associated communities. As noted above, consideration of data across a broad time frame (10 years or more), including data from the most recent two years, is necessary to reflect both recent operations and annual fluctuations in fishing operations due to changing environmental conditions, market price, and management measures. As such, while the COP includes data through 2018, the EIS should include the most recent information available. We rely on VTRs as the best source of area-based data for all federally-managed commercial and party/charter fisheries. Both VMS and automatic identification system (AIS) data provide higher resolution spatial data, but such sources are not adequate to provide information on all commercial fisheries or fishing vessels, especially the skate and whiting fisheries which do not have a VMS requirement. As discussed in the COP, multiple sources of data should be analyzed together to present a more complete picture of overall fishery operations and avoid drawing inappropriate conclusions by considering only one data source. In evaluating the use of existing data sources, please refer to the list of data limitations provided in our January 2021 socioeconomic checklist. When using these data to analyze the impacts of the proposed project, BOEM should recognize such limitations and tailor impact conclusions based on the data used. Care should be taken to put operations into the proper context in future analysis to avoid mischaracterizing fishing operations and potential impacts associated with the proposed project. Further, assumptions and methods used to extrapolate data from incomplete data sources should be clearly articulated, although extrapolations should be minimized to avoid reaching inaccurate conclusions from limited data.

Comment Number: BOEM-2021-0062-DRAFT-0037-91

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office
Commenter Type: Federal Agency

Comment Excerpt Text:

A quantitative analysis of the potential biological, social and economic costs of the project to fishing industries and their communities must be included in the EIS. As noted above, we have provided a checklist outlining the elements we expect to be included in an analysis of the socioeconomic impacts of this project. Our previously referenced socioeconomic impact summaries address nearly all of the elements on the checklist and can be used as the foundation of such an analysis. The analysis should also 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 EFH during construction, operation, and decommissioning the project. Vessels may experience increased operational costs from increased insurance rates to fish within wind farms or additional fuel required to transit around wind farms or search for new fishing locations. 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, should be assessed. This is a critical analysis, as even marginal changes in costs could be impactful for some fisheries or individual operations. Similarly, analysis of the affiliated non-market social

impacts of such activities should be included in the EIS, including impacts to cultural norms, fishermen or fishing community social relationships, and health and well-being (see Fisheries Social Impact Assessment Guidance Document <https://media.fisheries.noaa.gov/dam-migration/01-111-02.pdf> and

Practitioner's Handbook https://spo.nmfs.noaa.gov/sites/default/files/TM212_0.pdf). Finally, the EIS should consider and discuss any mitigation measures contemplated to reduce any adverse impacts to fishing operations, particularly those due to loss of area access or gear damage/loss.

Comment Number: BOEM-2021-0062-DRAFT-0037-96

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The data presented in Appendix V highlight the importance of the export cable corridors to regional fisheries, noting that fishery landings along the cable corridors are nine times higher than landings from within the lease area itself due to the “variety of favorable benthic habitat” along the export cable corridors (COP Appendix V, page 2-60 and 2-74). Of particular note is the importance of the cable corridor to the longfin squid fishery and Atlantic cod. Although the Falmouth cable corridor is important to the squid fishery, the Brayton Point cable corridor is associated with more fishing activity overall to regional ports. As noted above, both cable corridors pass through sensitive habitat areas, including complex habitat important to several commercial and recreational fishery species. Therefore, the EIS should thoroughly evaluate both the biological and socioeconomic impacts of the cable corridors to fishery resources, operations, and associated communities and include alternatives that avoid and minimize impacts to such habitat.

Comment Number: BOEM-2021-0062-DRAFT-0039-2

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

We continue to encourage BOEM to continue to expand on past coordination with the fishing industry and state and federal agencies charged with protecting fishing and marine mammal resources.

Comment Number: BOEM-2021-0062-TRANS-111021-001-1

Commenter: David Wallace

Commenter Type: Individual

Comment Excerpt Text:

I represent the clam fishery. We are very concerned about the spacing of the turbines between one point one times one square -- nautical mile and two point two nautical miles which were our suggestions. The real problem is that at those very tight areas between turbines, we will not be able to fish within that array except on exceptionally good weather, and therefore we are being eliminated from traditional fishing grounds and with no compensation and no consideration. The other point that I would like to make is that -- is that there has been no transit zones through those arrays both on -- both sides and the Mayflower array, so one point -- one times one mile for a transit zone which was said to be quite adequate is actually quite dangerous especially in bad weather circumstances and so we oppose that also.

A.2.9 Cultural, Historical, and Archaeological Resources

Comment Number: BOEM-2021-0062-DRAFT-0029-2

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

Our aim in these comments, and in ongoing consultation with BOEM, is to ensure that the BOEM's permitting process follows the law, and that BOEM selects an alternative that preserves the historic integrity of the surrounding area, including the Town, the whole of which is a National Historic Landmark (NHL). BOEM must also comply with the requirements of the National Environmental Policy Act (NEPA) and Section 106 and 110(f) of the National Historic Preservation Act (NHPA).

Comment Number: BOEM-2021-0062-DRAFT-0029-3

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

First, the Town expects BOEM to use this consultation opportunity to fulfill its obligations to consult under federal law. "Consultation," under the NHPA, "means the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process." [Footnote 1: 36 C.F.R. § 800.16(f).] As consulting parties, we expect BOEM to actively seek, discuss, and consider our views in permitting and mitigating this Project. According to the COP, Nantucket is expected to incur severe visual impacts and we therefore urge and expect BOEM to work closely with the Town to ensure the setting and character of our historic resources are preserved to the greatest extent possible by employing all possible planning to avoid or minimize harm.

Comment Number: BOEM-2021-0062-DRAFT-0029-4

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

Furthermore, we encourage BOEM to consult with the Nantucket Historic District Commission (HDC) and other local groups throughout this permitting process. At over 30,000 acres, the Nantucket Historic District, which encompasses the entire island of Nantucket as well as the islands of Tuckernuck and Muskeget, is the largest conventional NHL district by area in the contiguous United States. Since 1955, the Nantucket HDC has played a central role in the "preservation and protection of the Town's historic buildings, places and districts of historic interest through the development of an appropriate setting for these buildings, places and districts and through the benefits resulting to the economy of Nantucket in developing and maintaining its vacation-travel industry through the promotion of these historic associations." In light of the Town's high cultural and historic sensitivity, and its proximity to the Project, we strongly urge that Nantucket's historical and cultural review boards and stakeholders, such as the Nantucket HDC and the Nantucket Historical Commission, be consulted and engaged in any historic or archaeological review process of the Project.

Comment Number: BOEM-2021-0062-DRAFT-0029-5

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

BOEM must also ensure compliance with the NHPA, and in doing so must work with the Town to identify historically significant resources. Section 106 of the NHPA requires BOEM to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approve throughout

the country. [Footnote 2: 54 U.S.C. §§ 300101-307108; Section 1 of the NHPA, Pub. L. No. 89-665, as amended by Pub. L. No. 96-515.] Section 106 requires federal agencies to identify any historic properties that will be affected by the project, evaluate the effects, and seek to reduce, minimize, and mitigate those effects. As BOEM proceeds with the evaluation of the Project, it must consider the Town of Nantucket as an NHL, and work closely with consulting parties to evaluate impacts.

In addition to its obligations under Section 106 of the NHPA, BOEM must address impacts to NHLs differently than it addresses other historic properties, something the COP fails to mention. To fulfill its legal obligations for permitting, BOEM must undertake all possible planning to minimize harm to the Nantucket Historic District pursuant to Section 110(f) of the NHPA. [Footnote 3: 54 U.S.C. § 306107.] Section 110(f) provides:

Prior to the approval of any Federal undertaking which may directly and adversely affect any [NHL], the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council a reasonable opportunity to comment on the undertaking. [Footnote 4: Id.]

The COP and NOI do not make clear whether BOEM has initiated the Section 110(f) process or whether and how BOEM has undertaken such planning and actions as would be necessary to minimize harm to the Town. In fact, none of the available documents contain any information at all about how BOEM intends to demonstrate compliance with Section 110(f) of the NHPA. BOEM must address impacts to the Town differently than it addresses impacts to other historic properties in the Project area for Section 110(f) purposes, and we are concerned that BOEM is overlooking this requirement in its review.

Comment Number: BOEM-2021-0062-DRAFT-0029-7

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

In addition to considering impacts on the natural environment, NEPA requires federal agencies to consider impacts on historic and cultural resources. BOEM must consider a wide range of effects, specifically including impacts that are "historic, cultural, [and] economic." [Footnote 7: 40 C.F.R. § 1508.1(g)(1).] Spoliation of the historic landscape of the Town—including its unimpeded ocean views—will have irreparable effects on historic and culturally significant land and these potential adverse effects must be carefully considered. Furthermore, because the Town relies so heavily on tourism for its economy, impacts to historic and cultural resources pose economic risk that BOEM must consider.

Comment Number: BOEM-2021-0062-DRAFT-0029-9

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

The COP's Offshore Visual Impacts Assessment, however, is inadequate to show the actual impact of the wind turbines and associated infrastructure. Section 106 requires federal agencies to not only identify historic properties that will be affected by the project, but also to evaluate the effects on those properties. Nevertheless, the Visual Impacts Assessment and the corresponding visualizations do not adequately evaluate the impacts to all of the historic resources on Nantucket. Due to the potential for the Project to adversely impact cultural sites, historic properties, and the viewshed, BOEM should conduct additional visual assessments to assess accurately adverse impacts and to determine appropriate avoidance, minimization, or mitigation measures from additional vantage points. These vantage points should include all historic districts, sites, and landscapes identified by BOEM and the consulting parties.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-139

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

VII. BOEM Must Comply with Section 106 of the National Historic Preservation Act and Recognize and Respect Tribes' Sovereign Status and Collaborate Directly with Tribal Governments in a Consultative Process

During preparation of this EIS, BOEM intends to ensure that the NEPA process will meet its National Historic Preservation Act (NHPA) obligation. The construction of wind turbine generators (WTGs), offshore substation, installation of electrical support cables, operations and maintenance (O&M) facility, port facilities, and development of staging areas are ground- or seabed-disturbing activities that could directly affect archaeological resources. Section 106 of the NHPA requires Federal agencies to "take into account the effects of their undertakings on historic properties." [Footnote 512: 36 C.F.R. § 800.1.] It also gives the Advisory Council on Historic Preservation an opportunity to comment. [Footnote 513: id] The Section 106 process balances historic preservation concerns with the needs of federal agencies while involving interested parties. [footnote 514: Id.]

Robust consultation with states and tribes under Section 106 is paramount to ensuring the Project appropriately considers impacts on historic state and tribal resources. [Footnote 515: Successful compliance with Section 106 involves identifying state, tribal, and private interests involved in historic preservation within the development areas. Relevant State or Tribal Historical Preservation officers (SHPO or THPO respectively) must be involved in the Section 106 process, along with any private preservation groups with appropriate legal or economic interests. BOEM must identify which historic properties are listed, or are eligible for listing, on the National Register of Historic Places that could be affected by the project. BOEM must assess the project's impact on these properties to determine if any adverse effects "diminish the characteristics qualifying a property for inclusion in the national register." (36 C.F.R § 800.5.) Collaborative efforts between BOEM, SHPO, THPO, and any private preservation groups can result in agreed upon measures to minimize or mitigate known adverse effects. These collaborations should continue throughout project development in case any unknown cultural or archeologic resources are discovered during development.] Additionally, it is necessary that during development proper precautions are taken in case unknown cultural resources are uncovered. [Footnote 516: If any additional or previously unidentified cultural resources are located during project implementation, the find must be protected from operations and reported immediately to the SHPO or THPO staff. All operations in the vicinity of the find will be suspended until the site is visited and appropriate recordation and evaluation is made by the SHPO or THPO staff.] It is critical that the project include best management practices developed collaboratively with tribes for cultural resource protection in order to avoid, minimize, and mitigate any potential adverse impacts to cultural resources. Executive Order 13175 mandates all executive agencies recognize and respect tribal sovereign status and engage in "regular, meaningful, and robust consultation with Tribal officials in the development of Federal policies that have Tribal implications." [Footnote 517: Exec. Order No. 13,175, 65 Fed. Reg. 67,249, 67,249–50 (Nov. 6, 2000) (mandating that agencies "respect Indian tribal self-government and sovereignty" when "formulating and implementing policies" that affect tribal interests). Reinforced in the Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships. Jan. 26, 2021. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/26/memorandum-on-tribal-consultation-and-strengthening-nation-to-nation-relationships/>.] We encourage BOEM to also adopt early consultation as envisioned in Secretary Haaland's recent Secretarial Order:

Bureaus/Offices will proactively begin consultation with potentially impacted Tribes, both those currently in the proposed area and those with a historic presence, as well as engage potentially impacted environmental justice communities early in the project planning process. "Early in the project planning process" includes when a Bureau/Office has enough information on a proposed action to determine that an environmental assessment or an environmental impact statement will be prepared. [Footnote 518: Secretarial Order No. 3399, at § 5(c). Apr. 16, 2021.

https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508_0.pdf.]

Native American and Alaska Native Tribes are sovereign governments recognized as self-governing under federal law, and the U.S. government has a "trust responsibility" to those tribes. [Footnote 519: Id.] The federal government has special fiduciary obligations to protect Native resources and uphold the rights of Indigenous peoples to govern themselves on tribal lands. [Footnote 520: *Eric v. Sec'y of U. S. Dep't of Hous. & Urban Dev.*, 464 F. Supp. 44 (D. Alaska 1978).] In carrying out this duty, federal officials are "bound by every moral and equitable consideration to discharge the federal government's trust with good faith and fairness." [Footnote 521: *United States v. Payne*, 264 U.S. 446, 448 (1924); accord *Yukon Flats School Dist. V. Native Village of Venetie Tribal Gov't*, 101 F.3d 1286 (9th Cir. 1996) rev'd on other grounds 522 U.S. 520 (1998); see also 84 Fed. Reg. 1200–01 (Feb.1, 2019) (including 229 Alaska Native entities in the list of tribes recognized as having the immunities and privileges of "acknowledge Indian tribes by virtue of their government-to-government relationship with the United States.") Note that the trust doctrine includes duties to manage natural resources for the benefit of tribes and individual landowners, and the federal government has been held liable for mismanagement. (See *United States v. Mitchell*, 463 U.S. 206 (1983) (holding that the Department of the Interior was liable for monetary damages for mismanaging timber resources of the Quinault tribe in violation of the agency's fiduciary duty.)] Acting in accord with these trust responsibilities requires nation-to-nation consultation from the first opportunity.

Comment Number: BOEM-2021-0062-DRAFT-0038-1

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

NPS has program responsibilities for National Historic Landmarks (NHLs) in or near the project Area of Potential Effect (APE) identified pursuant to the NHPA, including "Nantucket Historic District, NHL", and Gay Head Light, which is listed on the National Register of Historic Places (NRHP) and monitored by NPS under the National Historic Lighthouse Preservation Act (NHLPA). NPS has provided information on these areas below, which may be useful to incorporate into your baseline environmental information. NPS also has program responsibilities for National Natural Landmarks (NNLs) in the project area, which include Muskeget Island and Gay Head Cliffs NNLs. We have then identified potential areas of interest and concern and provided initial comments for your consideration in the forthcoming evaluation of the project. As more information is developed and shared with the parties, we will review and offer additional comments as appropriate.

We have an initial request we hope you will consider while the draft and final Environmental Impact Statements (EISs) are prepared that would aid NPS in our role and the public overall in reviewing and commenting on materials for the projects. NHLs, NHLPA Lighthouses, and NNLs should be identified on all the project maps that show the study area. Point locations may be used for NHL, NHLPA Lighthouses and NNL locations. We can assist in providing location data to fulfill this request.

Comment Number: BOEM-2021-0062-DRAFT-0038-11

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

As always, NPS encourages BOEM to consult with the Massachusetts and Rhode Island SHPOs (per 36 CFR 800.4(a)(2) to identify any National Register properties or additional NHLs within the APE that may be affected by the undertaking. Additionally, as a general rule, BOEM should always invite NHL & NHLPA lighthouse owners to participate in consultation. NPS can provide contact information for NHLPA lighthouses as needed.

Comment Number: BOEM-2021-0062-DRAFT-0038-12

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

NPS notes that many coastal areas across from the Mayflower Wind project, including Martha's Vineyard and Nantucket Island, are important to the Wampanoag Tribe of Gay Head, a Federally Recognized Tribe. NPS encourages meaningful tribal consultation between BOEM and the Wampanoag Tribe of Gay Head.

Comment Number: BOEM-2021-0062-DRAFT-0038-2

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

National Historic Landmarks are historic properties that illustrate the heritage of the United States. The NPS has specific responsibilities with regards to administration of the NHL Program. The over 2,600 NHLs found in the U.S. today come in many forms: historic buildings, sites, structures, objects, and districts. Each NHL represents an outstanding aspect of American history and culture. Of note, federal funding or licensing of activities that affect historic properties are regulated principally by Section 106 and Section 110(f) of the NHPA. Other federal effects are listed in 36 CFR § 65.2. Under Sections 106 and 110(f) of the Act, federal agencies must "take into account" the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking and its effects. Implementing regulations of the ACHP may be found in 36 CFR § 800 "Protection of Historic Properties," which establishes a process of consultation with the ACHP, State Historic Preservation Officer (SHPO) and consulting parties to reach agreement on how the undertaking will avoid, minimize, or mitigate adverse effects. Steps in the process include identification and evaluation of historic properties that may be affected, assessment of the effects of the federal action, and resolution of any adverse effects that would occur. If a federal activity will "directly and adversely affect" a Landmark, Section 110(f) of the Act also calls for federal agencies to undertake "such planning and actions as may be necessary to minimize harm to such Landmark." As with Section 106, the agency must provide the Advisory Council with a reasonable opportunity to comment in accordance with 36 CFR § 800.

Comment Number: BOEM-2021-0062-DRAFT-0038-3

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

The Nantucket Historic District is a National Historic Landmark District that encompasses the entire island of Nantucket, as well as the small islands of Tuckernuck and Muskeget, Massachusetts. At over 30,000 acres, it is the largest conventional historic NHL District by area in the contiguous United States. The town is the finest surviving architectural and environmental example of a late 18th- and early 19th-century New England seaport town. The whaling industry in America originated on the island of Nantucket in the late 17th century, as colonists followed the example of the island's original American Indian inhabitants. Nantucket developed much of its present appearance in the 18th century. Dwellings from this time, including the Nathaniel Macy House at 12 Liberty Street and the Tristram Bunker House at 3 Bear Street, are similar to those built in the 17th century. The Golden Age of Nantucket began about 1820 and the large homes built between 1820 and 1850 are indicative of local sea captains' and merchants' wealth. According to the Nantucket Preservation Trust:

[T]he island has been reconized as a national treasure since 1966 – the first year the National Register of Historic Places and National Historic Landmark programs were implemented – only Nantucket's structures built prior to 1900 were considered contributing to the island's historic character. The update extends the period of significance from 1900 to 1975; it also recognizes the significance of Nantucket's 19th and 20th century resort industry and the island's national role in the evolution of land conservation and historic preservation – in addition to Nantucket's whaling era.

According to the NHL nomination, "Nantucket in its entirety, today presents an accurate impression of the ambience of the early whaling industry and serves as an important part of Americas' material culture."

Comment Number: BOEM-2021-0062-DRAFT-0038-4

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

Gay Head Light was authorized by the U.S. Congress in 1798 and constructed in 1799 and is one of the first U.S. lighthouses to use a "revolving illuminating apparatus" to generate a flashing white light signal. In 1852, a Lighthouse Board report listed Gay Head Light as one of the most important lighthouses on the Atlantic Coast. According to the National Trust for Historic Preservation:

Gay Head Lighthouse was the first lighthouse built on Martha's Vineyard and one of the first in the U.S. to receive a first order Fresnel lens in 1856. Many men in the Aquinnah community, including members of the Wampanoag tribe, worked at the lighthouse. Standing atop the National Natural Landmark Gay Head Cliffs, the lighthouse serves as a beacon to Wampanoag tribal heritage and is the only lighthouse with a history of Native American Lighthouse keepers. "Gay Head Lighthouse represents an important part of Massachusetts coastal communities' identity and the cultural and nautical history of the United States," said Stephanie Meeks, president of the National Trust for Historic Preservation.

The light is currently owned by the Town of Aquinnah, MA. Ownership was transferred from the U.S. Coast Guard to the Town of Aquinnah in 2015, through the National Historic Lighthouse Preservation Act. Under the NHLPA, lighthouse recipients are required to submit detailed annual reports to NPS. These Reports outline the recipients' activities and include information about preservation actions, maintenance, finances, and other issues or problems.

Comment Number: BOEM-2021-0062-DRAFT-0039-33

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The Mayflower Wind COP mentions that Mayflower Wind has consulted with tribes that claim cultural affiliation to the area of potential effect, including the Narragansett Indian Tribe, the Mashpee Wampanoag Tribe, the Wampanoag Tribe of Gay Head (Aquinnah), the Shinnecock Indian Nation, the Delaware Indian Tribe, the Mashantucket Pequot Tribal Nation, and the Mohegan Tribe of Connecticut. The COP also notes that tribes will continue to be consulted throughout the process. We support this coordination to date.

We note that COP Appendix Q – Marine Archaeological Resources Assessment Volume and COP Appendix R - Terrestrial Resources Assessment Volume have not been provided except for the cover page that indicates "...will be provided as a supplemental filing." Since potential impacts to tribal cultural properties are often of paramount concern to tribal nations, continued NHPA Section 106 consultation with the tribes throughout the archaeological assessment process is critical. We encourage BOEM to involve the tribes in this work, including development of an unanticipated discovery plan that includes procedures to be followed if potentially significant historic properties are encountered or inadvertently disturbed during construction. We also recommend continued outreach by the project proponent and BOEM throughout the balance of the review process, including coordination with tribes in marine survey protocol design, execution of the surveys, and interpretation of the results. The DEIS should provide an accounting of the engagement and discussion of issues important to the affected tribes.

A.2.10 Demographics, Employment, and Economics

Comment Number: BOEM-2021-0062-DRAFT-0037-45

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

It is vital that all costs and benefits of available alternatives, including the no action alternative, are considered in a cost-benefit analysis. Costs and benefits should include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider (including potential economic, environmental, public health and safety, distributive impacts, equity, etc.).

A.2.10.1 Recreation and Tourism

Comment Number: BOEM-2021-0062-DRAFT-0029-8

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

Nantucket's economy is seasonal in nature and tourism driven. Not only are visitors attracted to the Town's preservation of historic buildings, places, and districts, but also to its world-class, public beaches with pristine ocean views. The Town is therefore sensitive to any potential visual impacts to the ocean horizon and sunset views, especially from the Island's southern coastline: from Madaket Beach in the west to Cisco Beach and Nobadeer Beach, and to Sconset Beach in the east.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-81

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, BOEM should examine the potential for impacts to short-period, long-period, and wind driven waves from development of Mayflower Wind. Modelling of impacts to waves at European projects [Footnote 295: Navitus Bay Development. Navitus Bay Wind Park Environmental Statement: Non-Technical Summary (Report No. 6.3). 2014. Available at: tethys.pnnl.gov/sites/default/files/publications/Navitus-Bay-Wind-ES.pdf; Rampion Offshore Wind Farm. Environmental Statement. December 2012. Available at: www.rampionoffshore.com/environmental-statement/; Alari and Raudsepp. Simulation of Wave Damping Near Coast due to Offshore Wind Farms. Journal of Coastal Research 28(1), 143-148. January 2012. Available at: doi.org/10.2112/JCOASTRES-D-10-00054.1; Scroby Sands Offshore Wind Farm: Coastal Processes Monitoring. July 2006. Available at: tethys.pnnl.gov/sites/default/files/publications/Scroby_Sands_Coastal_Processes.pdf.] found that waves were insignificantly affected [Footnote 296: The model for the Rampion project found a 22% reduction in onshore wave height, before the project was reconfigured, Rampion Offshore Wind Farm. Environmental Statement. December 2012. Available at: www.rampionoffshore.com/environmental-statement/.] but similar analyses at Mayflower Wind should determine whether there are expected impacts to wave height, shape, peel angle, frequency, pattern, speed, and quality. Models should examine the effects from the foundations on waves as well as from any changes in bathymetry from those foundations (for example, scouring) that might occur. Impacts to waves from the turbine blades changing wind patterns or strengths should also be examined. These impacts should be examined for each individual project and cumulatively, and BOEM should require Mayflower Wind to monitor oceanographic conditions such that changes in waves post-construction can be detected. (Additionally, while not discussed in depth here, changes to waves could have serious impacts on recreation. [Footnote 297: In addition to considering how changes in waves may affect marine life, the Draft EIS should consider how changes in waves affect ocean users. Mayflower Wind and BOEM should engage in a robust and transparent stakeholder process with coastal and ocean recreation enthusiasts and experts, including sailors, kiteboarders, surfers, and other stakeholders to vet modeling data in relation to potential impacts on wave riding breaks and other wind-driven activities. Such a process would use the best available science and expertise to help build understanding of impacts to wind, waves, and associated recreation opportunities, which may assist in conflict mitigation])

Comment Number: BOEM-2021-0062-DRAFT-0038-5

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

The National Natural Landmarks Program is managed by the NPS. The program supports and encourages the conservation of our nation's best examples of the natural landscape. It is the only natural areas program of national scope that identifies and recognizes deserving biological and geological features in both public and private ownership. To date there are over 600 NNLs designated nationwide. While NNL designation does not dictate how landowners manage these properties, it does encourage and support voluntary conservation and wise stewardship of these nationally significant sites.

Federal agencies should consider the existence and location of designated National Natural Landmarks in assessing the effects of their activities on the environment under section 102(2)(c) of the National Environmental Policy Act (42 U.S.C. 4321). Agencies and organizations that coordinate, fund or permit projects that could impact NNLs should be aware of the program and of landmarks in their geographic area for the purposes of environmental planning and decision-making.

A.2.10.2 Employment and Job Creation

Comment Number: BOEM-2021-0062-DRAFT-0013-1

Organization: Massachusetts Building Trades Council, AFL-CIO

Commenter Type: Other

Comment Excerpt Text:

The Massachusetts Building Trades Council, AFL-CIO represents over 75,000 highly trained men and women from sixty-three local unions and district councils who work in every trade and sector of the construction industry. The Council and its affiliated unions have supported the development of offshore wind for over 20 years in Massachusetts. Most recently, we negotiated and executed a Project Labor Agreement with Vineyard Wind to secure 500 local union jobs for the construction of the first industrial scale offshore wind farm in the United States. Our counterparts in Rhode Island performed the construction of the Block Island project under a similar project labor agreement several years ago. The New Bedford Marine Commerce Terminal, which was constructed intentionally to service the construction of offshore wind, was also constructed under the terms of a PLA.

Project Labor Agreements are a proven and time-tested model to procure large scale and unique construction projects in a safe, cost effective and timely manner. They also ensure that local workers receive good union wages and benefits, safe working conditions and the world class training provided by registered union apprenticeship programs. PLAs also include language and requirements to meet local hiring goals to increase diversity, equity, and inclusion and the hiring of veterans. The provisions of a PLA mirror the Biden Administration's vision for maximizing union job creation and other positive economic for the state of Massachusetts, the region and the offshore wind industry as a whole.

The negotiations of the Project Labor Agreement with Vineyard Wind took three years to negotiate. Some of the hurdles to overcome included the lack of a US flagged installation vessel and differences over what constituted an experienced domestic workforce with the proper training, certifications, and skill sets. Currently, there is a US built and flagged installation vessel under construction in Texas with more to come. Based on the strength of the multi million investment in union apprenticeship training programs combined with additional financial commitments from Vineyard Wind, we were able to address and overcome these differences. While these issues were more pronounced due the fact that Vineyard Wind will be the first industrial scale offshore wind project in the United States, we were able to overcome them. The same cannot be said of the Mayflower Wind Energy LLC Project. By the time that project commences there will be much larger domestic workforce with the training, certifications, skills and experience needed to construct the project.

Unfortunately, the Mayflower Wind Energy LLC does not have a Project Labor Agreement (PLA), a commitment to negotiate a PLA or local hire conditions in place for the current project under review or for the subsequent project currently bidding in Massachusetts.

This omission runs directly counter to the stated goals of the Congress and the Biden Administration:

Congress declared in the National Environmental Policy Act ("NEPA"):

"that it is the continuing policy of the Federal Government. .. to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

The March 29, 2021, White House Fact Sheet - Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs clearly states:

"The President recognizes that a thriving offshore wind industry will drive new jobs and economic opportunity up and down the Atlantic Coast, in the Gulf of Mexico, and in Pacific waters." With the first bullet point being to - "1. Advance ambitious wind energy projects to create good-paying, union jobs."

Comment Number: BOEM-2021-0062-DRAFT-0013-2
Organization: Massachusetts Building Trades Council, AFL-CIO
Commenter Type: Other

Comment Excerpt Text:

We urge BOEM, in undertaking an EIS for the Mayflower project, to ensure it is fulfilling that policy by taking efforts to maximize the benefits of the burgeoning offshore wind industry in ways that:

- Create quality, family-sustaining, union jobs for American workers;
- Expands domestic manufacturing;
- Provides increased access to careers for low-income, women, Black, Brown, Indigenous, and People of Color ("BIPOC") populations;

Comment Number: BOEM-2021-0062-DRAFT-0013-3
Organization: Massachusetts Building Trades Council, AFL-CIO
Commenter Type: Other

Comment Excerpt Text:

NEPA's requires that federal projects "fulfill the social, economic, and other requirements of present and future generations of Americans." This EIS should include a robust analysis of socioeconomic impacts associated with Mayflower COP. More specifically, BOEM's analysis of socioeconomic impacts should include consideration of incentives to ensure: the use of domestic content; Project Labor Agreements (PLAs), Labor Peace Agreements (LPA's), Community Benefits Agreement (CBAs); utilization of registered apprentices and other labor-management training programs, protection against worker misclassification and wage theft, neutrality agreements, local hire, and prevailing wage.

Comment Number: BOEM-2021-0062-DRAFT-0013-4
Organization: Massachusetts Building Trades Council, AFL-CIO
Commenter Type: Other

Comment Excerpt Text:

As noted at the beginning, the Massachusetts Building Trades Council, AFL-CIO, and its affiliated local unions have supported the development of offshore wind to address climate change and our energy needs in a way that mitigates job impacts for thousands of workers in the various aspects of fossil fuel and other traditional energy sectors. These initial projects will set the stage for the development, construction, maintenance, and operation of this new industry for generations. I am confident that BOEM will undertake a thorough review and make decisions that will ultimately achieve these goals.

Comment Number: BOEM-2021-0062-DRAFT-0016-1
Organization: Rhode Island Building & Construction Trades Council
Commenter Type: Other

Comment Excerpt Text:

I am writing you today on behalf of the 10,000 skilled tradesmen and women represented by the Rhode Island Building and Construction Trades Council to alert you that Mayflower Wind Energy LLC does not have a Project Labor Agreement (PLA), a commitment to negotiate a PLA or local hire conditions in

place for the current project under review or for the subsequent project currently bidding in Massachusetts. The proximity of this proposal affects our members in both Massachusetts and Rhode Island.

Comment Number: BOEM-2021-0062-DRAFT-0016-2
Organization: Rhode Island Building & Construction Trades Council
Commenter Type: Other

Comment Excerpt Text:

We are excited about the enormous economic benefit that the offshore wind industry brings to the entire East Coast and we have strongly voiced our support in the past for similar offshore projects that have committed to local hiring, training, and apprenticeship pathways. However, without a Project Labor Agreement (PLA), Mayflower Wind Energy LLC, threatens to erode the already established standards set in this industry by labor and development partners.

Comment Number: BOEM-2021-0062-DRAFT-0016-3
Organization: Rhode Island Building & Construction Trades Council
Commenter Type: Other

Comment Excerpt Text:

The Rhode Island Building and Construction Trades Council and Ørsted are developing long-term strategic plans for the balanced and sustainable development of Ørsted's projects, including South Fork Wind Farm, guaranteeing good-paying union jobs, and demonstrate how we can successfully combine workforce training and middle-class labor standards with family sustaining wages, healthcare benefit and pension security.

Comment Number: BOEM-2021-0062-DRAFT-0016-4
Organization: Rhode Island Building & Construction Trades Council
Commenter Type: Other

Comment Excerpt Text:

We urge BOEM, in undertaking an EIS for the Mayflower project, to consider the socioeconomic benefits and impact that a Project Labor Agreement for the Mayflower Wind Project will deliver to Southern New England.

Comment Number: BOEM-2021-0062-DRAFT-0022-2
Organization: New England for Offshore Wind
Commenter Type: Other

Comment Excerpt Text:

In addition to potential health savings, the economic potential of offshore wind cannot be overstated. The Biden Administration's commitment to deploy 30 gigawatts (GW) of offshore wind by 2030 could create 77,000 jobs and deliver \$12 billion in annual economic input by that same year.[Footnote 3: The White House Briefing Room, "FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs", <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>] Since state and independent analyses show that New England will need anywhere from 30-45 GW of offshore wind to reach net zero emissions by 2050, job creation would continue to increase in the decades ahead.

Comment Number: BOEM-2021-0062-DRAFT-0022-3

Organization: New England for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

It is crucial that offshore wind projects foster the creation of high-quality, family sustaining jobs. Local hire provisions and/or a Project Labor Agreement (PLA) for craft workers on the construction of the projects can ensure this industry creates job transition opportunities for New England's unionized workforce and generates significant economic activity in our region. "including expeditious development and potentially more years of receipt of operating fees—by assuring labor stability." [Footnote 4: Department of the Interior, "Atlantic Wind Lease Sale 8 (ATLW-8) for Commercial Leasing for Wind Power on the Outer Continental Shelf in the New York Bight—Proposed Sale Notice", <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/86-FR-31524>]

Comment Number: BOEM-2021-0062-DRAFT-0022-4

Organization: New England for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

With the right policy and comprehensive planning, this industry also has the potential to drive equity and economic inclusion and build wealth in communities that have been historically overburdened by the energy system in our region. Incorporating diversity goals into PLAs as was done with the Vineyard Wind 1 project can drive workforce diversity for the construction of projects, and developers can take additional steps in their project planning to increase supplier and workforce diversity.

Comment Number: BOEM-2021-0062-DRAFT-0025-4

Organization: Business Network for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

Approval of the Mayflower Wind project is also critical to the state's economic development goals. In October 2021, Gov. Baker announced a new legislative proposal to direct \$750 million to grow and develop Massachusetts's clean energy industry. The bill, *An Act to Power Massachusetts' Clean Energy Economy*, would support research and development and job training for the clean energy industry. The legislation is designed to work in tandem with existing leases - including the Mayflower Wind project - to attract investments and create jobs. It also changes the procurement process to promote objectivity, emphasize economic development and ensure equity. Approval of Mayflower Wind will help make those goals a reality.

According to project estimates, construction of the Mayflower Wind offshore wind project will generate \$150 million in investments for southern Massachusetts, and more than 14,000 jobs are projected to be created through all development phases. According to Mayflower Wind, at least 75% of the jobs related to operations and maintenance will be based in the local area. In addition, the Massachusetts Department of Energy Resources projects that, over the project's lifetime, residential and business ratepayers will save more than \$2 billion in electricity costs.

Comment Number: BOEM-2021-0062-DRAFT-0027-10

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

When done right, offshore wind power will create thousands of high-quality, family-sustaining jobs in manufacturing, construction, operations and maintenance, and in the development of port facilities, transmission, and other associated infrastructure. We appreciate your work to prepare an EIS, informed by early-stakeholder input, and to conduct a diligent socioeconomic review of this project so that we may realize the thousands of jobs and millions of dollars in economic benefits that will be provided by offshore wind.

Comment Number: BOEM-2021-0062-DRAFT-0027-11

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In undertaking an EIS of the Mayflower project, BOEM should ensure it is fulfilling that policy by taking efforts to create a high-road offshore wind industry that:

Maximizes the creation of quality, family-sustaining, union jobs;

Expands domestic manufacturing along a robust domestic supply chain;

Comment Number: BOEM-2021-0062-DRAFT-0027-4

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Socio-Economic Impacts

To achieve the Biden Administration’s vision for maximizing union job creation and comply with NEPA’s requirement that federal projects “fulfill the social, economic, and other requirements of present and future generations of Americans,” the EIS should include a robust analysis of socioeconomic impacts associated with Mayflower COP.

In particular, BOEM’s analysis of socioeconomic impacts should include consideration of and incentives to ensure Mayflower Wind’s commitments around use of domestic content; Project Labor Agreements (PLAs), Labor Peace Agreements (LPA’s), Community Benefits Agreement (CBAs); utilization of registered apprentices and other labor-management training programs, protection against worker misclassification and wage theft, neutrality agreements, local hire, and prevailing wage. BOEM’s analysis should also account for impacts on fisheries and engage fishing industry stakeholders at all possible opportunities.

Comment Number: BOEM-2021-0062-DRAFT-0027-5

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Currently the Mayflower Wind Energy LLC has no Project Labor Agreement or local hire conditions in place. In its proposed sale notice (PSN) for the sale of commercial wind energy leases on the Outer Continental Shelf (OCS) in the New York Bight, BOEM stated that high road labor standards, specifically PLAs, may support the achievement of Outer Continental Shelf Lands Act factors“—including expeditious development and potentially more years of receipt of operating fees—by assuring labor stability.” [Footnote 2: Department of the Interior, Atlantic Wind Lease Sale 8 (ATLW–8) for Commercial Leasing for Wind Power on the Outer Continental Shelf in the New York Bight—Proposed Sale Notice, Available Online: <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/86-FR-31524.pdf>]

PLAs benefit union and nonunion workers because they ensure that wages and benefits are defined and protected at local standards. PLAs can also help achieve a fair return to the U.S. from offshore wind development because they often reduce project cost for developers, save public funds in the long run, and result in increased economic benefits for the local economy. [Footnote 3: Frank Manzo et al., *Efficiencies of Project Labor Agreements*, 2015. Available online:

<https://illinoisepi.org/site/wp-content/themes/hollow/docs/wages-labor-standards/Illinois-PLAs-in-CDB-Projects-FINAL.pdf>] PLAs use a skilled labor workforce and often avoid labor disputes which allows for a project to move forward with greater efficiency. [Footnote 4: Ibid.] PLAs see fewer cost overruns thanks, at least in large part, to the stabilizing effects of PLAs. [Footnote 5: Ibid.]

Comment Number: BOEM-2021-0062-DRAFT-0027-8
Organization: BlueGreen Alliance
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Plans to support utilization and growth of a domestic supply chain should be analyzed and evaluated to maximize U.S. employment for the projected life cycle of the project. A recent study by researchers at Princeton University found that increasing domestic content in renewable energy projects can create tens of thousands of American jobs without significantly increasing capital costs. [Footnote 9: Erin N. Mayfield and Jesse D.Jenkins, Working Paper: Influence of High Road Labor Policies and Practices on Renewable Energy Costs, Decarbonization Pathways, and Labor Outcomes, April 13, 2021. Available online: https://www.dropbox.com/sh/ad9pzifo9w1a49u/AAC2milGD44M1wXo1Sk7EAgsa?dl=0&preview=Working_Paper-High_Road_Labor_and_Renewable_Energy-PUBLIC_RELEASE-4-13-21.pdf]

Comment Number: BOEM-2021-0062-DRAFT-0027-9
Organization: BlueGreen Alliance
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should also evaluate the programs necessary for training and expanding the domestic workforce with an emphasis on ensuring opportunities for displaced energy workers, as well as fostering equitable access to career pathways in the industry. Particular attention should be paid to creating jobs in construction as well as operations and maintenance for residents of the impacted region.

Comment Number: BOEM-2021-0062-DRAFT-0028-2
Organization: New England for Offshore Wind
Commenter Type: Other

Comment Excerpt Text:

Harnessing offshore wind potential could help drive a green and just recovery by creating tens of thousands of jobs in the next decade, establishing the New England region as a hub for clean-tech development and deployment, expanding the market for local renewables, and saving ratepayers billions of dollars.

Comment Number: BOEM-2021-0062-DRAFT-0036-1
Organization: North America's Building Trades Unions
Commenter Type: Other

Comment Excerpt Text:

Critical to ensuring that development on the Outer Continental Shelf has the least harmful impact on the environment is conducting construction in the safest and most expeditious manner possible. Moreover, as BOEM noted, among the goals President Biden outlined in Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad” is “spurring well-paying union jobs and economic growth.” 86 Fed.Reg. 60270 (Nov. 1, 2021). NABTU is particularly wellpositioned to comment on those goals, as the skilled craftpersons its affiliates represent have built the Nation’s green energy infrastructure, particularly within the wind energy space, and are now poised to lead the nation to meet the President’s goal of 30 gigawatts of offshore wind by 2030. Our affiliates membership have safely and efficiently tackled the challenging environment posed by offshore wind construction through utilizing the skills they have learned during their completion of Department of Labor registered apprenticeships. And as explained below, construction of these projects will benefit from the use of Project Labor Agreements (PLAs), agreements offshore wind developers have already determined can be effectively deployed to aid in accomplishing the Administration’s goals of addressing the climate crisis and creating well-paying pathways to the middle-class.

Comment Number: BOEM-2021-0062-DRAFT-0036-3
Organization: North America's Building Trades Unions
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Look no further than May of this year, to BOEM’s approval of a windfarm off the coast of Martha’s Vineyard, the first commercial-scale offshore wind farm to be built in the U.S. and permitted in federal waters. Recognizing the benefits of unionized labor and its role in supporting the fledgling offshore wind industry, Vineyard Wind, the developer of this project entered into an agreement with the Southeastern Massachusetts Building and Construction Trades Council. This agreement is the embodiment of what efforts should look like to meet Executive Order 14008, by underlining both the shift to clean energy, and the creation of well-paying union jobs.

Additionally, other industry leading developers like Ørsted North America, Inc., US Wind, and Dominion Energy have recognized the benefits our affiliated unions and local trade councils offer, and have committed to utilizing unionized labor as they construct offshore windfarms in the months and years to come. The advantages our affiliates offer come in many forms, including ensuring that work will be performed safely, adhering to strict work schedules, and supplying a highly trained workforce adept enough to undertake the challenge of building out this comparatively small domestic industry.

Comment Number: BOEM-2021-0062-DRAFT-0036-5
Organization: North America's Building Trades Unions

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As previously stated, the industry recognizes NABTU and its affiliated unions as leaders in providing workers with the skillsets necessary to complete offshore wind installations safely and efficiently. It is well-understood that construction unionization is associated with lower occupational fatality and injury rates.[Footnote 1: Roland Zullo, “Right-to-Work Laws and Fatalities in Construction,” 14 THE JOURNAL OF LABOR AND SOCIETY 225, 232 (June 2011), *available at* <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/98283/j.1743-4580.2011.00334.x.pdf?sequence=1>] The cause for this continued safety is twofold: 1) union workers are more likely to participate in safety protocols and to engage with employers who offer or require safety training, and 2) union members enter the workforce after completing a rigorous registered apprenticeship program, where they are educated on safe work practices. [Footnote 2: Xuanwen Wang, PhD, Rebecca Katz, MPH, Xiuwen Sue Dong, DrPH, CPWR Data Report: Union Effect on Safety Management and Safety Culture in the Construction Industry (First Quarter 2018) (“The results confirm that labor-management cooperation is a win-win solution for improving safety management and safety culture at workplaces . . . , which benefits not only construction workers, but also construction contractors.”), <https://www.cpwr.com/wp-content/uploads/2018/05/Quarter1-QDR-2018.pdf>.]

This education and training is the result of a registered apprenticeship model which has uniquely positioned unionized construction workers to meet head-on the difficult nature of this work.

Comment Number: BOEM-2021-0062-DRAFT-0036-6

Organization: North America's Building Trades Unions

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The rigors and expansive network of NABTU’s affiliated unions’ Department of Labor registered apprenticeship programs are the key ingredient in our continued success across the green energy sector. In 2019 alone, building and construction trade unions trained over 80,000 craftsmen and craftswomen at our 1,600 programs across the country. These apprentices participated in a privately funded program that, in some professions, lasts for five years, and in which NABTU’s affiliates and their contractor partners invest over \$1.5 billion annually. It is not an understatement to say that our registered apprenticeship model is one of the largest postsecondary education networks in the country.

These programs provide classroom and on-the-job training, enabling apprentices to “earn while they learn,” while laying the groundwork for a domestic workforce capable of building the future of the offshore wind industry. In turn, the programs clearly achieve Congress’ intent that operations in the Outer Continental Shelf be “conducted in a safe manner by well-trained personnel.” [Footnote 3: 43 U.S.C. section 1332(6)] Utilizing this workforce comes with well-defined benefits, whether they be in the form of topflight training or strong adherence to safety protocols. It is in recognition of these benefits that the major developers in the offshore windfarm industry have committed to entering into PLAs, agreements that enable the developers to solidify the use of a skilled workforce and to streamline their ability to respond to the numerous challenges they will face completing offshore projects.

Comment Number: BOEM-2021-0062-DRAFT-0036-7

Organization: North America's Building Trades Unions

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To accomplish construction safely and on time, NABTU encourages BOEM to recognize the intrinsic worth of encouraging the use PLAs on these development projects. These comprehensive multi-employer/multi-union unitary collective bargaining agreements have been used for nearly 90 years in both the public and private sectors. [Footnote 4: *See, e.g., U.S. Gen. Accounting Office, Project Labor Agreements: The Extent of the Use and Related Information* at 4, Pub. No. GAO/GGD-98082 (1998) (tracing the use of PLAs on federal and other publicly funded projects back to the construction of the Grand Coulee Dam in Washington State in 1938 and the Shasta Dam in California in 1940).] PLAs set standard work rules, establish clear lines of communication and better structure relationships to ensure signatory unions utilize their networks to supply a constant flow of highly skilled workers.

PLAs do not limit competition, but instead can be designed to ensure that both union and nonunion employers may bid on work. As noted, the developers undertaking offshore wind projects have recognized the benefits presented by the ability of PLAs to ensure high labor standards; so too have state governments providing support for these projects.

NABTU views these agreements as the cornerstone of any relationship that seeks to build complex projects in challenging environments, with the added pressure of public interest in the deployment of domestically emerging technologies. They are, moreover, critical in ensuring that these projects are deployed in a manner that minimizes the impact on the ocean's fragile environment.

Comment Number: BOEM-2021-0062-TRANS-111021-004-1

Commenter: Wu

Commenter Type: Individual

Comment Excerpt Text:

So I guess my question is does Mayflower have an idea of, you know, how many unique workers locally would actually be hired, the duration of each hire and so, you know, are these mostly going to be impacts on the local community for a couple of years or even a couple of months during construction, I guess that is going to be 90 percent of the 10,000 jobs or are a majority of those jobs something that is much more long term that will be created and lasting throughout the entire lifecycle of the project itself.

I guess my final comment is where Mayflower, what kind of plans Mayflower might have to basically ensure that, you know, it's a very new industry in Massachusetts, I went to school in Massachusetts, and offshore wind never came up once in any of my curriculum including curriculums on sustainable energy, so, you know, it's very new and I am just curious as to how the come company plans on hitting that 10,000 job year goal with, I guess, starting at kind of point zero within the regional educational environment.

Comment Number: BOEM-2021-0062-TRANS-111821-001-1

Commenter: Francis Callahan

Commenter Type: Individual

Comment Excerpt Text:

I am commenting specifically regarding the socioeconomic impacts of the Mayflower Wind Energy proposal. To date there is no project labor agreement or local hire condition in place and certainly not in writing with the Massachusetts Building Trades Council.

In our industry in which would apply for the offshore wind industry and we have secured a project labor agreement with the Vineyard Wind Project, the project labor agreement guarantees the local working

conditions for that project insuring that there are local trained workers who received good Union wages and benefits or as President Biden says to build back better. It sets other conditions in place for training.

The Unions of the Massachusetts Building Trades Council already spends in excess of \$16 million a year training a skilled workforce and we are in the process of adding components to our training programs relative to GWO training, and other aspects of the offshore wind industry to meet the needs and I just wanted to put down, we will be putting forward more --submitting more detailed written testimony, I believe the deadline was December 1 from the earlier comments.

Again, project labor agreements are the gold standard for establishing conditions not just for the workers on the job but ensuring there is a local workforce, and we have also been able to secure diversity, equity and inclusion goals and have met and/or exceeded those goals on a number of projects including the New Bedford Marine Commerce Terminal which was completed under the terms and conditions of the project labor agreement. We made sure it was a local workforce, a diverse workforce, women of people, color, and veterans and in addition all the workers received free training, good Union wages, health insurance and retirement benefits, and we are hoping that will be one of the key tools in ensuring that we develop a local skilled workforce to service this industry in Massachusetts and up and down the east coast

Comment Number: BOEM-2021-0062-TRANS-111821-004-6

Commenter: Susanna Hatch

Commenter Type: Individual

Comment Excerpt Text:

ELM has appreciated Mayflower Wind's engagement on this issue as we have worked to build connections to developers with diverse organizations in Massachusetts. We hope that the diversity and inclusion plan submitted to Massachusetts and Mayflower Wind's most recent bid will be comprehensive and actionable so as to drive supplier and workforce diversity.

Furthermore it is important that offshore wind projects demonstrate a commitment to creating high quality jobs for our regions highly skilled Unionized workforce.

A.2.10.3 Other

Comment Number: BOEM-2021-0062-DRAFT-0006-3

Organization: Buzzards Bay Area Habitat for Humanity

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Buzzards Bay Area Habitat for Humanity is also very excited that Mayflower Wind is pursuing ways to invest in families that live along the South Coast. Mayflower Wind has committed to partner in our mission of bringing people together to build homes, communities, and hope. In doing so, their support will help to build additional homes for local families in need of housing that is safe, affordable, and energy-efficient.

With grant funding from Mayflower Wind, we will be building our most energy-efficient home build to date in Westport, a duplex that will serve two additional families in need of a place to call home. Mayflower Wind will also be backing our efforts of opening our first Habitat ReStore. By opening a ReStore, BBAHFH and Mayflower Wind will be serving the community together in a new way, a way that will help families and the environment by Reducing – Reusing – Recycling of unwanted items.

A future Habitat ReStore will serve both the community and the environment by saving money, energy, and natural resources which will make a significant impact. By reusing others' unwanted items, Habitat ReStores reduce the need for new product, preventing additional pollution caused by harvesting the necessary new raw materials. Not only does this save on materials, but also the energy that would have been used to make the new product and transport it to where it would have been sold, which reduces greenhouse gas emissions that contribute to global climate change. A Habitat ReStore is a store and donation center, where donated goods are sold to others at a fraction of the retail price, keeping items out of the landfill. In the past 10 years, 2.1 million tons were diverted from landfills by Habitat ReStores across the country.

Comment Number: BOEM-2021-0062-DRAFT-0006-5
Organization: Buzzards Bay Area Habitat for Humanity
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

By opening a Habitat ReStore, the surplus revenue will fund future affiliate operations and land purchases. The ReStore's proceeds are reinvested into the Habitat affiliate, helping facilitate strategic growth and sustainability, enabling BBAHFH to build even more energy-efficient homes along the South Coast. Together we will serve families in need, helping them to achieve the strength, stability, and independence that they need to build a better future for themselves.

Mayflower Wind's funding will allow BBAHFH to not only continue our work of building stronger families, but their funding will expand our efforts, allowing us to grow and serve the community in new ways with a Habitat ReStore. Together we will serve our most vulnerable neighbors in a pay-it-forward housing partnership by giving a hand-up and empowering families to become part of their own housing solution, while reducing waste in landfills by opening a Habitat ReStore.

Comment Number: BOEM-2021-0062-DRAFT-0007-2
Organization: Falmouth Running Club / Cape Cod Marathon
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We also believe that it is extremely important to support our local community, so we make significant donations to many school groups and local non-profit organizations. The support we receive from Mayflower Wind will allow us to increase these donations and further support our community.

Comment Number: BOEM-2021-0062-DRAFT-0026-15
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

BOEM must fully corroborate statements by developers regarding project economics, which the public cannot do as BOEM considers this information to be confidential. It is particularly concerning to have no independent verification of what alternatives are possible, within the bounds of project economics, given that other developers have provided incorrect information in the past and that BOEM leadership is already touting project benefits before any economic analysis whatsoever. This holds true across a range of project considerations from design and mitigation alternatives to research, monitoring, and decommissioning.

Comment Number: BOEM-2021-0062-DRAFT-0026-16
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

There is little peer-reviewed information regarding the economic costs and benefits of OSW. Most of the information in the public domain is generated by OSW developers or trade associations and based upon information deemed confidential so that it cannot be verified. The true ecological cost of OSW is site specific, as well as cumulative. The public must understand the overall Mayflower Wind project cost, the amount of federal, state, or local taxpayer subsidies devoted to the project, projections of the full cost to ratepayers (including the contract price in addition to any predictions of project contingencies or overages), and portion of project costs that will accrue to foreign markets. This information is required to make even a basic informed evaluation of the project's desirability or whether BOEM's final project decision will constitute a reasoned decision among alternatives.

OSW appears to have widely different costs and benefits as compared to other renewable power sources. Multiple technologies exist at commercial scales that may have relative benefits in comparison to OSW. Depending on site-specific conditions, technology that may be inappropriate in one area due to unreasonable conflicts or environmental conditions may be the most desirable in another. For example, in California, the State Groundwater Management Act required certain farmland to be fallowed during drought conditions, leading to a potential opportunity for collocation of agrivoltaic solar projects. Similar examples likely exist for OSW; regardless, a comparison of relative costs and environmental impacts of alternative technologies should be included in the EIS.

BOEM regularly conducts economic cost-benefit analyses for oil and gas activities, and it is unclear why it does not follow the same approach for OSW. This disparity is abundantly obvious in last year's "Economics Issue" of the agency's *Ocean Science* newsletter. [Footnote 10: BOEM. 2020. Ocean Science 17(2) <https://www.boem.gov/sites/default/files/documents/newsroom/ocean-science/BOEM%20Ocean%20Science%202020%20Issue%202.pdf>.] That bulletin appears to describe how BOEM evaluates tradeoffs, costs, and benefits across its programs. While it provides a user-friendly overview of how it prepares cost estimates for OCS oil and gas projects, the OSW-related sections merely repeat vague descriptions of the leasing process without any economic information whatsoever.

The economic importance of fishing, and economic losses associated with loss of fishing grounds and indirect effects, have been systematically underrepresented both in this COP and throughout OSW development more generally. Any economic analysis in a forthcoming EIS must analyze the significant "multiplier effects" that make fisheries far more valuable throughout the supply chain than a simple exposure calculation would suggest. This includes an expected "cascading effect" in diversified fishing businesses where economic stability in one season is required to support their activities in other fisheries throughout the year.

Comment Number: BOEM-2021-0062-DRAFT-0027-6
Organization: BlueGreen Alliance
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Further, PLAs often lead to safer working conditions as a result of a more skilled workforce. Data suggests that the construction industry is volatile, resulting in a constant loss of human capital. Additionally, accidents, including death, are more common in states with low-road contractors. [Footnote

6: Donald Vial et al., , 2014. Available online: <https://laborcenter.berkeley.edu/pdf/2014/WET-Plan-Appendices14.pdf>] PLAs and high-road labor standards can mitigate construction industry volatility and increase site safety. Reports indicate that PLAs decrease the significant gap between expected and realized energy savings in various energy efficiency measures. [Footnote 7: Ibid.]

Comment Number: BOEM-2021-0062-DRAFT-0033-6

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

BOEM's analysis should consider the relative impact of the project to the State, not a dollar-for-dollar comparison. The COP Volume V consistently ranks Montauk, NY as one of the most exposed ports among all states in the Northeast (see attached Figures 2, 3, and 4). The exposure is most pronounced within the Lease Area and along the Falmouth Export Cable Corridor, which crosses through highly productive squid and monkfish fishing grounds. Significantly for these areas, Montauk is more economically exposed in comparison with top ports like New Bedford, MA and Point Judith, RI, based on the percentage of average annual landings. [Footnote 4: See COP Appendix V, pg. 2-56, Table 2-64.]

Comment Number: BOEM-2021-0062-DRAFT-0033-9

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

BOEM should analyze the economic impact of rerouting New York's transiting vessels around a fully developed RI/MA Wind Energy Areas.

Comment Number: BOEM-2021-0062-DRAFT-0039-21

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

- We recommend that the DEIS quantify health impacts associated with clean energy development. EPA's COBRA model (www.epa.gov/cobra) has been previously used to estimate and monetize the changes in health outcomes due to changes in certain criteria air pollutant emissions of offshore wind development, e.g., for the South Fork Wind DEIS. We recommend BOEM use COBRA to estimate the economic benefit of avoided health impacts due to offshore wind development displacing onshore fossil fuel generation. Note that the COBRA analysis requires county-level emissions changes, which can be derived from AVERT. BOEM should also consider evaluating the health impacts of non-power sector-related onshore emissions of PM2.5, NOX, SO2, and VOCs in COBRA as well. While COBRA is intended to be a straightforward tool to use, we request that BOEM contact EPA to ensure accurate reporting of health impacts. The EPA contact for COBRA is Emma Zinsmeister (Zinsmeister.Emma@epa.gov).

Comment Number: BOEM-2021-0062-TRANS-111521-001-2

Commenter: Jeremy McDermott

Commenter Type: Individual

Comment Excerpt Text:

As the NEPA process moves forward, we hope that the bureau will consider the impact of projects like this on the human environment and not just wildlife and the substantial economic development benefits of a project like this both in terms of job creation and physical infrastructure will help -- help boost the economy in Massachusetts and around the region, and will help specifically lift up underserved communities that have been neglected in reaping the benefits of energy development historically.

A.2.11 Environmental Justice

Comment Number: BOEM-2021-0062-DRAFT-0005-3

Organization: SouthCoast LGBTQ + Network

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As a member of the community, I am excited about the influx of renewable energy jobs coming to a more economically disadvantaged area. As an organization, the SouthCoast LGBTQ+ Network has begun discussions with Mayflower wind to encourage job training and education in our population. We see this as a wonderful future for younger residents. For these reasons, I am advocating for offshore wind off of our coast, I strongly support the Mayflower Wind project as a first step towards its fulfillment.

Comment Number: BOEM-2021-0062-DRAFT-0008-5

Organization: Associated Industries of Massachusetts

Commenter Type: Other

Comment Excerpt Text:

Additionally, Mayflower Wind has made an enormous commitment to the economic vitality of Massachusetts by agreeing to direct, contingent on winning new contracts, 77 million dollars to Massachusetts based businesses and residents, including low-income residents. The city of Fall River will also gain economic development opportunities.

Comment Number: BOEM-2021-0062-DRAFT-0014-2

Organization: Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We are members of the Faith Communities Environmental Network (FCEN) with a vision of all faiths working together to protect the environment with Eco-justice on Cape Cod & the Islands, the sacred Wampanoag homeland. We believe that whatever is done to build renewable sources of electricity must be planned and implemented in ecologically just ways, with special mitigations for whales, marine and bird life. And that they avoid causing disproportionately negative impacts on local environmental-justice populations. On Cape Cod this includes low and moderate income communities, minority residents, tribal communities, seniors and those with mobility issues, etc. (MA definition of Environmental Justice communities)

It is very important to us that BOEM is conducting this full EIS review to validate that this project will fulfill all the environmental safeguards (43 U.S.C. 1332(3)) including consideration of natural resources, safety of navigation, and existing ocean protections. Our understanding from Mayflower Wind is that they have and will continue to diligently fulfill these requirements.

Comment Number: BOEM-2021-0062-DRAFT-0025-5

Organization: Business Network for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

As BOEM advances the Mayflower Wind COP through the permitting process, the Network encourages BOEM to ensure it includes a complete accounting of the full scope of benefits that will accrue from approving the project. This includes consideration of benefits to environmental justice communities in the socio-economic analysis, including job creation and funding in communities that have experienced disproportionate levels of environmental degradation and resulting health impacts. Massachusetts, New Hampshire, and Rhode Island were among eight states who experienced record hot weather in June 2021, according to the National Weather Service. Connecticut and Maine were among six other states who saw their second hottest June months ever during 2021. Currently, New England generates about 52% of its electricity from natural gas and 27% from nuclear, according to ISO New England. Wind accounts for 3.8% and solar 2%. Approving the Mayflower Wind project will be an important part in reducing carbon emissions in the Northeast.

Comment Number: BOEM-2021-0062-DRAFT-0027-12

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Delivers community benefits with attention to improving access to low-income and Black, Brown, Indigenous, and People of Color (“BIPOC”);

Comment Number: BOEM-2021-0062-DRAFT-0027-7

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

PLAs also provide opportunities and benefits for communities as they offer hiring opportunities to historically marginalized communities, including racial minorities, women, and veterans. [Footnote 8: Frank Manzo et al., *Efficiencies of Project Labor Agreements*, 2015. Available online:

<https://illinoisepi.org/site/wp-content/themes/hollow/docs/wages-labor-standards/Illinois-PLAs-in-CDB-Projects-FINAL.pdf>] This was demonstrated during the construction of the New Bedford Marine Commerce Terminal and is a focus of the PLA with Vineyard Wind. Targeted hire agreements can also help achieve this goal. Targeted Hire provisions mandate or incentivize the hiring of workers on a project from certain communities, which may include women, people of color, veterans, the formerly incarcerated, indigenous people, economically disadvantaged communities, communities heavily impacted by climate change or climate change policies, and many others. These communities may be targeted through contracting requirements, hiring requirements, or the use or

establishment of pre-apprenticeship programs. Ideally, these provisions establish long-lasting pipelines for members of disadvantaged communities to access good jobs and careers in the clean economy. We urge Mayflower to move forward with a pathway to establish a PLA on this project.

Comment Number: BOEM-2021-0062-DRAFT-0028-3

Organization: New England for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

It holds the unique potential to address and combat the intersecting environmental, public health, and economic crises that exacerbate ongoing racial and social injustices. With this technology, we can transition away from fossil fuels that deteriorate the lands and health of low-income areas and communities of color. We can prioritize training a local workforce and groups that have been the hardest hit by the COVID-19 pandemic and, in doing so, revitalize U.S. manufacturing to maximize economic benefits from this industry.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-138

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In considering the environmental justice impacts, BOEM must look at how power plants are frequently located in or close to population centers and disproportionately located in or near communities of color, lower income communities, and Indigenous communities. The ability of offshore wind to displace fossil fuel generation thus has a potentially important environmental justice benefit. This displacement could be particularly pronounced, as offshore wind facilities' generation often coincides with afternoon peak demand. [Footnote 511: Dep't of Energy, Office of Energy Efficiency & Renewable Energy, Top 10 Things You Didn't Know About Offshore Wind Energy, <https://www.energy.gov/eere/wind/articles/top-10-things-you-didnt-know-about-offshore-wind-energy> (last visited Apr. 28, 2021).] Offshore wind may be especially helpful in displacing the dirtiest peaking units, providing especially large air quality benefits and benefits to environmental justice communities.

Comment Number: BOEM-2021-0062-DRAFT-0037-46

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The NEPA document should address effects of the project on Environmental Justice, including those specific to fishing communities with minority and low-income populations. We anticipate Environmental Justice concerns will be included as required under Executive Order 12898 (E.O. 12898, 59 FR 7629; February 16, 1994) Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This E.O. requires that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories..." and take into account E.O. 13985 (86 FR 7009; January 20, 2021) On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government. In addition, for coastal communities that include tribal

nations who value the sea and fish to sustain Native American life, projects should also consider E.O. 13175 (65 FR 67249; November 6, 2000), which requires federal agencies to establish regular and meaningful consultation and collaboration with tribal officials where tribal implications may arise.

Comment Number: BOEM-2021-0062-DRAFT-0039-30

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

EPA has a strong commitment to promoting the principles of environmental justice outlined in Executive Order 12898 - . The Presidential Memorandum accompanying Executive Order 12898 emphasizes the importance of using the NEPA review process to promote environmental justice and directs Federal agencies to analyze the environmental effects, including human health, economic and social effects, of their proposed actions on minority and low-income communities. Mitigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental impacts of proposed Federal actions on minority communities and low-income communities. Environmental justice, as defined by EPA, means the fair treatment of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws and policies, and their meaningful involvement in the decision-making process of the government.

Comment Number: BOEM-2021-0062-DRAFT-0039-31

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

It is unlikely that the installation and operation of offshore components of the Mayflower Wind project will impact minority and low-income communities in a negative way. However, we encourage BOEM to analyze whether noise, air and traffic impacts from onshore construction associated with cable landfall and associated project operations within port areas may cause community impacts that should be considered in the environmental justice analysis in the EIS.

Comment Number: BOEM-2021-0062-DRAFT-0039-32

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

As a preliminary step in this process, we encourage BOEM to conduct an EJSCREEN analysis (or some other comparable evaluation tool) to determine if onshore facilities, port usage and trucking related to the project will impact communities with environmental justice concerns. In particular, we suggest that the analysis focus on the landfall areas at Brayton Point and also consider the potential for compounding effects to existing communities (i.e., Fall River) that already have demonstrated environmental and demographic EJ indicators.

The results of the screening can be used to refine a more in-depth analysis of environmental justice issues for the project and how best to focus outreach efforts to any affected communities. We encourage BOEM to work to identify if any linguistically isolated populations exist in areas that may experience project impacts so they can be considered during development of community outreach efforts for the project. The DEIS should include a specific accounting of the outreach for the project.

We also recommend that BOEM use EJSCREEN to help determine if there are potential environmental justice impacts that should be analyzed and discussed in the DEIS associated with work at the US ports under consideration as listed in the COP in Massachusetts, Rhode Island, New York, New Jersey and Virginia.

Comment Number: BOEM-2021-0062-TRANS-111821-002-4

Commenter: Heidi Richie

Commenter Type: Individual

Comment Excerpt Text:

So we appreciate everything that BOEM and the other agencies are doing to coordinate with the states and the industry and other stakeholders on that. For Mayflower, we also appreciate commitments to equity and workforce development and those are also vitally important and then the landslide impacts of this new industry are also important. There is tremendous opportunity here to revitalize some of our environmental justice communities in Massachusetts but there also needs to be good planning put in place with input from those communities to make sure that the onshore side of things is beneficial and does not cause further inequitable impacts.

A.2.12 Finfish, Invertebrates, and Essential Fish Habitat

Comment Number: BOEM-2021-0062-DRAFT-0012-15

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Conservation of Essential Fish Habitat (EFH) is a critical element of sustainable modern fisheries management. Both state and federal fishery managers have identified habitats that support critical life history processes such as spawning, breeding, feeding, and growth to maturity. A complete EIS must include a detailed assessment of the effects of the project on these habitats, including EFH designated under the MSA and a range of alternatives to conserve these habitats and minimize the effects of the project on EFH and other marine habitats.

Because the project is sited in federal waters and may have adverse effects on EFH, BOEM should consult with the relevant Fishery Management Council under the EFH provisions of the MSA that provides a clear mechanism for fisheries managers to comment on and make recommendations concerning any activity that may affect habitat including EFH. [Footnote 6: 16 U.S.C. 1855] Particular attention should be given to the effects of the project on areas that have been designated as Habitat Areas of Particular Concern (HAPC) under MSA because of their ecological importance, sensitivity to human-induced environmental degradation, the extent of threats posed by development, or the rarity of the habitat type.

Oceana also encourages BOEM to conduct similar outreach and consultation with state and regional managers at the Atlantic States Marine Fisheries Commission with authority and responsibility for inshore fisheries to ensure effects on inshore habitats are minimized.

Comment Number: BOEM-2021-0062-DRAFT-0018-3
Organization: Massachusetts Office of Coastal Zone Management
Commenter Type: State Agency

Comment Excerpt Text:

CZM understands that Mayflower Wind has been reaching out to and coordinating with other offshore wind developers in order to share data on fish species that move between and among lease areas. Mayflower Wind should continue to coordinate with other research teams to understand potential impacts to the distribution, abundance, and feeding of key species that currently inhabit areas within and adjacent to the Project footprint.

Comment Number: BOEM-2021-0062-DRAFT-0021-14
Organization: New England and Mid-Atlantic Fishery Management Councils
Commenter Type: Other

Comment Excerpt Text:

Provision of high-resolution benthic habitat maps early in the process is important. These data are needed for NOAA Fisheries to conduct essential fish habitat consultations. This consultation process is designed to avoid impacts wherever possible and determine mitigation measures where impacts cannot be avoided. It is important to consider that while features less than 0.5 meters in size may not constitute complex hazards from a cable or turbine installation standpoint, pebbles and cobbles on centimeter scales can offer refuge from flow and predation and provide feeding opportunities for juvenile fish. Reworking and removing epifauna from these sediments during cable and turbine installation will affect the fish that use these habitats. The New England Council has worked to protect complex habitats at these spatial scales from the impacts of fishing, for example, on Nantucket Shoals. The analyses prepared for the New England Council's Clam Dredge Exemption Framework articulate what we consider complex seabed in a fisheries context, and the types of areas we would recommend that wind energy development avoid. [Footnote 6: See Appendix A at <https://www.nefmc.org/library/clam-dredge-framework>.]

Comment Number: BOEM-2021-0062-DRAFT-0021-21
Organization: New England and Mid-Atlantic Fishery Management Councils
Commenter Type: Other

Comment Excerpt Text:

Turbine and substation foundations, as well as materials used for scour protection and external cable armoring will create substrates for fouling organisms and create artificial reefs. These artificial reefs are expected to attract certain fishery species (e.g., black sea bass). However, the addition of new structured habitat in this area will replace existing habitat types and could displace other species which prefer soft sediments (e.g., flatfish, bivalves). The EIS should acknowledge that although the artificial reef effect will be beneficial for some species, it will not be universally beneficial for all species. The impacts of such changes should be analyzed. In addition, the EIS should evaluate the extent to which impacts may vary based on the characteristics of the materials used. These materials should mimic natural, nearby habitats where possible.

Comment Number: BOEM-2021-0062-DRAFT-0021-22
Organization: New England and Mid-Atlantic Fishery Management Councils
Commenter Type: Other

Comment Excerpt Text:

Secondary cascading effects should also be evaluated as community composition could change within and beyond the project area. For example, this project area includes habitat for sea scallops. The addition of structured habitat may attract bivalve predators such as sea stars and moon snails, which could have negative impacts on shellfish species and could result in cascading ecological impacts. In addition, if construction of this project negatively impacts important prey species (e.g., sand lance and other forage species), this could have cascading impacts for marine food webs.

Comment Number: BOEM-2021-0062-DRAFT-0021-34

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Installation of cables and foundations for turbines and offshore substations will generate both noise and sediment plumes, which may affect biological processes for marine species. For example, longfin squid may be negatively impacted by the construction sounds and their demersal egg mops could be materially impacted by sediment deposition. The EIS should acknowledge that both demersal and pelagic species may also be impacted by the noise and vibrations generated from construction activities and may change their behavior and/or feeding patterns to avoid the impacted area, which is not a negligible impact. It will be important for the impacts analysis, including the EFH assessment, to consider how installation during different seasons will affect particular species and life stages during spawning, juvenile settlement, etc.

Comment Number: BOEM-2021-0062-DRAFT-0023-15

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

The proposed Brayton Point ECC route into the Sakonnet River poses some habitat constraints that need to be adequately analyzed and addressed by Mayflower Wind. In particular, the entirety of the Sakonnet River has been designated as Inshore Juvenile Cod Habitat Area of Particular Concern (HAPC). See Map 245 – Inshore Juvenile Cod HAPC in the New England Fishery Management Council Omnibus Essential Fish Habitat Amendment 2, dated October 25, 2017 (https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf#page=10). It is our understanding in conversation with NMFS staff that the Sakonnet River is comprised of a highly complex heterogeneous gravel, cobble and sand habitat that supports juvenile Atlantic cod fish. The NMFS staff have also indicated that recent biological surveys within the Sakonnet River are producing significant numbers of juvenile Atlantic cod fish, thus supporting the HAPC designation. Given the biological, cultural, economic, and historical importance of the southern New England Atlantic cod fish population and the role that designated Atlantic cod fish HAPC provide in sustaining this population, any adverse impacts to the Sakonnet River HAPC must be avoided, as it may result in significant long-term cumulative impacts to this stock. The NMFS recently detailed its findings and potential adverse impacts on Atlantic cod fish from the proposed Revolution Wind project in the June 1, 2021 filing with BOEM. These NMFS findings are informative and instructive for Mayflower Wind to review. See https://downloads.regulations.gov/BOEM-2021-0029-0035/attachment_1.pdf. Therefore, Mayflower Wind should provide an alternative to the proposed Sakonnet River cable route to minimize effects of the project on complex habitat within the Sakonnet River, in particular Atlantic cod fish HAPC as described above. An alternative that should be considered by Mayflower Wind for inclusion within the CRMC state

permit application is the complete avoidance of the Sakonnet River given that there is the potential for significant impacts to important marine habitat.

Comment Number: BOEM-2021-0062-DRAFT-0024-2

Organization: Rhode Island Department of Environmental Management

Commenter Type: State Agency

Comment Excerpt Text:

One of the proposed corridors is through the Sakonnet River, in Rhode Island state waters. The RIDEM is supportive of offshore wind development, but has concerns regarding impacts to fish habitat within the Sakonnet River portion of Narragansett Bay.

Comment Number: BOEM-2021-0062-DRAFT-0024-4

Organization: Rhode Island Department of Environmental Management

Commenter Type: State Agency

Comment Excerpt Text:

Given the presence of high-value habitat to a large number of managed species, and HAPC for Atlantic cod, avoidance of essential fish habitat will be a priority for all cable laying activities.

Comment Number: BOEM-2021-0062-DRAFT-0024-6

Organization: Rhode Island Department of Environmental Management

Commenter Type: State Agency

Comment Excerpt Text:

Furthermore, a detailed analysis of potential impacts to all life history stages of Atlantic cod and winter flounder should be prepared as part of the EIS.

Narragansett Bay has been identified as a settlement and nursery area for early stages of Atlantic cod until late spring temperatures decline. Southern New England Atlantic cod numbers appear to be increasing but may be limited due to warming water temperatures (Langan et al. 2020). Therefore, minimizing impacts to Atlantic cod nursery grounds like Narragansett Bay is critical.

While winter flounder have been in decline in recent years, Sakonnet River larval densities have been some of the highest sampled in Narragansett Bay (McManus et al. 2021).

Comment Number: BOEM-2021-0062-DRAFT-0026-31

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

Due to the G&G activities occurring outside of the NEPA process, NMFS is unable to conduct Essential Fish Habitat (EFH) consultations, despite the fact that geophysical surveys emit high amounts of acoustic energy, including shallow- and medium-penetration sub-bottom imaging systems that use ‘chirp’ and ‘boomer’ equipment. [Footnote 18: BOEM. "Guidelines for Information Requirements for a Renewable Energy Site Assessment Plan (SAP)." (June 2019). <https://www.boem.gov/sites/default/files/renewable-energy-program/BOEM-Renewable-SAP-Guidelines.pdf>.] In preparation of a SAP, G&G survey requirements only include a submission of a Biological Evaluation [Footnote 19: National Marine

Fisheries Service. "Recommendations for the Contents of Biological Assessments and Biological Evaluations." <https://www.nrc.gov/docs/ML0921/ML092170770.pdf>.] to NMFS Protected Resources Division for the purposes of avoiding marine mammals. EFH assessments and consultations conducted in later project stages have also failed to adequately assess the impacts of G&G surveys to the acoustic environment, as these activities. For example, consultations for the Vineyard Wind and South Fork projects do not evaluate the projects' impacts to EFH from acoustic surveys under the SAP or the COP.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-10

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The proposed Mayflower Wind export cable corridors will cross areas that have been designated HAPC for both juvenile Atlantic cod and summer flounder in Massachusetts and Rhode Island state waters. [Footnote 74: MWF COP at 6-179-180, App. N at 4-2, 4-41.] The juvenile cod HAPC is a subset of the area designated as juvenile cod EFH, and is defined as the inshore areas of Southern New England between 0 to 66 feet deep relative to mean high water. This HAPC contains structurally complex hard bottom habitats that provide juvenile cod with protection from predators and supports juvenile cod prey. [Footnote 75: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, NEFMC & NMFS, at 109-11 (October 2017).] Regarding summer flounder, the Mid-Atlantic Fishery Management Council has identified HAPC for this species as "all native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH." [Footnote 76: Regional Use of the Habitat Area of Particular Concern (HAPC) Designation, Mid-Atlantic Fishery Management Council, at 181-19 (May 2016).] Thus, the export cable corridors for Mayflower Wind will traverse HAPC for both juvenile Atlantic cod HAPC and summer flounder. [Footnote 77: MWF COP at 6-179, App. N at 4-2, 4-41.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-14

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As noted above, the route of the FECC contains complex substrate types. Glacial moraines, consisting mainly of cobble and boulder substrates, are important habitats for a diversity of fish and benthic species. Given their relative structural permanence and complexity, glacial moraines create a unique bottom topography, which enables a high level of biodiversity. The COP observes that "hardbottom substrates support complex communities of attaching and encrusting organisms that provide secondary habitat for benthic and demersal species." [Footnote 92: MWF COP at 6-166.] Complex, hard bottom habitat provides EFH for a number of species, including both juvenile and adult Atlantic cod. Offshore, both juvenile and adult cod prefer structurally complex hard bottom habitats comprising mostly pebbles, cobble, and boulders. [Footnote 93: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, NEFMC & NMFS, at 10-14 (October 25, 2017).] Cobble substrate is critical for the survival of juvenile cod because it helps them avoid predators. [Footnote 94: Id.] Studies have also shown that hard bottom habitats are important for cod reproduction. [Footnote 95: G.R. Decelles, et al, Using Fishermen's Ecological Knowledge to Map Atlantic Cod Spawning Ground on Georges Bank, 74 ICES Journal of Marine Science, 1587-1601 (April 2017)]

Atlantic cod demonstrate spawning site fidelity, meaning they return to the same bathymetric locations year-after-year to spawn. [Footnote 96: Douglas R. Zemeckis, Spawning Site Fidelity by Atlantic Cod in the Gulf of Maine: Implications for Population Structure and Rebuilding, 71 ICES Journal of Marine Science, 1356-1365 (September 2014); Jon Egil Skjaeraasen, et al., Extreme Spawning- Site Fidelity in Atlantic Cod, 68 ICES Journal of Marine Science, 1472-1477 (April 2011).] Here, Mayflower Wind recognizes that the substrates in Muskeget Channel classified as "gravel pavement" are important juvenile Atlantic cod habitat. [Footnote 97: MWF COP, App. N at 3-2.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-15

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Boulders and cobbles, which are more prevalent in complex habitats, also provide EFH for other species such as black sea bass juveniles and adults, Atlantic sea scallop larvae, ocean pout and herring eggs, as well as certain invertebrates that attach to hard surfaces, including mussels, oysters, starfish, sea urchin, etc. [Footnote 98: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, NEFMC & NMFS, at 23, 85, 88 (October 2017); SFWF DEIS at 3-37.] Complex, hard bottom habitat is also important for Atlantic wolffish spawning as wolffish prefer to nest under boulders and rocks. [Footnote 99: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, NEFMC & NMFS, at 17 (October 25, 2017).] Because of the depleted status of Atlantic wolffish, Atlantic wolffish has been designated as a zero-possession species, meaning that fishing vessels holding a federal groundfish permit may not fish for, possess, or land Atlantic wolffish. [Footnote 100: Species directory: Atlantic Wolffish, NOAA Fisheries (last visited, July 19, 2021), available at <https://www.fisheries.noaa.gov/species/atlantic-wolffish>.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-194

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Draft EIS should adequately assess the impacts from increased turbidity and sediment deposition on benthic resources, finfish, EFH, and invertebrates during cable installation and require Mayflower Wind to undertake measures to avoid, minimize, and mitigate these impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-26

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mayflower Wind intends to employ several technologies to bury the interarray cable and export cable corridors, including jet plows. [Footnote 135: See MWF COP at 3-55-3-56.] Because jet plows have lower impacts than other technologies, BOEM should require the use of this technology to the greatest extent possible. [Footnote 136: VW1 FEIS at 3-11, 3-27, 3-54.] While use of jet plows for cable

installation have lower impacts than other technologies, they still result in entrainment of benthic larvae, and eggs and larvae of pelagic finfish and invertebrates, resulting in 100% mortality. [Footnote 137: VW1 FEIS at 3-11, 3-27, 3-54.] Entrainment would affect several overfished species that have EFH in the route of the cable, including Atlantic cod and yellowtail flounder. The Draft EIS should adequately assess the impacts from entrainment of eggs and larvae during cable installation and burial.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-35

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, impact levels to EFH may vary depending on the biological status of each EFH species and whether an EFH species is abundant in an area. In the Draft EIS, BOEM should discuss the biological status of each EFH species and which EFH species are abundant and non-abundant in the area of the Mayflower Wind Farm and the overall impact to these species' EFH.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-7

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

E. Impacts to Benthic Resources, Finfish, Invertebrates, and Essential Fish Habitat

The Draft EIS must present a detailed assessment of the anticipated impacts of the Mayflower Wind project on benthic resources, finfish, invertebrates, and essential fish habitat (EFH). The Draft EIS should also contain a quantification of complex and non-complex habitats; examine additional alternatives to conserve marine habitats and resources and avoid, mitigate, and minimize impacts to complex habitats; and include additional mitigation and monitoring requirements for the Mayflower Wind project.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-8

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Initially, we note that the Magnuson Stevens Fishery Conservation and Management Act [Footnote 67: 16 U.S.C. §1801 et seq.] requires federal agencies, such as BOEM, to consult with NMFS on activities that could adversely affect EFH. [Footnote 68: 16 U.S.C. §1855(b)(2). The Magnuson Stevens Act Fishery Conservation and Management Act also allows "Regional Fishery Management Councils" to comment on and make recommendations to NMFS and/or other federal agencies concerning activities that affect EFH. 16 U.S.C. §1855(b)(3).] NOAA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." [Footnote 69: Guide to Essential Fish Habitat Designations in the Northeastern United States, NOAA (2018), available at <https://www.nrc.gov/docs/ML1409/ML14090A199.pdf>.] The Mayflower Wind Farm and the Mayflower Wind export cable corridors will take place in EFH designated for many species, including several overfished fish populations such as Atlantic cod, Atlantic wolffish, winter flounder, witch flounder, yellowtail flounder, and ocean pout. [Footnote 70: Omnibus Essential Fish Habitat Amendment 2,

Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, New England Fishery Management Council (NEFMC) & NMFS, at 13-14, 19, 24-25, 36-41, 52-54 (October 2017), available at https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf#page=18; Operational Assessment of 19 Northeast Groundfish Stocks, NMFS, Northeast Fisheries Science Center, at 31, 72, 167, 177, 195 (October 2017), available at <https://repository.library.noaa.gov/view/noaa/16091>.] There are also two fish species listed under the U.S. Endangered Species Act (ESA) that are present in the Project Area, including Atlantic sturgeon and shortnose sturgeon. [Footnote 71: MWF COP at 6-173, 6-175.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-9

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NOAA also identifies habitat areas of particular concern (HAPCs), which are high-priority areas for conservation, management, or research because the areas are rare, sensitive, stressed by development, or important to ecosystem function. [Footnote 72: Habitat Areas of Particular Concern within Essential Fish Habitat, NOAA (last visited June 9, 2021), available at <https://www.fisheries.noaa.gov/southeast/habitat-conservation/habitat-areas-particular-concern-within-essential-fish-habitat>.] HAPCs are discrete subsets of EFH that provide important ecological functions or are especially vulnerable to degradation. While HAPCs are recognized due to their importance for conservation, management, and research, designation as an HAPC does not confer any specific habitat protection; however, regional management councils may take HAPCs into consideration when minimizing adverse impacts from fishing. [Footnote 73: Regional Use of the Habitat Area of Particular Concern (HAPC) Designation, Mid-Atlantic Fishery Management Council, at 1-2 (May 2016), available at https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/573a073937013bed07239025/1463421108737/Regional-HAPC-Report_WEB.pdf.] In completing the Draft EIS, not only should BOEM include a detailed evaluation of the impacts of the project on EFH, but particular attention should be given to any area designated as an HAPC.

Comment Number: BOEM-2021-0062-DRAFT-0035-59

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

E. Impacts to Benthic Resources, Finfish, Invertebrates, and Essential Fish Habitat

The Draft EIS must present a detailed assessment of the anticipated impacts of the Mayflower Wind project on benthic resources, finfish, invertebrates, and essential fish habitat (EFH). The Draft EIS should also contain a quantification of complex and non-complex habitats; examine additional alternatives to conserve marine habitats and resources and avoid, mitigate, and minimize impacts to complex habitats; and include additional mitigation and monitoring requirements for the Mayflower Wind project.

Comment Number: BOEM-2021-0062-DRAFT-0035-60

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Initially, we note that the Magnuson Stevens Fishery Conservation and Management Act [Footnote 67: 16 U.S.C. §1801 et seq.] requires federal agencies, such as BOEM, to consult with NMFS on activities that could adversely affect EFH. [Footnote 68: 16 U.S.C. §1855(b)(2). The Magnuson Stevens Act Fishery Conservation and Management Act also allows “Regional Fishery Management Councils” to comment on and make recommendations to NMFS and/or other federal agencies concerning activities that affect EFH. 16 U.S.C. §1855(b)(3).] NOAA defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” [Footnote 69: Guide to Essential Fish Habitat Designations in the Northeastern United States, NOAA (2018), available at <https://www.nrc.gov/docs/ML1409/ML14090A199.pdf>.] The Mayflower Wind Farm and the Mayflower Wind export cable corridors will take place in EFH designated for many species, including several overfished fish populations such as Atlantic cod, Atlantic wolffish, winter flounder, witch flounder, yellowtail flounder, and ocean pout. [Footnote 70: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, New England Fishery Management Council (NEFMC) & NMFS, at 13-14, 19, 24-25, 36-41, 52-54 (October 2017), available at https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf#page=18; Operational Assessment of 19 Northeast Groundfish Stocks, NMFS, Northeast Fisheries Science Center, at 31, 72, 167, 177, 195 (October 2017), available at <https://repository.library.noaa.gov/view/noaa/16091>.] There are also two fish species listed under the U.S. Endangered Species Act (ESA) that are present in the Project Area, including Atlantic sturgeon and shortnose sturgeon. [Footnote 71: MWF COP at 6-173, 6-175.]

Comment Number: BOEM-2021-0062-DRAFT-0035-61

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NOAA also identifies habitat areas of particular concern (HAPCs), which are high-priority areas for conservation, management, or research because the areas are rare, sensitive, stressed by development, or important to ecosystem function. [Footnote 72: Habitat Areas of Particular Concern within Essential Fish Habitat, NOAA (last visited June 9, 2021), available at <https://www.fisheries.noaa.gov/southeast/habitat-conservation/habitat-areas-particular-concern-within-essential-fish-habitat>.] HAPCs are discrete subsets of EFH that provide important ecological functions or are especially vulnerable to degradation. While HAPCs are recognized due to their importance for conservation, management, and research, designation as an HAPC does not confer any specific habitat protection; however, regional management councils may take HAPCs into consideration when minimizing adverse impacts from fishing. [Footnote 73: Regional Use of the Habitat Area of Particular Concern (HAPC) Designation, Mid-Atlantic Fishery Management Council, at 1-2 (May 2016), available at https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/573a073937013bed07239025/1463421108737/Regional-HAPC-Report_WEB.pdf.] In completing the Draft EIS, not only should BOEM include a detailed evaluation of the impacts of the project on EFH, but particular attention should be given to any area designated as an HAPC.

Comment Number: BOEM-2021-0062-DRAFT-0035-62

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The proposed Mayflower Wind export cable corridors will cross areas that have been designated HAPC for both juvenile Atlantic cod and summer flounder in Massachusetts and Rhode Island state waters. [Footnote 74: MWF COP at 6-179-180, App. N at 4-2, 4-41.] The juvenile cod HAPC is a subset of the area designated as juvenile cod EFH, and is defined as the inshore areas of Southern New England between 0 to 66 feet deep relative to mean high water. This HAPC contains structurally complex hard bottom habitats that provide juvenile cod with protection from predators and supports juvenile cod prey. [Footnote 75: Omnibus Essential Fish Habitat Amendment 2, Volume 2 EFH and HAPC Designation Alternatives and Environmental Impacts, NEFMC & NMFS, at 109-11 (October 2017).] Regarding summer flounder, the Mid-Atlantic Fishery Management Council has identified HAPC for this species as "all native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH." [Footnote 76: Regional Use of the Habitat Area of Particular Concern (HAPC) Designation, Mid-Atlantic Fishery Management Council, at 181-19 (May 2016).] Thus, the export cable corridors for Mayflower Wind will traverse HAPC for both juvenile Atlantic cod HAPC and summer flounder. [Footnote 77: MWF COP at 6-179, App. N at 4-2, 4-41.]

Comment Number: BOEM-2021-0062-DRAFT-0037-21

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS should analyze the effects of the proposed water withdrawals and heated effluent discharges on marine resources. This should not only include an overall evaluation of effects on vulnerable life history stages of species in the project area, but also include a specific evaluation focusing on impacts to Atlantic cod and prey of protected species, especially North Atlantic right whales. A species-specific evaluation of potential impacts to Atlantic cod eggs and larvae should also be included in the analysis of this alternative. This evaluation should incorporate and fully consider the proximity of cod spawning activity and juvenile cod HAPC to evaluate the potential effects of the OCS to Atlantic cod. Similarly, the EIS should fully consider the potential for impingement or entrainment of prey of protected species, especially copepods, which are a critical foraging resource for North Atlantic right whales.

Comment Number: BOEM-2021-0062-DRAFT-0037-42

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Using the best scientific information available for all marine trust resources is critical to analyzing the impacts resulting from this project. Data used should include a sufficient range of years to reflect natural variability in resource conditions and fishery operations, but also current conditions. We recommend that fisheries and marine resource survey analyses consider at least 10 years of data up to and including data within the past two years. This is especially important for marine mammals given recent distribution and habitat utilization shifts. Short-term, 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. The temporal classification (e.g., short-term, long-term, or permanent) should be appropriate for the species, habitat types and impacts considered and should be clearly and consistently defined. The time of year that construction activities

occur is also an important factor in evaluating potential biological, economic, and social impacts of the project and should be clearly specified for each project activity to the extent possible.

Comment Number: BOEM-2021-0062-DRAFT-0037-75

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

As currently described in the NOI, this facility (inclusive of the wind farm area, offshore and inshore export cables and corridors, and shoreside landing points) will be constructed, operated, and maintained in areas designated essential fish habitat (EFH) for various life stages of species managed by the New England Fishery Management Council (NEFMC), Mid-Atlantic Fishery Management Council (MAFMC), and NMFS. Species for which EFH has been designated in the project area include, but are not limited to, Atlantic cod (*Gadus morhua*), summer flounder (*Paralichthys dentatus*), winter flounder (*Pseudopleuronectes americanus*), Northern longfin squid (*Doryteuthis pealii*), haddock (*Melanogrammus aeglefinus*), monkfish (*Lophius americanus*), ocean pout (*Zoarces americanus*), pollock (*Pollachius virens*), silver hake (*Merluccius bilinearis*), winter skate (*Leucoraja ocellata*), little skate (*Leucoraja erinacea*), windowpane flounder (*Scophthalmus aquosus*), bluefish (*Pomatomus saltatrix*), black sea bass (*Centropristis striata*), red hake (*Urophycis chuss*), scup (*Stenotomus chrysops*), yellowtail flounder (*Limanda ferruginea*), Atlantic sea scallop (*Placopecten magellanicus*), Ocean quahog (*Arctica islandica*), and Atlantic surfclam (*Spisula solidissima*). The proposed project area is also designated EFH for several Atlantic highly migratory species, including, but not limited to albacore tuna (*Thunnus alalunga*), yellowfin tuna (*Thunnus albacares*), bluefin tuna (*Thunnus thynnus*), blue shark (*Prionace glauca*), sandbar shark (*Carcharhinus plumbeus*), white shark (*Carcharodon carcharias*), dusky shark (*Carcharhinus obscurus*), tiger shark (*Galeocerdo cuvier*), and sand tiger shark (*Carcharias taurus*).

Comment Number: BOEM-2021-0062-DRAFT-0037-76

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The most up-to-date EFH and HAPC designations should be used in your evaluation of impacts to EFH. HAPCs are a subset of EFH that are especially important ecologically, particularly susceptible to human-induced degradation, vulnerable to developmental stressors, and/or rare. EFH and HAPC for species managed by the NEFMC have been modified under the Omnibus Amendment which was approved and implemented in 2018. The EFH mapper should be used to query, view, and download spatial data for the species managed by the New England, Mid-Atlantic, and South 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/>. 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 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/topic/atlantic-highly-migratory-species>.

Comment Number: BOEM-2021-0062-DRAFT-0037-79

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The analysis should include a broad discussion of the potential effects of habitat alteration from construction and operation of the project using the best available scientific information. The analysis should address the potential impact of converting smaller-grained hard habitats (e.g. pebbles and cobbles) that support early life history stages of finfish to smaller grained soft- sediment habitats (i.e. “fining” of sediments) through cable installation within complex habitats, as well as to artificial reefs that may attract larger predator species within areas where the target cable burial depth is not attainable and secondary cable protection is necessary. Within soft bottom habitats WTGs and associated scour protection may create a reef effect, displacing native species and habitats and creating artificial habitats. The document should clearly distinguish the difference between man-made structures and substrates and the natural habitat present in the project area. Specifically, artificial habitats are only a component of the EFH designation for two managed fish species (black sea bass and red hake) in the region. The distinction between the natural and man-made structures should be incorporated into the analysis and should not be evaluated as equal in terms of habitat functions and values. The limitations of habitat value from scour and cable protection, and other man-made structures, should be clearly disclosed and analyzed.

Comment Number: BOEM-2021-0062-DRAFT-0037-80

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Atlantic cod EFH for vulnerable early life history stages have been designated in the project area. Complex habitats, including SAV at depths up to 20 meters are designated juvenile cod HAPC, and found along both export cable corridor routes. Further, new analyses of historical data suggest that portions of eastern WEA, including the Mayflower lease area, likely support Atlantic cod spawning activity. The southern New England spawning population represents the southernmost spawning contingent of this species along the Atlantic coast and contributes to the availability of the species throughout southern New England waters. Recent information indicates these fish comprise a genetically distinct spawning population. The protection of this spawning population enhances genetic diversity and may increase the potential for the species as a whole to adapt to climate change. As discussed above, Atlantic cod spawn in southern New England between November and April. Spawning aggregations can be easily disturbed by in-water activities and disruptions to spawning aggregations may affect reproductive success, which could result in significant long-term effects to the stock, particularly if construction activities occur during spawning periods over multiple seasons. However, the full extent of cod spawning activity within the WEA and the Mayflower lease area is currently unknown. We recommend that site-specific (and regional) passive acoustic monitoring (PAM) studies be conducted, beginning this spawning season (November to April) to survey for cod spawning activity. Absent new information, the EIS should fully evaluate potential impacts of project construction and operation on Atlantic cod spawning, including potential impacts to early life stages (e.g. habitats that support early stage juveniles after they settle to the bottom) and spawning activity from pile driving and ground disturbing activities, as well as the cumulative population level effects that may occur as a result of construction timing over multiple seasons. Further, the proposed OCS will result in both entrainment and impingement impacts as well as heated effluent discharges that may adversely affect planktonic stage Atlantic cod eggs and larvae. Specific measures to avoid and minimize these impacts should also be analyzed and discussed in the NEPA document.

Comment Number: BOEM-2021-0062-DRAFT-0037-81

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

In addition to Atlantic cod, spawning activity and sensitive life stages (eggs, larvae and juveniles) of other managed species are present throughout both the lease area and export cable corridor. The EIS should discuss impacts to sensitive life stages that may be more vulnerable to impacts. For example, both winter flounder and longfin squid (two species with designated EFH in the project area) have demersal eggs found within the project area and export cable corridor that are particularly vulnerable to sedimentation and burial. Turbidity and sediment re-deposition from construction activities, could result in mortality for demersal eggs and larvae within the project area and along the export cable corridor, particularly for habitats and sensitive life stages in the Sakonnet River. Sessile shellfish species may also be more vulnerable to project impacts. Potential impacts of the project on vulnerable life stages, including potential impacts to recruitment, should be discussed in detail and specific measures for avoiding and minimizing impacts should be identified in the document. As discussed above, alternatives that would reduce adverse impacts to these resources should also be evaluated.

Comment Number: BOEM-2021-0062-DRAFT-0037-82

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

In the MSA, Congress recognized that one of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. Congress also determined that habitat considerations should receive increased attention for the conservation and management of fishery resources of the United States. As a result, one of the purposes of the MSA is to promote the protection of EFH in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat.

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 identified under this Act,” 16 U.S.C. § 1855(b)(2). This process is guided by the requirements of our EFH regulation at 50 CFR 600.905. It is our understanding BOEM will be the lead Federal agency for this consultation, and that you will coordinate with any other Federal agencies that may be issuing permits or authorizations for this project, as necessary, 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).

Pursuant to the MSA, each 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, “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

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.

As stated above, adverse impacts to EFH may result from actions occurring within or outside of areas designated as EFH. In addition, the EFH final rule also states that the loss of prey may have an adverse effect on EFH and managed species. As a result, actions that reduce the availability of prey species, either through direct harm or capture, or through adverse impacts to the prey species' habitat may also be considered adverse effects on EFH. The EFH regulations state that for any Federal action that may adversely affect EFH, Federal agencies must provide NMFS with a written assessment of the effects of that action on EFH (50 CFR 600.920(e)). This EFH Assessment should include analyses of all potential impacts, including temporary and permanent and direct and indirect individual, cumulative, and synergistic impacts of the proposed project.

The EFH assessment must contain the following mandatory elements: (i) a description of the action, (ii) an analysis of the potential adverse effects of the action on EFH and the managed species, (iii) the federal agency's conclusions regarding the effects of the action on EFH, and (iv) proposed mitigation, if applicable (50 CFR 600.920(e)(3)). 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) is necessary for this project. As part of the expanded EFH consultation, the EFH Assessment for the proposed project, the assessment should also contain additional information, including: (i) the results of an on-site inspection to evaluate the habitat and the site specific effects of the project, (ii) the views of recognized experts on the habitat or species that may be affected, (iii) a review of pertinent literature and related information, (iv) an analysis of alternatives to the action, and (v) other relevant information.

The EFH expanded consultation process allows the maximum opportunity for NMFS and the Federal action agency, in this case BOEM, to work together to review the action's impacts on EFH and federally managed species, and for our agency to develop EFH conservation recommendations (EFH CRs) to avoid, minimize or otherwise offset adverse effects to EFH and federally managed species. Although the EFH consultation is a separate review mandated pursuant to the MSA, our EFH regulations encourage the consolidation of the EFH consultation with other interagency consultation, coordination, and environmental review procedures required by other statutes, such as NEPA, where appropriate. Because the information contained within the EIS is needed to support a complete EFH Assessment, we request you use the NEPA document as the vehicle within which to present the EFH assessment. The EFH Assessment should be included within a separate section or appendix of the DEIS document and be clearly identified as an EFH assessment.

Comment Number: BOEM-2021-0062-DRAFT-0037-83

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

We understand you permit the use of a Project Design Envelope (PDE) in the preparation of a COP, and the NEPA document will focus on analysis of the maximum impacts that would occur from the range of design parameters. However, for purposes of the EFH consultation, the EFH Assessment should be consistent with the EFH regulations under the MSA. Specifically, you are required to include in your

assessment an analysis of the potential adverse effects on designated EFH, including the site-specific effects of the project, and measures that can be taken to avoid, minimize, or offset such effects (CFR 600.920(d-e)). You must assess the potential adverse impacts that would occur as a result of the range of design parameters under consideration in the PDE, rather than a maximum impact scenario. Of particular concern is the adequacy of the habitat information that will be provided in the EFH assessment. Accurate characterization and delineation of habitats within the project area is a critical component of the EFH assessment and a prerequisite for meaningful and appropriate EFH conservation recommendations to be developed for incorporation into the project. Should the EFH assessment provide insufficient details to assess impacts of the project, we may determine that the assessment is incomplete and that consultation under the MSA cannot be initiated, or we may provide precautionary conservation recommendations based upon the level of information and analysis available.

To help ensure adequate information to initiate the EFH consultation, the expanded EFH Assessment should include full delineation, enumeration, and characterization of all habitat types in the project area including the lease areas, cable corridors and landing sites. Particular attention should be paid to HAPCs, sensitive life stages of species, ecologically sensitive habitats, and difficult-to-replace habitats such as natural hard bottom substrates, particularly substrates with attached macroalgae and epifauna (including corals), SAV, and shellfish habitat and reefs. The habitat mapping data should also be shared directly with us in usable GIS format for review, apart from the body of the EFH Assessment and maps and figures contained therein.

To aid BOEM and project applicants in the development of comprehensive and complete EFH Assessments, we have published our Recommendations for Mapping Fish Habitat [Footnote 27: https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/60637e9b0c5a2e0455ab49d5/1617133212147/March292021_NMFS_Habitat_Mapping_Recommendations.pdf], dated March 2021. This document is an updated version, which was previously submitted to you on May 27, 2020. To further streamline the consultation process, we also shared a technical assistance document with you in January of 2021, titled Essential Fish Habitat (EFH) Information Needs for Offshore Wind Energy Projects in the Atlantic which provides a checklist of information that should be incorporated into the EFH Assessment.

As stated in our habitat mapping recommendations, EFH checklist, and through regular communication with you, early coordination in the consultation process, particularly for projects at the size and scale of offshore wind development, is essential. We are concerned about the limited early coordination and communication for the Mayflower Wind project, particularly related to habitat mapping and data collection. While some coordination has occurred, there has been limited coordination and data sharing subsequent to acoustic surveys and prior to planned benthic surveys. As we have previously discussed, we strongly recommend early coordination occur for habitat mapping procedures, including: 1) data collection (sampling design and methodologies); 2) data processing and interpretation (including habitat characterization); and 3) the development of maps that accurately delineate fish habitat, benefits all parties and will help avoid unnecessary delays in project development and consultations. It is critical that the data being collected can be used to accurately characterize and delineate fish habitat within the lease area and cable corridors to ensure we can differentiate and distinguish between, and within, areas of sensitive and complex habitats to provide appropriate conservation recommendations.

This is particularly important for the export cable routes which include complex habitats and unique features. Accurate characterization of complex habitats and features at a fine scale will be critical to ensure our recommendations are appropriate and feasible. As we have discussed previously, early coordination and sharing of collected data is critical to ensure we can provide constructive feedback and identify any concerns early in the process to help avoid delays in the review process. We appreciate that the developer has requested a meeting early next year, prior to completing early spring surveys. We hope this meeting provides sufficient time to incorporate our feedback into the benthic survey plans prior to commencement of the spring surveys. As discussed above, we are concerned about the timing of this data

collection in relation to the EFH consultation timeline. This data will be critical to inform both the EIS and the EFH consultation as the survey will collect habitat data for the Sakonnet River and the identified preferred alternate route through Muskeget Channel, both areas where we have substantial concerns related to potential habitat impacts. Without accurate and complete habitat data, our ability to review or initiate the EFH consultation for the proposed project will be affected. We recommend further coordination with us related to both the upcoming benthic surveys and the consultation timeline.

In the absence of fine-scale and accurate fish habitat characterization and delineation, we must take a conservative approach to our assessment of project impacts and development of conservation recommendations for the project. Given the complexity of habitat in the project area and in consideration of the time necessary for reviewing such technical information, we request all data related to habitat mapping (acoustic survey results, seafloor sampling data, GIS data, figures/maps, etc.) be shared with us as soon as practicable (once it is processed, even if it is in draft form), so we can begin reviewing and providing comments, which will allow for more streamlined project review and consultation.

Comment Number: BOEM-2021-0062-DRAFT-0037-84

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The 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). As a result, our FWCA recommendations must be given full consideration by federal action agencies. Your consultation with us under the FWCA may occur concurrently with the EFH consultation under the MSA.

Under the FWCA, our authority extends to numerous other aquatic resources in the area of the proposed project, including, but not limited to, the following species and their habitats: American lobster (*Homarus americanus*), sand lance (*Ammodytes dubius* and *Ammodytes americanus*), striped bass (*Morone saxatilis*), American shad (*Alosa sapidissima*), alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*) (collectively known as river herring), Atlantic menhaden (*Brevoortia tyrannus*), Atlantic silversides (*Menidia menidia*), oyster (*Crassostrea virginica*), blue mussel (*Mytilus edulis*), tautog (*Tautoga onitis*), weakfish (*Cynoscion regalis*) and other assorted fish and invertebrates. NOAA jointly manages a number of these species 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.asafc.org>.

We anticipate all of these species will be included in your impact assessments, both in the EFH Assessment and NEPA document.

Comment Number: BOEM-2021-0062-DRAFT-0037-86

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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 WTG 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.

Comment Number: BOEM-2021-0062-DRAFT-0037-94

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Currently, the EFH consultation is scheduled to begin with receipt of an EFH assessment on September 23, 2022. Given the upcoming survey schedule, it is not clear if the information necessary to inform the EFH consultation will be analyzed and available by this time. We recommend further discussion with us to assess whether the late receipt of this information will affect the existing project schedule.

Comment Number: BOEM-2021-0062-DRAFT-0037-97

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Impacts to NOAA scientific surveys are not described in the COP prepared for this action. A discussion of other uses of the lease area, including scientific surveys of marine resources, is necessary and must be included in the EIS.

As noted for other wind development projects, the Mayflower Wind project is anticipated to have major adverse impacts on NMFS Northeast Fisheries Science Center scientific surveys, which will, in turn, result in adverse impacts on fishery participants and communities, conservation and recovery of protected species, and on the American public. This project would have direct impacts on the federal multi-species bottom trawl survey conducted on the FSV Henry Bigelow, the surfclam and ocean quahog clam dredge surveys conducted on chartered commercial fishing platforms, the integrated benthic/sea scallop habitat survey, ship and aerial-based marine mammal and sea turtle surveys, and the shelf-wide Ecosystem Monitoring Survey (Ecomon). Based on standard operating practices conducted by the NOAA Office of Marine and Aviation Operations, WTG arrays would preclude safe navigation and safe and effective deployment of mobile survey gear on NOAA ships.

The impacts to our scientific surveys from this project will be driven by four main mechanisms: 1) exclusion of NMFS sampling platforms from the wind development area, 2) impacts on the random-stratified statistical design that is the basis for data analysis and use in scientific assessments, advice, and analyses; 3) the alteration of benthic, pelagic, and airspace habitats in and around the wind energy development; and 4) potential reductions in sampling outside wind areas caused by potential increased

transit time by NOAA vessels. Adverse effects on monitoring and assessment activities would directly impact the critical scientific information used for fisheries management and the recovery and conservation programs for protected species. These impacts would result in increased uncertainty in the surveys' measures of abundance, which could potentially lead to lower quotas for commercial and recreational fishermen and lower associated fishing revenue based on current fishery management council risk policies. These impacts will occur over the lifetime of wind energy operations at the project area and in the region (to at least 2050).

Comment Number: BOEM-2021-0062-DRAFT-0037-98

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

In addition to impacts on fisheries independent survey data collections, analysis of impacts on fisheries dependent data collections, e.g., landings, biological samples, and observer data, due to potential changes in effort should also be required. This assessment should consider potential changes in mortality rates for target and non-target species and potential fisheries interactions with marine mammals and threatened and endangered species. This analysis should also consider the potential changes in fisheries dependent data collections on stocks expected to be impacted by offshore wind development impact producing effects and on the anticipated displacement of fishing operations. How these effects impact specific stock assessments should also be evaluated in addition to how these changes may impact the effectiveness of fishery management measures in meeting their objectives.

A.2.13 Land Use and Coastal Infrastructure

Comment Number: BOEM-2021-0062-DRAFT-0038-15

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

It is our understanding that potential landfall locations are proposed for multiple locations in Falmouth and Brayton Point, Massachusetts. We are still reviewing the Land and Water Conservation Fund (LWCF) – State and Local Assistance sites database as well as communicating with our Rhode Island and Massachusetts State liaisons to understand if any of these locations are LWCF sites and therefore subject to review for possible conversion. In addition, we are consulting internally with our Federal Lands to Parks (FLP) program staff and our Urban Park and Recreation Recovery (UPARR) staff to determine if any of the proposed onshore locations are FLP parcels or UPARR supported parks. NPS will contact BOEM with these results as soon as we have them.

If the proposed route and potential landfall of electric transmission infrastructure for the project changes, NPS would appreciate notification so that we may review the new locations for any potential conflicts.

A.2.14 Marine Mammals

Comment Number: BOEM-2021-0062-DRAFT-0012-14

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, the project must undergo consultation and permitting under the ESA and MMPA; including a Biological Opinion for all Endangered Species Act-listed species and Incidental Harassment Authorizations under the MMPA. Each of these must use the best scientific information available and the analysis and conclusions of these assessments must be updated as new information is published.

Comment Number: BOEM-2021-0062-DRAFT-0012-30

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In the years since the leasing process was completed for the MA/RI WEA, NARWs have shifted their aggregation and feeding areas. Because of this shift the region south of Nantucket and Martha's Vineyard is now considered a year-round "corehabitat" for foraging NARWs where up to 100 whales have been seen during aerial surveys in recent years.[Footnote 9: Erin M. Oleson, Jason Baker, Jay Barlow, Jeff E. Moore, Paul Wade. 2020. North Atlantic Right Whale Monitoring and Surveillance: Report and Recommendations of the National Marine Fisheries Service's Expert Working Group. NOAA Tech. Memo. NMFS-F/OPR-64,47 p.]

Additionally, new research has demonstrated that since 2017, NARWs have been sighted in wind energy development areas off Massachusetts and Rhode Island nearly every month, with sightings being most common between late winter and spring. In fact, model outputs suggest that around 23% of the entire species is present in these areas between late winter and spring. [footnote 10: Quintana-Rizzo, E., Leiter, S., Cole, T.V.N., Hagbloom, M.N., Knowlton, A.R., Nagelkirk, P., Brien, O.O., Khan, C.B., Henry, A.G., Duley, P.A. and Crowe, L.M., 2021. Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development in southern New England, USA. *Endangered Species Research*, 45, pp.251-268.] The importance of this area cannot and should not be underestimated.

Comment Number: BOEM-2021-0062-DRAFT-0012-32

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In 2008 NOAA promulgated regulations to reduce the risk of vessel strikes with NARWs known as the Ship Strike Rule. The heart of this management strategy is to designate important areas where NARWs are expected to aggregate in certain times of the year (SMAs) and require vessels to avoid these areas or slow to below 10 knots when transiting the area. Additionally, the Ship Strike Rule requires NOAA to create 15-day reactive vessel speed areas called DMAs when aggregations of NARWs are detected outside of the established SMAs. Collectively the SMAs and the archive of DMAs are useful to illustrate important areas for NARWs that should be avoided in offshore wind development. Relative to the current project in the MA/RI WEA, Oceana includes a map from a 2020 NOAA report on SMAs DMAs in the

U.S. Atlantic to show the persistence of DMAs in the MA/RI WEA region. [Footnote 11: National Marine Fisheries Service. 2020. North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment. National Marine Fisheries Service, Office of Protected Resources, Silver Spring, MD. Appendix A figure 51, page 53. https://media.fisheries.noaa.gov/2021-01/FINAL_Appendix_A-Figures_and_Tables.pdf?null]

Comment Number: BOEM-2021-0062-DRAFT-0012-5

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NARWs spend the majority of the year in the waters off New England and Eastern Canada with mothers migrating south seasonally to have calves in the U.S. SE region. Wind development in persistent aggregation habitats and calving grounds pose the greatest concern and those areas where NARWs spend less time are likely more appropriate because of the reduced frequency, intensity, and duration of interactions with potential offshore wind development. As offshore wind is developed along the eastern seaboard, strong measures and regulations are needed to protect this critically endangered species.

Comment Number: BOEM-2021-0062-DRAFT-0012-50

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana is enthusiastic about the Biden administration focus on development of offshore wind in U.S. waters as part of an effective and responsible response to the climate crisis. The potential for development of offshore wind in U.S. waters is significant and should be pursued without delay. As the Administration advances offshore wind development projects, there is an opportunity to advance clean energy goals while protecting biodiversity. There are also areas in the ocean where impacts to marine wildlife or other considerations make offshore wind a less viable option. Oceana has presented these scoping comments to inform the range of issues that need to be explored in the upcoming EIS to ensure adequate protections are in place for critically endangered North Atlantic right whales that use the proposed project site as year-round core habitat for feeding, socializing and other important purposes. Oceana looks forward to our ongoing engagement in the Mayflower Wind project and offshore wind more generally and appreciates the opportunity to provide these comments at the beginning of the EIS process.

Comment Number: BOEM-2021-0062-DRAFT-0012-7

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As the Bureau of Ocean Energy Management (BOEM) begins the process to identify if the Mayflower Wind project can be responsibly sited, permitted, installed, operated, and decommissioned, Oceana submits these comments to help the project meet the goals of offshore wind expansion in U.S. waters while also achieving other important marine conservation goals. Oceana has concerns with this project due to the overlap with the habitat area for NARW and intends to engage in the stakeholder process to ensure that NARW conservation is adequately considered throughout the process.

Comment Number: BOEM-2021-0062-DRAFT-0017-4

Commenter: Leslie Clift

Commenter Type: Individual

Comment Excerpt Text:

More research is first needed on potential restrictions for installation, operations, and decommissioning with regards to time of year and related reproduction of marine life. The observer program for protected species should be bolstered. More research is needed on marine debris associated with wind farms.

Comment Number: BOEM-2021-0062-DRAFT-0018-5

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

The EIS should report the results of recent and ongoing marine mammal surveys in relation to the project footprint. Results should describe species presence and abundance over time.

Comment Number: BOEM-2021-0062-DRAFT-0019-1

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

I have concerns about construction and operational noise from construction of the Mayflower Wind Project effecting the habitat and feeding activities of North Atlantic Right whales in the Federal ocean waters off of southeastern Rhode Island/Massachusetts.

Comment Number: BOEM-2021-0062-DRAFT-0019-2

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

As inshore waters warm and ocean acidity increases and "N" loading in coastal waters effects the Essential Fish Habitat of finfish and shellfish in this geographic region, NARWs and their copepod prey move into the deeper ocean which could expose them to noise from the wind farms being constructed in southeastern New England. This situation has already increased in NARW entanglements in lobster pot gear in the Gulf of Maine/St. Lawrence.

Comment Number: BOEM-2021-0062-DRAFT-0019-4

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

The increase of deaths from ship strikes and crab/lobster gear entanglements plus reduced birthing rates has seen the population decrease from 500 to 336 animals in the last 10 years.

Comment Number: BOEM-2021-0062-DRAFT-0019-5

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

This is an existential crisis under the Marine Mammal Protection Act/Endangered Species. Even BOEM's Cumulative Environmental Impact Analysis of 20 wind farms to be constructed along the Atlantic seaboard between now and 2030 recognized possible modest negative consequences on NARWs.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-150

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Impacts to marine mammals (Section IV.F):

- BOEM must consider the full range of potential impacts on all marine mammal species that occur regularly in the Project Area and must protect the critically endangered North Atlantic right whale from additional harmful impacts of human activities.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-151

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM's impact analyses must account for year-round presence of North Atlantic right whales in the Project Area, which represents important habitat for socializing (including mating behavior) and foraging.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-195

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should also consider the potential for disturbance and potential disruption of foraging areas for baleen whales off Rhode Island and Massachusetts [Footnote 143: King, C.D., Chou, E., Rekdahl, M.L., Trabue, S.G., and Rosenbaum, H.C. (2021) Baleen whale distribution, behaviour and overlap with anthropogenic activity in coastal regions of the New York Bight, Marine Biology Research, 17:4, 380-400, DOI: 10.1080/17451000.2021.1967993] as a result of cable laying activities.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-38

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

F. Impacts to Marine Mammals

1. Status of Marine Mammals in the Project Area

Of the 31 marine mammal species occurring in Project Area, the COP identifies 11 species that regularly occur (i.e., are "common") in waters in and near the Project Area. [Footnote 158: MFW COP, Volume II, Table 6-61. The COP does not define the term "common" but generally this term is used to describe species that are likely to occur in the area regardless of how abundant they may be. We note that the COP lists Risso's dolphin as "uncommon"; however, consistent sightings data show that this is a regularly occurring species in and near the Project Area. For example, the COP lists Risso's dolphins as being sighted in or near the Project Area during several studies (e.g., Schwartz, 2021; Kraus et al., 2016; AIS Inc., 2020; RPS, 2019) (MFW COP, Volume II at 6-208 to 6-210).] Of these species, three (North Atlantic right, fin, and sei whale) are listed as endangered under the ESA, and as depleted and strategic stocks under the Marine Mammal Protection Act (MMPA). In addition, strategic status has been proposed for the Gulf of Maine stock of humpback whales. [Footnote 159: 2020 Draft Marine Mammal Stock Assessment Reports, NAT'L MARINE FISHERIES SERV. (NMFS) (Aug. 2020), <https://s3.amazonaws.com/media.fisheries.noaa.gov/2020-12/Draft%202020%20Atlantic-Gulf-marine%20mammal%20stock%20assessment%20reports.pdf?null> [hereinafter "2020 Draft Marine Mammal Stock Assessment"], at 2. The revised Stock Assessment Report for humpback whales was presented in draft stages but withdrawn for final publication due to delay in publication of supporting documents] Harbor porpoise are expected to be common to the Project Area in the winter and spring; while not a listed species or strategic stock, the marked sensitivity of the harbor porpoise to noise requires BOEM's specific attention.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-39

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

a) North Atlantic Right Whales

As the agency is aware, the conservation status of the North Atlantic right whale rests on a knife-edge. Despite more than 50 years of federal protections, the species has never recovered to a sustainable level [Footnote 160: See generally Recovery Plan for North Atlantic Right Whale (*Eubalaena glacialis*), NMFS (Aug. 2004), available at <https://www.fisheries.noaa.gov/resource/document/recovery-plan-north-atlantic-right-whale-eubalaena-glacialis>.] and indeed remains "one of the world's most endangered large whale species." [Footnote 161: 10 Things You Should Know About North Atlantic Right Whales, NMFS (Oct. 17, 2019), <https://www.fisheries.noaa.gov/feature-story/10-things-you-should-know-about-north-atlantic-right-whales>.]

Recent scientific analysis confirms that the right whale population has been declining since 2010 due primarily to entanglements in commercial fishing gear and vessel strikes. [Footnote 162: Richard M. Pace, III et al., State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales, *ECOLOGY & EVOLUTION* (Sept. 18, 2017); Sarah M. Sharp et al., Gross and histopathologic diagnoses from North Atlantic right whale *Eubalaena glacialis* mortalities between 2003 and 2018, *DISEASES OF AQUATIC ORGANISMS* (June 20, 2019).] In the wake of an alarming number of human-caused deaths of North Atlantic right whales in 2017, NMFS declared an Unusual Mortality Event (UME) under the MMPA for all U.S. waters in which right whales occur. [Footnote 163:

2017–2021 North Atlantic Right Whale Unusual Mortality Event, NMFS (last visited Sep. 20, 2021), <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-north-atlantic-right-whale-unusualmortality-event>.] This designation is still in effect. At least 34 whales are known to have been killed since 2017, and an additional 16 whales have been documented with serious injuries from which they will likely not recover. [Footnote 164: Id.] However, recent scientific analysis estimated that observed carcasses account for only 29 percent of all estimated deaths since 2010, meaning the actual number of dead right whales since 2017 is likely to be more than three times higher. [Footnote 165: Richard M. Pace, III et al., Cryptic mortality of North Atlantic right whales, CONSERVATION SCI. & PRACTICE (Feb. 2, 2021).]

The best population estimate for 2020 is just 336 individuals, an eight percent decline from 2019. [Footnote 166: New England Aquarium, Statement on North Atlantic right whale population estimate. <https://www.neaq.org/about-us/news-media/press-kit/press-releases/statement-on-north-atlantic-right-whale-population-estimate/>. We note that the COP uses a woefully outdated population estimate of 428 right whales based on the Draft 2019 NMFS Stock Assessment Report (MFW COP Vol. II at 6-221).] Based on the best population estimate for the species as well as recently documented deaths, approximately 100 animals have been killed in the last five years. [Footnote 167: New England Aquarium, Statement on North Atlantic right whale population estimate, supra. Pettis, H.M., et al., “North Atlantic Right Whale Consortium 2020 Annual Report Card,” supra.; Pace, R.M., “Revisions and further evaluations of the right whale abundance model: Improvements for hypothesis testing,” supra; NMFS, “2017-2021 North Atlantic right whale Unusual Mortality Event,” supra.] Additionally, scientists from the New England Aquarium believe, based on the 2019 population estimate, that “low birth rates coupled with whale deaths means there could be no females left in the next 10 to 20 years.” [Footnote 168: Davie, E., “New population estimate suggests only 356 North Atlantic right whales left,” CBC News (Oct. 29, 2020). Available at: <https://www.cbc.ca/news/canada/nova-scotia/356-north-atlantic-right-whales-left-2020-population-1.5779931>.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-40

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Calf survival is also severely diminished. Three calves born during the last two calving seasons are already either confirmed or likely dead due to vessel strikes. [Footnote 169: NMFS, “2017-2021 North Atlantic right whale Unusual Mortality Event,” supra.] One of the calves’ mothers has been declared seriously injured due to the strike that killed her calf, one mother has not been resighted, and the third has been seriously injured from entanglement in fishing gear. [Footnote 170: Id.] A fourth calf was found to have died of natural causes. [Footnote 171: Id.] In general, females are more negatively affected than males by the lethal and sublethal effects of human activity, now surviving to only 30-40 years of age with an extended inter-calf interval of approximately ten years. [Footnote 172: Corkeron, P., Hamilton, P., Bannister, J., Best, P., Charlton, C., Groch, K.R., Findlay, K., Rowntree, V., Vermeulen, E., and Pace, R.M., “The recovery of North Atlantic right whales, *Eubalaena glacialis*, has been constrained by human-caused mortality,” Royal Society Open Science, vol 5, art. 180892 (2018).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-41

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In 2019, North Atlantic right whales were listed as a National Oceanic and Atmospheric Administration (NOAA) "Species in the Spotlight" indicating that they are one of nine marine species to be at greatest risk of extinction in the United States. [Footnote 173: NMFS, "North Atlantic right whale – In the Spotlight." Available at: <https://www.fisheries.noaa.gov/national/endangered-species-conservation/species-spotlight-action-plan-accomplishments>.] In July 2020, the International Union for Conservation of Nature (IUCN) reclassified the North Atlantic right whale from "endangered" to "critically endangered" on the IUCN Red List of Threatened Species, one step away from "extinction." [Footnote 174: Cooke, J.G., "Eubalaena glacialis," The IUCN Red List of Threatened Species, e.T41712A162001243 (2020). Available at: <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T41712A162001243.en>]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-42

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Since 2010, North Atlantic right whale distribution and habitat use has shifted in response to climate change-driven shifts in prey availability. [Footnote 175: Record, N., Runge, J., Pendleton, D., Balch, W., Davies, K., Pershing, A., Johnson, C., Stamieszkin, K., Ji, R., Feng, Z. and Kraus, S., "Rapid Climate-Driven Circulation Changes Threaten Conservation of Endangered North Atlantic Right Whales," *Oceanography*, vol. 32, pp. 162-169 (2019); Meyer-Gutbrod, E.L., Greene, C.H., Davies, K.T.A., and Johns, D.G., "Ocean regime shift is driving collapse of the North Atlantic right whale population," *Oceanography*, vol. 34, pp. 22-31 (2021).] Best available scientific information, including recent regional aerial surveys, [Footnote 176: Kraus, S.D., et al., 2016, supra; Leiter, S.M., K.M. Stone, J.L. Thompson, C.M. Accardo, B.C. Wikgren, M.A. Zani, T.V.N. Cole, R.D. Kenney, C.A. Mayo, and S.D. Kraus. 2017. North Atlantic right whale *Eubalaena glacialis* occurrence in offshore wind energy areas near Massachusetts and Rhode Island, USA. *Endangered Species Research* 34:45–59; Stone, K.M., Leiter, S.M., Kenney, R.D., Wikgren, B.C., Thompson, J.L., Taylor, J.K. and Kraus, S.D., 2017. Distribution and abundance of cetaceans in a wind energy development area offshore of Massachusetts and Rhode Island. *Journal of Coastal Conservation*, 21(4), pp.527- 543; Quintana, E., S. Kraus, and M. Baumgartner. 2019. Megafauna aerial surveys in the Wind Energy Areas of Massachusetts and Rhode Island with emphasis on large whales. Summary report - Campaign 4, 2017-2018. Prepared by New England Aquarium, Anderson Cabot Center for Ocean Life and Woods Hole Oceanographic Institution; Northeast Fisheries Science Center and Southeast Fisheries Science Center, "2018 Annual Report of a Comprehensive Assessment of Marine Mammal, Marine Turtle, and Seabird Abundance and Spatial Distribution in US waters of the Western North Atlantic Ocean – AMAPPS II." (2019). Available at: <https://www.fisheries.noaa.gov/resource/publication-database/atlantic-marine-assessment-program-protected-species>; O'Brien, O., K. McKenna, B. Hodge, D. Pendleton, M. Baumgartner, and J. Redfern. 2021a. Megafauna aerial surveys in the Wind Energy Areas of Massachusetts and Rhode Island with emphasis on large whales. Summary Report - Campaign 5, 2018-2019. Agreement No.: M17AC00002. OCS Study BOEM 2021-033. US Department of the Interior, Bureau of Ocean Energy Management O'Brien, O, McKenna, K, Pendleton, D, and Redfern, J. 2021b. Megafauna aerial surveys in the wind energy areas of Massachusetts and Rhode Island with emphasis on large whales: Interim Report Campaign 6A, 2020. Sterling (VA): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2021-054. 32 p. Quintana-Rizzo E., Leiter, S., Cole, T.V.N., Hagbloom, M.N., Knowlton, A.R., Nagelkirk, P., O'Brien, O., Khan, C.B., Henry, A.G., Duley, P.A., Crowe, L.M., Mayo, C.A., and Kraus, S.D., "Residency, demographics, and movement patterns of North Atlantic right

whales *Eubalaena glacialis*, in an offshore wind energy development in Southern New England, USA,” *Endangered Species Research*, vol. 45, pp. 251-268 (29 Jul. 2021).] acoustic detections, [Footnote 177: Kraus, S.D., et al., 2016, supra. Davis, G.E., Baumgartner, M.F., Bonnell, J.M., Bell, J., Berchick, C., Bort Thornton, J., Brault, S., Buchanan, G., Charif, R.A., Cholewiak, D., et al., “Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014,” *Scientific Reports*, vol. 7, p. 13460 (2017). Davis, G.E., M.F. Baumgartner, J.M. Bonnell, J. Bell, C. Berchok, J. Bort Thornton, S. Brault, G. Buchanan, R.A. Charif, D. Cholewiak, C.W. Clark, P. Corkeron, J. Delarue, K. Dudzinski, L. Hatch, J. Hildebrand, L. Hodge, H. Klinck, S. Kraus, B. Martin, D.K. Mellinger, H. Moors-Murphy, S. Nieukirk, D.P. Nowacek, S. Parks, A.J. Read, A.N. Rice, D. Risch, A. Širovic, M. Soldevilla, K. Stafford, J.E. Stanistreet, E. Summers, S. Todd, A. Warde, and S.M. Van Parijs. 2017. Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014. *Scientific Reports* 7(1):13460. Davis, G.E., M.F. Baumgartner, P.J. Corkeron, J. Bell, C. Berchok, J.M. Bonnell, J. Bort Thornton, S. Brault, G.A. Buchanan, D.M. Cholewiak, C.W. Clark, J. Delarue, L.T. Hatch, H. Klinck, S.D. Kraus, B. Martin, D.K. Mellinger, H. Moors-Murphy, S. Nieukirk D.P. Nowacek, S.E. Parks, D. Parry, N. Pegg, A.J. Read, A.N. Rice, D. Risch, A. Scott, M.S. Soldevilla, K.M. Stafford, J.E. Stanistreet, E. Summers, S. Todd, and S.M. Van Parijs. 2020. Exploring movement patterns and changing distributions of baleen whales in the western North Atlantic using a decade of passive acoustic data. *Global Change Biology* 26(9):4812-4840. Woods Hole Oceanographic Institution, “Autonomous Real Time Marine Mammal Detections: Cox Ledge, Winter 2019-2020,” Available at: http://dcs.who.edu/cox1219/cox1219_we16.shtml.] photo-identification data, [Footnote 178: Leiter, S.M., et al., 2017, supra. Hamilton, P., “North Atlantic Right Whale Catalog Update, Recent Genetic Findings and Whale Naming Results,” Presentation at the North Atlantic Right Whale Consortium Annual Meeting (Oct. 29, 2020).] stranding data, [Footnote 179: 2017–2021 North Atlantic Right Whale Unusual Mortality Event. <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-north-atlantic-right-whale-unusual-mortality-event>.] a series of Dynamic Management Areas (DMAs) declared by NMFS pursuant to ship strike rule, [Footnote 180: NOAA Fisheries Interactive DMA Analyses <https://apps-nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/>. Although there are challenges in the use of opportunistic sightings data (no area systematically surveyed, effort not corrected for, and potential for counting an individual whale more than once), they are a proxy for habitat used by North Atlantic right whales, as validated by NMFS’s management actions based on these data, including the implementation of DMAs.] and prey data, [Footnote 181: Pendleton, D.E., Pershing, A., Brown, M.W., Mayo, C.A., Kenney, R.D., Record, N.R., and Cole, T.V.N., “Regional-scale mean copepod concentration indicates relative abundance of North Atlantic right whales,” *Marine Ecology Progress Series*, vol. 378, pp. 211-225 (2009); NOAA Northeast Fisheries Science Center, “Ecology of the Northeast US Continental Shelf – Zooplankton.” Available at: <https://www.nefsc.noaa.gov/ecosys/ecosystem-ecology/zooplankton.html>. Quintana, E., et al., 2019, supra] indicate that North Atlantic right whales now rely heavily on the waters within, and regionally proximate to, the Project Area year-round. [Footnote 182: We are extremely concerned that the COP assumes that right whales will potentially occur in the Project Area primarily “during spring migration and during the winter months” (MFW COP Vol. II at 6-221). As discussed in this section, right whales are expected to occur in the area year-round and use habitat in the region for feeding, socializing, and migration. This must be factored into BOEM’s impact analysis and mitigation requirements.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-43

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Not only are right whales present in the Project Area year-round, but their presence appears to be increasing. A new scientific analysis comparing the Northeast Large Pelagic Survey Collaborative (NLPSC) aerial survey campaigns conducted in 2011-2015 with those conducted in 2017-2019 show that right whale occurrence has increased during the study period. [Footnote 183: Quintana-Rizzo E., et al., 2021, supra.] Since 2017, right whales have been sighted in the area nearly every month, with peak sighting rates between late winter and spring. [Footnote 184: Id.] Modeling suggests that 23 percent of the species' population is present from December through May each year, and that mean residence time has tripled to an average of 13 days during these months. [Footnote 185: Id.] A total of 327 unique right whales were identified during the combined survey effort off southern New England between March 2011 and December 2019; by the end of 2019, 87 percent of the population had been sighted. [Footnote 186: Id] The discovery curve had a steep slope during the 2011-2015 surveys and was even steeper in 2017-2018, suggesting an open population or that sightings in the area were underestimated. [Footnote 187: Id]

All demographic classes of right whales have been documented in or near the Project Area and the age-ratio of the whales using the area is reflective of the species. [Footnote 188: Id.; Leiter, S.M., et al., 2017, supra; Quintana-Rizzo et al., 2021, supra.] Both reproductive females and conceptive females have been seen in the study area. Forty-five of the 108 reproductively active females (42 percent) known to be alive during the study were sighted in the southern New England region, and 17 were resighted in multiple years. The overall yearly proportions of reproductively active females varied from 0.25 to 0.57 (0.4 +/- 0.05). [Footnote 189: Quintana-Rizzo et al., 2021, supra.] In the case of conceptive females, only four females were identified in four years (2011, 2012, 2017, 2018), and their yearly proportion varied from 0 to 0.14 (0.03 +/- 0.02). [Footnote 190: Id] The area also provides important habitat for cow-calf pairs. Six different calves (inferred by the presence of known mothers) were recorded during the study in southern New England (4 in 2011, 1 in 2015, 1 in 2019; 89 calves were born in the population during this time). Three calves were sighted twice in the same year. [Footnote 191: Id]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-44

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Project Area represents important habitat for socializing and feeding right whales. Feeding was observed in all seasons and years during the 2011-2019 survey period, and social behaviors were observed mainly in the winter and spring in most, but not all, years, suggesting that right whales may use this area for courtship and mating. [Footnote 192: Id] Indeed, feeding behaviors have been observed in the Project Area by all whale species and small cetaceans regularly occurring in this area. [Footnote 193: Id] Oceanographic studies in the Project Area, which were part of the NLPSC campaigns, confirmed the presence of a zooplankton community with composition similar to that of Cape Cod Bay, which is a known hotspot for right whale feeding. [Footnote 194: Id.; O'Brien, O., et al., 2021a, supra.]

Protection of North Atlantic right whale foraging and mating habitat is essential, and further research to determine the extent to which North Atlantic right whales are currently engaging in these behaviors in this area should be undertaken during site assessment. Foraging areas with suitable prey density are limited relative to the overall distribution of North Atlantic right whales, and a decreasing amount of habitat is available for resting, pregnant, and lactating females. [Footnote 195: Van der Hoop, J., Nousek-McGregor, A.E., Nowacek, D.P., Parks, S.E., Tyack, P., and Madsen, P., "Foraging rates of ram-filtering North Atlantic right whales." *Functional Ecology*, vol. 33, pp. 1290-1306 (2019); Plourde, S., Lehoux, C., Johnson, C. L., Perrin, G., and Lesage, V. "North Atlantic right whale (*Eubalaena glacialis*) and its food: (I) a spatial climatology of *Calanus* biomass and potential foraging habitats in Canadian waters." *Journal*

of Plankton Research, vol. 41, pp. 667-685 (2019); Lehoux, C., Plourde S., and Lesage, V., “Significance of dominant zooplankton species to the North Atlantic Right Whale potential foraging habitats in the Gulf of St. Lawrence: a bioenergetic approach.” DFO Canadian Science Advisory Secretariat (CSAS) Research Document 2020/033 (2020). Gavrilchuk, K., Lesage, V., Fortune, S., Trites, A.W., and Plourde, S., “A mechanistic approach to predicting suitable foraging habitat for reproductively mature North Atlantic right whales in the Gulf of St. Lawrence.” DFO Canadian Science Advisory Secretariat (CSAS) Research Document 2020/034 (2020).] Scientific information on North Atlantic right whale functional ecology shows that the species employs a “high-drag” foraging strategy that enables them to selectively target high-density prey patches, but is energetically expensive. [Footnote 196: Van der Hoop, J., et al., Id] This means that unrestricted and undisturbed access to suitable areas, when they exist, is extremely important for the species to maintain its energy budget. [Footnote 197: Id.] Thus, if access to prey is limited in any way, the ability of the whale to offset its energy expenditure during foraging is jeopardized. In fact, researchers have concluded: “[R]ight whales acquire their energy in a relatively short period of intense foraging; even moderate changes in their feeding behavior or their prey energy density are likely to negatively impact their yearly energy budgets and therefore reduce fitness substantially.” [Footnote 198: Id.] North Atlantic right whales are already experiencing significant food-stress; juveniles, adults, and lactating females have significantly poorer body condition relative to southern right whales, and the poor condition of lactating females may cause a reduction in calf growth rates. [Footnote 199: Christiansen, F., Dawson, S.M., Durban, J.W., Fearnbach, H., Miller, C.A., Bejder, L., Uhart, M., Sironi, M., Corkeron, P., Rayment, W., Leunissen, E., Haria, E., Ward, R., Warick, H.A., Kerr, I., Lynn, M.S., Pettis, H.M., & Moore, M.J., “Population comparison of right whale body condition reveals poor state of the North Atlantic right whale.” Marine Ecology Progress Series, vol. 640, pp. 1-16 (2020).] Indeed, North Atlantic right whale body lengths have been decreasing since 1981, a change associated with entanglements in fishing gear as well as other cumulative stressors. [Footnote 200: Stewart, J.D., Durban, J.W., Knowlton, A.R., Lynn, M.S., Fearnback, H., Barbaro, J., Perryman, W.L., Miller, C.A., and Moore, M.J., “Decreasing body lengths in North Atlantic right whales,” Current Biology, published online (3 June 2021). Available at: [https://www.cell.com/current-biology/fulltext/S0960-9822\(21\)00614-X](https://www.cell.com/current-biology/fulltext/S0960-9822(21)00614-X).] Undisturbed access to foraging habitat is necessary to adequately protect the species, as is the minimization of disturbance during the species’ energetically expensive migration.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-45

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Project Area is also part of the NMFS-designated migratory corridor BIA for the North Atlantic right whale. [Footnote 201: LaBrecque, E., C. Curtice, J. Harrison, S.M.V. Parijs, and P.N. Halpin. 2015. Biologically important areas for cetaceans within U.S. waters – East Coast region. Aquatic Mammals 41(1):17-29.] While helpful in identifying key areas of importance, the BIAs are not comprehensive and are intended to be periodically reviewed and updated to reflect the best available scientific information. [Footnote 202: “However, these BIAs are meant to be living documents that should be routinely reviewed and revised to expand the number of species covered and to update the existing BIAs as new information becomes available.” Van Parijs, S. M., “Letter of introduction to the Biologically Important Areas issue.” Aquatic Mammals, vol. 41, p.1 (2015).] All of the East Coast marine mammal BIAs were defined in 2015 before evidence emerged of the new foraging areas south of Martha’s Vineyard and Nantucket. Until the current review is completed for the East Coast in December 2021, [Footnote 203: See <https://oceannoise.noaa.gov/biologically-important-areas>.] BOEM should not rely on the North Atlantic right whale migratory corridor BIA as the sole indicator of habitat importance for the species.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-46

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Other Large Whale Species

Four other large whale species are regularly sighted in the area: humpback whales, minke whales, fin whales, and sei whales. [Footnote 204: Kraus et al., 2016, supra; Quintana, E., et al. 2019, supra; O'Brien, O., et al., 2021a, 2021b, supra.] In addition to North Atlantic right whales, humpback whales and minke whales are the most recently sighted. [Footnote 205: Quintana, E., et al. 2019, supra; O'Brien, O., et al., 2021a, 2021b, supra.] Humpback whales, minke whales, and fin whales may be present within the Project Area and surrounding waters year-round; however, these species have been observed at their highest densities in the spring and summer. [Footnote 206: Kraus et al., 2016, supra; Id.] Sei whales have been consistently sighted in the spring and summer. [Footnote 207: Id.] Presence of humpback whales in the fall and winter has increased in recent years [Footnote 208: O'Brien, O., et al., 2021a, 2021b, supra.] and this species has been observed to have different distribution patterns between seasons within a year and also between years. For example, in 2017, they were sighted throughout the study area but in 2018, they were sighted on the western and eastern sides. In the winter and fall, humpback whales were sighted only in offshore waters, in the spring the species was distributed across the WEAs, while in the summer they were clustered near Cox Ledge. [Footnote 209: Quintana, E., et al. 2019, supra] Feeding behavior has been documented in the area for all four species, and mothers and calves of all species have been documented in the area. [Footnote 210: Kraus et al., 2016, supra.] Although expected to be uncommon in the Project Area, in 2019 two groups of sperm whales representing six individuals were sighted close to shore in relatively shallow water: 10 nm south of Nantucket Island on 12 June 2019, and 13 nm southwest of Nantucket on 15 July 2019 (the two sightings were only 5 nm apart from each other. [Footnote 211: O'Brien, O., et al., 2021a, supra.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-47

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Ongoing UMEs exist for humpback and minke whales: the Atlantic population of minke whales since January 2017 and humpback whales since January 2016. Alarming, 122 minke whales have stranded between Maine and South Carolina from January 2017 to November 2021. [Footnote 212: NOAA-NMFS, "2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast." Available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-minke-whale-unusual-mortality-event-along-atlantic-coast>.] Elevated numbers of humpback whales have also been found stranded along the Atlantic Coast since January 2016 and, in a little over five years, 154 humpback whale mortalities have been recorded (data through 19 November 2021) with strandings occurring in every state along the East Coast. [Footnote 213: NOAA-NMFS, "2016-2021 Humpback whale Unusual Mortality Event along the Atlantic Coast." Available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2021-humpback-whale-unusual-mortality-event-along-atlantic-coast>.] Partial or full necropsy examinations have been conducted on approximately half of the stranded animals and a significant portion showed evidence of pre-mortem vessel strikes. NMFS recently proposed to designate the Gulf of Maine humpback whale stock as a strategic stock under the MMPA based on the total estimated human-caused

average annual mortality and serious injury to this stock, including from vessel strikes. [Footnote 214: National Marine Fisheries Service (NMFS). 2020. Draft U.S. Atlantic and Gulf of Mexico marine mammal stock assessments -- 2020. The revised SAR for humpback whales was presented in draft stages but withdrawn for final publication due to delay in publication of supporting documents.] This stock primarily occurs off Rhode Island and Massachusetts, but a portion of the population uses waters off New York through the Mid-Atlantic. [Footnote 215: Hayes, S.A. et al 2020. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2019. NOAA Fisheries Northeast Fisheries Science Center. NOAA Technical Memorandum NMFS-NE-264: Humpback whale (*Megaptera novaeangliae*): Guld of Maine stock.] The declaration of UMEs by NMFS in the past few years for three large whale species for which anthropogenic impacts are a significant cause of mortality, and the recent classification of humpback whales as a strategic stock by the agency, demonstrates an increasing risk to whales from human activities along the East Coast.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-48

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c) Other Marine Mammals

Harbor porpoises also require special attention during offshore wind energy development because of their extreme sensitivity to noise. Harbor porpoises are substantially more susceptible to temporary threshold shift (i.e., hearing loss) from low-frequency pulsed sound than are other cetacean species that have thus far been tested. [Footnote 216: Lucke, K., Siebert, U., Lepper, P.A., and Blanchet, M.A., “Temporary shift in masked hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to seismic airgun stimuli.” *Journal of the Acoustical Society of America*, vol. 125 (2009): 4060-4070.] European studies demonstrate that harbor porpoises are easily disturbed by the low-frequency noise produced by pile-driving operations during offshore wind energy development. Harbor porpoises have been reported to react to pile driving beyond 20 km and may be displaced from areas for months or years after construction. [Footnote 217: See, e.g., Carstensen, J., Henriksen, O. D., and Teilmann, J., “Impacts of offshore wind farm construction on harbour porpoises: acoustic monitoring of echolocation activity using porpoise detectors (T-PODs).” *Mar. Ecol. Prog. Ser.* vol. 321 (2006): 295-308; Evans, P.G.H. (ed.), “Proceedings of the ECS/ASCOBANS Workshop: Offshore wind farms and marine mammals: impacts and methodologies for assessing impacts.” *ESC Special Publication Series*, no. 49 (2008): 50-59, 64-65, available at http://www.ascobans.org/sites/default/files/document/MOP6_5-06_WindFarmWorkshop_1.pdf; Tougaard, J., Carstensen, J., Teilmann, J., Skov, H., and Rasmussen, P., “Pile driving zone of responsiveness extends beyond 20 km for harbor porpoises (*Phocoena phocoena*, (L.)).” *Journal of the Acoustical Society of America*, vol. 126 (2009): 11-14.; Brandt, M. J., Diederichs, A., Betke, K., and Nehls, G., “Responses of harbor porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea,” *Marine Ecology Progress Series*, vol. 421 (2011): 205-216.; Dähne, M., Gilles, A., Lucke, K., Peschko, V., Adler, S., Krügel, K., Sunderleyer, J., and Siebert, U., “Effects of pile-driving on harbor porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany.” *Environmental Research Letters*, vol. 8 (2013): 025002.] High-amplitude pile driving noise may also negatively affect harbor porpoise foraging by decreasing their catch success rate and increasing the termination rate of their fish-catching attempts. [Footnote 218: Kastalein, R.A., L.A.E. Huijser, S. Cornelisse, L. Helder-Hoek, N. Jennings, and C.A.F. de Jong. 2019. Effect of pile-driving playback sound level on fish-catching efficiency in harbor porpoises (*Phocoena phocoena*). *Aquatic Mammals* 45(4):398-410.] Both captive and wild animal studies show harbor porpoises abandoning habitat in response to various types of pulsed sounds at well below 120 dB (re 1 uPa (RMS)) [Footnote 219: See, e.g., Bain,

D.E., and Williams, R., “Long-range effects of airgun noise on marine mammals: responses as a function of received sound level and distance” Report by Sea Mammal Research Unity (SMRU), 2006.; Kastelein, R.A., Verboom, W.C., Jennings, N., de Haan, D., “Behavioral avoidance threshold level of a harbor porpoise (*Phocoena phocoena*) for a continuous 50 kHz pure tone.” *Journal of the Acoustical Society of America*, vol. 123 (2008): 1858-1861.; Kastelein, R.A., Verboom, W.C., Muijsers, M., Jennings, N.V., van der Heul, S., “The influence of acoustic emissions for underwater data transmission on the behavior of harbour porpoises (*Phocoena phocoena*) in a floating pen.” *Mar. Environ. Res.* Vol. 59 (2005): 287-307; Olesiuk, P.F., Nichol, L.M., Sowden, M.J., and Ford, J.K.B., “Effect of the sound generated by an acoustic harassment device on the relative abundance and distribution of harbor porpoises (*Phocoena phocoena*) in Retreat Passage, British Columbia.” *Marine Mammal Science*, vol. 18 (2002): 843-862.] and, in fact, evidence of the acoustic sensitivity of the harbor porpoise has led scientists to call for a revision to the NMFS acoustic exposure criteria for behavioral response. [Footnote 220: Tougaard, J., Wright, A. J., and Madsen, P.T., “Cetacean noise criteria revisited in the light of proposed exposure limits for harbor porpoises,” *Marine Pollution Bulletin*. vol. 90 (2015): 196-208.] Impacts to harbor porpoises must, therefore, also be minimized and mitigated to the full extent practicable during offshore wind siting and development in the waters off Rhode Island and Massachusetts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-49

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The agency is obligated by NEPA to consider the full range of potential impacts on all marine mammal species and to protect the critically endangered North Atlantic right whale from additional harmful impacts of human activities. Considering the elevated threat to federally protected large whale species and populations in the Atlantic, emerging evidence of dynamic shifts in the distribution of large whale habitat, and acoustic sensitivity of the harbor porpoise, BOEM must ensure that any potential stressors posed by construction and operations on affected species and stocks are avoided, minimized, mitigated, and monitored to the fullest extent possible. [Footnote 221: 16 U.S.C. § 1371(a)(5)(D)(ii)(I)(2020).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-50

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

2. BOEM Must Use Best Available Scientific Information to Analyze Impacts to Marine Mammals

As stated in Section IV.F.1 above, distribution and habitat use of North Atlantic right whales and other large whale species and stocks have undergone significant climate-driven shifts. Best available scientific information indicates that North Atlantic right whales now heavily rely on the waters off Rhode Island and Massachusetts year-round and that this region is an increasingly important seasonal foraging habitat for other species and stocks of endangered and strategic large whales.

To adequately assess the occurrence of and potential impacts to marine mammals, it is extremely important that BOEM consider a variety of local and regional data sources. For example, aerial survey and passive acoustic monitoring data must be combined to provide a comprehensive look at the seasonal and annual occurrence of large whales. Data sources that should be assessed include NLPSC aerial surveys and passive acoustic studies, [Footnote 222: Kraus, S.D., et al., 2016, supra; Leiter, S.M., et al.,

2017, supra; Stone, K.M., et al., 2017, supra; Quintana, E., et al., 2019, supra; O'Brien, O., et al., 2021a, 2021b, supra.] other regional acoustics data, [Footnote 223: Estabrook, B.J., K. B. Hodge, D. P. Salisbury, D. Ponirakis, D. V. Harris, J. M. Zeh, S. E. Parks, and A.N. Rice. 2019. Year 1 annual survey report for New York Bight whale monitoring passive acoustic surveys October 2017- October 2018. Contract C009925. Prepared for Division of Marine Resources, New York State Department of Environmental Conservation, Albany, NY by Bioacoustics Research Program, Cornell Lab of Ornithology, Cornell University, Ithaca, NY; Estabrook, B.J., K. B. Hodge, D. P. Salisbury, D. Ponirakis, D. V. Harris, J. M. Zeh, S. E. Parks, and A.N. Rice. 2019. Year 2 annual survey report for New York Bight whale monitoring passive acoustic surveys October 2018 – October 2019. Contract C009925. Prepared for Division of Marine Resources, New York State Department of Environmental Conservation, Albany, NY by Bioacoustics Research Program, Cornell Lab of Ornithology, Cornell University, Ithaca, NY. Right whales were acoustically detected year-round in the New York Bight during the NYSDEC's passive acoustic monitoring study conducted from October 2017 through October 2019.] the Center for Coastal Studies surveys, [Footnote 224: See <https://coastalstudies.org/right-whale-research/population-monitoring/>.] and the Atlantic Marine Assessment Program for Protected Species (AMAPPS) data, [Footnote 225: NEFSC (Northeast Fisheries Science Center) and SEFSC (Southeast Fisheries Science Center). 2020; 2019 annual report of a comprehensive assessment of marine mammal, marine turtle, and seabird abundance and spatial distribution in US waters of the western North Atlantic Ocean - AMAPPS II.] as well as verified opportunistic sightings data. [Footnote 226: E.g., NOAA Fisheries, "NOAA right whale sighting advisory system," <https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html>.] Where possible, density estimate modeling for the WEAs should include these multiple data sources, particularly the most recent data for this region. [Footnote 227: The COP fails to mention the most recent NLPSC studies and data (MFW COP Vol. II at Table 6-60): Quintana, E., et al. 2019, supra; O'Brien, O., et al. 2021b, supra. It is particularly important to cite the full set of NLPSC survey data from 2017-2020 as these data show an increase in large whale sightings, confirm sightings of right whales during all seasons, and show a shift in whale hotspots. The COP also only uses AMAPPS survey data through 2018 and does not include the most recent information: NEFSC (Northeast Fisheries Science Center) and SEFSC (Southeast Fisheries Science Center). 2021. 2020 Annual report of a comprehensive assessment of marine mammal, marine turtle, and seabird abundance and spatial distribution in US waters of the Western North Atlantic Ocean: AMAPPS III; The COP refers to data collected via lease area monthly visual surveys for marine mammals and sea turtles conducted by Mayflower Wind and APEM (Mayflower-APEM, 2020a-l) and data from Protected Species Observer Reports (RPS, 2019) (COP, Vol. II at 6-204 and throughout marine mammal and sea turtle sections). However, we could not find any of these reports available online and do not know how the data were collected or the dates of the monitoring conducted. These reports or at least a summary report of each data collection effort need to be made available to the public. According to the COP, passive acoustic data were also recorded, but "none of the rarely observed species were identified during the NLPS or during visual and acoustic surveys conducted for the proposed Project (AIS Inc., 2020; Mayflower-APEM, 2020a-m; RPS, 2019)" (MFW COP Vol. II at 6-210). We cannot find any information about when and where these acoustic surveys were conducted and how the data were analyzed, specifically how detections were analyzed for all species that could occur in the Project Area. Analyzing data for all species would be a very time consuming and costly task given that automatic detection capabilities are only available for a few species. Further, figure names for 6-28 through 6-30 include "Acoustic" but no acoustic detections are shown in the figures. Sightings data from PSOs and aerial surveys are plotted but NLPSC data should also be included since these surveys covered the WEAs.]

BOEM currently relies on estimates of marine mammal densities derived from the habitat-based density model (the "Roberts et al." model) produced by the Duke University Marine Geospatial Ecology Laboratory. [Footnote 228: Roberts, J.J., Best, B.D., Mannocci, L., Fujioka, E., Halpin, P.N., Palka, D.L., Garrison, L.P., Mullin, K.D., Cole, T.V., Khan, C.B. and McLellan, W.A., "Habitat based cetacean

density models for the U.S. Atlantic and Gulf of Mexico,” Scientific Reports, vol. 6, p.22615 (2016); Roberts J.J., Mannocci L., and Halpin P.N., “Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2016-2017 (Opt. Year 1).” Document version 1.4. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC (2017); Roberts J.J., Mannocci L., Schick R.S., and Halpin P.N., “Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2017-2018 (Opt. Year 2).” Document version 1.2 - 2018-09-21. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC. (2018).] The current "Roberts et al." model, which was released in February 2021 (version 11), does not include all the available site-specific and regional data sources mentioned above, and therefore may not accurately reflect marine mammal occurrence and density in the region.[Footnote 229: We note that the COP only incorporates density estimates from the Roberts et al. (2016) model and not the recent updates. The analyses therein are therefore based on outdated information (MFW COP Vol. II at 6-214).] Consequently, BOEM should not use the Duke University habitat-density models as the sole information source from which to estimate marine mammal occurrence, density, and impact. The Roberts et al. model for the U.S. Atlantic will be updated again during Spring 2022. [Footnote 230: <https://seamap.env.duke.edu/models/Duke/EC/>; It is unclear whether these updates will include all of the NLPSC survey data collected to date. Stone et al. (2017) conducted density modeling of the site-specific NLPSC campaign data from October 2011 through June 2015 to generate site-specific abundance/density estimates of some marine mammal species. Yet, abundance/density modeling has not been conducted using the most recent campaign data, which would include the higher number of large whale sightings, or is not yet available to the public.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-73

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Vessel strikes are one of the two main factors driving the North Atlantic right whale to extinction. Offshore wind development will result in a marked increase in vessel activity. For example, in the recent Final EIS for the South Fork Project, the agency notes that up to an additional 379 construction and operations vessels associated with reasonably foreseeable offshore wind development (under the No Action Alternative not including the South Fork Project) may be operating within the geographic analysis area at the peak of projected offshore wind farm development in 2024. [Footnote 263: SFWF FEIS at 3-61.] Vessel collision risk to large whales must be fully analyzed for the following reasons:

First, any interaction between a vessel and whale poses a risk of serious injury or mortality. This is true irrespective of the number of other vessels operating in the same location. As demonstrated by the documented deaths of North Atlantic right whale calves in July 2020 and February 2021, and the serious injury, thus, likely death of a third calf in January 2020, an addition of even a single vessel traveling at speeds over 10 knots poses an unacceptable risk. Thus, when analyzing impacts from vessel traffic, BOEM should concern itself less with "relative risk" and instead focus on the risk to the animal and the offshore wind project vessel.

Second, even through the lens of relative risk, the North Atlantic right whale cannot currently withstand if the species is to survive. Reasonably foreseeable wind development activities will primarily occur off of New Jersey, New York, Rhode Island, Massachusetts, and just outside this region, meaning that vessel activity associated with construction, including vessel transits, will be similarly concentrated in that region. As previously discussed (Section IV.F.1.a above), waters in and around the Project Area represent

an important year-round habitat for the North Atlantic right whale, a species for which vessel strike is a leading factor in its trajectory towards extinction. Vessel strikes therefore pose an unacceptable risk in this region and BOEM must acknowledge that any vessel operating in that region has the potential to strike a North Atlantic right whale and, in doing so, expedite the species' decline.

Third, BOEM's assumptions about smaller vessels posing lower risk of a fatal collision are not supported by best available science. Vessel strikes can result in either "blunt force trauma," where injuries can range from non-lethal superficial abrasions and contusions to severe lethal impact wounds resulting from contact with a non-rotating feature of the vessel, or "propeller-induced trauma," that results in incising wounds resulting from contact with the sharp, rotating, propeller of the vessel (also termed "sharp force trauma"). [Footnote 264: Van der Hoop, J., Barco, S.G., Costidis, A.M., Gulland, F.M., Jepson, P.D., Moore, K.T., Raverty, S. and McLellan, W.A., "Criteria and case definitions for serious injury and death of pinnipeds and cetaceans caused by anthropogenic trauma," *Diseases of Aquatic Organisms*, 103(3), pp.229-264 (2013);; Sharp, S.M., McLellan, W.A., Rotstein, D.S., Costidis, A.M., Barco, S.G., Durham, K., Pitchford, T.D., Jackson, K.A., Daoust, P.Y., Wimmer, T. and Couture, E.L., "Gross and histopathologic diagnoses from North Atlantic right whale *Eubalaena glacialis* mortalities between 2003 and 2018," *Diseases of Aquatic Organisms*, 135(1), pp.1-31 (2020).] Observations compiled by Laist et al. (2001) [Footnote 265: Laist, D.W., Knowlton, A.R., Mead, J.G., Collet, A.S. and Podesta, M., "Collisions between ships and whales," *Marine Mammal Science*, 17(1), pp.35-75 (2001).]—the primary reference cited by BOEM—suggest that the most severe injuries occur as a result of vessel strikes by large ocean-going vessels; this research has led to a number of mitigation and management actions in the United States and internationally. However, there is increasing recognition that smaller vessels can also cause lethal injury, even when traveling at relatively low speeds (i.e., below 10 knots). [Footnote 266: Kelley, D.E., Vlastic, J.P. and Brilliant, S.W., "Assessing the lethality of ship strikes on whales using simple biophysical models," *Marine Mammal Science*, 37(1), pp.251-267 (2021).] The NMFS Large Whale Ship Strike Database reveals that blood was seen in the water—indicative of serious injury—in at least half of the cases where a vessel known to be less than 65 feet in length struck a whale. [Footnote 267: Jensen, A.S. and Silber, G. K., "Large Whale Ship Strike Database," U.S. Department of Commerce, NOAA Technical Memorandum NMFS-OPR-25 (Jan. 2004) at 12–37.] This is likely an underestimate of the magnitude of the threat, as small vessel collisions with whales are underreported. [Footnote 268: Hill, A.N., et al., "Vessel collision injuries on live humpback whales, *Megaptera novaeangliae*, in the southern Gulf of Maine," *Marine Mammal Science*, vol. 33, pp. 558–573 (2017). A.S. Jensen and G.K. Silber, Large Whale Ship Strike Database, U.S. Department of Commerce, NOAA Technical Memorandum NMFS-OPR-25 (Jan. 2004), at 12–37.] Passengers have been knocked off their feet or thrown from the boat upon impact with a whale, [Footnote 269: Bigfish123, Comment to Collision at Sea, The Hull Truth (May 1, 2009, 5:44 am), <http://www.thehulltruth.com/boating-forum/222026-collision-sea.html>.] demonstrating this is also a significant human safety issue.

Fourth, BOEM's assertion that existing federally required mitigation measures will "minimize" collision risk is flawed. NOAA requires a mandatory vessel speed restriction of vessels 65 feet and greater within Seasonal Management Areas (SMAs) to reduce the risk to North Atlantic right whales and voluntary 10-knot speed reduction zones (i.e., NOAA DMAs and North Atlantic right whale "Slow Zones") offer an additional layer of protection. [Footnote 270: 73 Fed. Reg. 60,173 (Oct. 10, 2008).] However, a recent analysis undertaken by NMFS shows that compliance with voluntary speed reductions is woefully low. [Footnote 271: National Marine Fisheries Service, "North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment," *supra*.] BOEM recently required additional sector-specific vessel speed restrictions for the Vineyard Wind 1 project, including a requirement that project-related vessels of any length must adhere to SMAs and DMAs and that all vessels must travel at 10 knots or less when transiting to, from, or within the project site, except for certain geographic areas and crew transfer vessels, that may travel faster than 10 knots upon submission of a North Atlantic right whale "strike management plan." [Footnote 272: BOEM. Vineyard Wind 1 Offshore Wind Energy Project Construction and Operations

Plan. Record of Decision. May 10, 2021. Available at: <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Final-Record-of-Decision-Vineyard-Wind-1.pdf>. (VW1 ROD).] We encourage BOEM to continue to strengthen vessel speed requirements for future projects.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-75

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Data are readily available (e.g., on the Northeast Ocean Data Portal [Footnote 273: See <https://www.northeastoceandata.org/>]) to undertake a quantitative analysis of additional vessel strike risk posed by vessels associated with the offshore wind industry (i.e., total number of vessels, proportion of vessels associated with reasonably foreseeable offshore wind activities, locations of the primary route between ports and WEAs, and marine mammal occurrence and density). We encourage BOEM to undertake this quantitative analysis to provide a more robust analysis in its future environmental impact statements.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-77

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c) BOEM Should Analyze Large-scale Habitat Displacement for the North Atlantic Right Whale

The report, "A framework for studying the effects of offshore wind development on marine mammals and turtles," [Footnote 277: Kraus, S.D., et al., "A Framework for Studying the Effects of Offshore Wind Development on Marine Mammals and Turtles,"supra.] outlines detailed recommendations for monitoring the potential impacts of offshore wind on marine mammals, including long-term avoidance and/or displacement, by the top scientists and experts working in this field. The report of the Marine Mammal Workgroup convened following the 2020 New York State of the Science Workshop offers additional recommendations. [Footnote 278: Southall, B., L. Morse, K.A. Williams, and E. Jenkins. 2021. Marine Mammals Workgroup Report for the State of the Science Workshop on Wildlife and Offshore Wind Energy 2020: Cumulative Impacts. Report to the New York State Energy Research and Development Authority (NYSERDA). Albany, NY. 50 pp. Available at <https://www.nyetwg.com/2020-workgroups>.] It is vital that we gain an understanding of baseline environmental conditions prior to large-scale offshore wind development in the United States. To this end, BOEM must help establish and fund a robust, long-term scientific plan to monitor effects of offshore wind development on marine mammals before the first large-scale commercial projects are constructed.

Given the acute vulnerability of the North Atlantic right whale, it is essential that, at a minimum, BOEM conduct a technical, quantitative analysis of the cumulative impacts of offshore wind development against a baseline of other reasonably foreseeable actions on the North Atlantic right whale population. This analysis should be incorporated into the agency's NEPA compliance documents. We note that the analyses proposed below are also relevant for other species of large whale found in the Northwest Atlantic. We recommend that the analysis quantify the percentage of the North Atlantic right whale population potentially exposed to conceivable impacts from offshore wind development on an annual basis [Footnote 279: For example, by following the approach of Dr. Wing Goodale, Biodiversity

Research Institute, in the analysis of “cumulative adverse effects” on four bird taxa. See, Goodale, W. (2018). Cumulative adverse effects of offshore wind energy development on wildlife. Presentation at the New York State Energy Research and Development Authority “State of the Science Workshop on Wildlife and Offshore Wind Development,” Fox Hollow, Woodbury, New York, Nov. 14, 2018.

Available at:

http://www.briloon.org/uploads/BRI_Documents/Wildlife_and_Renewable_Energy/NYSERDA_workshop_WingGoodale_CumulativeImpacts.pdf] and, as a worse-case scenario, the potential impact on population viability of a permanent loss of foraging and other habitat within all lease areas expected to be developed. The analysis should also examine the additional energetic expenditure experienced if right whales were to avoid all lease areas expected to be developed during their migration. This is particularly important in light of new scientific information indicating the need for North Atlantic right whales to undertake efficient and uninterrupted foraging in order to maintain their energy budget. [Footnote 280: Van der Hoop, J., et al., “Foraging rates of ram-filtering North Atlantic right whales,” supra.] The energetic implications for displacement of pregnant females during their southern migration (e.g., offshore into the Gulf Stream) should also be taken into consideration.

Habitat avoidance may also result in North Atlantic right whales being displaced into shipping lanes, thereby increasing their risk of vessel strike. The analysis should therefore estimate the additional potential risk that habitat displacement into shipping lanes, and the increased vessel traffic directly resulting from wind development activities may pose in terms of serious injury and mortality along the East Coast, and evaluate that risk against that of species extinction. Such an analysis will allow BOEM to determine if existing mitigation measures are adequate or if potential impacts need to be managed as projects are developed concurrently and sequentially. For example, considering vessel collision risk for the entire East Coast may illuminate that more comprehensive vessel speed mitigation measures need to be in place at the project level in order to reduce the overall cumulative risk.

BOEM should conservatively assess the potential loss to the right whale of communication and listening range and assume that any substantial decrement will result in adverse impacts on the species’ foraging, mating, or other vital behavior. A conservative approach is justified given the species’ extreme vulnerability, where any additional stressor may potentially result in population-level impacts, and the difficulty in obtaining empirical data on population-level impacts on wild animals, and recent scientific information on the estimated levels of underwater noise generated by operational projects (see next section).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-80

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

f) BOEM Should Monitor for Oceanographic Changes Caused by Large-Scale Build-Out of Offshore Wind Energy That May Affect the Marine Mammal Prey Base

The design of an offshore wind farm, such as the location, number of turbines, and foundation types, may affect local and regional hydrodynamics. [Footnote 289: Segtnan OH, Christakos K. 2015. Effect of offshore wind farm design on the vertical motion of the ocean. *Energy Procedia* 80(2015): 213-222.] As tidal currents move past the offshore wind foundations, they generate a turbulent wake that will contribute to a mixing of the stratified water column. [Footnote 290: Schultze, L. K. P., L. M. Merckelbach, J. Horstmann, S. Raasch, and J. R. Carpenter. "Increased mixing and turbulence in the wake of offshore wind farm foundations." *Journal of Geophysical Research: Oceans* 125, no. 8 (2020): e2019JC015858.] The loss of stratification within the wake of a single offshore wind turbine has been observed in the

German Bight, a relatively shallow area of the North Sea with typical water depths between 20 and 50 m. [Footnote 291: Id.] A single monopile was found to be responsible for 7-10 percent additional mixing to that of the bottom mixed layer, whereby approximately 10 percent of the turbulent kinetic energy generated by the structure is used in mixing. [Footnote 292: Id.] Although the effect of a single turbine on stratification is relatively low, large-scale build-out of offshore wind energy (i.e., 100 km²) could significantly affect the vertical structure of a weakly stratified water column, and could modify the stratification regime and water column dynamics on a seasonal scale, depending on local conditions and turbine layout. [Footnote 293: Id.; Carpenter JR, Merckelbach L, Callies U, Clark S, Gaslikova L, Baschek B (2016) Potential Impacts of Offshore Wind Farms on North Sea Stratification. PLoS ONE 11(8): e0160830. <https://doi.org/10.1371/journal.pone.0160830>] NOAA Fisheries recently acknowledged that large-scale build out of offshore wind energy in the Northeast region may cause local oceanographic changes that may affect the distribution of North Atlantic right whale prey. [Footnote 294: State of the Ecosystem New England (Presentation to the New England Fishery Mgmt. Council), NMFS (Apr. 15, 2021). See also 2021 STATE OF THE ECOSYSTEM NEW ENGLAND, NMFS (revised Apr. 26, 2021), <https://apps-nefsc.fisheries.noaa.gov/rcb/publications/SOE-NEFMC-2021-508-Final.pdf>, at 37 (“Right whales may be displaced, and altered local oceanography could affect the distribution of their zooplankton prey.”)]

Comment Number: BOEM-2021-0062-DRAFT-0035-58

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While vessel transit corridors may concentrate vessel traffic through specified "highways," there is no evidence to suggest this limits risks to marine mammals and other wildlife. Reduced vessel speeds are generally the key to minimizing collision risk for marine mammals and other wildlife, and it is unclear that there is any benefit to wildlife from transit corridors or prescribed layouts. Regional monitoring across sites will be needed to understand varying potential impacts from different layout specifications.

Comment Number: BOEM-2021-0062-DRAFT-0037-14

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

As documented in recent NEPA reviews and consultations, offshore wind development has the potential to affect North Atlantic right whales through exposure to a number of stressors, including increases in vessel traffic and exposure to noise during various stages of the project. The effects of the physical presence of structures in and near areas of high right whale abundance and social behaviors also need to be carefully considered. Emerging information suggests that the physical presence of wind turbine structures and associated wind energy extraction will have at least localized effects on oceanographic and atmospheric conditions that may affect prey and subsequently whales. Studies [Footnote 6: Miles, T., Murphy, S., Kohut, J., Borsetti, S., & Munroe, D. (2021). Offshore Wind Energy and the Mid-Atlantic

Cold Pool: A Review of Potential Interactions. *Marine Technology Society Journal*, 55(4), 72-87.] ,[Footnote 7: van Berkel, J., Burchard, H., Christensen, A., Mortensen, L., O., Petersen, O.S., & Thomsen, F. (2020). The effects of offshore wind farms on hydrodynamics and implications for fishes. *Oceanography*, 33(3), 108-117.] have shown that offshore wind turbines can alter horizontal currents and vertical water column stratification that influence the distribution of planktonic right whale prey. These

risks are especially relevant in relation to the Mayflower lease area due to the proximity of Nantucket Shoals as an ecologically important feature, and the high prevalence of right whales in the area.

Comment Number: BOEM-2021-0062-DRAFT-0037-32

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The section describing the "Affected Environment" for protected species should include information on the seasonal abundance and distribution of marine mammals, sea turtles, ESA-listed marine fish, anticipated habitat uses (e.g., foraging, migrating), threats, and the habitats and prey these species depend on throughout the area that may be directly or indirectly impacted, by the project. The status of marine mammal stocks (see our stock status reports [Footnote 8: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>]) population trends, and threats should also be identified. Similar information should also be provided for all ESA listed species (see relevant status reviews on our ESA Species Directory, <https://www.fisheries.noaa.gov/species-directory/threatened-endangered>). [Footnote 9: Please note that NOAA Fisheries biological opinions should not be used as a reference unless referring to specific conclusions for which the particular project that the biological opinion was issued. We do not recommend relying on NOAA Fisheries Biological Opinions to support conclusions reached by BOEM for other projects that were not the subject of that Opinion.]

Comment Number: BOEM-2021-0062-DRAFT-0037-33

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

As the EIS is developed, specificity between species groups (e.g., low frequency vs. mid frequency cetaceans) of marine mammals and sea turtles should be incorporated. A broad grouping approach (e.g., all marine mammals) creates uncertainty and gaps in the analysis and does not fully represent the variability of impacts amongst different taxa. As species within these taxa have different life histories, biology, hearing capabilities, behavioral and habitat use patterns, distribution, etc., project effects may not have the same degree of impact across all species. Thus, the impact conclusions (e.g., minor, moderate, major) are clearer and better supported if the document describes the degree of impacts to each species (e.g., green sea turtle vs. hawksbill) or groups of species (e.g., mysticetes, odontocetes, pinnipeds). Additionally, for some marine mammal species (e.g., harbor porpoise), data from European wind farms can be used to support each determination. This approach also allows the analysis to better identify the ability of those species or groups to compensate when exposed to stressors and better identify the benefit from mitigation and monitoring measures. This approach would ensure the analysis reduces uncertainty and reflects the best available scientific information. Also, wherever possible, we encourage you to identify effects to individuals (e.g., injury, behavioral disturbance, disrupted foraging), as well as impacts at the population level.

Comment Number: BOEM-2021-0062-DRAFT-0037-43

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

It will be particularly important to evaluate how construction timing overlaps with the presence of protected species and sensitive life stages of fish in the project area. North Atlantic right whales may be present in the area between late summer through spring. Areas within the Mayflower lease have been identified as hotspots for right whales during the spring and winter seasons and adjacent waters during the summer, with records of feeding and social behavior [footnote 11: Quintana-Rizzo, E., Leiter, S., Cole, T. V. N., Hagbloom, M. N., Knowlton, A. R., Nagelkirk, P., ... & Kraus, S. D. (2021). Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development in southern New England, USA. *Endangered Species Research*, 45, 251-268.]. Additionally, mean residence time of whales was shown to be an average of 13 days, suggesting whales persist and forage in these areas for long periods of time rather than traveling through. Sightings of whales have also demonstrated persistent aggregations overlapping and adjacent to the Mayflower lease area throughout the late-summer and fall. While there is limited data on cod spawning locations for this project area, we know cod spawning activity in southern New England occurs between November and April. Additional baseline studies are necessary to understand how southern New England cod spawning overlaps with the Mayflower lease area. The export cable routes, and the Sakonnet River in particular, is designated HAPC for juvenile cod and summer flounder. Studies from state larval and trawl surveys have identified larvae and juvenile, young of the year (YOY) cod in this area, largely collected between February and May at an increased in abundance since 2002; and Age 1+ cod occur from October through June in Rhode Island waters outside of Narragansett Bay [Footnote 12: Langan, J. A., McManus, M. C., Zemeckis, D. R., & Collie, J. S. 2020. Abundance and distribution of Atlantic cod (*Gadus morhua*) in a warming southern New England. *Fishery Bulletin*, 118(2), 150-162.]. Demersal winter flounder eggs and larvae occur in the Sakonnet River between February and June. The potential overlap of project construction and in-water activities should be fully evaluated in the EIS, as well as measures to avoid and minimize impacts to sensitive life stages. Figure 3-6 of the COP (page 3-9) depicts an indicative construction schedule for this project that suggests construction activities within the lease area and cable corridors may overlap with the presence of protected species and sensitive life stages for three consecutive years in 2025, 2026, and 2027. The evaluation of environmental consequences in EIS should consider how the time of year of construction activities overlap with the presence of important resources. We encourage BOEM to develop time of year restrictions on different activities to minimize exposure of the species of concern to relevant impacts. We understand that this will likely involve the need to consider consequences of multiple years of construction.

Comment Number: BOEM-2021-0062-DRAFT-0037-58

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The following listed species may be found in the Mayflower Wind lease area: Endangered North Atlantic right (*Eubalaena glacialis*), fin (*Balaenoptera physalus*), sei (*Balaenoptera borealis*), and sperm (*Physeter macrocephalus*) whales; endangered Kemp's ridley (*Lepidochelys kempii*) 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 present in the lease area seasonally, with occurrence largely limited to May - November. Additionally, blue whales (*Balaenoptera musculus*), oceanic whitetip shark (*Carcharhinus longimanus*) and giant manta ray (*Manta birostris*) may occasionally occur in the more offshore portions of the project area. More information on these species is available on our regional ESA information site [Footnote 16: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater>]. North Atlantic right whale sightings are available at our NOAA Right Whale Sightings Map page [Footnote 17: <https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html>].

Comment Number: BOEM-2021-0062-DRAFT-0037-66

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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) [Footnote 23: National Research Council (NRC). 2003. Ocean noise and marine mammals. National Academy Press; Washington, D.C.]. While BOEM and Mayflower Wind will need to consider effects to all listed species, given the imperiled status of North Atlantic right whales, implementing measures to ensure that no right whales are injured or killed as a result of the Mayflower Wind project is critical. We note that given the rapid pace of development of the lease blocks adjacent to the Mayflower Wind project and continued uncertainty surrounding construction schedules, consideration of the potential for overlapping construction periods (e.g., construction in multiple, adjacent leases in the same season) will be essential.

Comment Number: BOEM-2021-0062-DRAFT-0037-69

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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 101(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. ITAs may be issued as either (1) regulations and associated Letters of Authorization (LOAs) or (2) Incidental Harassment Authorizations (IHAs). LOAs may be issued for up to a maximum period of five years; IHAs may be issued for a maximum period of one 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 an ITA. 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.

Information about the MMPA and 50 CFR part 216 is available on our website at

<https://www.fisheries.noaa.gov/topic/laws-policies#marine-mammal-protection-act>. Information on the application process is available at <https://www.fisheries.noaa.gov/node/23111> and the application along with detailed instructions is available at

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/apply-incident-take-authorization>.

Comment Number: BOEM-2021-0062-DRAFT-0037-70

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Because activities associated with the construction of Mayflower Wind have the potential to result in the harassment [footnote 24: 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.] of marine mammals, we anticipate that a request for an ITA pursuant to section 101(a)(5) of the MMPA may be submitted to us by the project proponent. NMFS' proposal to issue an ITA that would allow for the taking of marine mammals, consistent with provisions under the MMPA and incidental to an applicant's lawful activities, is a major federal action under 40 CFR 1508.1(q) [footnote 25: All references to the Council on Environmental Quality NEPA regulations included in this letter apply to the 2020 regulations effective September 14, 2020.], requiring NEPA review. Rather than prepare a separate NEPA document, NMFS, consistent with the CEQ regulations at 40 CFR 1506.3, intends to adopt BOEM's Final EIS to support its decision to grant or deny Mayflower Wind's request for an ITA pursuant to section 101(a)(5)(A) or (D) of the MMPA. NOAA may adopt all or portions (e.g., specific analyses, appendices, or specific sections) of a NEPA document prepared by another federal agency 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.

Comment Number: BOEM-2021-0062-DRAFT-0037-73

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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 1502. Therefore, the EIS must contain an adequate evaluation of the impacts on all marine mammals that may be present in the project area. In order to take a requisite "hard look" at environmental impacts, the analysis should consider the affected environment and degree of impact on each resource which involves an evaluation of direct and indirect effects, as well cumulative effects; the duration of the impact; whether it is beneficial or adverse and the geographic scale in which the action is occurring (e.g., local, regional). 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 to marine mammals.

Comment Number: BOEM-2021-0062-DRAFT-0037-74

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

For specific marine mammals issues, we refer you to the discussion on marine mammals in the ESA section above. We note because all marine mammals are protected under the MMPA, those comments apply to all marine mammal species. We specifically recommend that the analysis of impacts on marine mammals and corresponding significance determinations be separated by species group (i.e., mysticetes,

odontocetes, and pinnipeds). For the noise impacts analysis, we recommend a similar approach using the hearing groups identified in NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS, 2018).

Comment Number: BOEM-2021-0062-DRAFT-0037-8

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Endangered North Atlantic right whales occur in the Mayflower Wind lease area, along the proposed cable corridor, and along many of the anticipated vessel transit routes. Specifically, recent analyses have identified areas within the Mayflower lease area as hotspots for right whales during the spring and winter seasons and adjacent waters during the summer, with records of feeding and social behavior.[Footnote 1: Quintana-Rizzo, E., Leiter, S., Cole, T. V. N., Hagbloom, M. N., Knowlton, A. R., Nagelkirk, P., ... & Kraus, S. D. (2021). Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development in southern New England, USA. *Endangered Species Research*, 45, 251-268.] Additionally, mean residence time of whales was shown to be an average of 13 days, suggesting whales persist and forage in these areas for long periods of time rather than traveling through. Sightings of whales have also demonstrated persistent aggregations overlapping and adjacent to the Mayflower lease area throughout the late-summer and fall. The status of this species is extremely poor and these animals are considered critically endangered. The latest preliminary estimate suggests there are fewer than 350 North Atlantic right whales. The potential biological removal (PBR) level is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population; PBR for North Atlantic right whales is less than 1. The proposed construction, operation, and decommissioning of the Mayflower Wind project may have adverse effects on North Atlantic right whales and this warrants special consideration throughout the environmental review process. These effects include well documented risks to right whales such as increased vessel traffic and construction noise, and also effects with greater uncertainty, such as the physical presence of wind turbine structures on the movement of animals and oceanographic and atmospheric impacts to prey and subsequently whales (more information in Appendix A). The effect of structures and energy extraction is especially pertinent to the Mayflower lease area as it overlaps a persistent tidal mixing front around Nantucket Shoals. The potential consequences of developing this area on the marine environment, including potential effects on the foraging ecology of right whales, needs to be carefully evaluated. NMFS staff are available to meet with you and the project applicant to inform the development of measures to avoid and minimize effects of the proposed project on right whales.

Comment Number: BOEM-2021-0062-DRAFT-0037-95

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

A NOAA Tech Memo [Footnote 18: Pace, RM. 2021. Revisions and Further Evaluations of the Right Whale Abundance Model: Improvements for Hypothesis Testing. NOAA Tech Memo NMFS-NE-269; 49 p. Available online at <https://apps-nefsc.fisheries.noaa.gov/rcb/publications/tm269.pdf>] was recently published with a new population estimate (368 individuals as of January 2019) for North Atlantic right whales. Additionally, the latest preliminary estimate suggests there are fewer than 350 North Atlantic right whales. We note that these population estimates are significantly lower than the estimate in the 2020

Stock Assessment Report [Footnote 19: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>], which was a minimum population estimate of 408 individuals as of January 2018. The 2021 draft marine mammal Stock Assessment Reports are currently available [Footnote 20: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports>], with the final versions expected to be published in mid-2022. There is no designated critical habitat that overlaps with the lease area. We do not have sufficient information on the project to determine if any vessel transit routes would overlap with any designated critical habitat. Depending on vessel traffic routes, additional ESA species may occur in the project area. Please see Attachment B to this letter for a list of recommended scientific references for consideration related to the presence of ESA-listed species in or near the lease area.

A.2.15 Mitigation and Monitoring

Comment Number: BOEM-2021-0062-DRAFT-0009-6
Organization: Association to Preserve Cape Cod, Inc.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP included a proposed plan for marine mammal and turtle protection during project construction and operation. APCC looks to the EIS process for an analysis to determine whether Mayflower Wind's proposed plan is consistent with federal standards and guidelines established for protecting marine mammals and turtles for offshore wind projects. APCC strongly encourages Mayflower Wind to officially adopt the best management practices and mitigation measures drafted in the agreement reached between Vineyard Wind and the Natural Resources Defense Council, National Wildlife Federation and Conservation Law Foundation for protection of the critically endangered North Atlantic right whale.

Comment Number: BOEM-2021-0062-DRAFT-0009-7
Organization: Association to Preserve Cape Cod, Inc.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Mayflower Wind COP includes an avian exposure risk assessment designed to be in accordance with BOEM guidance. The COP also includes an assessment of bat species that may be exposed to potential impacts of offshore and onshore project construction and operation. APCC looks to the EIS process for more discussion about potential impacts to avian and bat species and actions that can be taken to avoid, minimize and mitigate potential project impacts, especially for at-risk species.

Comment Number: BOEM-2021-0062-DRAFT-0012-18
Organization: Oceana
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Vessels should be required to carry and use protected species observers at all times when under way. Additionally, because visual sighting of whales, including NARWs is difficult, particularly in low light conditions, the EIS should include alternatives to require service vessels to complement observer coverage with additional monitoring technologies such as, infrared (IR) detection devices for whales and other protected species. Research suggests that a complementary approach combining human and technological tools is most effective for marine mammal detection. [Footnote 7: Smith, et al. 2020. A field comparison of marine mammal detections via visual, acoustic, and

infrared (IR) imaging methods offshore Atlantic Canada. Marine Pollution Bulletin. 154 (2020) 111026.] The EIS should include IR camera requirements in the range of wildlife observing alternatives. *Speed* Research suggests that reducing vessel speed will reduce risk of vessel collision mortality up to 86 percent for large whales like the NARW. [Footnote 8: Conn and Silber. 2013. Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales. *Ecosphere* (4)4. April, 2013. 1-16.] Due to the risk of ship strikes to NARWs in the project area, the EIS must include alternatives to limit vessels of all sizes associated with the offshore wind project to speeds less than 10 knots at all times.

Comment Number: BOEM-2021-0062-DRAFT-0012-19

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Consistent with NOAA regulations under the ESA for all vessels, aircraft, the EIS should include requirements that all vessels must maintain a separation distance of at least 500m from NARWs at all times with clear requirements to safely move away from NARWs that are detected within this range.

Comment Number: BOEM-2021-0062-DRAFT-0012-20

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To support oversight and enforcement of the conditions on the project the EIS should include alternatives requiring all vessels to be equipped with and using a Class A Automatic Identification System (AIS) device at all times while on the water. This should apply to all vessels, regardless of size, associated with the offshore wind siting, development, and operations of the project.

Comment Number: BOEM-2021-0062-DRAFT-0012-21

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS must include alternatives to specify and require all vessels associated with the project, at all phases of development, follow the vessel plan and rules including vessels owned by the developer, contractors, employees, and others regardless of ownership, operator, contract. Exceptions and exemptions will create enforcement uncertainty and incentives to evade regulations through reclassification and redesignation. BOEM can simplify this by requiring all vessels to abide by the same requirements, regardless of size, function, or other specifics.

The EIS must also include an alternative to specify that developers are explicitly liable for behavior of all employees, contractors, subcontractors, consultants, and associated vessels and machinery.

Comment Number: BOEM-2021-0062-DRAFT-0012-22

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Constructing an industrial facility in public federal waters will have effects on the marine environment. Some of these effects can be forecast and others are uncertain. To ensure effective oversight and administration of this project, the EIS must include a monitoring and research plan conducted transparently by NOAA or an independent party to assess and report the effects of the project on the ocean ecosystem including marine habitats, wildlife, fishery resources and protected species and changes compared to the baseline study.

Comment Number: BOEM-2021-0062-DRAFT-0012-23
Organization: Oceana
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The monitoring program included in the EIS should include, but should not be limited to, chemical and sonic monitoring, assessment of physical alteration of the seafloor, currents and winds, visual and acoustic surveys for protected species, and biological/ecological surveys for plankton abundance and marine wildlife presence and abundance.

Comment Number: BOEM-2021-0062-DRAFT-0012-24
Organization: Oceana
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Response plan The EIS must also include a detailed plan to respond to unintended and unforeseen effects on the marine environment and marine wildlife. This response plan must include thresholds for modification of the project's scope and duration if these conditions are met. There must also be a threshold for possible decommissioning if the project has unexpected effects.

Comment Number: BOEM-2021-0062-DRAFT-0012-25
Organization: Oceana
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The project will be a private enterprise conducted on shared public waters and as such, the EIS must include alternatives to require all phases of the project to subscribe to the highest level of transparency, including frequent reporting to federal agencies, requirements to report all visual and acoustic detections of NARWs and any dead, injured, or entangled marine mammals to NMFS or the Coast Guard as soon as possible and no later than the end of the Protected Species Observer shift.

Comment Number: BOEM-2021-0062-DRAFT-0012-26
Organization: Oceana
Commenter: Beth Lowell
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To foster stakeholder relationships and allow public engagement and oversight of the permitting, construction, and operation of the project the EIS must include alternatives to require all reports and data related to the project and its monitoring programs to be accessible on a publicly available website.

Comment Number: BOEM-2021-0062-DRAFT-0012-35

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

High resolution geophysical (HRG) surveys are an essential part of offshore wind development but have noted environmental effects on the marine ecosystem. As such, the EIS should include a range of alternatives to prohibit HRG surveys during seasons when protected species are known to be present in the project area, in addition to any dynamic restrictions due to the presence of NARW or other endangered species.

Comment Number: BOEM-2021-0062-DRAFT-0012-36

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, the EIS should include alternatives that require clearance zones for NARWs that extend at least 1,000 meters with requirements for HRG survey vessels to use Protected Species Observers (PSOs) and Passive Acoustic Monitoring (PAM) to establish and monitor these zones and to cease surveys if a NARW enters the clearance zone. When safe to begin, HRG surveys should use a soft start, ramp-up procedure to encourage any nearby marine life to leave the area.

Comment Number: BOEM-2021-0062-DRAFT-0012-37

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS must include alternatives to schedule and complete construction activities to minimize interactions with migratory species, spawning, feeding aggregations and breeding activity and specific seasonal and reactive restrictions on construction activity during times when NARWs and other protected species may be present.

Comment Number: BOEM-2021-0062-DRAFT-0012-38

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Offshore wind farm construction may include both driven piles and piles installed using vibratory techniques. Each of these produces disruptive noise in and around the project area and BOEM should include clear requirements on these activities to minimize the effects of the project. Specifically, the EIS should include a range of alternatives to prohibit pile driving during seasons when protected species are known to be present or migrating in the project area, in addition to any dynamic shutdown restrictions due to the presence of NARW or other endangered species.

Comment Number: BOEM-2021-0062-DRAFT-0012-39

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

If and when piling installation is permitted the EIS must include alternatives to require both acoustic and visual clearance zones to ensure protected species are not in the affected area. Oceana suggests that the EIS include an acoustic clearance zone that extends at least 5,000m in all directions from the location of the driven pile, including a visual clearance zone that extend at least 5,000m in all directions from the location of the driven pile and an acoustic exclusion zone of at least 2,000 meters from the location of the driven pile.

Comment Number: BOEM-2021-0062-DRAFT-0012-4

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana is supportive of offshore wind if it is responsibly sited, built, and operated throughout its lifespan. Proposed offshore wind projects need to consider, avoid, and mitigate effects to protected species, particularly on the critically endangered NARW to ensure that wind development will not come at the expense of the species.

Comment Number: BOEM-2021-0062-DRAFT-0012-40

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Acoustic monitoring should be undertaken using near real-time PAM, assuming a detection range of at least 10,000m, should be undertaken from a vessel other than the pile driving vessel, or from a stationary unit, to avoid the hydrophone being masked by construction related noise. PAM should be used during impact pile driving, vibratory pile driving installation of the cofferdam, and HRG surveys.

Comment Number: BOEM-2021-0062-DRAFT-0012-41

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Visual monitoring should use PSOs stationed at the pile driving site and on additional vessels, as appropriate, to enable monitoring of the entire clearance zone.

Comment Number: BOEM-2021-0062-DRAFT-0012-42

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Each vessel should have a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon per pile driving locations. Similar to the requirements for vessel monitoring, the EIS should also explore requirements to supplement human observer with IR technology and drones, where appropriate.

Comment Number: BOEM-2021-0062-DRAFT-0012-43

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Acoustic and visual monitoring should begin at least 60 minutes prior to the commencement or resumption of pile driving and should be conducted throughout the duration of pile driving activity. Visual observation of the Visual Clearance Zone should continue until 30 minutes after pile driving.

Comment Number: BOEM-2021-0062-DRAFT-0012-44

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Because avoidance of protected species is critical, the EIS should include a prohibition on initiating pile driving within 1.5 hours of civil sunset or in times of low visibility when the visual clearance zone cannot be monitored. Oceana understands that in rare circumstances pile driving must proceed after dark for safety reasons. If this occurs the project must notify NMFS with reasons and explanation for exemption and a summary of the frequency of these exceptions must be publicly available to ensure that these are the exception rather than the norm for the project.

Comment Number: BOEM-2021-0062-DRAFT-0012-45

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Despite the best information informing seasonal restriction on construction, it is likely interactions with NARWs will occur in and around the project site. The EIS must include alternatives to use effective reactive restrictions on construction that are triggered by visual or acoustic presence or other means of detection for protected species before or during piling installation. These alternatives should include:

- A prohibition on initiating pile driving if a NARW or other protected species is detected by visual or acoustic surveys within the acoustic or visual clearance zones.
 - A shutdown requirement if a NARW or other protected species is detected in the clearance zones, unless continued pile driving are necessary for safety. If and when this exemption occurs the project must immediately notify NMFS with reasons and explanation for exemption and a summary of the frequency of these exceptions must be publicly available to ensure that these are the exception rather than the norm for the project.
 - Pile driving may resume after the lead PSO confirms that no NARW or other protected species have been detected within the acoustical and visual clearance zones.
-

Comment Number: BOEM-2021-0062-DRAFT-0012-46

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should include alternatives to use best commercially available technology and methods to minimize sound levels from pile driving coupled with a robust monitoring and reporting program to ensure compliance.

Comment Number: BOEM-2021-0062-DRAFT-0012-47

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should include alternatives to require noise reduction technologies such as bubble curtains, noise mitigation systems, or sound dampeners. The projects shall achieve no less than 10dB (SEL) in combined noise reduction and attenuation, taking as a baseline, projections from prior noise measurements of unmitigated piles from Europe and North America.

Comment Number: BOEM-2021-0062-DRAFT-0012-48

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Compliance with these requirements is critically important and the EIS should include alternatives to require field measurements to be taken throughout the construction process including on the first pile installed. These compliance measurements should be taken by independent evaluators at intervals established to reduce observer bias and ensure full compliance with noise reduction requirements.

Comment Number: BOEM-2021-0062-DRAFT-0012-49

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Offshore energy projects will install hundreds of pilings and thousands of miles of cable in public waters. All offshore wind projects have a finite duration and will ultimately need to be decommissioned and removed from the ocean. The EIS must include alternatives to ensure decommissioning, removal and mitigation of the site occurs regardless of economic, political, or environmental factors. The EIS must therefore include alternatives to make developers explicitly responsible for removing offshore wind equipment when their project ends and further include alternatives to require offshore wind developers and operators to place adequate resources in trust to ensure that decommissioning will occur regardless of bankruptcy, change of ownership or lack of profitability. American taxpayers should not be responsible for decommissioning of this or any offshore wind project.

Comment Number: BOEM-2021-0062-DRAFT-0014-3

Organization: Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mitigate fishing industry concerns ie. siting of turbines and local job development•

Comment Number: BOEM-2021-0062-DRAFT-0014-5

Organization: Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands

Commenter: Susan Starkey

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Reduce and manage impacts on birds, sea turtles, whales, and other marine habitat

Comment Number: BOEM-2021-0062-DRAFT-0014-6

Organization: Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Provide plans and financial resources RE the landing of the cables on Cape Cod and integration/coordination with the impacted Towns of Falmouth and Somerset (have a Host Agreement in place with support/resources).

Comment Number: BOEM-2021-0062-DRAFT-0017-3

Commenter: Leslie Clift

Commenter Type: Individual

Comment Excerpt Text:

Noise reduction technologies should be applied during installation, operations, and decommissioning.

Comment Number: BOEM-2021-0062-DRAFT-0018-10

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

CZM suggests that Mayflower Wind coordinate with Massachusetts agencies on mitigation opportunities for avifauna impacts, including identifying opportunities to support conservation and habitat restoration or enhancement for protected avian species.

Comment Number: BOEM-2021-0062-DRAFT-0018-13

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Section 3.4 of the COP briefly describes the intake of seawater to cool electrical equipment associated with the use of an offshore DC converter station. The EIS should fully describe the expected daily and annual volume of seawater necessary to cool the DC converter station and steps that Mayflower will take to minimize the entrainment and impingement of organisms at the point of intake including a description of regular operational procedures to inspect the cooling water intake system, its screens and other entrainment prevention apparatus, and remediation measures that will be taken if intake velocity is found to be in excess of 0.5 fps or if impacts to target species are observed.

Comment Number: BOEM-2021-0062-DRAFT-0018-16
Organization: Massachusetts Office of Coastal Zone Management
Commenter Type: State Agency

Comment Excerpt Text:

The EIS should also provide the details of a monitoring program for verifying the modeled turbidity and total suspended solids during the construction process and for monitoring the recovery of benthic habitats after construction.

Comment Number: BOEM-2021-0062-DRAFT-0018-2
Organization: Massachusetts Office of Coastal Zone Management
Commenter Type: State Agency

Comment Excerpt Text:

The EIS should describe a fisheries and benthic research plan that describes how Mayflower Wind will coordinate with other developers to better understand and report on project-specific and regional effects upon fisheries species.

Comment Number: BOEM-2021-0062-DRAFT-0018-4
Organization: Massachusetts Office of Coastal Zone Management
Commenter:
Commenter Type: State Agency

Comment Excerpt Text:

Based on this information, the EIS should outline the actions that will be taken to prevent vessel strikes during pre-construction surveys, construction activity, and operations. The EIS should also describe what techniques will be used to mitigate sound impacts to marine mammals during the installation of the wind turbine bases and monopiles.

Comment Number: BOEM-2021-0062-DRAFT-0018-6
Organization: Massachusetts Office of Coastal Zone Management
Commenter Type: State Agency

Comment Excerpt Text:

As with the fisheries research, the EIS should report how Mayflower Wind is working with other offshore wind developers and the broader research community to share information so that federal and state agencies and the public can better understand and mitigate for regional impacts to marine mammals that are associated with the construction or operation of offshore wind energy projects.

Comment Number: BOEM-2021-0062-DRAFT-0018-7
Organization: Massachusetts Office of Coastal Zone Management
Commenter Type: State Agency

Comment Excerpt Text:

Mayflower Wind should use the Avian Exposure Risk Assessment (AERA) results in COP Appendix I1 to prepare a focused avian monitoring and mitigation plan in the EIS.

Comment Number: BOEM-2021-0062-DRAFT-0018-9
Organization: Massachusetts Office of Coastal Zone Management
Commenter Type: State Agency

Comment Excerpt Text:

In addition to monitoring, the EIS should describe specific mitigation strategies for avoiding or minimizing impacts to avifauna including, but not limited to: bird-deterrent devices, a Piping Plover protection plan for landside construction activities including monitoring and training of construction personnel, Aircraft Detection Lighting Systems on the wind turbine generators, bird mortality monitoring, and coordination with the U.S. Fish and Wildlife Service (USFWS) and the Massachusetts Natural Heritage and Endangered Species Program (NHESP) to support migration monitoring via Motus wildlife tracking tags and installation of telemetry receiving stations.

Comment Number: BOEM-2021-0062-DRAFT-0021-16
Organization: New England and Mid-Atlantic Fishery Management Councils
Commenter Type: Other

Comment Excerpt Text:

In addition, we recommend time of year construction restrictions including for the cable corridors to reduce impacts to fishery species. For example, offshore, piling driving restrictions between November and January would help minimize impacts on spawning Atlantic cod that are known to occur along the Brayton Point cable corridor while construction restrictions to avoid sedimentation during the summer would minimize impacts on longfin squid egg mops. The COP notes that during construction and decommissioning, the project will seek to avoid, minimize, and mitigate impacts to marine organisms, specifically calling out sturgeon and winter flounder, through certain time-of-year restrictions (COP Vol. 2, Table 16-1). The EIS should acknowledge the tradeoffs associated with reducing the amount of construction activity and associated impacts during one time of year as this will require an increase in construction during other times of year when different species and different fisheries may be more vulnerable to impacts.

Comment Number: BOEM-2021-0062-DRAFT-0021-17
Organization: New England and Mid-Atlantic Fishery Management Councils
Commenter Type: Other

Comment Excerpt Text:

For all alternatives, the EIS should be clear on which measures to avoid, minimize, or mitigate negative impacts will be required as opposed to discretionary. Only required measures should influence the impacts conclusions in the EIS. Monitoring studies should be described in the EIS and in the COP but should not be considered environmental protection measures as monitoring is not equivalent to mitigation. Avoidance, minimization, and compensation for negative impacts should all be considered, with compensation thoroughly planned for and used if avoidance or mitigation are not possible or are not achieved. Avoidance should be the first priority.

Comment Number: BOEM-2021-0062-DRAFT-0021-30

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

COP Vol. 2, p. 16-30 includes a brief mention on the availability of gear loss claim funds if warranted due to entanglement and snags; however, compensation funds for displacement and opportunity loss of commercial and recreational fisheries due to the presence and operation of wind turbines are not explicitly referenced. Mitigation and compensation funds should be explained in much further detail and must be available to all affected vessels and ocean users who rely on this project area for revenue. The availability of such funds and their influence on impacts determinations should be explained in specific detail in the EIS. On November 12, 2021, several states sent a letter requesting that BOEM develop a fisheries compensation framework. BOEM recently published a request for information and is hosting a series of meetings to develop mitigation guidance. We support these efforts.

Comment Number: BOEM-2021-0062-DRAFT-0026-17

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

If BOEM proceeds to prepare an EIS for this project, a detailed list of mitigation measures that should be included as alternatives to the proposed action is provided in the final section of this letter.

Comment Number: BOEM-2021-0062-DRAFT-0026-23

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

The EIS must also consider a range of alternatives including all reasonable mitigation options to avoid impingement and entrainment of all marine species, so that BOEM may meet the statutory obligation to ensure the “location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” [Footnote 13: 33 U.S.C. § 1326(b)]

Comment Number: BOEM-2021-0062-DRAFT-0026-24

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

RODA has concerns over the ability of the turbines to operate safely year-round based on local environmental conditions. RODA has raised, in previous comment letters, the topic that turbines are known to ice over and create safety hazards. Developer representatives have indicated that they do not believe icing is not an issue in this region, raising doubt whether they are likely to investigate best available de-icing technology. Icing is a major safety concern for the fishing industry as they do not want to be put at risk from ice falling off turbines while operating near them (depending on whether conditions allow that). It is not clear in the COP what de-icing technologies are available and whether they would be incorporated into the project design envelope.

Comment Number: BOEM-2021-0062-DRAFT-0026-26
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

Once avoidance, minimization, and mitigation measures have been exhausted through project design, impact fees to compensate for residual damage to regional seafood production must be required as a condition of any future permit. Fishing industry requests and positions regarding impact fees are well documented: RODA and our members have repeatedly urged BOEM for years to coordinate, or at least require development of, an appropriate regional-scale fisheries compensatory mitigation plan. Only very recently has BOEM indicated for the first time that it intends to engage the fishing community in dialogue regarding compensation on a project-specific or cumulative scale. BOEM has an ethical and scientific obligation to recognize a process for developing an impact fees framework only if it is driven by the fishing industry and fisheries science experts in a transparent and participatory manner.

As a reminder, compensatory mitigation alone is not sufficient to meet NEPA requirements of avoiding, minimizing, and mitigating impacts to fisheries, nor does its implementation assure that an OSW project has been designed in a way that does not unreasonably interfere with fishing operations. However, customary practice supports compensatory mitigation for fisheries impacts after efforts to minimize and mitigate impacts have been fully employed. From an equity perspective, fishermen are by far the most impacted group with respect to OSW development. Despite this, financial offsets offered to fishermen pale in comparison to those invested by OSW developers, investors, and supporters to other interests. Approaches to impact fees must be developed by an independent party that is not able to be influenced by OSW advocates. RODA is in the final stages of preparing guidelines from the seafood industry on impact fees which will be available on our website soon.

Comment Number: BOEM-2021-0062-DRAFT-0026-33
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

We take to heart recent requests from BOEM and OSW developers to include specific, actionable requests for fisheries mitigation measures to be included for consideration. Thus RODA recommends, at a minimum, the following alternatives for inclusion in the EIS and anticipate requesting additional specific measures as project plans and permitting develop:

- Transit lanes of 4 nm to allow safe transit of all mariners especially in inclement weather
- Available technologies and practices for the safety of all mariners operating in the vicinity of the WEA and for minimizing environmental impacts in the following areas:
 - De-icing o Cable mattressing
 - Scour protection
 - Cooling station
 - Communication at sea

- Radar interference
 - Vessel traffic
 - Range of cable burial depths
 - Performing “micrositing” of turbines, cables, substation(s), and CWIS with fishermen
 - Monitoring fisheries impacts for the life or projects, especially changes in larval populations put at risk by the CWIS
 - Requirements that would minimize the environmental impacts of project decommissioning
 - No-surface occupancy areas with the lease area, if robust scientific analysis indicates the presence of important spawning and/or habitat areas
 - Time of year restrictions during construction, operations, and decommissioning
 - No-build setbacks from any important spawning/habitat areas
-

Comment Number: BOEM-2021-0062-DRAFT-0027-13

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mitigates risks associated with potential impacts to fisheries

Comment Number: BOEM-2021-0062-DRAFT-0027-14

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Protects marine ecosystems by avoiding, minimizing, mitigating and monitoring environmental impacts.

Comment Number: BOEM-2021-0062-DRAFT-0027-2

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Avoiding

sensitive habitat areas, requiring strong measures to protect wildlife throughout each state of the development process, and comprehensive monitoring of wildlife and habitat before, during, and after construction, are all essential for the responsible development of offshore wind energy.

Comment Number: BOEM-2021-0062-DRAFT-0028-4

Organization: New England for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

Finally, we can protect wildlife and ecosystems through requiring the use of best management practices informed by the latest science and technological innovation. We have the power to do all of this – and we must.

Comment Number: BOEM-2021-0062-DRAFT-0030-12

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Anticipated environmental impacts and the effect on corresponding permit conditions should be specified for each option, particularly concerning steps necessary to minimize and mitigate impacts.

Comment Number: BOEM-2021-0062-DRAFT-0030-13

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The scope of each alternative should evaluate how the project may impact benthic habitats in the project area and consider, for example, how Nature-Based Design of scour protection and cable mattresses might potentially provide benthic/fishery habitat mitigation and enhancement opportunities, necessary mitigation for marine mammals, marine life and benthic habitat, and other operational permit conditions relative to each alternative. Structuring the EIS in this manner is critical to identifying and fully understanding the benefits and impacts associated with each foundation type. In order to transition from an offshore wind industry that routinely selects monopiles as the standard foundation to an industry that completely avoids pile driving noise impacts during installation, then project applicants' determinations that gravity-based and suction bucket foundations are reasonably available and viable options must also be translated by BOEM into alternatives that clearly spell out the varying applicable permit conditions so that project complexity, costs and viability are more assessable by the project applicants and the public. For example, projects that do not require pile driving may not be constrained by permit conditions aimed at minimizing and mitigating pile driving noise, such as seasonal or daily construction windows, exclusion zones, and expensive noise mitigation techniques. It is important to illuminate these distinctions as early as possible for this project, and to inform other developers that are still factoring the cost/benefit of various types of alternative quiet foundation types for other projects, including, but not limited to, the projects anticipated to occur within the existing and pending lease areas along the East Coast.

Comment Number: BOEM-2021-0062-DRAFT-0030-14

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is incumbent on BOEM to utilize the NEPA process in a way that directs developers to design their projects in the first instance to avoid environmental impacts by selecting the best foundation and turbine types for avoiding those impacts. Selecting design options that impacts in the first instance is without question the primary objective of the mitigation hierarchy and then, only after all reasonably available options for avoiding impacts have been employed, do the "minimizing" and then "mitigating" impacts come into frame. Avoiding exposure of marine wildlife to pile driving noise unequivocally represents the best practice.

Comment Number: BOEM-2021-0062-DRAFT-0030-20

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Articulation of a noise threshold at the early stages of planning will provide time and flexibility for the developers to choose how to keep construction noise below that threshold, perhaps even steering project applicants to foundation and turbine technologies that will not exceed) the threshold at the start. Without a detailed description of what the anticipated pile driving noise will be at its source, all stakeholders involved are challenged to ascertain whether and how mitigation will be achieved by any specific noise reduction requirement. Therefore, absent articulation of a specific noise threshold, required noise mitigation should not be limited to a set dB reduction but instead should include use of best technology available or combination of approaches which have the potential to far exceed a minimal dB reduction. We urge requiring in field testing of the efficacy of noise mitigation approaches, mandatory public sharing of testing results, and making continual adjustments and improvements within and among projects using an adaptive management approach.

Comment Number: BOEM-2021-0062-DRAFT-0030-21

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition, as the Conservancy has previously recommended, requiring a thorough network of non-proprietary sound monitoring stations within the Offshore Project Area is key to providing real-time data that can support ongoing research and monitoring projects, and can inform foundation and turbine technology requirements for future projects, best management practices, permit conditions, and make adaptive management more than a theoretical tagline. Ultimately, this kind of monitoring will enable BOEM to establish noise thresholds for pile driving and operation and maintenance activities associated with the offshore wind industry. NOAA and BOEM recently released recommendations for using passive acoustic monitoring for offshore wind [Footnote 4: <https://www.frontiersin.org/articles/10.3389/fmars.2021.760840/full>], which we encourage BOEM to operationalize into required permit conditions.

Comment Number: BOEM-2021-0062-DRAFT-0030-3

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the goal and purpose of BOEM's authority in the context of its National Environmental Policy Act (NEPA) review is to determine whether to approve, approve with modifications, or disapprove the Mayflower Wind COP, BOEM's great opportunity to further our collective understanding and fully develop the range of environmental benefits associated with the various foundation technologies, installation and mitigation approaches proposed in the Mayflower Wind COP as feasible should not be missed. As the offshore wind industry advances so too do the technologies that might allow for avoidance of, or significant minimization of, environmental impacts ordinarily associated with offshore wind construction and operation.

Comment Number: BOEM-2021-0062-DRAFT-0030-6

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3) BOEM should require monitoring for the magnitude and extent of sound propagation during pile driving during construction to inform future foundation technology choices

Comment Number: BOEM-2021-0062-DRAFT-0033-10

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

Implementing an adaptive management plan and on-going citizen participation: Public outreach and stakeholder engagement is necessary to properly inform the EIS and future phases of construction and operation. DOS encourages continued coordination with the Fisheries Technical Working Group (F-TWG) managed by New York State Energy & Research Development Authority) and recommends outreach to other New York State commercial and for-hire fishermen and fishing organizations as part of the developer's stakeholder outreach (e.g., Long Island Commercial Fishing Association).

Comment Number: BOEM-2021-0062-DRAFT-0033-12

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

o An adaptive management plan and strategy for ongoing citizen participation.

Comment Number: BOEM-2021-0062-DRAFT-0034-13

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

• Construction Impacts to Marine Mammals:

o During construction, there are a number of measures for protection of marine mammals which should be thoroughly addressed, particularly that for the Northern American Right Whale (NARW) and the Finback. This issue is thoroughly addressed in Wind Energy Plan for Dukes *County*, available on the MVC website

http://www.mvcommission.org/sites/default/files/docs/Wind_Energy_Plan_for_Dukes_County_web.pdf

? Surveys conducted in the Project Area indicated NARW are common in the project area. There are very effective protective measures available. Because these whales are seriously threatened with extinction, protection should rise above avoidance of a core habitat. These whales migrate through Vineyard waters and vicinity in the spring and fall on their way to and from summer grounds in Cape Cod Bay and vicinity. The best protection for these whales is a temporal-based avoidance of ship strikes and other construction impacts. The Marine Mammal Protection Act requires vessels to cease activities when one of these whales is sighted. MVC recommends the further protection of employing passive acoustic

monitoring to inform the crew of nearby Right Whales. They are very vocal and spend quite a bit of time underwater. Listening for them alerts the crew long before a watchstander may sight a whale at the surface. ? Although the Right Whales just pass through, the waters south of the Vineyard do support a resident summer population of Finback whales. It is more feasible to avoid Finback impacts by avoiding the time and space where they spend the summer. Details are included in the *Wind Energy Plan for Dukes County* and references identified therein.

Comment Number: BOEM-2021-0062-DRAFT-0034-7
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

Construction impacts will restrict navigation in some fishing grounds short-term. This short-term conflict may result in loss of income, boats or homes by those boat owners. There should be a mitigation plan with substance.

Comment Number: BOEM-2021-0062-DRAFT-0034-9
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

Some mitigation measures for conflicts of operation have been explored and are included in the proposal. This shows a willingness on the part of the proponent to communicate and plan well. Impacts should be avoided wherever possible. Even with appropriate avoidance of conflict, it seems inevitable that there will be some negative impact. There should be a mitigation/compensation plan with substance and again, account for the need to re-assess longer term shifts in marine life habitat and migratory patterns.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-101
Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, the Draft EIS should explicitly outline the implementation of collision detection and minimization measures during the operation of the Project and other offshore wind areas. Under the ESA and MBTA, developers are responsible for any take of migratory birds and ESA-listed species. However, without appropriate monitoring for collision detection, large collision events could have serious population-level impacts to migratory songbirds and shorebirds without any recourse. This is not an acceptable outcome, and BOEM must require the developer to create a plan to address this concern.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-112
Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

8. The Draft EIS Should Outline BOEM's Expectation for Monitoring and Adaptive Management Meant to Address Realized Impacts to Birds Resulting from Project Construction and Operation

In addition to accounting for potential avian impacts in the Draft EIS, as we have reiterated repeatedly herein, the developer must provide its plan to monitor bird activity in the Project area and the surrounding area before, during, and after construction. We suggest that BOEM clearly outline monitoring requirements and coordinate with other stakeholders, including Rhode Island and Massachusetts state agencies, and the Regional Wildlife Science Entity, to support the development of a regional monitoring plan for birds and other wildlife.

Monitoring for adverse effects requires multiple modes of evaluation in a coordinated framework pre- and post-construction. Radar, vessel and aerial surveys, acoustic monitoring, and telemetry are all complementary tools that provide data necessary for evaluating impacts, though none of these tools provides the full picture when used alone.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-113

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

a) Collision Monitoring

Post-construction fatality monitoring onshore is a key component of Tier 4 of the USFWS Land-Based Wind Energy Guidelines. [Footnote 389: U.S. Fish and Wildlife Service. 2012. U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. OMB Control No, 10180148. U.S. Department of Interior, Fish and Wildlife Service, Hadley, MA. Available from https://www.fws.gov/ecologicalservices/es-library/pdfs/WEG_final.pdf.] Many wind projects onshore conduct post-construction monitoring, especially on public lands managed by the Department of Interior's Bureau of Land Management.

Developers survey for carcasses around a radius from the turbines, under an *a priori* protocol, to determine avian mortality rates. The data are adjusted for searcher efficiency, carcass persistence, and other sources of bias.

This practice is entirely impractical at sea for obvious reasons, however, that does not relieve BOEM from requiring post-construction fatality monitoring—an obligation that the onshore wind industry has committed to and is required to fulfill. There is ongoing, rapid development of imaging and bird strike technologies used in the European Union and the United Kingdom, and such technologies are also being developed in the United States. Grant funding from the Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy, state energy agencies, and others supports technical and economic advancement of offshore and onshore wind. The DOE Wind Energy Technologies Office invests in energy science research and development activities that enable the innovations needed to advance wind systems, reduce the cost of electricity, and accelerate the deployment of wind power.

DOE has recently funded development of collision detection technology from the Albertani Lab [Footnote 390: Clocker K, Hu C, Roadman J, Albertani R, Johnston ML. 2021. Autonomous Sensor System for Wind Turbine Blade Collision Detection. IEEE Sensors Journal:1–1.] at Oregon State University and WT Bird from WEST, Inc.[Footnote 391: Verhoef JP, Eecen PJ, Nijdam RJ, Korterink H, Scholtens HH. 2003. WT-Bird A Low Cost Solution for Detecting Bird Collisions:46.] Similar technologies are being tested at Block Island Wind Project and other offshore locations in the European Union and United Kingdom and are making rapid gains in being effective, officially verified, commercially available, and affordable at scale in the near future, possibly at the same time as the Project would be ready for construction and operation. [Footnote 392: Dirksen S. 2017. Review of methods and

techniques for field validation of collision rates and avoidance amongst birds and bats at offshore wind turbines. Sjoerd Dirksen Ecology.] However, these technologies must be fully integrated into turbine design before they can be deployed. DOE is currently evaluating the development status of these integrated systems based on their readiness for offshore wind deployment. [Footnote 393: Brown-Saracino J. 2018. State of the Science: Technologies and Approaches for Monitoring Bird and Bat Collisions Offshore. RENEWABLE ENERGY:23. Available at https://www.briloon.org/uploads/BRI_Documents/Wildlife_and_Renewable_Energy/NYSERDA_workshop_JocelynBrown-Saracino.pdf.] BOEM must support the development of these technologies and must drive turbine developers to integrate these systems into their turbine designs. We cannot wait on offshore wind project developers to drive the market, BOEM must require this type of collision monitoring and work with the industry to support the development of these technologies to make deploying them a reality.

The incorporation of these new monitoring technologies, and hopefully a standardized technology, should be a required element in the post-construction monitoring plan for the Project. BOEM should require standardized methodology for using these new technologies across all projects in the Atlantic OCS to incorporate mortality data, and possibly displacement data, into ongoing cumulative effects analyses and adaptive management strategies, to validate collision risk models, and to measure impacts on ESA-listed species and other species of conservation obligation by augmenting tracking data with data from on-site detection technology.

Many of the offshore wind projects to date (Mayflower Wind provides no plan to monitor collisions) have suggested in their COPs that mortality monitoring can rely on carcass monitoring around the base of the offshore wind turbines. This is contrary to the standard protocol for post-construction monitoring at onshore wind projects, where a radius from the turbine is prescribed as the search area and includes where birds may be propelled or thrown from the actual turbine structure and blades after collision. The offshore structures anticipated to be installed have very little available structure on which a dead or injured bird could land. Defining the structure as a search area, if it means the turbine base or nacelle (since no injured or dead birds could be found on the blades), is woefully inadequate. Only updated technology will detect bird strikes or mortalities in the appropriate range established by onshore post-construction mortality studies. The Draft EIS must address this inadequacy in the COP and mandate a protocol for adequately monitoring mortality events.

The Draft EIS should specifically require the adoption of collision detection technologies when they are verified and commercially available and BOEM should support their development and testing. The shared cost of development and implementation of these technologies across all lessees and with BOEM, if standardized, would avoid an undue economic burden on individual projects.

Additionally, BOEM must require that lease applicants report mortality events promptly and publicly.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-114

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Monitoring for Displacement and Barrier Effects

Within the Final EISs for both the South Fork and Vineyard Wind 1 Projects, BOEM proposed that the industry develop a monitoring framework in coordination with the federal and state jurisdictions, to include, at a minimum:

- Acoustic monitoring for birds and bats;
- Installation of Motus receivers on WTGs in the WDA and support with upgrades or maintenance of two onshore Motus receivers;
- Deployment of Motus tags to track roseate terns, common terns, and/or nocturnal passerine migrants;
- Pre- and post-construction boat surveys;
- Avian behavior point count surveys at individual WTGs; and
- Annual monitoring. [Footnote 394: SFWF FEIS at G-6, Table G-2.]

We support these admirable expectations and expect that BOEM will expand on this framework in the Draft EIS to specify how this monitoring should be carried out to collect the best available data.

Monitoring pre- and post-construction should be designed in such a way as to be able to discern any changes to avian spatial distribution that might result from construction and operation of the Project. A monitoring plan should incorporate the suggestions previously provided to BOEM on October 23, 2020 via the Avian Considerations recommendations [Footnote 395: "Re:BOEM's obligations under Migratory Bird Treaty Act in Vineyard I Construction and Operation Plan Environmental Impact Statement." Submitted to BOEM Oct. 23, 2020; Available here: https://drive.google.com/file/d/1SNv6_3296W_S-c-OgMsfikDAGFu7fOr4/view?usp=sharing] as well as recommendations provided to BOEM from the Atlantic Marine Bird Cooperative.

More specifically, we recommend that efforts to track avian movement include both satellite and automated radio telemetry, as appropriate, and these efforts should not be limited to Roseate Terns, Common Terns, and nocturnal passerine migrants. Technically speaking, while the passive radio telemetry receivers for these efforts are considered part of the Motus network, the tags themselves are VHF and ultra high frequency radio transmitters. Recommendations by USFWS Northeast Migratory Bird Office should be followed when deploying receivers and tags, using the specifications best able to capture migratory routes in the offshore environment. As we have specified to BOEM previously, we further suggest that transect surveys be accompanied by telemetry and radar studies. Radar surveys can provide a broad overview for comparison of flight paths, especially for nocturnal migrants which could not be captured during daytime survey efforts, [Footnote 396: Desholm M, Kahlert J. 2005. Avian collision risk at an offshore wind farm. *Biology Letters* 1:296–298. Royal Society.] while telemetry, especially satellite telemetry with pressure sensors, can gather high resolution distribution and flight path data for priority species.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-116

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

10. Adaptive Management and Mitigation for Birds

The Draft EIS should provide more certainty that the developer will use adaptive management for birds and collect "sufficiently robust" data to inform mitigation strategies to avoid, minimize, and mitigate impacts to birds.

According to USFWS Wind Energy Guidelines (2012), [Footnote 401: USFWS (2012).] DOI has adopted the National Research Council's 2004 definition of adaptive management, which states:

Adaptive management promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a ‘trial and error’ process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-117

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Further, the Supplement to the Draft EIS for the Vineyard Wind 1 project acknowledged that:

Adaptive management could be used for many resources, particularly regulated fisheries and wildlife resources (including birds, benthic resources, finfish, invertebrates, essential fish habitat, marine mammals, and sea turtles), which would be closely monitored for potential impacts. *If data collected are sufficiently robust, BOEM or other resource agencies could use the information obtained to support potential regulation changes, or new mitigation measures for future projects.* [Footnote 402: VW1 SEIS, Table A-10 (emphasis added).]

The Final EIS for the South Fork stated:

BOEM worked with USFWS to develop standard operating conditions for commercial leases and as terms and conditions of plan approval and are intended to ensure that the potential for adverse impacts on birds is minimized. The standard operating conditions have been analyzed in recent EAs and consultations for lease issuance and site assessment activities, and BOEM’s recent approval of the Virginia Offshore Wind Technology Advancement Project. Some of the standard operating conditions originated from best management practices in the ROD for the 2007 Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf. BOEM and USFWS work with the lessees to develop post-construction plans aimed at monitoring the effectiveness of measures considered necessary to minimize impacts to migratory birds with the flexibility to consider the need for modifications or additions to the measures. [Footnote 403: SFWF FEIS at H-42 (internal citations omitted).]

To provide regulatory certainty to lease applicants, the draft EIS should explicitly outline protocols for monitoring, adaptive management, and mitigation.

The South Fork Final EIS suggests "bird deterrent devices to minimize bird attraction to operating turbines. [Footnote 404: Id. at G-6, Table G-1.] However, the specifics of such measures are not provided but the South Fork Draft EIS suggested that painting a turbine blade black and widely spacing wind turbines may reduce collision risk. [Footnote 405: Id., Table G-2.] Should BOEM make black turbine blades a requirement for the Project, it could provide an excellent opportunity to institute adaptive management, by studying their efficacy in reducing collisions in order to inform best management at future wind farms. [Footnote 406: Roel May et al., *Paint it black: Efficacy of increased wind turbine rotor blade visibility to reduce avian fatalities*, ECOLOGY & EVOLUTION (July 26, 2020).] Painting a blade black to reduce motion smear is likely to be more effective for birds active during daylight hours compared to nocturnally active ones (e.g., nocturnal migrants and nocturnally foraging terns). However,

as we have addressed previously, widely spacing turbines is not a minimization strategy, as there is little evidence to suggest that turbine spacing reduces risks to birds. However, this too could provide an opportunity to learn from this management practice and adapt management for future wind developments from this knowledge.

Instituting adaptive management, using the two strategies above as examples, will require robust collision monitoring. As we have noted in this document and in other letters to BOEM, collecting bird carcasses is an inadequate method for estimating collisions in the offshore environment. Instead, collision monitoring will need to use technology from which we can rapidly learn the variables contributing to collision risk and adjust management accordingly—including informed curtailment strategies as necessary. Collisions with turbines over water are unlikely to result in a confirmation of the strike without detection technology. This will continue to be a data deficiency in the monitoring plans. We are concerned that a continued lack of collision data will be misconstrued as a lack of need for collision mitigation. Therefore, BOEM must correct this knowledge gap by requiring a true commitment to collision detection technology deployment at offshore wind developments, Mayflower Wind included.

The framework for adaptive management should include operational adjustments that are reasonable and cost effective and include advances in detection and avoidance technology. For example, the adaptive management framework should include smart curtailment to constrain loss of energy production, seasonal adjustments based on mortality data as needed to compare with defined thresholds, and other operations that are proven to be effective in case of a rare event of mortality of a significant species or number of birds. These are practices used in adaptive management at some onshore wind facilities and in European Union offshore wind facilities. Their incorporation into the leasing process early will permit BOEM to require their adoption as new technologies become available.

An adaptive management framework requires a level of coordination and commitment that goes well beyond Mayflower Wind. BOEM and USFWS must commit to providing a structure that ensures this across the offshore wind landscape.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-118

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

11. Compensatory Mitigation for Birds

Compensatory mitigation is another tool that should be used to offset adverse impacts from the Project.

Given the current technology, there are no viable options for effectively minimizing the potential impacts of developing the Project to the extent needed to protect birds from harmful and long-term impacts. Furthermore, migratory birds pose significant conservation challenges, as many originate from other regions and actions to increase their populations require significant investment of time and resources to restore equivalent habitat. The breadth of species potentially affected and the migratory nature of these species will require environmental compensatory mitigation.

The number of birds affected is uncertain due to the lack of available technology to accurately measure impacts (e.g., collisions) on a species level or the fate of those birds after a collision event (e.g., injury, morbidity, or mortality). We further note that, as discussed above, the agencies still have conservation obligations under frameworks, including ESA and MBTA. Based on studies of ESA-listed species alone (discussed above), it seems likely that birds protected by federal laws will be killed in collisions with turbines under the currently anticipated industry build-out scenario. As such, compensatory mitigation

should be provided for bird mortality resulting from development of the WEAs, and particularly for species of conservation concern.

Directed mitigation can result in meaningful beneficial outcomes. For example, the Montrose restoration, a \$63 million mitigation package compensated for migratory seabirds in Mexico, contributed to efforts which led to the recovery and delisting of Pacific Brown Pelican. [Footnote 407: Endangered and Threatened Wildlife and Plants; Removal of the Brown Pelican (*Pelecanus occidentalis*) From the Federal List of Endangered and Threatened Wildlife, 74 Fed. Reg. 59444 (November 17, 2009). <https://www.federalregister.gov/documents/2009/11/17/E9-27402/endangered-and-threatened-wildlife-and-plantsremovalof-the-brown-pelican-pelecanus-occidentalis>.]

Mitigation more effectively compensates for impacts when conducted on a project and population-specific basis. This model is encouraged for offshore wind energy development impacts. However, if a project-by-project approach proves difficult to operationalize, a compensatory mitigation fund could be developed and administered by trustees of federal agencies. Following the model of other forms of development, this would most appropriately be funded by the developers whose actions are resulting in the impacts, with funding amounts based on likely or actual impacts (see below).

Quantifying compensatory mitigation for birds should initially be based on a generous estimate of the number of birds that could be killed in collisions with turbines, including ESA-listed species and nocturnal migrants. Evaluating mitigation necessary to effectively compensate for these losses should utilize resource equivalency analysis, which accounts for the fact that birds at different life stages do not functionally equate in conservation importance (e.g., one additional hatchling does not functionally replace a breeding adult bird). This approach has been used extensively for addressing bird losses resulting from oil spills and contaminants in California. For example, under NEPA, the Damage Assessment and Restoration Plan / Environmental Assessment for the Luckenbach Spill called for a number of mitigation projects to compensate for the losses of migratory birds in distant countries where those species originate, such as Mexico, Canada, and New Zealand, in the amount of \$21 million. [Footnote 408: Luckenbach Trustee Council. 2006. S.S. Jacob Luckenbach and Associated Mystery Oil Spills Final Damage Assessment and Restoration Plan/ Environmental Assessment. Prepared by California Department of Fish and Game, National Oceanic and Atmospheric Administration, United States Fish and Wildlife Service, National Park Service.] Quantities and supporting analyses should be re-evaluated as collision monitoring data become available and additional mitigation provided as necessary.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-119

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Compensatory mitigation requirements under the ESA were essentially ignored by the previous administration. We urge the current administration to observe compensatory mitigation requirements for species currently listed and under listing consideration for the ESA which may be impacted by offshore wind development: Piping Plover, Red Knot, Roseate Tern, and Black-capped Petrel.

Seabirds are long lived and have delayed maturity and low fecundity. This life history means that adult survival is the main driver of population change. Mortality from offshore wind energy development is likely additive and, if skewed to breeding adults, will likely have a greater potential to drive declines in population trajectories. These unique life-history traits require a substantial and long-term commitment to reach the offset needed. Given that compensatory mitigation is time-consuming from concept to success, we urge the developers and agencies to commit to this and initiate action as soon as possible.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-121

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

1. BOEM Must Require a Rigorous Monitoring Plan to Better Understand Bat Risk Offshore and Not Base Risk Analyses on Pre-construction Presence

Recognizing that much remains unknown regarding the impacts to bats from offshore wind in the United States, BOEM must require an explicitly defined monitoring and adaptive management plan. This plan must include a commitment to standardized monitoring both before construction and during operations and should be made available for public review and comment. Additionally, because technologies to improve understanding of and reduce bat risk offshore (e.g., strike detection and deterrent technologies) are likely to be developed over the life of Mayflower Wind, the Draft EIS for Mayflower Wind should specifically require the adoption of monitoring technologies when they are verified and commercially available as part of the Project's monitoring framework and protocol.

Determining risk and adaptively managing to minimize impacts relies on monitoring, but traditional fatality monitoring is not feasible offshore. Given the challenges of conducting fatality assessments at offshore sites, [Footnote 417: Kunz, T.H., Arnett, E.B., Cooper, B.M., Erickson, W.P., Larkin, R.P., Mabee, T., Morrison, M.L., Strickland, M.D., and Szewczak, J.D., "Assessing impacts of wind energy development on nocturnally active birds and bats: a guidance document," *Journal of Wildlife Management*, vol. 71, pp. 2449-2486 (2007); Rydell, J., Bach, L., Dubourg-Savage, M., Green, M., Rodrigues, L., and Hedenstrom, A., "Bat mortality at wind turbines in northwestern Europe." *Acta Chiropterologica*, vol. 12, pp. 261-274 (2009).] many dead or injured bats would most likely go unrecorded, either falling into the water or becoming prey to marine scavengers or predators. [Footnote 418: Assessing bat fatalities based on carcasses found on vessel and structures is unlikely to provide a meaningful estimate of bat fatalities, as carcasses can fall far from the wind turbine, based on carcass size, wind speed, turbine height, and other factors. We recommend BOEM consult with Manuela Huso, Research Statistician at United States Geological Survey Forest and Rangeland Ecosystem Science Center prior to making any inferences about total fatalities based on carcasses recovered from structures.] BOEM's assessment of the impacts to bats should, therefore, be conservative, and employ the best available scientific methods, such as autodetection, acoustic monitoring at nacelle height, targeted tagging of bats, and thermal imaging technology. BOEM should also support research into monitoring methods for bats that are better suited to the offshore environment.

Acoustic surveys are an important tool for understanding bat activity offshore but, unlike other recent proposed offshore wind projects, [Footnote 419: E.g., Atlantic Shores, Sunrise Wind, Kitty Hawk, and Coastal Virginia Offshore Wind Commercial Project.] Mayflower Wind has not conducted offshore surveys for bats. BOEM should require pre-construction bat surveys and also require developers and their consultants to publish the full dataset collected and submit all bat acoustic data to the Bat Acoustic Monitoring Portal, BatAMP. [Footnote 420: <https://batamp.databasin.org/>] Additionally, Mayflower Wind's Bat Risk Assessment relies, in part, on acoustic surveys that are not publicly available (e.g. Stantec 2018). [Footnote 421: See, e.g., at MFW COP, Appendix I2 at 3-2.] If BOEM uses these acoustic surveys in their impact analyses, these data should be made publicly available in order to facilitate a full and fair discussion of impacts to bats.

Preliminary acoustic surveys represent an important first step to assessing bats' use of the Project Area and should be required prior to development. However, pre-construction acoustic surveys are

inappropriate for predicting post-construction fatality risk for bats. At land-based wind facilities, pre-construction bat activity surveys do not correlate with post-construction fatalities, [Footnote 422: Donald Solick et al., *Bat activity rates do not predict bat fatality rates at wind energy facilities*, ACTA CHIROPTERA (June 2020); Cris D. Hein et al., *Relating pre-construction bat activity and post-construction bat fatality to predict risk at wind energy facilities: A synthesis*, NAT'L RENEWABLE ENERGY LAB. (NREL) (Mar. 2013)] possibly due to bats' attraction to turbine structures (see Section IV.I.6). Furthermore, low levels of bat calls do not necessarily indicate that bats are not present, [Footnote 423: Aaron J. Corcoran et al., *Inconspicuous echolocation in hoary bats (*Lasiurus cinereus*)*, PROCEEDINGS ROYAL SOC'Y B (May 2, 2018).] so BOEM should not overly base its risk assessment for bats on pre-construction offshore surveys.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-130

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) There Are Inadequate Data to Assess Cumulative Impacts to Bats from 22 GW of Offshore Wind Buildout

While these comments provide some additional resources on bat movement offshore and bat interactions with wind turbines for BOEM to include in their analysis, there remains insufficient research on bats and offshore wind to accurately assess cumulative risk and impact from the 22 GW buildout scenario used in the Vineyard Wind 1 and South Fork NEPA analyses, let alone the broader scope outlined in Section II.E.1.

Because of this knowledge gap, it is imperative that BOEM require offshore wind facilities to commit to pre- and post-construction monitoring and to integrate novel technology for monitoring as it becomes available. Monitoring data must be made readily and promptly available to the public.

Although we now know that population-level impacts to bats are possible from land-based wind, these impacts to bats from onshore wind energy were not anticipated and were only discovered because of monitoring for avian impacts. [Footnote 483: Arnett et al. 2008.] While post-construction monitoring should occur at the project-level, BOEM and their partner agencies should support coordinated and regional surveys of bat use of the OCS and WEAs. Should further monitoring and research efforts reveal that impacts to bats are non-negligible, BOEM and other agencies should support the development and deployment of minimization strategies and deterrent technologies.

The following is a list of recommendations for BOEM and its partner agencies to support successful understanding of offshore wind's impact on bats, modified and expanded upon from Peterson et al. (2016). [Footnote 484: See Peterson et al. 2016, §5.] BOEM and its partner agencies should:

-Support supplemental field surveys for bats on the OCS, using similar methodology as described in Peterson et al. (2016). [Footnote 485: Peterson et al. 2016.]

- Require acoustic detectors to be placed at nacelle height on a subset of turbines constructed along the Atlantic OCS and require that the data collected be made publicly available.

- Support research to determine whether it is possible to improve acoustic monitoring to enable better species identifications, such as being able to differentiate calls between the ESA-listed northern long-eared bat and other *Myotis* species.

- Support continued advances in radio telemetry equipment, nanotag transmitters, and GPS tags so that more bats can be tracked offshore (e.g., support the development of smaller GPS tags with longer battery lives).
- Support deploying Motus towers and/or other nanotag receiving towers in the coastal and offshore environment, including on structures in WEAs.
- Support efforts to tag additional individual bats with nanotag transmitters and GPS tags.
- Support the development of bat monitoring technology for offshore WTGs, such as strike detection technology and thermal video.
- Support research on and testing of bat deterrent devices for offshore WTGs, such as ultraviolet lighting or ultrasonic noise emitters.
- Require offshore wind projects to support testing and deployment of best available monitoring and deterrent technologies, once developed.
- Require offshore wind projects to promptly report and make publicly available all monitoring and testing data.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-131

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Draft EIS for Mayflower Wind should specifically require the adoption of monitoring technologies when they are verified and commercially available as part of the Project's monitoring framework and protocol. BOEM should further support and encourage their development and testing at Mayflower Wind. The shared cost of development, testing, and implementation of these technologies across all lessees and with BOEM, if standardized, would avoid an undue economic burden on individual projects.

Many of the above listed recommendations are aimed at filling in knowledge gaps about bats' use of the offshore environment. These survey efforts will likely provide critical information about bats' use of the Project Area which will be necessary for effective mitigation. However, bat activity in the Project Area prior to turbine installation may not accurately predict bat fatalities during turbine operation. As discussed earlier, at land-based wind facilities, pre-construction bat activity surveys are poorly correlated with post-construction fatalities. [Footnote 486: Solick, D., Pham, D., Nasman, K., Bay, K. (2020). Bat Activity Rates do not Predict Bat Fatality Rates at Wind Energy Facilities. *Acta Chiroptera*, 22(1); Hein, C. D., Gruver, J., & Arnett, E. B. (2013). Relating pre-construction bat activity and post-construction bat fatality to predict risk at wind energy facilities: a synthesis. A report submitted to the National Renewable Energy Laboratory.] Because of this, the commitment to post-construction monitoring is critical to yielding a better understanding about how bats interact with offshore wind turbines. An important component to this will be programmatically supporting the tagging of individual bats, such as through Motus, requiring receiving towers in the WEA, and requiring installation of acoustic detectors, preferably at nacelle height.

Data on bat activity and calls within the rotor-swept zone of offshore WTGs would allow better understanding of which bat species are at risk and during what environmental conditions, which could inform mitigation measures. Because bat activity offshore seems to be predominantly restricted to warm, slow wind speed nights and is highly seasonal, [Footnote 487: RWF COP Appendix AA, 2.3.1, p. 27; Peterson et al. (2016). In their study, the majority of bat activity in the Gulf of Maine and the Mid-

Atlantic occurred below 10 m/s average nightly wind speed and above ~7oC.] if bat minimization measures are needed and targeted curtailment is shown to be effective in the offshore environment, periods of operational curtailment could be restricted to these highest risk times to decrease loss in energy generation.

In addition to operational curtailment, it is possible that deterrent technologies to prevent bats from approaching wind turbines could be useful in minimizing bat fatalities offshore. Deterrent technologies are being developed for land-based turbines, including turbine coatings (to counteract any attraction to smooth surfaces which might be perceived as water), [Footnote 488: Texturizing Wind Turbine Towers to Reduce Bat Mortality DE-EE0007033, <https://www.energy.gov/sites/prod/files/2019/05/f63/TCU%20-%20M17%20-%20Hale-Bennett.pdf> (last visited Oct. 04, 2021).] ultraviolet lighting (which many bat species can see), [Footnote 489: NREL Wind Research, Technology Development and Innovation Research Projects <https://www.nrel.gov/wind/technology-development-innovation-projects.html> (last visited Oct. 04, 2021).] and ultrasonic noise emitters (to possibly 'jam' bats' radars and make wind facilities unappealing to bats). [Footnote 490: <https://www.osti.gov/biblio/1484770>; Weaver, S. P., Hein, C. D., Simpson, T. R., Evans, J. W., & Castro-Arellano, I. (2020). Ultrasonic acoustic deterrents significantly reduce bat fatalities at wind turbines. *Global Ecology and Conservation*, e01099. <https://doi.org/10.1016/j.gecco.2020.e01099>; Arnett, E. B., Hein, C. D., Schirmacher, M. R., Huso, M. M. P., & Szewczak, J. M. (2013). Evaluating the Effectiveness of an Ultrasonic Acoustic Deterrent for Reducing Bat Fatalities at Wind Turbines. *PLoS ONE*, 8(6), e65794. <https://doi.org/10.1371/journal.pone.0065794>.] One of the ultrasonic deterrent technologies, NRG Systems, has been commercially deployed at land-based wind facilities. [Footnote 491: <https://news.duke-energy.com/releases/duke-energy-renewables-to-use-new-technology-to-help-protect-bats-at-its-wind-sites>] None of these technologies have been assessed yet in the offshore environment nor on turbines with such large swept areas, which may present a challenge for effective deterrent use offshore.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-144

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- By entirely avoiding the impact of pile driving noise, the installation of gravity-based or suction bucket foundations represents a 'best practice' in the context of the mitigation hierarchy (avoid, minimize, mitigate) for noise.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-148

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM should require robust monitoring of impacts to essential fish habitat and benthic resources in the area of the Mayflower Wind.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-152

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM should work with the National Marine Fisheries Service and other relevant agencies, experts, and stakeholders towards developing a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-153

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM should prohibit pile driving during times of highest risk for North Atlantic right whales, set diel restrictions on pile driving, require protective clearance zones and shutdown requirements for all marine mammals, and require all vessels to adhere to a 10-knot speed restriction (see Section IV.F.4 for more detailed recommendations).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-156

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM should require all vessels to adhere to a 10-knot speed restriction, and to further slow to 4 knots when a turtle is sighted or when transiting through areas of likely offshore feeding habitats from June 1 to November 30.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-158

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The Draft EIS should provide clear parameters for monitoring impacts from the project before, during, and after construction and during operation, incorporating guidance from New York State Energy Research and Development Authority's Environmental Technical Working Group, the Atlantic Marine Bird Cooperative, and non-profit groups contributing to this letter, keeping in mind that impacts are likely to occur beyond the project footprint and multiple tools will be necessary to create a complete picture of potential impacts to birds in and around the project boundary (e.g., marine radar, satellite and radio telemetry, and telemetry surveys covering up to 20 km beyond the project footprint).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-159

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

-BOEM should require a plan for documenting, minimizing, and compensating for loss of birds from collision with turbines, including losses that are identified after the project is constructed or are unknown at the time of developing the plan, which may include but is not limited to temporary curtailment strategies and collision detection technology.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-160

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The Draft EIS should outline actions to limit impacts to breeding, migrating, wintering, and staging birds from both offshore and onshore construction activities.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-162

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Because so little is known about potential bat impacts from offshore wind, BOEM should require support for and, once they are verified and commercially available, adoption of monitoring technologies as part of Mayflower Wind's monitoring framework and protocol.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-186

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While our organizations support consideration of gravity-based and suction bucket foundations for the Mayflower Wind project and are encouraged about the potential project's minimal noise footprint, we acknowledge that there remains much to learn about the potential impacts of these foundation types in the United States. We urge BOEM to work closely with Mayflower Wind to review the project's potential impacts and to establish a thoughtful and rigorous long-term scientific monitoring program with the view to inform the responsible development of future offshore wind energy projects that employ any of the foundation types proposed in the PDE.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-188

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To minimize and mitigate potential scour protection impacts for all foundation types, BOEM should consider requiring scour protection following a Nature-Based Design approach. Nature-Based Design refers to options that can be integrated with or added to the design of offshore wind infrastructure to create suitable habitat for species or communities whose natural habitat has been modified, degraded, or reduced. [Footnote 56: Sensu, Hermans et al. 2020. Nature-Inclusive Design: A catalog for offshore wind infrastructure. <https://edepot.wur.nl/518699>] A rigorous scientific monitoring program for the lifetime of the project will help assess the impact of changes to benthic habitat and community composition and help determine the degree to which scour protections should be removed or left in place during the project's eventual decommissioning.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-190

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should follow the monitoring guidance set forth in the New York State Energy and Research Development Authority (NYSERDA) Environmental Stratification Workgroup Report [Footnote 59: Available at: <https://drive.google.com/file/d/15i0sGK9FyQDgS5pipnfeH7tA5FBHMq/view>.] and undertake research similar to that conducted in Europe for monopile foundations [Footnote 60: See, e.g., Schultze, L. K. P., et al. "Increased mixing and turbulence in the wake of offshore wind farm foundations," Id.] to better understand the effects of individual foundations, as well as the cumulative effects of large-scale build out, on mixing and stratification in the Mid-Atlantic Bight, including potential impacts on the development of the Cold Pool, and any indirect impacts on fish and invertebrates, including prey aggregations of higher trophic level predators. [Footnote 61: At least 2 NOAA documents that speak about the impact of offshore wind on copepods and prey availability: https://apps-nefsc.fisheries.noaa.gov/rcb/publications/soe/SOE_NEFMC_2021_Final-revised.pdf. See slide 4 ("Offshore Wind Risks: Right whales may be displaced and altered local oceanography could affect distribution of their zooplankton prey."); See, also, page 13 of the Species in the Spotlight Report for a discussion of OSW impacts. https://media.fisheries.noaa.gov/2021-04/SIS%20Action%20Plan%202021_NARightWhale-FINAL%20508.pdf.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-27

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Draft EIS should also assess whether the impacts from entrainment during cable burial could be reduced or avoided by requiring cable burial during certain seasons. For example, with the Vineyard Wind 1 offshore wind project, Vineyard Wind committed to conducting burial activities in Nantucket

Sound outside of the spring and summer spawning seasons for a number of benthic invertebrates and fish that lay demersal eggs, including commercially important species. [Footnote 138: Id. at 3-27.] Here, the Draft EIS should analyze whether similar seasonal restrictions could avoid or mitigate entrainment impacts to invertebrates and fish.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-3

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM also retains the ability to consider adoption of supplemental mitigation measures if monitoring or the agency's data collection efforts, on either the Mayflower Wind or other offshore wind projects, identify an unexpected negative impact. While it would be inappropriate for BOEM to rely on an adaptive management plan to address environmental considerations in lieu of necessary mitigation measures, the agency is allowed and encouraged to adopt further adaptive management measures if needed.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-36

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Additional Mitigation and Monitoring Measures

BOEM and Mayflower Wind should work closely with Rhode Island and Massachusetts fishery managers and NMFS to consider and implement appropriate mitigation measures to avoid, minimize, and mitigate potential adverse impacts to EFH, finfish, benthic resources, and invertebrate populations which may be affected by construction activities, particularly during vulnerable times of spawning, larval settlement, and juvenile development. In addition to the mitigation measures already identified in the COP, we encourage BOEM to require Mayflower Wind to undertake additional actions including but not limited to (1) conducting site-specific benthic habitat assessments and Atlantic cod spawning surveys to inform siting of WTGs and the subsea cable; (2) time of year restrictions on cable installation to avoid disruption of fish spawning activities; and (3) requiring post-construction monitoring to document habitat disturbance and recovery and require that Mayflower Wind consult with NMFS and BOEM before conducting monitoring to address agency comments prior to implementation. BOEM should also require Mayflower Wind to employ a closed loop cooling system for its offshore DC converter station.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-37

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Moreover, because the offshore wind industry is in its infancy, a comprehensive monitoring effort is crucial. Thus, BOEM and/or Mayflower Wind, in consultation with state fishery managers and NMFS, should conduct long-term monitoring before, during, and after construction to document impacts to benthic habitat and EFH, and habitat recovery, and if necessary, design appropriate adaptive mitigation strategies to address the impacts identified.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-51

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. Advancing Monitoring and Mitigation During Offshore Wind Energy Development

While the best available scientific information justifies the use of seasonal restrictions to temporally separate development activity from North Atlantic right whales in some areas, it is becoming increasingly clear that there may not be a time of "low risk" for this species, particularly off Rhode Island and Massachusetts where right whales are known to occur year-round. The population size is now so small that any individual-level impact is of great concern. In addition, climate-driven changes in oceanographic conditions, and resulting shifts in prey distribution, are rapidly changing the spatial and temporal patterns of habitat use for North Atlantic right whales and other large whale species. [Footnote 231: Davis, G.E., et al., "Exploring movement patterns and changing distributions of baleen whales in the western North Atlantic using a decade of passive acoustic data," supra note 87; Davis, G.E., Baumgartner, M.F., Bonnell, J.M., Bell, J., Berchick, C., Bort Thornton, J., Brault, S., Buchanan, G., Charif, R.A., Cholewiak, D., et al., "Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014," *Scientific Reports*, vol. 7, p. 13460 (2017); Record, N., et al., 2019, supra; Meyer-Gutbrod, E.L., et al, 2021, supra.] Therefore, we recommend BOEM work with NMFS and other relevant agencies, experts, and stakeholders, towards developing a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species (i.e., fin, sei, minke, and humpback whales) during all phases of offshore wind energy development.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-52

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The ability to reliably detect North Atlantic right whales and other species on a near real-time basis and adjust survey/construction activities accordingly (e.g., if an endangered whale species is detected within X meters distance of the survey/construction area, then no survey/construction activity will be undertaken within a defined time period) would enable BOEM and NMFS to adaptively manage and mitigate risks to protected species in near real-time while affording flexibility to offshore wind energy developers. This approach could be used in conjunction with seasonal restrictions in North Atlantic right whale primary foraging areas (e.g., off southern New England) or potentially year-round in the Mid-Atlantic region (as long as a mandatory 10-knot vessel speed restriction is in place) where a changing climate is leading to novel spatial and temporal habitat-use patterns. A near real-time monitoring and mitigation approach would also minimize risks posed by North Atlantic right whale seasonal restrictions to other protected species that may be present at high densities at times when North Atlantic right whales are expected to be present in lower numbers (e.g., fin whale foraging that occurs in the summer months east of Montauk Point when North Atlantic right whale presence may be relatively low). An added benefit is that the biological data collected could be used to inform future wind energy development activities and adaptive management.

There are several technologies in various stages of development that would allow near real-time detection of protected species (e.g., Robots4Whales, [Footnote 232: Woods Hole Oceanographic Institution WHOI and WHOI/WCS, “Robots4Whales,” supra note 39.] SeaTrac [Footnote 233: <https://www.seatrac.com/>]) and convey that information to decision makers (e.g., "Mysticetus" [Footnote 234: Available at: <https://www.mysticetus.com/>]) to inform mitigation action. Near real-time monitoring systems are already being deployed to mitigate risks to North Atlantic right whales. For example, an unmanned acoustic glider capable of auto-detecting North Atlantic right whale calls is currently informing decisions being made by Transport Canada on when to impose vessel speed restrictions in the Laurentian Channel. Ten-knot speed limits can be issued within an hour of North Atlantic right whales being detected. [Footnote 235: See, e.g., CBC News, “Underwater glider helps save North Atlantic Right Whales from Ship Strikes” (Aug. 30, 2020). Available at: <https://www.cbc.ca/news/canada/new-brunswick/nb-north-atlantic-right-whales-underwater-glider-1.5701984>.] BOEM should coordinate with NMFS to evaluate the current status of near real-time detection technologies and develop recommendations for an integrated near real-time monitoring and mitigation system that combines, at minimum, both visual and acoustic detections. As part of this work, the acoustic detection ranges for different species of large whale should be modeled for each offshore wind energy area (i.e., accounting for site-specific oceanographic conditions, ambient and anthropogenic noise levels, etc.) to inform the subsequent expansion of the near real-time monitoring and mitigation approach to other protected large whale species.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-53

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is also of paramount importance that BOEM encourage and promote adaptive management and robust long-term monitoring to assess impacts as offshore wind energy is developed and operational. This is imperative considering the effects of a changing climate on large whale species and other cumulative anthropogenic stressors. With U.S. offshore wind energy still in its infancy, it is critical that the impact of offshore wind operations on marine wildlife and the ocean ecosystem be closely monitored to guide the industry’s adaptive management and future development. It is vital that we gain an understanding of baseline environmental conditions prior to large-scale offshore wind energy development in the U.S. To this end, BOEM must coordinate with NMFS to establish and help fund a robust, long-term scientific plan to monitor the effects of offshore wind energy development on marine mammals and other species before, during, and after large-scale commercial projects are constructed. Without strong baseline data collection and environmental monitoring in place, we risk losing the ability to detect and understand potential impacts and risk setting an under-protective precedent for future offshore wind energy development. Such monitoring must inform and drive future mitigation as well as potential practical changes to existing operations to reduce any potential impacts to natural resources and wildlife.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-54

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4. The Project Must Adopt Strong Measures to Protect the North Atlantic Right Whale and Other Large Whales During Construction and Operations

The imperiled status of the North Atlantic right whale demands the implementation of strong protective measures to safeguard this species during construction and operations of the Mayflower Wind Project. BOEM must also require strong protections for other endangered and threatened marine mammal species, including those currently experiencing a UME, and for species particularly sensitive to noise and development. The specific mitigation measures that will be implemented for marine mammals detailed in the COP are generally under protective and not based on best available scientific information, including recent scientific studies indicating the increased year-round use of the Project Area and surrounding waters by North Atlantic right whales. [Footnote 236: E.g., The COP stresses that North Atlantic right whales are mainly expected to be in the Project Area during spring and fall based on Kraus et al. 2016 instead of year-round as numerous sources, including the more recent NLPSC data, show (see Section IV.F.1.a). MFW COP Vol. II at 6-246.]

As a general matter, BOEM must take all necessary precautions to reduce the number of Level A takes (any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal or marine mammal stock in the wild) and Level B takes (any act that has the potential to disturb [but not injure] a marine mammal or marine mammal stock in the wild by disrupting behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering) [Footnote 237: 16 U.S.C. 1361 §§ 101(a)(5)(A) and (D), 86 Fed. Reg. 1520 (Posted January 4, 2021)] for large whales to be as close to zero as possible. In general, when designing mitigation, BOEM must require the most protective measures possible for all endangered and at-risk species, including fin whales, humpback whales, and minke whales, as well as harbor porpoises.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-55

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should also work with NMFS to advance a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species (see Section IV.F.3, "Advancing Monitoring and Mitigation During Offshore Wind Energy Development").

Comment Number: BOEM-2021-0062-DRAFT-0035-02-56

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Pile driving noise during the construction phases has been identified as a stressor of high concern for marine mammals. Potential impacts of unmitigated exposure to pile driving noise include physical injury, hearing impairment, disruption of vital behaviors such as feeding, breeding, and communication, habitat displacement, stress, and other health effects.

Gravity-based and suction bucket jacket foundations, as proposed by Mayflower Wind, do not require pile driving and thus avoid the noise impacts stemming from this activity. Due to the different level of impact posed to marine mammals from gravity-based and suction bucket foundations relative to pile-driven foundations, we present two sets of mitigation recommendations for North Atlantic right whales below, one for gravity-based and suction bucket foundations, and the other for pile-driven foundations that includes seasonal restrictions on pile driving and larger clearance and exclusion zones.

While gravity-based and suction bucket jacket foundations avoid the impacts of pile driving noise, their installation is not necessarily noise free, and the potential use of dynamic positioning systems and other noise related to installation vessels may still lead to some level of behavioral disturbance (see also Section IV.F.5.b). Like all offshore wind technologies, these foundations are new to U.S. waters and so it will be important to monitor the levels of noise emitted during installation at the source and model the level of potential noise exposure to large whales and other marine mammals to inform the most appropriate mitigation approaches for future offshore wind energy projects for which gravity-based or suction bucket foundations are used.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-57

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The mitigation measures described below reflect our current (November 2021) set of recommendations for North Atlantic right whales during construction and operations of fixed foundation turbines along the East Coast. Mitigation measures that offer co-benefits to other large whale species are noted below. Please note that these recommendations may be subject to change based on new scientific and/or technological developments.

a) Mitigation Recommendations for Gravity-based and Suction Bucket Jacket Foundations

a. Require clearance zone and exclusion zone distances that will eliminate Level A take and minimize behavioral harassment:

i. Clearance and exclusion zone distances for North Atlantic right whales and other large whale species must be designed to eliminate Level A take and minimize behavioral harassment to the full extent practicable during the installation of gravity-based or suction bucket foundations, considering noise levels expected to be generated during installation.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-58

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b. Require shutdown of activities if a large whale is detected visually or acoustically:

i. Installation of gravity-based and suction bucket jacket foundations should not be initiated when the application of monitoring methods defined in subsection (c) results in a detection of a North Atlantic right whale or other large whale species within the relevant clearance zone (as defined based on noise levels expected during installation; see subsection (a)).

ii. Installation of gravity-based and suction bucket jacket foundations should be halted, unless continued installation activities are necessary for reasons of human safety or installation feasibility, when the application of monitoring methods defined in subsection (c) results in a detection of a North Atlantic right whale or other large whale species within the relevant exclusion zone (as defined based on noise levels expected during installation; see subsection (a)).

iii. Once halted, installation may resume after use of the methods set forth in subsection (c) and the lead Protected Species Observer (PSO) [Footnote 238: The term “PSO” refers to an individual with a current National Marine Fisheries Service (NMFS) approval letter as a Protected Species Observer.] confirms no North Atlantic right whales or other large species have been detected within the relevant clearance zones.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-59

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c. Require the following near real-time monitoring protocols during clearance and installation:

i. Monitoring of the clearance and exclusion zones should be undertaken using near real-time PAM [Footnote 239: Throughout these comments “PAM” refers to a real-time passive acoustic monitoring system, with equipment bandwidth sufficient to detect the presence of vocalizing North Atlantic right whales and/or if available at the time of construction other similar high performance sound monitoring systems and arrays.] and should be undertaken from a vessel other than the installation vessel, or from a stationary unit, to avoid the hydrophone being masked by installation-related noise.

ii. Monitoring of the clearance and exclusion zone should be undertaken by vessel based PSOs stationed at the installation site. On each vessel, there must be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon per foundation installation location.

iii. Acoustic and visual monitoring should be required, and monitoring should begin at least 60 minutes prior to the commencement or installation activity and should be conducted throughout the duration of installation. Visual monitoring should continue until 30 minutes after installation.

iv. Additional observers and monitoring technologies (e.g., infrared, drones, hydrophones) should be deployed, as needed, to ensure the ability to monitor the established clearance and exclusion zones, including at night and during periods of poor visibility.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-6

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While vessel transit corridors may concentrate vessel traffic through specified "highways," there is no evidence to suggest this limits risks to marine mammals and other wildlife. Reduced vessel speeds are generally the key to minimizing collision risk for marine mammals and other wildlife, and it is unclear that there is any benefit to wildlife from transit corridors or prescribed layouts. Regional monitoring across sites will be needed to understand varying potential impacts from different layout specifications.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-60

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

d. Require mandatory vessel speed restrictions:

i. All Project-associated vessels should adhere to a 10-knot speed restriction at all times except in limited circumstances where the best available scientific information demonstrates that whales do not occur in the area.

ii. Project proponents may develop, in consultation with NOAA Fisheries, an "Adaptive Plan" that modifies these vessel speed restrictions. However, the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven [Footnote 240: I.e., via a peer-reviewed scientific study.] to be equally or more effective than a 10-knot speed restriction, the Adaptive Plan could be used as an alternative to a 10-knot speed restriction.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-61

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

e. Consider other vessel-related measures:

i. All personnel working offshore should receive training on observing and identifying North Atlantic right whales and other large whale species.

ii. Vessels must maintain a separation distance of at least 500 m for North Atlantic right whales and 100 m for other large whale species. They must maintain a vigilant watch for North Atlantic right whales and other large whale species, and slow down or maneuver their vessels as appropriate to avoid any potential interaction with them.

iii. All vessels responsible for crew transport (i.e., service operating vessels) should carry automated thermal detection systems to assist monitoring efforts while vessels are in transit, maintaining a speed of 10 knots.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-62

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

f. Require mandatory reporting of all North Atlantic right whale and other large whale detections:

i. Project personnel should report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the Coast Guard as soon as possible and no later than the end of the PSO shift. We note that, in some cases, such as with the use of near real-time autonomous buoy systems, the detections will be reported automatically on a preset cycle.

ii. Project personnel must immediately report an entangled or dead North Atlantic right whale or other large whale species to NOAA Fisheries, the Marine Animal Response Team (1-800-900-3622), or the United States Coast Guard immediately via one of several available systems (e.g., phone, app, radio).

Methods of reporting are expected to advance and streamline in the coming years, and agencies should require projects to commit to supporting and participating in these efforts.

iii. Quarterly reports of PSO sightings data should be made publicly available to inform marine mammal science and protection.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-63

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Mitigation Recommendations for Pile-driven Foundations

a. Prohibit pile driving during times of highest risk (North Atlantic right whales only):

i. Pile driving should not occur during periods of highest risk to North Atlantic right whales, defined as times of highest relative density of animals during foraging and migration, and times when mother-calf pairs, pregnant females, surface active groups (indicative of breeding or social behavior), or aggregations of three or more whales (indicative of feeding or social behavior) are, or are expected to be, present, as informed by review of the best available scientific information at the time of the activity. [Footnote 241: The COP states that “Potential risk to seasonal marine mammal species from Project activities can be minimized or offset through mitigation strategies, such as applying time-of-year restrictions to construction and operation activities in the Project Area.” (MFW COP Vol. 11 at 6-246). However, no seasonal restrictions are included in the mitigation and monitoring plan (Appendix O) except the required vessel speed restrictions for SMAs and DMAs.]

ii. If a near real-time monitoring system and mitigation protocol for North Atlantic right whales and other large whale species is developed and scientifically validated, the system and protocol may be used to dynamically manage the timing of pile driving and other construction activities to ensure those activities are undertaken during times of lowest risk for all relevant large whale species. The development of such a protocol is particularly important where foraging aggregations of other large whale species are observed coincident with the times that pile driving would most likely be undertaken based on times of lower relative risk to North Atlantic right whales.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-64

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b. Restrict pile driving activity at night and during periods of low visibility (all large whale species):

[Footnote 242: The COP states: “Mayflower Wind will propose additional monitoring and mitigation measures to support the start (or continuation) of pile driving at night or in poor visibility conditions during the period when NARW are less likely to be present.” (MFW COP Appendix O at 8). The COP refers to June through November to be the months when NARWs are less likely to be in the Project Area based on Roberts et al. (2020) model predictions. During these months, construction activities will be concentrated and continue into period of darkness/low-light conditions. (Id.). This is wholly under protective and not based on best available scientific information.]

i. Pile driving shall not be initiated within 1.5 hours of civil sunset or in times of low visibility when

the visual “clearance zone” and “exclusion zone” (as hereinafter defined) cannot be visually monitored, as determined by the lead PSO on duty.

ii. Pile driving may continue after dark only if the activity commenced during daylight hours and must proceed for human safety or installation feasibility reasons, [Footnote 243: Installation feasibility refers to ensuring that the pile installation event results in a usable foundation for the wind turbine (i.e., foundation installed to the target penetration depth without refusal and with a horizontal foundation/tower interface flange). In the event that pile driving has already started and nightfall occurs, the lead engineer on duty will make a determination through the following evaluation: 1) Use the site-specific soil data on the pile location and the real-time hammer log information to judge whether a stoppage would risk causing piling refusal at re-start of piling; and 2) Check that the pile penetration is deep enough to secure pile stability in the interim situation, taking into account weather statistics for the relevant season and the current weather forecast. Such determinations by the lead engineer on duty will be made for each pile location as the installation progresses and not for the site as a whole. This information will be included in the reporting for the project. For the avoidance of doubt, the determination that pile driving must proceed for human safety reasons need not be made by the lead engineer on duty. In the event that the lead PSO directs that impact pile driving be halted because of a visual observation or acoustic detection of a North Atlantic Right Whale within the Clearance Zone, installation feasibility shall be determined by the lead engineer on duty.] and if required night-time monitoring protocols are followed (see subsection e).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-65

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c. Require the following clearance zone distances prior to pile driving and exclusion zone distances during pile driving (provided here for a minimum of 10-12 dB noise reduction (see subsection h) though technologies have achieved significantly greater noise reduction, [Footnote 244: See, e.g., AdBm Demonstration at Butendiek Offshore Wind Farm with Ballast Nedam “Attenuation of up to 36.8 dB was realized across all hammer strikes at this location.”

<https://tethys.pnnl.gov/sites/default/files/publications/AdBm-2014.pdf>.] which would provide more protections to marine life and allow more project flexibility; North Atlantic right whales only): [Footnote 245: A 1 km anticipated clearance/exclusion zone is proposed in the COP for North Atlantic right whales (MFW COP Appendix O at 6-7). This distance is wholly under protective for an estimated noise reduction target of 10 dB. (MFW COP Appendix U2 at 19).]

i. A visual clearance zone and exclusion zone shall extend at minimum 5,000 m in all directions from the location of the driven pile.

ii. An acoustic clearance zone shall extend at minimum 5,000 m in all directions from the location of the driven pile.

iii. An acoustic exclusion zone shall extend at minimum 2,000 m in all directions from the location of the driven pile.

iv. Clearance and exclusion zone distances for other large whale species must be designed in a manner that eliminates Level A take and minimizes behavioral harassment to the full extent practicable.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-66

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

d. Require shutdown of activities if a right whale is detected visually or acoustically (for a minimum of 10-12 dB noise reduction (see subsection h); North Atlantic right whales only):

i. Pile driving should not be initiated when monitoring methods defined in subsection (e), below, result in either an acoustic detection within the acoustic clearance zone or a visual detection within the visual clearance zone of one or more North Atlantic right whales.

ii. Pile driving shall not be initiated or, if already underway, shall be shut down unless continued pile driving activities are necessary for reasons of human safety or installation feasibility when monitoring methods defined in subsection (e) result in acoustic detection within the acoustic exclusion zone or a visual detection within the visual exclusion zone of one or more North Atlantic right whales.

iii. Pile driving shall be shut down, unless continued pile driving activities are necessary for reasons of human safety or installation feasibility, if a North Atlantic right whale is visually detected by PSOs at any distance from the pile.

iv. Once halted, pile driving may resume only after using the methods set forth in subsection (e) and the lead PSO confirms no North Atlantic right whales or other large whale species have been detected within the relevant acoustic and visual clearance zones.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-67

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

e. Require the following near real-time monitoring protocols during pre-clearance and when pile driving activity is underway (all large whale species):

i. Monitoring of the acoustic clearance and exclusion zone will be undertaken using near real-time PAM, assuming a detection range of at least 10,000 m, and should be undertaken from a vessel other than the pile driving vessel, or from a stationary unit, to avoid the hydrophone being masked by the pile driving vessel or development-related noise. [Footnote 246: In the COP, Mayflower Wind commits to at least one on-duty acoustic monitor during all pre-clearance periods and active pile driving (MFW COP Appendix O at 2). In addition, “The specifics of the PAM system will be determined in consultation with NMFS during the Marine Mammal Protection Act (MMPA) Incidental Take Authorization (ITA) process. The system will be designed to detect vocalizations from all marine mammals potentially present in the region, including low-frequency cetaceans like the North Atlantic right whale (NARW) and fin whale.” (MFW COP Appendix O at 5).]

ii. Monitoring of the visual clearance and exclusion zone will be undertaken by vessel based PSOs stationed at the pile driving site and on additional vessels circling the pile driving site, as required. On each vessel, there must be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon per pile driving location. Additional vessels must survey the clearance and exclusion zones at speeds of 10 knots or less.

iii. Acoustic and visual monitoring should begin at least 60 minutes prior to the commencement or re-initiation of pile driving and should be conducted throughout the duration of pile driving activity. Visual observation should continue until 30 minutes after cessation of pile driving.

iv. PAM and infrared technology must be used during any pile driving activities that extend into periods of darkness. [Footnote 247: According to the COP, “The PSOs on duty will monitor for marine mammals and other protected species using night-vision goggles with thermal clip-ons and a hand-held spotlight (one set plus a back-up set), such that PSOs can focus observations in any direction” (MFW COP, Appendix O at 3). According to a fairly recent review of night vision technologies for detecting marine mammals in darkness and low-light conditions (Smultea Sciences. 2021), the effectiveness of low-light imaging technology devices is limited to a 200-m distance and specific conditions (e.g., sufficient ambient light, no fog or precipitation, Bft less than around 4). Such devices are considered ineffective in very lowlight or no light conditions (e.g., cloudy or moonless nights), too much incident light (e.g., direct vessel lights), fog, precipitation, and high sea states. For monitoring during pile driving activities associated with offshore windfarm construction, PSOs need to be able to effectively detect marine mammals within a 2-km radius (the anticipated Level-A isopleth). The authors found that cooled IR cameras with high-end optics are the only systems empirically, systematically, and repeatedly proven to reliably and consistently detect whale blows during darkness/low-light conditions. Smultea Environmental Sciences, LLC (Smultea Sciences). 2021. Review of Night Vision Technologies for Detecting Cetaceans from a Vessel at Sea. Prepared by M.A. Smultea, G. Silber, P. Donlan, D. Fertl, and D. Steckler. Prepared for Ørsted North America, 399 Boylston St., 12th Floor, Boston, MA 02116. 7 January 2021.]

v. The deployment of additional observers and monitoring technologies (e.g., infrared, drones, hydrophones) should be undertaken, as needed, to ensure the ability to effectively monitor the established clearance and exclusion zones.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-68

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

f. Require mandatory vessel speed restrictions (all large whale species):

i. All Project-associated vessels [Footnote 248: The COP states an expected daily average of 15-35 vessels depending on construction activities, with an expected maximum peak of 50 vessels in the Lease Area at one time. MFW COP Vol I at 3-20. Operational speeds range from 0 to 12 knots with maximum speed ranges of 12 (survey vessels) to 35 knots (crew transfer vessels; including during O&M). MFW COP Vol. I at Table 3-21, Table 3-23.] should adhere to a 10-knot speed restriction at all times [Footnote 249: The COP states: ““Vessels travelling within any NMFS designated Seasonal Management Area (SMA) or Dynamic Management Area (DMA)1 will maintain observations by at least one PSO or trained vessel crew even when traveling below 10 kts in accordance with the SMA or DMA guidelines.” (MFW COP Appendix O at 5) Additional measures include: Reducing the speed of all vessels, except CTVs, to =10 kts between November 1 through May 30; Maintaining 500 m distance from North Atlantic right whales (NARW) and 100 m distance from other ESA-listed whales and humpback whales and 50 m distance from other marine mammals; From November 1 through May 30, CTVs may travel at over 10 kts. However, if a NARW is detected via visual observation within or approaching the transit route, all CTVs will travel at 10 kts or less for the remainder of that day; Monitoring the NMFS North Atlantic

Right Whale reporting systems from November 1 through May 30 and whenever a DMA is established in the operational area; Operating vessels, except CTVs, will travel at speeds =10 kts in any DMA; Reducing vessel speeds to =10 kts when mother/calf pairs, pods, or large assemblages of marine mammals are observed; Complying with speed restrictions in NARW management areas including SMAs and DMAs, except as noted above for CTVs. (MFW COP Appendix O at 9). These mitigation measures are inadequate (see Section IV.F.5.b for further discussion.) except in limited circumstances where the best available scientific information demonstrates that whales do not use the area.

ii. Project proponents may develop, in consultation with NOAA Fisheries, an “Adaptive Plan” that modifies these vessel speed restrictions. However, the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven [Footnote 250: I.e. via a peer-reviewed scientific study.] to be equally or more effective than a 10-knot speed restriction, the Adaptive Plan could be used as an alternative to a 10-knot speed restriction.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-69

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

g. Consider other vessel-related measures (all large whale species):

i. All personnel working offshore should receive training on observing and identifying North Atlantic right whales and other large whale species.

ii. Vessels must maintain a separation distances of 500 m for North Atlantic right whales and 100 m for other large whale species, maintain a vigilant watch for North Atlantic right whales and other large whale species, and slow down or maneuver their vessels as appropriate to avoid a potential interaction with a North Atlantic right whale or other large whale species.

iii. All vessels responsible for crew transport (i.e., service operating vessels) should carry automated thermal detection systems to assist monitoring efforts while vessels are in transit (while maintaining a speed of 10 knots).

h. Require underwater noise reduction levels based on best commercially available technology (all large whale species):

i. A combination of near field (e.g., reduced blow energy, resonant panel noise abatement system, [Footnote 251: See, e.g., AdBm Technologies. <https://adbmtech.com/>.] Hydrosound Damper, [Footnote 252: See, e.g., OffNoise-Solutions Hydro-Sound-Damper-System (HSD-System). <https://www.offnoise-solutions.com/>.] isolation casings (Noise Mitigation Screen (NMS)), [Footnote 253: Koschinski, S. & Lüdemann, K. (2020, March). Noise mitigation for the construction of increasingly large offshore wind turbines: Technical options for complying with noise limits. Report commissioned by the Federal Agency for Nature Conservation, Isle of Vilm, Germany.] dewatered cofferdam [Footnote 254: Id.] and far field noise mitigation (e.g., single bubble curtain), and/or a combination system (double bubble curtain), expected to achieve at least 15dB (SEL) noise attenuation taking, as a baseline, projections from prior noise measurements of unmitigated piles from Europe and North America, should be required. [Footnote 255: The COP (MFW COP, Appendix U2 at 19) states that a “performance of 10 dB broadband attenuation was chosen [] as an achievable reduction of sound levels produced during pile driving when one [noise abatement system] is in use, noting that a 10 dB decrease means the sound energy level is reduced by 90 percent. For exposure-based radial distance estimation, no attenuation, 6 dB attenuation,

and 15 dB attenuation were included for comparison purposes.”] A minimum of 10 dB (SEL) must be attained in the field during construction in combined noise reduction and attenuation. [Footnote 256: The COP (i.e., MFW COP, Appendix U-2) does not appear to provide any estimation of the source levels used for to develop the models meaning that they cannot be verified (ranges are provided but not the specific source levels). The simple method to address this would be to provide a sound source verification study from a similar project (especially with similar hammer energy levels) or clearly explain how source levels were calculated, neither of which should require proprietary modeling. We do not assume that the reported values are wrong, but there is not enough information to follow the math, and other reports indicate higher expected impact levels. A BOEM appendix for the South Fork Wind Farm project lists a study that found modeled impact results underestimated potential impacts by a factor of five (Patricio et al. 2014 cited in CSA 2020). That same appendix also cited monitoring reports for the Block Island Wind Farm (Amaral et al. 2018, also cited in CSA 2020) that showed monitored sound levels that show reported values that would have thresholds for potential effects greater than those reported in this document, despite the report being for 50-inch piles with low number of strikes (dozens at most) and hammer energy approximately 1/33rd (200 kJ) of the hammer energy anticipated to be used for this project (up to 6600 kJ for monopiles and up to 3500 kJ for jackets).]

ii. Field measurements should be conducted on at least the first pile installed, and ideally data should be collected from a random sample of piles throughout the construction period. We do not support field testing using unmitigated piles.

iii. Sound source validation reports of field measurements must be evaluated by both BOEM and NMFS prior to additional piles being installed, and subsequently be made available to the public.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-70

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

i. Require mandatory reporting of all North Atlantic right whale and other large whale detections:

i. Project personnel should report all visual observations and acoustic detections of North Atlantic right whales to NMFS or the Coast Guard as soon as possible and no later than the end of the PSO shift. We note that, in some cases, such as with the use of near real-time autonomous buoy systems, the detections will be reported automatically on a preset cycle.

ii. Project personnel must immediately report an entangled or dead North Atlantic right whale or other large whale species to NMFS, the Marine Animal Response Team (1-800-900-3622), or the United States Coast Guard immediately via one of several available systems (e.g., phone, app, radio). Methods of reporting are expected to advance and streamline in the coming years, and BOEM should require projects to commit to supporting and participating in these efforts.

iii. Quarterly reports of PSO sightings data should be made publicly available to inform marine mammal science and protection.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-74

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

PSOs stationed aboard a vessel may increase the likelihood that a whale is detected, but this approach cannot be relied upon, particularly in periods of darkness or reduced visibility, and the whale would need to be detected with adequate time for the vessel captain to be alerted and to undertake evasive action (which may inadvertently strike another undetected whale). The use of vessel-based PSOs may therefore provide some additional benefit when a vessel is already traveling at slow speeds (i.e., less than 10 knots), but will provide little benefit for faster vessels.

Vessel speed restrictions and additional mitigation and monitoring measures must therefore be explicitly required as part of the permitting process. BOEM should acknowledge the significant risk vessel strikes pose to North Atlantic right whales and other large whales and require the industry to reduce vessel speeds to 10 knots or less and take further measures to mitigate vessel collision risk.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-86

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. Vessel Strike Mitigation

Mitigation measures for sea turtles should include a speed restriction of 10 knots for all vessels associated with the Project at all times, regardless of whether vessels are transiting or on site. [Footnote 318: The COP includes no specific speed restrictions for sea turtles and assumes they will be protected by the vessel avoidance measures for marine mammals. Further, “To avoid, minimize, or mitigate potential effects to sea turtles from Project vessels, Mayflower Wind will ensure all vessels underway do not intentionally approach any sighted sea turtle, and that vessels maintain a separation of 164 ft (50 m) or greater from any sighted sea turtle. Mayflower Wind will require all vessels operating within and transiting to/from the Lease Area comply with the vessel strike avoidance measures specified in lease stipulations or NOAA authorization.” (MFW COP Vol. II at 6-27)] Risk of collision with sea turtles is greatest when vessels are traveling at speeds greater than 10 knots. [Footnote 319: Hazel, J., I.R. Lawler, H. Marsh, and S. Robson. 2007. “Vessel speed increases collision risk for the green turtle *Chelonia mydas*,” *Endangered Species Research* 3:105–113.] While vessels may be directed to slow speeds to 4 knots if a sea turtle is sighted within 100 m of the vessel’s path, [Footnote 320: See, e.g., VW1 ROD, p. 51.] this is not a foolproof solution. Sea turtle detection – even when conducted by dedicated observers – is difficult unless the turtle surfaces close to the vessel, at which point it may not be possible to course-correct in time to prevent collision. Keeping ship speed to 10 knots improves the ability to adjust speeds. [Footnote 321: Kelley, D. E., Vlasic, J. P. and Brilliant, S. W., “Assessing the lethality if ship strikes on whales using simple biophysical models,” *Marine Mammal Science*, vol. 37, pp. 251-267 (2020).] Slowing to 4 knots from June 1 to November 30 while transiting through areas of visible jellyfish aggregations or floating vegetation lines or mats will improve protection for sea turtles, but the speed should be reduced from an upper limit of 10 knots. A standard 10-knot vessel speed limit ensures protections for a wide array of ocean wildlife and should be incorporated into the Draft EIS.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-87

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4. Pile Driving & High Resolution Geophysical and Geotechnical Survey Mitigation

No fewer than four PSOs should be available to monitor all exclusion zones for sea turtles – for vibratory driving and impact pile-driving, as well as any necessary high resolution geophysical and geotechnical survey activities. The vantage points and number of PSOs are critical factors for effective exclusion zone monitoring for sea turtles. To effectively monitor the full exclusion zone, multiple PSOs must be stationed at several vantage points at the highest level to allow each to continuously scan a section of the exclusion zone; a limited number of PSOs – even continuously moving around the vantage point – would still not be able to scan the entire exclusion zone. A minimum of four PSOs for all exclusion zone monitoring is recommended. Monitoring reports must be made publicly available. [Footnote 322: The monitoring protocols in the COP for sea turtles are the same as those for marine mammals. But these are not directly applicable to both taxa. For example, night vision goggles will be used during darkness/low-light conditions (i.e., during concentrated periods of construction activities from June through November) (MFW COP Appendix O). These devices are inadequate for detecting sea turtles (and most marine mammal species). Also, these concentrated periods of construction that are to allow for operations to continue at night coincide with the known seasonal peaks in sea turtle occurrence.]

Moreover, PSOs must be NOAA-certified, and solely focused on monitoring for protected species. While training vessel crew members to additionally watch is beneficial, we caution this cannot be a substitution for trained PSOs as the vessel crew's top priority is vessel operations.

Comment Number: BOEM-2021-0062-DRAFT-0035-55

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM also retains the ability to consider adoption of supplemental mitigation measures if monitoring or the agency's data collection efforts, on either the Mayflower Wind or other offshore wind projects, identify an unexpected negative impact. While it would be inappropriate for BOEM to rely on an adaptive management plan to address environmental considerations in lieu of necessary mitigation measures, the agency is allowed and encouraged to adopt further adaptive management measures if needed.

Comment Number: BOEM-2021-0062-DRAFT-0037-47

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

NEPA requires identification and consideration of reasonable mitigation measures to address adverse impacts resulting from the construction and operation of the wind energy facility and associated cable installation as well as the likelihood of their implementation. Under NEPA, mitigation includes:

- Avoiding an impact by not taking a certain action or parts of an action;
- Minimizing an impact by limiting the degree or magnitude of the action and its implementation;
- Rectifying an impact by repairing, rehabilitating, or restoring the affected environment;

- Reducing or eliminating an impact over time, through preservation and maintenance operations during the life of the action; and
- Compensating for an impact by replacing or providing substitute resources or environments.

Comment Number: BOEM-2021-0062-DRAFT-0037-48

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS must clearly identify which mitigation measures are included as part of the proposed action and thus, evaluated in the analysis, which measures are proposed as required, and measures that are optional and could be implemented by the developer to potentially reduce impacts. The document should provide information on how mitigation measures are considered in the context of the definition of effects magnitude (e.g. negligible, minor, moderate, major), and how mitigation would offset the magnitude of the effect. Mitigation measures must be relevant to the impact to be mitigated and capable of actually reducing impacts (e.g., as proposed in the COP, a monitoring study alone is not an effective mitigation measure). An analysis of the effectiveness of any proposed mitigation should also be evaluated in the EIS. Measures to avoid and minimize impacts such as speed restrictions for project vessels, soft start procedures, noise dampening technologies, construction time of year restrictions, anchoring plans, or micro-siting should be discussed in detail, including what resources would benefit from such mitigative measures and how/when such benefits (or impact reductions) would occur. We strongly encourage BOEM to require measures that reduce noise levels during construction to the maximum extent practicable where data suggests technology is more effective (e.g., if bubble curtains are proposed, requiring a double bubble curtain vs. single bubble curtain). The EIS should analyze temporary effects and anticipated recovery times for marine resources within the impacts analysis.

Comment Number: BOEM-2021-0062-DRAFT-0037-49

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

While the project should be planned and developed to avoid and minimize adverse effects to marine resources and existing uses (i.e. fisheries habitat, fishing and NMFS scientific survey operations) to the greatest extent practicable, compensatory mitigation should be proposed to offset unavoidable permanent and temporary impacts. This should include discussion and evaluation of potential compensatory mitigation for unavoidable adverse impacts to fisheries habitats and the lost functions and values resulting from those impacts. Compensatory mitigation for both ecological losses as well as social and economic losses should be discussed in the EIS, and incorporate all affected entities. Compensatory mitigation for social and economic impacts from this and other projects should consider any increased operational costs (i.e., increased steaming time to search for fish or transiting around turbines) or loss of fisheries revenue (i.e., lower catch or opportunity to catch fish as a result of construction closures or gear loss) resulting from the construction and operation of the project. Compensatory mitigation should also consider more conservative quotas set in response to reduced scientific survey access and associated increased uncertainty in stock assessments along with any potential proposed measures to compensate for such losses. Additionally, the potential for bycatch measures resulting from protected species interactions due to shifts in fishing activity and increased uncertainty in protected species assessments should be analyzed and discussed. Details of compensation plans describing qualifying factors, time constraints, allowed claim frequency, etc. should also be included when possible, particularly if used as mitigation measures to

reduce economic impacts from access loss/restriction, effort displacement, or gear damage/loss. Finally, mitigation necessary to offset adverse impacts to longstanding marine scientific survey operations (e.g., loss of access to project areas, changes to sampling design, habitat alterations, and reduced sampling due to increased transit time) and fisheries dependent data collections must also be considered and evaluated in the document (see description of scientific survey impacts below).

Comment Number: BOEM-2021-0062-DRAFT-0037-57

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Given the extent of potential offshore wind development on the OCS and in this region in particular, the cumulative effects analysis will be a critical component of the EIS. Establishing 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. As you are aware, we have been working with state agencies, developers, and research institutions through the Responsible Offshore Science Alliance to develop a regional scientific research and monitoring framework, including project-specific monitoring plan/study guidance to better identify and understand cumulative impacts and interactions between marine resources, fisheries, and offshore wind energy. Similarly, we are engaged in the development of the Regional Wildlife Science Entity in an effort to address regional science and monitoring of impacts to wildlife and protected species. It is imperative that project-specific monitoring efforts are integrated into existing regional monitoring programs throughout the outer continental shelf, unless there is a project or location specific research question explicit to characteristics and dynamics unique to the site and relevant to trust resources management. Monitoring at multiple scales and which takes an ecosystem-based approach to assessing monitoring needs of fisheries, habitat, and protected species should be required. This will be important to not only assess the cumulative impacts of project development; it will also help inform any future development. You should also coordinate with our agency early in the process related to any potential effects of monitoring activities on NOAA trust resources; we note that survey or monitoring activities may require permits or authorizations from us.

Comment Number: BOEM-2021-0062-DRAFT-0037-65

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Through the EIS, you should consider requiring the development of minimization and monitoring measures that minimize the risk of exposure to potentially harassing or injurious levels of noise to marine mammals, sea turtles, and Atlantic sturgeon. Mitigation measures should be required during pile driving that will act to reduce the intensity and extent of underwater noise and avoid exposure of listed species to noise that could result in injury or behavioral disturbance. The use of protected species observers to establish and monitor clearance zones prior to pile driving is essential and project scheduling should take into account the need for adequate visibility during the pre-pile driving clearance period, as well as for the duration of pile driving activities. Real-time and archival passive acoustic monitoring should also be used as a secondary detection/monitoring system during construction, to increase situational awareness in vessel corridors and around the project area, and to monitor the distribution of marine mammals in the lease area during construction and operations. We encourage you to work with MayflowerWind to develop a project schedule that minimizes potential impacts to North Atlantic right whales. Specifically, you should consider time of year restrictions for pile driving that would avoid pile driving during the months when the density of North Atlantic right whales is highest in the lease area and the development

of robust measures for other times of year that would minimize the exposure of right whales to noise that could result in behavioral disturbance (e.g., requirements for use of best available sound reduction technology, consideration of reduced hammer energy, etc.). You will also need to carefully consider recent information on the use of the MA/RI and MA Wind Energy Areas by North Atlantic right whales and the increased seasonal use of these areas documented in recent years both in regards to effects during the construction and operations phase (see text above in main body of letter about specific right whale considerations). Additionally, the Mayflower lease areas and adjacent waters over Nantucket Shoals are hotspots for leatherback sea turtles [Footnote 21: Dodge, K. L., Galuardi, B., Miller, T. J., & Lutcavage, M. E. (2014). Leatherback turtle movements, dive behavior, and habitat characteristics in ecoregions of the Northwest Atlantic Ocean. PLoS One, 9(3), e91726.],[Footnote 22: Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R. D. Kenney, C. W. Clark, A. N. Rice, B. Estabrook and J. Tielens. 2016. Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles. US Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.] during the summer and fall, consideration should be taken to reduce Project effects to this species. NMFS staff are available to work with you to inform the development of time of year restrictions and other measures to avoid or minimize effects to protected species.

Comment Number: BOEM-2021-0062-DRAFT-0037-67

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Mitigation measures should also be included that minimize the risk of vessel strike for whales, sea turtles, and Atlantic sturgeon, including consideration of vessel speed restrictions regardless of vessel size and robust measures to monitor vessel transit routes for North Atlantic right whales, including requirements for use of lookouts, reduced speeds, and use of PAM and other tools to increase the ability to detect and avoid whales along vessel transit routes. We strongly encourage you to require that vessels of all sizes reduce speeds to 10 knots or less in all Seasonal Management Areas and Slow Zones, including Slow Zones triggered by acoustic detections of North Atlantic right whales. Recent events and new information (see, <https://doi.org/10.1111/mms.12745>) demonstrate that large whales are susceptible to lethal vessel strikes from vessels of all sizes.

Comment Number: BOEM-2021-0062-DRAFT-0037-88

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

BOEM should consider measures such as time of year restriction on construction activities to avoid impacts during times of the year when sensitive life stages are present, particularly spawning activity and egg and larval development for species such as Atlantic cod, winter flounder, and longfin squid. Other mitigation measures, particularly for both the export and inter-array cables, would be to ensure such cables are buried as deeply as feasible to minimize potential exposure, need for cable armoring, and interactions with bottom-tending mobile fishing gear. The target burial depth range for this project is listed at 3.2-8.2 feet for inter-array cables and 3.2-13.1 feet for export cables. Burial close to the lower end of this range could increase the risk of cable exposure within areas of high sediment movement discussed within the COP. This could, in turn, lead to cable and gear damage, the latter of which may be exacerbated if there is a need to protect such cables through armoring beyond original estimates anticipated in the COP (10 percent of cable length).

Comment Number: BOEM-2021-0062-DRAFT-0037-9

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

As you develop the EIS, it will be critical to fully consider both project-specific and cumulative effects of offshore development on North Atlantic right whales and southern New England Atlantic cod and evaluate ways to avoid and minimize adverse impacts to these species and their habitats. We strongly encourage you and the developer to consider all available options to minimize risk to these species and their habitats as a result of project development.

Comment Number: BOEM-2021-0062-DRAFT-0037-93

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Given the anticipated development of offshore wind in our region, it is critical to expeditiously establish and implement a regional federal scientific survey mitigation program to address this significant issue. Such a survey mitigation program would include the following elements:

1. Evaluation of scientific survey designs;
2. Identification and development of new survey approaches;
3. Calibration of new survey approaches;
4. Development of interim provisional survey indices;
5. Integration of project-specific monitoring plans to address regional survey needs; and
6. Development of new data collection, analysis, management, and dissemination systems.

Information from project-specific mitigation plans could be critical inputs to the development and implementation of any future federal survey mitigation program if they are designed to address project level impacts on federal surveys. Project-level impacts on scientific surveys should require project-level mitigation measures for each of the seven scientific surveys disrupted by the Mayflower Wind project. Monitoring activities currently employed by wind developers have not been designed to mitigate project level impacts on NMFS scientific surveys. BOEM and NMFS are developing a federal survey mitigation strategy and NMFS survey mitigation program which will describe survey mitigation responsibilities to be implemented by project proponents. In the interim, project-level federal survey mitigation activities should be proposed and described as part of the Mayflower wind project. These activities should be standardized, meet existing scientific survey protocols and develop new methods using independent-peer review processes, and methods should be calibrated to and integrated with federal regional scientific surveys, and annual data collections implemented for the operational life span of the project, or until such time as a programmatic federal scientific survey mitigation program is established. Text provided in documents prepared for other projects with similar impacts can be used to inform the assessment of scientific survey impacts for this project. Consistent with work we have done with you in the past, the NEPA document should include a full description of scientific surveys to be impacted, the history of each time series, and relative importance of the impacted scientific surveys on management advice, decision-making, and other end-users. In addition, developer-led project level monitoring should be standardized regionally. We encourage you to work closely with us to ensure potential impacts to our scientific survey

operations and consequent effects to fisheries stock assessments, fishery management measures, and protected species conservation efforts are evaluated in the EIS for this and other projects, including any efforts to mitigate such impacts.

Comment Number: BOEM-2021-0062-DRAFT-0039-16

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

• The EPA recommends that BOEM develop and describe measures in the DEIS to mitigate NAAQS pollutants, such as NO_x, and PM_{2.5}, as well as any regulated toxic and greenhouse gas pollutants for the emissions sources described in Section 5.1 of the COP. EPA suggests that best available technologies and reasonable mitigation measures include the use of ultra-low sulfur fuels, including liquefied natural gas, inherently lower-emitting and high efficiency engine designs, use of Tier 4 certified engines, use of fuel cells and marine batteries, and electric cranes and support equipment. Also, as described in the COP, wind turbine generators (WTGs) may be equipped with a generator engine for emergency backup power. Diesel-fired engines on the WTGs are an additional source of air emissions and are subject to EPA's OCS air permit. EPA encourages BOEM to explore and describe in the DEIS options to require alternate lower-emitting power sources such as battery backup or fuel cell technology to provide emergency power to the WTGs during operations.

Comment Number: BOEM-2021-0062-DRAFT-0039-18

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

• The COP indicates the potential use of multiple ports along the Atlantic coast. Many port communities are located in areas that may have existing air quality issues and/or environmental justice concerns. EPA recommends that the EIS explore the feasibility of requiring emission reduction best practices for ports such as vessel speed reduction requirements, sulfur restrictions in fuel, chemical and waste storage/transfer, dust control or the use of marine shore power systems. In addition, the use of Tier 4 EPA certified equipment can further reduce emissions at ports. More information regarding air emissions reduction methods at ports can be accessed at <https://www.epa.gov/ports-initiative>.

Comment Number: BOEM-2021-0062-DRAFT-0039-24

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The COP (page 3-44) describes the clearance (moving) of boulders that cannot be easily avoided by micro-routing. While impacts may be relatively short-term, EPA recommends cable installation options, including micro-routing, be considered and described that minimize the disturbance of existing boulder, and similar complex habitat, where possible. The DEIS should explain how more permanent unavoidable impacts (such as scour protection) would be addressed through compensatory mitigation.

Comment Number: BOEM-2021-0062-DRAFT-0039-25

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

We recommend that the discussion in the DEIS include the range of design/construction measures provided in the COP that can be implemented to avoid and minimize impacts of transmission cables as they transition to shore from the marine environment. We recognize and appreciate the effort to-date to identify and delineate eelgrass beds in proximity to the cable landfall options, and support the use of Horizontal Directional Drilling (HDD) as one tool to avoid impacts to this important vegetated habitat. We recommend that the DEIS discuss the protocols that will be established to further minimize impacts associated with this drilling technology and describe mitigation measures to address unavoidable impacts from initial cable placement, or if the repair or replacement of cables is required in eelgrass habitat following construction.

Comment Number: BOEM-2021-0062-DRAFT-0039-27

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The DEIS should also describe mitigation that will be adopted to address construction and operation period noise impacts (including time of year restrictions) to marine life.

Comment Number: BOEM-2021-0062-DRAFT-0039-35

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

All construction practices which will be utilized to avoid and minimize impacts to wetlands and waters should be documented in the DEIS. Specifically, standard conditions to protect wetlands and waters should be documented. For example, the discussion should detail how Mayflower Wind's selection of Horizontal Directional Drilling (HDD) for the sea-to-shore transition of the export cable (beneath the nearshore area, tidal zone, eelgrass zone, beach and adjoining coastal dune areas) will minimize direct impacts. We note that Mayflower's chosen landfall alternative location in Falmouth is in an area where mapped eelgrass beds extend approximately 3,100 feet from shore in some locations, therefore the starting point for the HDD should be outside of the eelgrass area to avoid impacting eelgrass. We also recommend that the DEIS include a description of the HDD frack-out plan and describe how it will be designed to detect and minimize any release of bentonite drilling fluids to the marine environment.

For any unavoidable direct and indirect impacts to wetlands and other waters, including cover type conversions from construction and operation of the project, the DEIS should also include a conceptual discussion of anticipated compensatory mitigation. The mitigation analysis should also identify measures to address potential impacts to state and federally listed endangered and threatened species.

Comment Number: BOEM-2021-0062-TRANS-111821-002-2

Commenter: Heidi Richie

Commenter Type: Individual

Comment Excerpt Text:

So we also think it's important to emphasize the responsible part of our support for responsible development of offshore wind.

This requires research and monitoring of birds and bats, marine mammals, fish and the full range of species that utilize marine and coastal areas in and around the offshore wind areas. A robust and transparent approach is needed to ensure that impacts are avoided, minimized and where unavoidable mitigated as much as feasible.

We appreciate Mayflower's commitment in the bid they submitted to the state to help fund research and monitoring for fisheries and wildlife.

Comment Number: BOEM-2021-0062-TRANS-111821-002-5

Commenter: Heidi Richie

Commenter Type: Individual

Comment Excerpt Text:

Finally, I'd just like to note, as an example of one concern for what is needed for research and monitoring, there are ongoing, there have been aerial surveys that New England Aquarium has been conducting for the last two years in marine mammals, and there is a bit of a gap in funding for that, I know BOEM is trying to work to help resolve that, hopefully with the industry and the states but the North Atlantic Right Whale is now down to only 336 individuals. We absolutely need a robust continuous monitoring davis set before, and during construction and then also afterwards during operations. And that's just one example of the research needs.

A.2.16 Navigation and Vessel Traffic

Comment Number: BOEM-2021-0062-DRAFT-0012-17

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Expanded industrial activities in and around the project area will undoubtedly increase the amount of vessel traffic in the area. The EIS must include alternatives for a vessel traffic plan to minimize the effects of all vessels associated with the wind energy project on marine wildlife.

Comment Number: BOEM-2021-0062-DRAFT-0026-19

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

BOEM must also work with USCG to resolve inconsistent positions regarding the MA/RI Port Access Route Study (MARIPARS). Analysis in the Massachusetts Rhode Island Port Access Route Study by USCG outlined traffic and navigation risks associated with the 1x1 nm spacing proposed by developers, but did not provide recommendations on project design. This proposed spacing will make fishing operations and transiting much less safe and likely prohibitive. RODA filed an appeal of the MARIPARS alleging deficiencies under the Information Quality Act. USCG denied that appeal stating, in part:

The MARIPARS is only “influential” to the extent that it would form the basis of a subsequent Coast Guard policy decision to commence a rulemaking for the purpose of establishing a new routing measure or amending an existing one... Your letter suggests the MARIPARS is tantamount to a final decision about the turbine layout within the MA/RI WEA, however that decision will ultimately be made by BOEM, which in addition to the Coast Guard’s navigational safety opinion, will consider many other

inputs... the MARIPARS is not influential because the decisions on wind turbine siting could be made in its absence.

Recent statements from USCG to our members have also indicated that MARIPARS was not intended to predict all downstream maritime traffic effects of OSW development, that analyses would be conducted anew for each project, and that cumulative effects analyses are currently insufficient to understand full build-out. Despite this, in both the EIS and Record of Decision for the Vineyard Wind project, BOEM relied solely on the MARIPARS study to assert that the layout preferred by the developer would provide sufficient navigational safety—cumulatively—across the New England lease areas.

Previous BOEM EISs have contained no analyses of the impacts of transit lanes to the following crucial topics: fishing economics, product quality, markets, fisheries management, and living marine resources that may benefit from migration corridors. They also fail to identify the history of collaboration and negotiation that led to the transit lane proposal. These topics must be given full due consideration in any EIS for future projects.

BOEM must adequately analyze navigational safety in all EISs. This includes alternative turbine spacings beyond the uniform 1x1 nm spacing design supported by OSW developers for other WEAs. The MARIPARS is insufficient, as outlined above, and should not be solely relied upon for the determination of safety and navigation measures. The 1x1 nm supported by BOEM and the USCG was proposed by offshore wind developers and suggests a clear bias to the developers. The absence of any defensible analysis of layouts proposed by the fishing industry based on expertise in fishing operations (vessel turning capabilities, gear functions, etc.) further supports this appearance and raises serious conflict of interest concerns about whether BOEM can maintain objectivity in OSW permitting decisions.

Comment Number: BOEM-2021-0062-DRAFT-0033-11
Organization: New York State Department of State
Commenter Type: State Agency

Comment Excerpt Text:

A comprehensive mariner communication plan that addresses all phases of the Projects' development, from pre-construction surveys to decommissioning, to ensure sufficient outreach and engagement.

Comment Number: BOEM-2021-0062-DRAFT-0034-8
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

During operation of the wind generation facility, there may be impacts on the radar used by the small boats, particularly in fog or at night. Impacts need to be thoroughly addressed in the DEIS.

Comment Number: BOEM-2021-0062-DRAFT-0037-92
Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office
Commenter Type: Federal Agency

Comment Excerpt Text:

Consistent with our comments on other projects, we recommend BOEM avoid/minimize impacts to fishery resources and existing and anticipated future fishing operations from this project. As noted above, this project could alter EFH for certain species, while construction activities and noise could disrupt spawning behavior, mask species communications, and negatively impact eggs and larvae. These effects

could have short- and potentially long-term impacts to such resources and resulting consequences to fisheries that target them. Apart from indirect biological impacts, the project could result in direct impacts to fishing operations in the form of reduced area access, increased steaming time, and navigational/operational impediments. Beyond the operational impacts (access/navigation) due to the presence of structures, the COP notes that pre-construction preparation could involve relocating boulders and unexploded ordnance (UXO). Shifting the location of known obstructions or UXO may cause safety impacts to vessels, including gear/vessel damage and personal injury. The EIS should discuss these issues and include measures to avoid and minimize such impacts.

Comment Number: BOEM-2021-0062-TRANS-111021-002-2

Commenter: Jerome Virgil

Commenter Type: Individual

Comment Excerpt Text:

Now, as cape and island residents will know, the sea and the environment does a big harm to the vessels, to the ferries that come into -- that move between Nantucket and Martha's Vineyard and the mainland. They need repairs all the time.

A.2.17 NEPA/Public Involvement Process

Comment Number: BOEM-2021-0062-DRAFT-0008-4

Organization: Associated Industries of Massachusetts

Commenter Type: Other

Comment Excerpt Text:

None of this means that the review should be fast tracked or ignore legitimate concerns of impacted parties. BOEM must review all impacts to make sure voices have been heard and any negative impacts have been addressed. That type of analysis will not only help Mayflower succeed but also help future projects as stakeholders know that the process is fair and inclusive.

Comment Number: BOEM-2021-0062-DRAFT-0012-12

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana is aware of the Construction and Operations Plan, EIS, Record of Decision, and reinitiation of Section 7 consultation under the Endangered Species Act for the Vineyard Wind I project and is following the process carefully. Oceana notes that while the Vineyard Wind permitting in a nearby site may serve as an example, separate new analysis must be completed for each project with improvements and additions as necessary. While it may be attractive to simply replicate the Vineyard Wind analyses and conclusions in its EIS and associated reviews for the current project, that approach must be avoided.

Comment Number: BOEM-2021-0062-DRAFT-0012-16

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As BOEM develops the mandated full range of alternatives for the Mayflower Wind project, Oceana encourages BOEM to include the following concepts, strategies, tools, and safeguards for consideration. These elements will improve the project, minimize its effects, and ensure that the government and all concerned stakeholders can properly oversee the project as it is developed on shared public waters. Oceana recognizes that these proposals represent the state of the issues at this time and the environmental review and permitting can take years. BOEM should ensure that the final EIS for this project is updated with current knowledge, science, technology, and practices that may emerge during development of the document.

Comment Number: BOEM-2021-0062-DRAFT-0012-6

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana thanks you for the opportunity to submit scoping comments as your agency begins developing its Environmental Impact Statement (EIS) to evaluate options for development of Mayflower Wind in waters south of New England. As you know, National Environmental Policy Act (NEPA) scoping is a critical early step in the EIS process, as it provides an opportunity for all interested stakeholders with a variety of perspectives to help inform the process. It helps to "determine the scope of issues to be addressed in depth in the analysis," "identify concerns . . . and invite participation from affected entities," "define the alternatives that will be analyzed," and "identify the environmental issues that are pertinent to the proposed action." [Footnote 1: 40 C.F.R. § 1501.9; NOAA, , at 16 (January 13, 2017), <https://www.nepa.noaa.gov/docs/NOAA-NAO-216-6A-Companion-Manual-01132017.pdf>; , 297 F.3d 1012, 1022 (10th Cir. 2002).] A comprehensive and equitable scoping process is essential for identifying the "reasonable range" of alternatives that must be evaluated in the EIS process to address the purpose and need of proposed agency action. [Footnote 2: 40 C.F.R. § 1502.14.] Those reasonable alternatives must be rigorously explored and objectively evaluated. Each alternative must be "considered in detail...so that reviewers may evaluate their comparative merits." [Footnote 3: 40 C.F.R. § 1502.14(b).] "What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case." [Footnote 4: Council on Environmental Quality, 40 Most Asked Questions Concerning CEQ's Nation Environmental Policy Act Regulations (Mar. 23, 1981), <https://media.fisheries.noaa.gov/dam-migration/40-questions-nepa.pdf>.] As one court stated, the agency "must look at every reasonable alternative within the range dictated by the nature and scope of the proposal. The existence of reasonable but unexamined alternatives renders an EIS inadequate." [Footnote 5: 'Ilio'ulaokalani Coal. v. Rumsfeld, 464 F.3d 1083, 1095 (9th Cir. 2006).]

Comment Number: BOEM-2021-0062-DRAFT-0012-8

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To ensure that the Mayflower Wind project is developed in a responsible manner, BOEM must confirm that the project complies with existing laws including NEPA, the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Oceana appreciates the urgency that the administration has expressed to get projects like this under way quickly, but that cannot come at the expense of a full review and assessment.

Comment Number: BOEM-2021-0062-DRAFT-0019-7

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

There is also a need for more effective stakeholder outreach to avoid litigation/ lobbying by conservationists and marine mammal ENGOs.

Comment Number: BOEM-2021-0062-DRAFT-0022-5

Organization: New England for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

Finally, the responsible development of offshore wind, consistent with continuously improving best practices informed by the best science and a commitment to rigorous data collection, is essential. Offshore wind energy can be developed in a manner that protects wildlife, habitat, and communities, and should advance as quickly as responsible development allows. We applaud BOEM's announcement of an NOI for an environmental impact statement, and we urge the agency to conduct an expeditious and thorough analysis using the best available science and data and an inclusive stakeholder engagement process.

Comment Number: BOEM-2021-0062-DRAFT-0026-10

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

RODA reiterates the importance of any entity analyzing fisheries data to work cooperatively with NOAA Fisheries, state agencies, and the fishing industry. To that end, BOEM would improve its prior analyses by expanding the time series of data analyzed and by expanding its cooperation with the fishing industry and/or NOAA Fisheries and state agencies to enhance appropriate data sets.

Comment Number: BOEM-2021-0062-DRAFT-0026-12

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

RODA again calls upon BOEM to develop suitable Programmatic Environmental Impact Statements by region, with tiered analyses for individual projects or contiguous lease areas. This is the only approach that will both meet NEPA's requirements and allow for effective public comment opportunity. [Bold: Fishermen, scientists, managers, and other non-OSW professionals simply cannot provide meaningful comments on each individual project BOEM plans to review in the near term. Without the ability to provide consolidated reviews and comments, the quality of decision making and project planning and the ability to find suitable mitigation measures will be strongly jeopardized.]

The Supplemental Environmental Impact Statement (SEIS) completed in 2020 for the Vineyard Wind I project was intended to serve as a cumulative impacts analysis for multiple projects in the region. However, the SEIS was only incorporated into the record of that project as BOEM used an entirely different—and grossly insufficient—approach for the South Fork project just weeks later.

It is unclear what, if any, approach BOEM plans to use going forward. Politics must not interfere with scientific integrity or transparency. BOEM must clarify its intent to present the public with an understanding of the cumulative impact of a potential 3,000 turbines, of which the agency is “streamlining” installation into the seabed between MA and VA in the next nine years (with another 5,000 thereafter). It must provide explicit information as to how it will approach cumulative impacts reviews for this and future projects.

Comment Number: BOEM-2021-0062-DRAFT-0026-13
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

BOEM and OSW developers provide inconsistent approaches to whether projects should be considered on an individual or cumulative level, seemingly based on whichever is more beneficial for the developer and the issue in question. It is unclear how BOEM decides which projects are included in an EIS. For Mayflower Wind and several of the earliest projects (Vineyard Wind 1, South Fork, and Ocean Wind 1) BOEM’s NEPA review focuses on a single proposed project with a Power Purchase Agreement (PPA) in place Wind- C without the project having a PPA, and it will conduct one analysis for Phase 1 and 2 (both with PPAs) of Empire Wind. For the Sunrise Wind and Vineyard Wind South NOIs, BOEM has combined EISs for one phase with a PPA and a later phase that will, ambiguously, provide some more energy. There is evidently no standard protocol for when BOEM will conduct a project’s EIS, and inconsistency is increased when analyses are conducted piecemeal for each phase versus across an entire lease area. The current approach makes it nearly impossible to conduct any cumulative analysis as there is no appropriate time in the federal process to do so.

Comment Number: BOEM-2021-0062-DRAFT-0026-2
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

BOEM has announced new “public comment periods” almost daily for the past several months without sufficiently addressing the collective requests it has already received through the public process. This approach creates confusion, makes authentic engagement impossible, and exacerbates a growing divide between the select few who will financially benefit from OSW development and the overwhelming majority of coastal citizens who will suffer direct negative environmental and economic impacts, which are disproportionate to the minor global benefits these OSW projects offer toward mitigating climate change.

Comment Number: BOEM-2021-0062-DRAFT-0026-27
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

OSW-related activities, which have not undergone mandatory environmental review, are already occurring in the lease area where the Mayflower Wind project and others are proposed. These activities must be considered, analyzed, and authorized under appropriate NEPA practices including a Programmatic EIS.

Comment Number: BOEM-2021-0062-DRAFT-0026-28
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

Mayflower's ongoing and proposed fisheries research is not well coordinated with other OSW projects and fisheries science experts. BOEM must require such coordination, not just assume that its recommendations will be followed without oversight

Comment Number: BOEM-2021-0062-DRAFT-0026-4
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

RODA has repeatedly stated that BOEM's current approach of flooding the public with comment periods, while ignoring requests for transparency and authentic inclusion, prevents meaningful engagement thereby putting at risk the achievement of sustainable and environmentally conscious renewable energy production. RODA has consistently, for years, offered specific requests to BOEM to improve communication, safety, transmission planning, research, cumulative effects analyses, seafood business longevity, and environmental impacts. These requests are available on the RODA website [Footnote 2: [https://rodafisheries.org/offshore-wind/.](https://rodafisheries.org/offshore-wind/)] and BOEM should address them and forge working relationships with this constituency that provides food security to our nation throughout the development of this EIS and other actions.

One clear indicator of the ineffectiveness of this approach is that fundamental Mayflower Wind project decisions are already being made and discussed at the local, state, and business levels, which entirely narrow the range of alternatives that BOEM will consider in this EIS. Yet, reading the NOI, most members of the public would incorrectly assume that the project is still in a high level planning phase with the COP being a mere proposal for which BOEM would consider many options to modify. Regardless of the private plans being made by the project applicant, we again urge BOEM to develop a comprehensive planning process, remove segmentation that serves to marginalize fisheries, and consider OSW planning options from an impartial standpoint.

Comment Number: BOEM-2021-0062-DRAFT-0026-5
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

It is imperative for BOEM to publish all matters of public interest in the Federal Register, in accordance with its own past practice (until recently), standard practice at other agencies, and the law. This is especially important given BOEM's decision to conduct stand-alone NEPA reviews for the large number of OSW projects undergoing permitting rather than adopt a programmatic approach. It is extremely difficult for impacted parties and other members of the public to follow an individual project through its evolution, and consistent dockets within the Federal Register are a minimum necessary tool toward that end.

Comment Number: BOEM-2021-0062-DRAFT-0026-6
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

BOEM Must Demonstrate Independent Review

All offshore development projects should be subject to the highest standards of independent review. The purpose and need as stated in this NOI references Presidential Executive Order 14008, which mandates full deployment of renewable energy resources to combat climate change, while conserving our lands, waters, and biodiversity. This raises a number of questions regarding BOEM's approach to conducting reviews of OSW projects. RODA's large body of comments discuss the major gaps in our knowledge of the impacts of OSW on our marine ecosystems. BOEM is processing with rapid deployment of OSW to address a major global issue but is not considering the environmental effects sufficiently.

Comment Number: BOEM-2021-0062-DRAFT-0026-8
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

For this reason, the one-sided, promotional tone of BOEM's press release announcing this NOI (and the press releases that have accompanied every OSW-related announcement, no matter how minor or inconsequential, this year) is wholly inappropriate for a public trust agency and appears unprecedented in any industry. It is indisputable that public policies should prioritize a transition to energy sources that will reduce GHG emissions. However, it is unclear whether BOEM can be expected to conduct an independent review of these projects when effectively ordered by the White House to achieve 30 GW capacity of offshore wind energy by 2030, rather than an overall evaluation of possible energy strategies and their environmental and economic tradeoffs.

Comment Number: BOEM-2021-0062-DRAFT-0027-3
Organization: BlueGreen Alliance
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Environmental Impacts

To comply with state and federal policies and achieve all necessary permits, all offshore wind energy must be developed in an environmentally responsible manner that avoids, minimizes and mitigates impacts to ocean wildlife and habitat and traditional ocean uses, meaningfully engages stakeholders from the start, and uses the best available science and data to ensure science-based and stakeholder-informed decision making. This includes analysis of cumulative impacts and adaptive management strategies, obtaining all necessary and relevant data, and requires BOEM to identify all methodologies, and indicate when information is incomplete or unavailable, acknowledge scientific disagreement and data gaps, and evaluate intermediate adverse impacts based on approaches or methods generally accepted in the scientific community.

Comment Number: BOEM-2021-0062-DRAFT-0029-6

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

Second, BOEM must comply with NEPA in permitting this Project. As an "action-forcing" statute, NEPA is designed to ensure that the public and decision-makers are provided with the information they need to make a considered decision about the best path forward. The statute is also designed to ensure that the agency has carefully and fully contemplated the environmental effects of its proposed action. [Footnote 5: 40 C.F.R. § 1502.1; , 677 F.3d 596, 601 (4th Cir. 2012) (quoting , 490 U.S. 332, 350 (1989)).] In other words, NEPA requires that federal agencies take a "hard look" at the environmental consequences of a proposed action. [Footnote 6: , 938 F.2d 190 (D.C. Cir. 1991), , 502 U.S. 994 (1992).] As an island community with an economy that is seasonal and tourism driven, the Town has a stake in ensuring that the ecological integrity of the area is maintained, and expects BOEM to work closely with consulting parties in making its decision.

Comment Number: BOEM-2021-0062-DRAFT-0030-16

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

More in-depth analysis of the foundation types coupled with an indication of preference in the context of BOEM's COP review will also inform the appropriate hierarchy of decision-making relative to technology determinations and acceptable environmental impacts for offshore wind projects. [Footnote 1: It is of equal importance that coastal states' consistency review determinations pursuant to their respective Coastal Zone Management programs align with the NEPA review process in a way that adds to the fulsome assessment of offshore wind projects with the potential to impact and benefit states' coastal resources and uses. To this end, a project applicant's consistency certification should not be forwarded to a coastal state for a determination until BOEM issues a draft EIS that defines the scale and scope of the environmental assessment.] Without an option for BOEM to steer the project applicant toward preferred foundation and turbine types in the NEPA process, the specifics of each project's design can easily and rather concretely be determined outside and prior to the NEPA environmental review process entirely. This already may be the case for this project.

Comment Number: BOEM-2021-0062-DRAFT-0031-10

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

I respectfully request that BOEM place a requirement in any EIS that requires the proponent to undertake the scientific and economic research necessary to ensure that claims as to lack of impact are indeed true and, if not, to address them through mitigation.

Comment Number: BOEM-2021-0062-DRAFT-0033-13

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

As BOEM and coastal states across the nation collectively rise to meet the administration’s 30 GW by 2030 goal and their respective state mandates, the Department encourages BOEM to proactively engage with all potentially affected states and stakeholders.

To that end, the Department respectfully requests an invitation for New York to constructively participate as a cooperating agency with federal and state partners in BOEM’s NEPA review of the proposed action.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-142

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Mayflower Wind does not have a committed power offtaker for the majority of its potential power generation but has a proposed schedule in which all construction will be completed in 2028. If finalizing offtakers for the Projects power were to delay the proposed schedule such that construction continued past 2028, under BOEM’s regulations Mayflower Wind would need to submit a revised schedule, which may require BOEM to conduct a revised National Environmental Policy Act analysis.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-166

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Responsible Development of Offshore Wind Power

The NEPA process should inform all interested parties about the environmental impacts from offshore wind projects and can ensure the responsible development of the promising and abundant resource of offshore wind power. Several decades of offshore wind development in Europe suggest that offshore wind power can be developed responsibly, provided that all siting and permitting decisions are based on sound science and informed by key experts and stakeholders. The European experience shows us that avoiding sensitive habitat areas, requiring strong measures to protect wildlife throughout each stage of the development process, and comprehensive monitoring of wildlife and habitat before, during, and after construction are essential for the responsible development of offshore wind energy. [Footnote 21: O’Brien, Sue. “Lessons learned from the European experience.” Presentation at the State of the Science Workshop on Wildlife and Offshore Wind Energy Development. Nov. 13-14, 2018.]

Despite offshore wind’s rapid growth in Europe, United States offshore wind remains a new industry, with the nation’s first commercial project – the Block Island Wind Farm (30 MW) – only coming online in December 2016. BOEM recently issued a Record of Decision approving a major project to the west of Mayflower Wind–Vineyard Wind 1–and is considering multiple other projects off the east coast. Commenters have provided ample comments on those projects which should provide guidance for this NEPA process as well.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-172

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

D. Full Disclosure of Data Relied on in the EIS

Under NEPA, BOEM must make every attempt to obtain and disclose data necessary to its analysis in order to provide a "full and fair discussion of significant environmental impacts." [Footnote 28: 40 C.F.R. § 1502.1.] Under previous regulations, the simple assertion that no information or inadequate information exists will not suffice. Unless, under the 1978 regulations, the costs of obtaining the information are exorbitant, NEPA requires that it be obtained. [Footnote 29: 40 C.F.R. § 1502.22 (repealed 2020); see also 42 U.S.C. §4332(G) (agencies shall "make available to states, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment"). The current regulations require that such information be obtained if "the overall costs of obtaining it are not unreasonable." 40 C.F.R. § 1502.21(b).] Under the 1978 regulations, agencies were further required to identify their methodologies, indicate when necessary information is incomplete or unavailable, acknowledge scientific disagreement and data gaps, and evaluate indeterminate adverse impacts based upon approaches or methods "generally accepted in the scientific community." [Footnote 30: 40 C.F.R. §§ 1502.22(b)(2), (b)(4), 1502.24 (repealed 2020). Current regulations at 40 C.F.R. §§ 1502.21(c), 1502.23 have similar provisions that are not inconsistent with the application of the more robust previous regulations.] Such requirements become acutely important in cases where, as here, so much about an activity's impacts depend on newly emerging science. Finally, NEPA does not permit agencies to "ignore available information that undermines their environmental impact conclusions." [Footnote 31: Hoosier Environmental Council v. U.S. Department of Transportation, 2007 WL 4302642 *13 (S.D. Ind. Dec. 10, 2007).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-182

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In the event that securing offtaker(s) for the additional energy from Mayflower Wind were to delay the proposed schedule such that construction continued past 2028, under BOEM's regulations Mayflower Wind would need to submit a revised schedule, which may require BOEM to conduct a revised NEPA analysis. The need for additional NEPA analysis would depend on the extent to which the new schedule deviated from the original schedule and the extent to which our understanding of the impacts from offshore wind development has changed. For example, if a delayed schedule were to occur after several offshore wind projects currently in the early stage of development were constructed and operated, such projects could give us new and significant information regarding how offshore wind projects impact a variety of resources and communities. Ocean conditions may have significantly changed, as well as the conservation status or behavior patterns of key species. New technologies may develop that could significantly impact construction, turbine size, turbine foundations, layout, or other significant factors, including impact minimization strategies. In such circumstances, additional NEPA analysis could be necessary before Mayflower Wind could proceed with a delayed construction schedule.

Comment Number: BOEM-2021-0062-DRAFT-0037-3

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

BOEM is planning to expedite the review of the Mayflower Wind COP through a two-year timeline to complete the NEPA process and consultations. The schedule also includes milestones for issuance of a requested MMPA Incidental Take Authorization to the developer. As you know, milestone dates associated with our consultations and authorization for this project are posted on the FAST-41 permitting dashboard. Our ability to initiate consultation and meet our milestone dates is contingent upon us making the determination that we have received complete and adequate consultation documents (Biological Assessment (BA) and Essential Fish Habitat (EFH) assessment) that contain all necessary information to consult on the project. Our Biological Opinion under the ESA will be comprehensive and must consider all proposed actions associated with the project, including the proposed issuance of a Letter of Authorization (LOA). The timeline is also contingent upon NMFS' deeming receipt of an adequate and complete MMPA LOA application by the agreed upon date, currently targeted for August 8, 2022; to meet this deadline and avoid schedule delays, NMFS strongly recommends the applicant submit a draft application to our Office of Protected Resources (PR.ITP.applications@noaa.gov) approximately six months in advance of the August 2022 milestone date (i.e., February 2022). If we do not receive the necessary information to initiate our consultations and start processing the LOA application by the dates outlined in the permitting timeline, it may result in delays in the overall project schedule.

Comment Number: BOEM-2021-0062-DRAFT-0037-41

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

It is important that the analysis provides a sufficient evaluation of baseline conditions and uses the best available information to evaluate the alternatives and support the analysis of effects. Any conclusions related to the magnitude and direction of project impacts should be fully supported by the analysis in the EIS and be consistent with impact definitions identified in the EIS. Importantly, the significance criteria definitions identifying the magnitude of impacts from the project (e.g., negligible, minor, moderate, major) should not embed terms defined by other statutes (e.g., the definition of minor should not refer to the MMPA definition of "level A harassment") or apply other statute definitions to the impact criteria used for NEPA purposes. Rather, these definitions should be written in a way that it is clear to a reader how these impact determinations consider the spectrum of effects to individual animals (e.g., temporary behavioral disturbance, injury). We also encourage you to use definitions that are appropriate for the resource being considered (e.g., benthic habitat vs. marine mammals). As you know, we recently worked with you on the South Fork EIS to develop significance criteria definitions for impacts to NOAA trust resources (i.e. marine mammals, and benthic habitat, EFH, finfish and invertebrates). That collaborative work should be carried forward for this and future NEPA documents. As we have stated in the past, to the extent that any conclusions are based on inclusion of mitigation measures, those measures must be clearly defined [Footnote 10: For example, Table 16.1 of the COP (page 16-13) notes that "lower impact construction methods" will be incorporated, when possible, to mitigate construction noise impacts to benthic and shellfish resources. Additional detail is necessary for the reader to understand how this potential mitigation measure would contribute to decreasing impacts.] and include an indication as to whether the measure is considered part of the proposed action and will be required upon approval, or an option that may be implemented by the developer at their own discretion. In preparation of the NEPA

document for Mayflower Wind, we strongly recommend you review and incorporate comments we have made on previous BOEM documents to ensure a robust and sufficient analysis of NOAA trust resources.

Comment Number: BOEM-2021-0062-DRAFT-0037-59

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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 activities that are reasonably certain to occur following the proposed approval of the Mayflower Wind COP (including surveys, construction, operation, and decommissioning) may affect ESA-listed species and/or designated critical habitat, section 7 consultation is required. It is our understanding BOEM will be the lead Federal agency for this consultation, and that you will coordinate with any other Federal agencies that may be issuing permits or authorizations for this project, as necessary, 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 and issuance of any MMPA take authorization by NOAA's National Marine Fisheries Service (NMFS)) regarding any wind energy facility proposed in the lease area. Given the extremely tight timelines proposed for this project, it is critical that we receive a draft Biological Assessment (BA) with the Cooperating Agency draft of the DEIS. This BA must reflect all activities associated with the full scope of the Mayflower Wind project including clearly defined mitigation and monitoring measures that BOEM considers as part of the proposed action. Further, the BA must reflect any and all proposed survey or monitoring activities proposed for any stage of the project, including surveys of fisheries resources. We encourage you to use the ESA Information Needs Checklist when developing the BA.

Comment Number: BOEM-2021-0062-DRAFT-0037-64

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

It is our understanding BOEM will develop a BA to support your eventual request for ESA section 7 consultation. While we understand that you intend to prepare the BA as a stand-alone document (i.e., you are not planning for the EIS to serve as the BA), we anticipate and expect that the BA will be an appendix to the EIS. We are not opposed to an approach whereby the EIS would serve as the BA, provided sufficient detail and analyses are included. We understand 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.

Comment Number: BOEM-2021-0062-DRAFT-0037-72

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

A summarized list of NOAA's adoption requirements is below, and more information can be found in NOAA's NEPA Companion Manual available at

<https://www.nepa.noaa.gov/docs/NOAA-NAO-216-6A-Companion-Manual-01132017.pdf>.

- 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; and
- The listing of agencies consulted.

Comment Number: BOEM-2021-0062-DRAFT-0039-1

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

In addition to coordination with affected states and local communities, we recommend that BOEM continue to work closely with federal agencies and tribes with relevant air, water and natural resource responsibilities and interests during the development of the DEIS.

Comment Number: BOEM-2021-0062-DRAFT-0039-36

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Finally, close coordination with the U.S. Army Corps of Engineers, National Marine Fisheries Service, appropriate state Coastal Zone Management offices, EPA, and others, will be essential for the portions of the proposed work that falls under each agencies' respective jurisdiction.

Comment Number: BOEM-2021-0062-DRAFT-0039-38

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The COP - Volume 2 (page 4-23) describes survey data that reveals the presence of hard bottom habitat, citing Appendix E. We note that Appendix E (Marine Site Investigation Report) is labeled "Confidential – Not for public disclosure." While the COP provides a good discussion and graphics that are based on this survey, it states that Appendix E will be revised once ongoing survey and analysis are complete. This detailed information on hard and complex benthic habitat is a critical part of the process to consider impacts from both the development of the wind farm and the cables that will bring power to shore. These data also inform options for avoiding or minimizing impacts. We recommend that the Marine Site Investigation Report (Appendix E) be made available to the public for review as part of the DEIS, as well as any other reports that present information on benthic surveys of the lease site or cable transit routes. Business sensitive information can always be redacted in the report, if warranted. EPA requests notification of the availability of the Marine Site Investigation Report for review and reserves the right to supplement our scoping comments based on that review.

Comment Number: BOEM-2021-0062-TRANS-111021-003-2

Commenter: Kathleen Keating

Commenter Type: Individual

Comment Excerpt Text:

My second comment is that the 30 day period from the publishing of the notice of intention is not long enough to actually get significant involvement from public, so I would like to make that comment known and pursue it further as far as, you know, the -- extending the time to get meaningful public comment from community stakeholders, myself in my home state and the others that are interested in -- in the projects in their home state.

A.2.18 Other Resources and Uses

No comments were received on this topic.

A.2.18.1 Aviation

No comments were received on this topic.

A.2.18.2 Marine Minerals

No comments were received on this topic.

A.2.18.3 Military

No comments were received on this topic.

A.2.18.4 Research Activities

No comments were received on this topic.

A.2.18.5 Other

Comment Number: BOEM-2021-0062-DRAFT-0009-2
Organization: Association to Preserve Cape Cod, Inc.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In preparation of the EIS, APCC recommends that additional study and information be provided for the following issue areas, which specifically pertain to the natural resources associated with the Cape Cod onshore and offshore aspects of the project.

A.2.19 Other Topics Not Listed

No comments were received on this topic.

A.2.19.1 Coastal Zone Consistency

Comment Number: BOEM-2021-0062-DRAFT-0023-1
Organization: Rhode Island Coastal Resources Management Council
Commenter Type: State Agency

Comment Excerpt Text:

The Rhode Island Coastal Resources Management Council (CRMC) is aware that BOEM issued a Notice of Intent (NOI) on November 1, 2021 to begin preparation of the Environmental Impact Statement (EIS) for the proposed Mayflower Wind1 project as posted on the BOEM website at: <https://www.boem.gov/renewable-energy/state-activities/mayflower-wind-construction-andoperations-plan>. The CRMC is providing the following comments for consideration by BOEM in the preparation of the above referenced EIS for the Mayflower Wind offshore wind energy project located within BOEM Lease Area OCS-A 0521. The Mayflower Wind project as described within the NOI is a proposed 1,600 to 2,400 megawatts (MW) renewable energy wind farm located approximately 30 miles south of Martha's Vineyard, MA. The project involves two separate export cable routes, one making landfall at Falmouth, MA via the east side of Martha's Vineyard through Muskeget Channel, the other making landfall at Brayton Point in Somerset MA, via Rhode Island state waters through the Sakonnet River and Mount Hope Bay.

Although Mayflower Wind is actively pursuing additional offtake opportunities, at this time it has only a single power and purchase agreement (PPA) to deliver 804 MW of offshore windgenerated electricity to Massachusetts with the interconnection point at Falmouth, MA. A second export cable route (with potentially up to 6 cables) into Rhode Island state waters via the Sakonnet River and Mount Hope Bay is described within the NOI and the Mayflower Wind Construction and Operation Plan (COP) for an interconnection point at Brayton Point in Somerset, MA. Mayflower

Wind has entered into an agreement with Anbaric Development Partners (Anbaric) to use transmission assets developed by Anbaric at Brayton Point. The CRMC will exercise its CZMA Federal Consistency review authority in this matter for the proposed Brayton Point export cable route, because the export cables are a listed activity and located within the Rhode Island 2011 and 2018 Geographic Location Descriptions (GLDs). See 15 C.F.R. § 930.53. Based on the information we reviewed from the BOEM website, however, it was not clear as to whether Mayflower Wind will be voluntarily submitting a Consistency Certification for CRMC review of the proposed wind farm as an unlisted activity within

lease area OCS-A 0521, as the wind farm itself is not located with the RI GLDs. Applicants may voluntarily submit a Consistency Certification for unlisted activities to a state CZMA agency pursuant to 15 C.F.R. § 930.54(f). For purposes of Federal consistency review, Mayflower Wind has recently confirmed its intent to file with the CRMC a Consistency Certification and necessary data and information for CRMC CZMA review of just the export cables through the RI GLDs. In addition, as Mayflower Wind is aware, the CRMC will exercise its state permitting authority for that portion of the Mayflower Wind project (i.e., export cables) proposed within Rhode Island state waters.

Comment Number: BOEM-2021-0062-DRAFT-0023-10

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

It is CRMC's strong recommendation that a State's federal consistency review for offshore wind projects should begin with BOEM's publication of the Draft Environment Impact Statement (EIS) and issuance of the Notice of Availability (NOA) for offshore wind projects under Subpart E of 15 C.F.R § 930. Under existing federal regulations, the NEPA process starts with BOEM's Notice of Intent to prepare an Environmental Impact Statement for the COP. For renewable energy projects on the outer continental shelf (OCS) the State's Coastal Zone Management Act federal consistency review process begins with receipt of a consistency certification and the COP, which are filed with the State on or about the time BOEM issues an NOI. BOEM's regulations (codified in 30 C.F.R. § 585.628) state that the NOI and the initiation of the federal consistency reviews begins once the information requirements for the COP are met and BOEM forwards the consistency certification to the state agency. NOAA's federal consistency regulations at 15 C.F.R. § 930.58 specifies that "NEPA documents shall not be considered necessary data and information when a federal statute requires a federal agency to initiate the CZMA federal consistency review prior to its completion of NEPA compliance." In the RICRMC's opinion, however, the availability and review of an offshore wind energy project's DEIS commensurate with initiation of the CZMA federal consistency review period would lead to a more informed and science-driven decision-making process in consideration of the proposed project alternatives as detailed within the DEIS. We also conclude that such review alignment would provide for a more timely state decision in offshore wind matters and provide predictability for developers.

As an example, BOEM states within the DEIS for the South Fork Wind project (BOEM Docket 2020–0066) that "Cooperating agencies would rely on the DEIS to support their decision making and to determine if the analysis is sufficient to support their decision." See DEIS at i. State CZMA agencies are cooperating agencies under the BOEM renewable energy review process. However, as it pertains to federal consistency requirements, the CZMA review process must be completed within 6-months, unless mutually agreed upon by both the state and the developer for a stay of the state's federal consistency review period to provide further time to review necessary data and information. In the case of the South Fork Wind project, BOEM publicly released the DEIS on January 8, 2021 some 2-years following the NOI. Obviously in this case, given the timing between BOEM's issuance of the NOI and the DEIS it would not have been possible for a state agency to review the DEIS and meet the CZMA 6-month review period. Thus, it would be much more beneficial to the state cooperating agencies if the initiation of the CZMA federal consistency review starts with BOEM's release of the DEIS. We urge BOEM to work with other federal agencies, in particular NOAA, to properly align the CZMA federal consistency review process with the BOEM's COP review process so that the DEIS is available to guide and inform the state's CZMA federal consistency decision.

Comment Number: BOEM-2021-0062-DRAFT-0023-11

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

In order to better align 30 C.F.R. § 585 with 15 C.F.R. § 930, the RICRMC suggests making the revisions to NOAA's federal consistency regulations (15 C.F.R. § 930) so that the consistency certification is not filed with the state until the DEIS is publically available (generally lining up with BOEM's issuance of the NOA). NOAA's federal consistency regulations should require federal agencies to submit a DEIS or DEA as information required pursuant to the list of necessary data and information so that the state agency can review the consistency certification along with all the alternatives presented within the DEIS/DEA and make a determination within the CZMA 6-month review period. As noted above, BOEM published a NOA for the South Fork DEIS on January 8, 2021, but issued its NOI to begin preparation of the DEIS on October 19, 2018, which would not have allowed for a fully informed Rhode Island CZMA review to include examination of the DEIS if not for the nine (9) stay agreements in the South Fork Wind matter.

Comment Number: BOEM-2021-0062-DRAFT-0023-12

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

The New York State Coastal Management Program recently amended their necessary data and information requirements subject to review pursuant to 15 C.F.R. Part 930, Subpart E (Consistency for Outer Continental Shelf Exploration, Development and Production Activities) by requiring Draft NEPA documentation including DEIS or DEA (when required by a federal agency) rather than final NEPA documentation as is currently listed. It is our understanding, however, that NY cannot require the DEIS as NDI until such time that the BOEM and NOAA regulations are aligned. Thus, it is the RICRMC's recommendation that NOAA's federal consistency regulations at 15 C.F.R. § 930.76 for OCS projects be amended to include a DEIS or DEA as necessary data and information. The filing of the consistency certification with the state agency should be delayed until the DEIS is made public so that the state CZMA federal consistency review can commence once all the pertinent information is available. Importantly, several project alternatives are part of the DEIS and must be considered under a state agencies CZMA review. In the RICRMC's opinion, the CZMA process should not begin until BOEM issues the NOA for the DEIS. The state agency review of the consistency certification can then begin at the time the state agency receives the certification (amendment to § 930.77 Commencement of state agency review and public notice). In addition, the RICRMC recommends modifying BOEM's NEPA regulations at 30 C.F.R. § 585.628 so that DEIS or DEA documents should be considered necessary data and information when BOEM forwards the COP, consistency certification, and associated data and information under the CZMA to the applicable state agency to initiate the CZMA federal consistency review. The RICRMC experience from the two offshore wind projects it has reviewed to date is that the COP and Appendices have been regularly updated during the federal consistency review period. Moreover, both these projects were modified substantially during BOEM's review. Again, BOEM should reconsider when it initiates the federal consistency review process so that state agency CZMA review is not initiated until BOEM issues a NOA for the DEIS to better inform both the CZMA and NEPA processes.

Comment Number: BOEM-2021-0062-DRAFT-0023-13

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

Independent of the federal consistency issues detailed above, we wanted to also address at this time issues related to the proposed export cable route into Rhode Island state waters via the Sakonnet River and Mount Hope Bay, the so called Brayton Point ECC route, as shown in Figures 1 through 4 of the Consistency Certification document. The CRMC has jurisdiction for the proposed activity pursuant to R.I. General Laws 46-23, and a CRMC Assent is required before the proposed activity can commence within Rhode Island state waters and the RI coastal zone. The applicable policies, standards and prohibitions are contained within the CRMC Red Book (650-RICR-20-00-1). In particular, Mayflower Wind should review the Category B application criteria at 650-RICR-20-00-1.3.1(A), and the applicable standards within CRMC Ocean SAMP at 650-RICR-20-05-11.9, including the “Application requirements in state waters” found at § 11.9.8.

Comment Number: BOEM-2021-0062-DRAFT-0023-5

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

BOEM should note that the Consistency Certification (CC), along with the necessary data and information, as required by 15 C.F.R. §§ 930.76 has not yet been filed with the CRMC. Importantly, however, the Consistency Certification will need to be amended and corrected as detailed below before it is filed with the CRMC. The Consistency Certification shown on the BOEM website (Appendix D3) is incorrect as it contains references and statements regarding CRMC water type policies and standards that only apply in state waters and are not applicable in Federal waters. In addition, there is incorrect text within the CC and inappropriate references to other state policies. Accordingly, we recommend the following changes to Appendix D3 before it is filed with the CRMC:

1. Page 3-1 should remove all references and text pertaining to CRMC policies/standards regarding water type and shoreline type, including the Red Book, as these policies/standards DO NOT apply to Federal waters. Section 3.0 of Appendix D3 should only reference the CRMC’s enforceable policies that apply to Federal waters, specifically the Ocean SAMP at § 11.10 (650-RICR-20-05-11).

2. Pages 3-2 through 3-7 should be deleted from the Consistency Certification, as these references to the CRMC Red Book (650-RICR-20-00-1) for CRMC Type 2, 4 and 6 waters, Shoreline Features (§ 1.2.2), Planning for Energy Facilities (§ 1.3.1(H)), Submerged Aquatic Vegetation (§ 1.3.1(R)), Protection and Enhancement of the Scenic Value of the Coastal Region (§ 1.3.5) and Protection and Enhancement of Public Access to the Shore (§ 1.3.6) apply only to activities within the State coastal zone. Nevertheless, these same policies and standards will apply for the portion of the Mayflower Wind project that will be located within Rhode Island State waters and CRMC jurisdictional areas along the shoreline. These State policies and standards, amongst others, must be addressed if and when Mayflower Wind files a CRMC Assent (State permit) application for project activities within the Rhode Island coastal zone.

3. In several sections the Consistency Certification states that a specific activity is “consistent to the maximum extent practicable” with the enforceable policy. Please note that Federal licensing activities (Subpart D) and offshore wind renewable energy activities (Subpart E) must be fully consistent with a

State's enforceable policies pursuant to 15 C.F.R. §§ 930.50 and 930.70. See Consistency Certification at 1-4, 3-9 and 3-10. Only Federal agency activities are held to the standard "consistent to the maximum extent practicable" as allowable pursuant to 15 C.F.R. § 930.30. Accordingly, Mayflower Wind will need to amend the Consistency Certification so that these noted sections state that they are fully consistent, and supported by information within the COP, with the State's applicable enforceable policies. We note that Section 4.0 of the Consistency Certification contradicts the language noted above.

4. In regard to the Consistency Certification statements for § 11.10.1(C) on page 3-9, it is not clear that information is presented to demonstrate that the project will "not have a significant adverse impact on the natural resources or existing human uses." See the comment below on Ocean SAMP § 11.10.2. In addition, it appears that the § 11.10.1(C) statement that a BOEM Environmental Assessment for the Massachusetts/Rhode Island wind energy area, which received a Finding of No Significant Impact in May 2013, is intended to demonstrate that there should be no impact on fisheries from the Mayflower Wind project. Nevertheless, despite the May 2013 BOEM EA findings, BOEM has more recently concluded in the FEIS for both the Vineyard Wind and South Fork Wind projects that there will be adverse impacts to commercial fisheries and operations from offshore wind projects. In addition, NOAA NMFS is increasingly concerned about the impacts on Atlantic cod stocks within the southern New England wind energy area from offshore wind projects. See, for example, NOAA NMFS scoping comments to BOEM on Revolution Wind dated June 1, 2021 and NOAA NMFS response to BOEM comments on Essential Fish Habitat for South Fork Wind dated October 25, 2021. Importantly, there may be project and/or cable routing alternatives developed as part of the BOEM DEIS for the Mayflower Wind project that may provide the information necessary for the CRMC in developing a conclusion as to whether Mayflower Wind has met this particular enforceable policy requirement.

5. In regard to the Consistency Certification statements for § 11.10.1(G) on page 3-9, it states "The EFH Assessment concluded that when Project activities are considered together with the existing EFH in the Offshore Project Area, the potential for negative effects associated with the construction, operation, and decommissioning of the Project on EFH are limited in scale and considered to be very low to low." Given NOAA NMFS concerns noted above, it is not yet clear that this statement is accurate, and there may indeed be adverse impacts on Atlantic cod from the Mayflower Wind project. Accordingly, it will be important to evaluate NOAA NMFS Essential Fish Habitat comments when available as part of the CRMC CZMA review for Mayflower Wind.

6. In regard to the Consistency Certification statements for § 11.10.1(H) and (I) on page 3- 10, the Mayflower Wind project has not been designed to avoid impacts to ecologically sensitive areas, as the export cable is site directly within two separate areas of glacial moraine identified by the CRMC as Areas of Particular Concern (APC), and as shown in Figure 5 of the Consistency Certification. All offshore development, which includes submerged cables, is presumptively excluded from APC. See Ocean SAMP § 11.10.2(B). Also, see "maximum extent practicable" discussion in number 3 above.

7. The paragraph referencing the "Sea to Shore Transition" on page 3-10 should be deleted, as this refers to proposed project activity that is not within Federal waters. Rather the Sea to Shore Transition is the landfall location within the Rhode Island coastal zone and subject to State permitting authority, not Federal consistency review.

8. As noted above in number 6, the siting of proposed export cables does not avoid glacial moraine (APC). Pursuant to the enforceable policy in Ocean SAMP § 11.10.2(B), all offshore development is presumptively excluded from APC, in this case glacial moraine. Mayflower Wind will need to demonstrate that the project "will not result in a significant alteration to the values and resources of the APC" and that it will be demonstrated "that all feasible efforts have been made to avoid damage to the APC resources and values" as required by the enforceable policy. The Consistency Certification makes note that Mayflower Wind will map glacial moraine "in more detail using acoustic data as part of the cable route planning process (COP Appendix E, Marine Site Investigation Report [MSIR]). These maps

will define the limits and topography of the moraines in more detail and will be used to optimize the routing of cables within the Brayton Point ECC to reduce disturbance and protect the cables.” See page 3-10. We note, however, that Appendix E is marked “Confidential” on the BOEM website and not publicly available. Furthermore, it is our understanding that this MSIR has not yet been completed. Thus, we are unable at this time to determine whether the information supports Mayflower Wind’s contention that they are meeting the enforceable policy requirement.

Comment Number: BOEM-2021-0062-DRAFT-0034-12
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

- Consistency with the Massachusetts Ocean Management Plan:

o Although some maps are referenced, there is no discussion of the Ocean Plan. The DEIS should examine particularly Appendix 5 – figure 4 Close-up of areas to avoid, areas of concern, and preliminary areas for offshore wind transmission corridors.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-17
Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The FECC will traverse the Massachusetts Coastal Zone that is subject to the Massachusetts Ocean Management Plan (MA Ocean Plan). [Footnote 104: MWF COP, App. D1 at 1-2, Figures 2-6.] Moreover, the BPECC will traverse an area of the Rhode Island Special Area Management Plan (RI SAMP) and much of the BPECC will be located within the Rhode Island Coastal Resources Management Council’s (RI Council) "Geographic Location Description" (GLD), [Footnote 105: MWF COP, App. D3 at 1-2, 1-3, Figures, 1-4, 1-5.] which gives the RI Council automatic consistency review over federal waters within the GLD [Footnote 106: See 15 C.F.R. §§ 930.53, 930.84, 930.154.] under the Coastal Zone Management Act of 1972. [Footnote 107: 16 U.S.C. § 1451 et seq.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-18
Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

a) Falmouth Export Cable Corridor in the Massachusetts Coastal Zone The MA Ocean Plan has mapped a number of complex, hard bottom areas in the vicinity of the planned OECC in Muskeget Channel. [Footnote 108: 2015 Massachusetts Ocean Management Plan, MA Executive Office of Energy and Environmental Affairs--Office of Coastal Zone Management, at Figure 12 (January 2015)] The MA Ocean Plan identifies special, sensitive, or unique (SSU) marine habitats, which includes "hard/complex seafloor." [Footnote 109: Id. at 2-7.] The MA Ocean Plan defines "hard/complex seafloor" as "seabed characterized singly or by any combination of hard seafloor, complex seafloor, artificial reefs, biogenic reefs, or shipwrecks and obstructions." [Footnote 110: Id.] Under the regulations governing the MA Ocean Plan, "activities proposed in the Ocean Management Planning Area are presumptively excluded from the [SSU] Resource areas delineated on maps contained in the Ocean Management Plan and

maintained in the Ocean Management Plan." [Footnote 111: 301 CMR 28.04(2)(a).] This presumption may be overcome by demonstrating that the maps delineating the SSU are inaccurate or by demonstrating as follows:

[1.] No less environmentally damaging practicable alternative exists. For the purposes of this standard, an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics with respect to the purpose of the Activity; and

[2.] The Proponent has taken all practicable measures to avoid damage to [SSU] Resources, and the Activity will cause no significant alteration to [SSU] Resources. Demonstrating compliance with this standard may include the incorporation of measures to avoid resources and impacts through time of year controls such that the construction, operation, or removal of the Activity will not occur when the [SSU] Resource is present or may be adversely effected [sic]; and

[3.] The public benefits associated with the proposed Activity outweigh the public detriments to the Special, Sensitive or Unique Resource. [Footnote 112: 301 CMR 28.04(2)(b).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-19

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The MA Ocean Plan designates areas for offshore wind transmission cables, which are in presumptive compliance with the management standards for SSU resources. [Footnote 113: 301 CMR 28.04(6)(a).] In designating preliminary areas for offshore wind transmission cable corridors for the MA Ocean Plan, the Plan also analyzed areas to avoid and areas of concern for siting of offshore wind transmission cable corridors. [Footnote 114: 2015 Massachusetts Ocean Management Plan, MA Executive Office of Energy and Environmental Affairs--Office of Coastal Zone Management, at App. 5-1 (January 2015); see also *id.* at App. 5-2-5-7.] The areas to avoid and areas of concern were based on "an analysis of potential impacts, incompatibility and/or adverse interactions with existing uses and sites, as well as limitations and specifications of cable installation, spatial data and information on special, sensitive and unique (SSU) resources, habitats and fisheries, navigation and transportation, infrastructure uses, and bathymetry." [Footnote 115: *Id.*]

However, as acknowledged in the COP, despite the MA Ocean Plan designating certain areas as preliminary areas for offshore wind transmission cable corridors and other locations as areas to avoid and areas of concern, [italics: Mayflower Wind does not propose to site the FECC in Muskeget Channel in areas designated in the MA Ocean Plan as transmission corridors, but instead proposes to route the FECC through locations designated as areas to avoid and areas of concern in Muskeget Channel.] [Footnote 116: MWF COP, App. D1 at Att. 1-4, Figure 4.] In its COP, Mayflower Wind does not explain why it proposes to route the FECC through locations identified as areas of concern or areas to avoid, other than to state that it selected the "western option" through Muskeget Channel so that it can co-locate a portion of the FECC with the offshore cable corridor for the Vineyard Wind project, which may reduce cumulative impacts; that there are fewer areas of high risk related to extremely shallow water depths than other options; and that it is the shortest of the three options. [Footnote 117: MWF COP, App. D1 at 2-4.] Given that Mayflower Wind has not provided the benthic survey data for the "western option," it is difficult to assess the validity of these claims. Further, Mayflower Wind has not explained whether it considered routing the FECC in a location that has not been identified as an area to avoid or an area of concern for transmission corridors in the MA Ocean Plan.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-24

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP shows that Mayflower Wind intends for the BPECC to traverse glacial moraines that have been designated as areas of particular concern in the RI SAMP. [Footnote 129: MWF COP, App. D3 at Figure 5; see also 650 RI ADC 20-05-11.10. 2(C), Figure 3.] Consistent with the RI SAMP, because the FECC route overlaps with glacial moraines designated as areas of particular concern, Mayflower Wind is required to avoid such areas unless it can demonstrate by clear and convincing evidence that there are no practicable alternatives or that the proposed project will not result in significant alteration of the resources of the area of particular concern. [Footnote 130: Id. at 11.10.2(B).] Mayflower Wind has not attempted to meet this standard, but rather, has stated only that it will avoid glacial moraine "to the extent practicable," [Footnote 131: MWF COP, App. D3 at 2-2.] which appears to be a much lesser burden than that required by the regulations governing the RI SAMP. Moreover, because Mayflower Wind has not provided the benthic survey data for the BPECC route, it is currently impossible to assess whether Mayflower Wind could meet this burden.

BOEM may only authorize the Mayflower Wind project if Rhode Island determines that the Mayflower Wind Farm is consistent with the RI SAMP, including its provisions relating to glacial moraines. [Footnote 132: See 15 C.F.R. §§ 930.50-930.66; see also 16 U.S.C. §1456 (Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs).] Because Mayflower Wind has not provided benthic survey data for the BPECC, BOEM currently cannot fully assess the impacts to benthic resources from the Mayflower Wind project and should not proceed to issuance of a Draft EIS until such information is provided. Once this information is provided, as part of the Draft EIS, BOEM should assess impacts to complex habitats from the BPECC and whether the route selected would adequately avoid, minimize, and mitigate impacts to areas of complex habitats, and in the case of glacial moraines designated as areas of particular concern, whether an alternative route is required to strictly avoid impacts.

Comment Number: BOEM-2021-0062-DRAFT-0037-26

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The description of the "Affected Environment" should recognize the ocean environment as dynamic, not static, and acknowledge that the environment, and species within the environment, vary over time and seasons. This section should include information on the physical (temperature, salinity, depth, and dissolved oxygen) and biological (e.g. plankton) oceanography. It is important that the EIS discuss seasonal changes and long-term trends in the environment as well as hydrodynamic regimes and how they influence the distribution and abundance of marine resources.

A.2.19.2 Noise

Comment Number: BOEM-2021-0062-DRAFT-0019-3

Commenter: David Dow

Commenter Type: Individual

Comment Excerpt Text:

The noise pollution from ocean wind farms can diminish the body condition of female NARWs of breeding age whose average time between calving is now 7 years instead of the 3 back in 2010.

Comment Number: BOEM-2021-0062-DRAFT-0030-18

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The initial goal of monitoring sound propagation is to establish pile driving noise thresholds aimed at avoiding both physiological and behavioral impacts to marine species especially from cumulative noise exposure resulting from temporal or spatial project construction overlaps. But ultimately this information should be used to allow project developers to always choose foundation and turbine types that avoid these physiological and behavioral impacts altogether. Concerns related to the impacts of pile driving on the critically endangered North Atlantic Right Whale (NARW) are well-placed and appropriately consistently raised whenever pile driving is an option for an offshore wind project. The best avoidance and mitigation protocols should be required for this project to ensure protections for the NARW. Pile driving noise is also concerning for all marine mammals, sea turtles, fish, and virtually all other taxa of marine life. Populations of marine mammals, sea turtles, fish and invertebrates stand to experience cumulative impacts resulting from chronic exposure to pile driving noise during construction of this project, and all the other projects in the construction pipeline. The minimization of cumulative impacts of pile driving for multiple projects at the same time or in rapid succession should be given more attention, since construction of these projects could overlap both temporally and spatially.

Comment Number: BOEM-2021-0062-DRAFT-0030-19

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Ideally, BOEM will be in a position to recommend a pile driving noise threshold aimed at avoiding physiological and behavioral impacts to marine mammals and fish. A 2010 study assessing the effect of pile driving noise on marine fish suggested that pile-driving noise during construction was of particular concern because "the high sound pressure levels could potentially prevent fish from reaching breeding or spawning sites, finding food, and acoustically locating mates. This could result in long-term effects on reproduction and population parameters. Further, avoidance reactions might result in displacement away from potential fishing grounds and lead to reduced catches. However, reaction thresholds and therefore the impacts of pile-driving on the behavior of fish are completely unknown." [Footnote 3: Mueller-Blenkle, C., McGregor, P., Gill, A., Andersson, M., Metcalfe, J., Bendall, V., Sigray, P., Wood, D., Thomsen, F. (2010). Effects of Pile-Driving Noise on the Behaviour of Marine Fish. *Centre for Environment Fisheries and Aquaculture Science (Cranfield and Stockholm Universities).*] The benefit of monitoring noise propagation during pile driving will be enhanced if the data generated is incorporated into concurrent research studies relative to specific target species of concern.

Comment Number: BOEM-2021-0062-DRAFT-0030-22

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We are aware that there are still some uncertainties around the magnitude and extent of the sound fields that will be generated by the first offshore wind projects constructed in the United States and how sound will propagate/dissipate through the water column and seafloor and recommend the initial use of applicable sound field measurements from other locations that could help more clearly articulate anticipated pile driving noise for this project in the EIS and the Incidental Harassment Assessment (IHA), including analyses of sound field measurements taken earlier this year during the installation of the two turbine Coastal Virginia Offshore Wind (CVOW) project [Footnote 5: https://espis.boem.gov/final%20reports/BOEM_2021-025.pdf.] in federal waters off Virginia. And we also recommend that sound generation predictions and field propagation models used as the foundation of analysis presented in Appendix U1 and U2 of the COP get verified as part of the initial construction of the first wind farms off the east coast and if necessary, predictions and permit conditions for subsequent projects be modified accordingly.

Comment Number: BOEM-2021-0062-DRAFT-0030-23

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Numerous recent studies recognize that "while the impact of underwater sound related to construction work has been in the focus of research and regulation, few data exist on the potential impact of underwater sound from operational wind farms." [Footnote 6: See Stöber, U., and Thomsen, F. (2021). How could operational underwater sound from future offshore wind turbines impact marine life? 149, 1791.] Still, we know that during project operation, WTGs will generate non-impulsive sound in the nacelle that will be transmitted down the WTG tower to the foundation and then radiated into the water. Sound (operational and from pile driving) may also propagate in the seabed. For example, at CVOW the sound reduction benefit from the use of bubble curtains for use during pile driving was at distances further away from the turbines themselves. It was speculated that "another possibility is the propagation of sound through the seabed (which would not be attenuated by the bubble curtains in the water) contributed to the peak pressure levels in both foundations at close ranges." [Footnote 7: HDR. 2020. Field Observations During Offshore Wind Structure Installation and Operation, Volume I. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS Study BOEM 2021-025. Pg 3. https://espis.boem.gov/final%20reports/BOEM_2021-025.pdf]

Comment Number: BOEM-2021-0062-DRAFT-0030-24

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Underwater sound levels generated by an operational WTG are related to the WTG's power and wind speed, with increased wind speeds creating increased underwater sound. [Footnote 8: Wahlberg, M., and Westerberg, H. (2005). Hearing in fish and their reactions to sounds from offshore wind farms. 288, 295–309. <https://doi.org/10.3354/meps288295>] Under normal conditions, the sound level that results from

WTG operation is of low intensity, [Footnote 9: Madsen, P. T., Wahlberg, M., Tougaard, J., Lucke, K., and Tyack, P. L. (2006). Wind turbine underwater noise and marine mammals: Implications of current knowledge and data needs. 309, 279–295. <https://doi.org/10.3354/meps309279>] with energy concentrated at low frequencies (below a few kHz). [Footnote 10: Tougaard, J., Henriksen, O. D., and Miller, L. A. (2009). Underwater noise from three offshore wind turbines: Estimation of impact zones for harbor porpoises and harbor seals. 125, 3766–3773. <https://doi.org/10.1121/1.3117444>] Pangerc et al. (2016) recorded SPL measurements at approximately 164 ft (50 m) from two individual 3.6 megawatt (MW) monopile wind turbines over a 21-day operating period. The sound pressure level increased with wind speed up to an average value of 128 dB re 1 μ Pa at a wind speed of about 22.4 miles per hour (mph) (10 meters per second [m/s]), and then showed a general decrease. [Footnote 11: Pangerc, T., Theobald, P. D., Wang, L. S., Robinson, S. P., and Lepper, P. A. (2016). Measurement and characterisation of radiated underwater sound from a 3.6 MW monopile wind turbine. 140, 2913–2922. <https://doi.org/10.1121/1.4964824>] Additional studies conducted during operation of the Block Island Wind Farm measured sound levels below 120 dB SPL at wind speeds less than 29 mph (13 m/s) (HDR 2019b). These sound levels are expected to be similar to those reported for cable laying/trenching.

Comment Number: BOEM-2021-0062-DRAFT-0030-7

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4) the effects of operation noise on marine life should be studied and addressed as part of the mitigation hierarchy; and

Comment Number: BOEM-2021-0062-DRAFT-0034-3

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

o Noise impacts during construction need to be addressed. Pile-driving, in particular, is known to negatively impact important forage species like mackerel, herring, squid and butterfish; breaking up schools. Mitigation measures, such as temporal avoidance of migration times, should be thoroughly explored.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-108

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Underwater noise impacts to diving birds must be considered in the Draft EIS, and this cannot be limited to an assessment of the Project footprint.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-184

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

III. Gravity-Based and Suction Bucket Foundations Offer Significant Environmental Benefits and Flexibility

Our organizations welcome Mayflower Wind’s inclusion of gravity-based and suction bucket foundations in their PDE. Gravity-based and suction bucket foundations offer several environmental benefits over the other offshore wind foundations evaluated in the COP. Most significantly, these foundations do not require pile driving and thus avoid the noise impacts stemming from that activity. [Footnote 50: Our groups are highly supportive of fixed foundation types that significantly reduce noise during installation, including gravity-based foundations, suction buckets (or “caissons”), and jack-up foundations (see, e.g., <http://www.windbaseoffshore.com/>), and encourage BOEM to incentivize full consideration of these foundations for all fixed-foundation wind energy projects in the United States.] Pile driving noise has been identified as a stressor of high concern for marine wildlife and the health of the broader marine ecosystem. [Footnote 51: “New York State Offshore Wind Master Plan Environmental Sensitivity Analysis. Final Report.” NYSERDA Report 17-25. Prepared for New York State Energy Research and Development Authority by Ecology and Environment Engineering, P.C., New York, New York, (November 2017). Available at: <https://www.nysesda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/17-25i-Environmental-Sensitivity.pdf>.] Sensitivity to the loud impulsive sound that propagates through the water column and substrate from pile driving extends to marine mammals, sea turtles, fish, marine birds, and benthic and pelagic invertebrates, some of which support economically valuable fisheries. Potential impacts of unmitigated exposure to pile driving noise include physical injury, hearing impairment, habitat displacement, stress, disruption of vital behaviors such as feeding, breeding, and communication, and other health effects. [Footnote 52: See, e.g., Weilgart, L. “The Impacts of Anthropogenic Ocean Noise on Cetaceans and Implications for Management,” *Canadian Journal of Zoology* 85, no. 11 (2007): 1091-1116; Weilgart, L. “The Impact of Ocean Noise Pollution on Fish and Invertebrates,” *OceanCare and Dalhousie University* (May 2018). Available at: https://www.oceancare.org/wpcontent/uploads/2017/10/OceanNoise_FishInvertebrates_May2018.pdf.] Particle motion caused by pile driving is also expected to impact species in the water column as well as the seabed, although these impact pathways require further study. [Footnote 53: Sophie L. Nedelec, James Campbell, Andrew N. Radford, Stephen D. Simpson, and Nathan D. Merchant (2016) Particle motion: the missing link in underwater acoustic ecology. *Methods in Ecology and Evolution* V7, 836–842.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-185

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

By entirely avoiding the impact of pile driving noise, the installation of gravity-based or suction bucket foundations represents a ‘best practice’ in the context of the mitigation hierarchy (avoid, minimize, mitigate) for this impact producing factor. [Footnote 54: IUCN and The Biodiversity Consultancy. “Mitigating biodiversity impacts associated with solar and wind energy development: guidelines for project developers” (2021). Available at: <https://portals.iucn.org/library/node/49283>.] As developers will not need the same level of noise protection in place, gravity-based and suction bucket foundations may offer the flexibility to construct year-round (e.g., avoiding seasonal restrictions designed to protect North Atlantic right whale from pile driving noise) in certain regions, such as the New York Bight, as long as a mandatory 10 knot vessel speed restriction is in place, and eliminate the need for expensive underwater noise reduction and attenuation technologies (e.g., hydro sound dampers, bubble curtains, etc.).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-191

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, while gravity-based and suction bucket foundations eliminate pile driving noise, there will be some noise generated during installation (i.e., from dynamic position systems, seabed preparation, etc.). BOEM, in coordination with National Marine Fisheries Service (NMFS), should characterize source noise levels during the installation of gravity-based and suction bucket foundations, as well as potential exposure levels for in-water species (see, also, Section IV.F on impacts to marine mammals). This information should be used to ensure that mitigation and monitoring protocols required during the installation of gravity-based and suction bucket foundations are as protective as possible.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-76

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, BOEM should consider the level and potential impacts of vessel-related noise during construction, particularly noise emitted by dynamic positioning systems. Reported source levels of noise from dynamical positioning systems (DPS) vary among 177, 162–180, and 121–197 dB re 1 μ Pa (SPL) at 1m. [Footnote 274: MMO, 2015. Modelled mapping of continuous underwater noise generated by activities. A report produced for the marine management organisation, technical annex, MMO Project, 1097. ISBN: 978-1-909452-87-9. Tech. rep. 43 pp.] The latter intensity range reports frequencies in the 50–3,200 Hz range, within the hearing frequency of large whales and fish, and may have biologically significant effects. For example, research has shown mesopelagic fish migrate deeper in the water column upon exposure of DPS noise, [Footnote 275: Peña, M., 2019. Mesopelagic fish avoidance from the vessel dynamic positioning system. *ICES Journal of Marine Science*, 76(3), pp.734-742] and there is extensive scientific literature on the impacts of continuous low frequency vessel noise on marine mammals and fish. [Footnote 276: Erbe, C., Marley, S.A., Schoeman, R.P., Smith, J.N., Trigg, L.E. and Embling, C.B., 2019. The effects of ship noise on marine mammals—a review. *Frontiers in Marine Science*, 6, p.606.]

DPS and other vessel noise differs from pile driving noise in its frequency spectrum and the fact it is continuous rather than impulsive noise. DPS and vessel noise will also occur in the construction area during times when pile driving is not occurring (i.e., before and after a pile is driven). Thus, it should not be expected that the noise from pile driving will simply negate the effects of vessel-related noise. BOEM should undertake an analysis of DPS and vessel-related noise associated with the construction of Mayflower Wind, as well as cumulatively for existing and reasonably foreseeable projects in the Rhode Island and Massachusetts WEAs.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-78

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

d) BOEM Should Conduct a Detailed Analysis of Noise Levels Generated by Operational Wind Projects

Underwater noise generated by turbines during the operations phase is positively correlated to the size of the turbine. [Footnote 281: Stöber, U., and Thomsen, F., How could operational underwater sound from future offshore wind turbines impact marine life?" *Journal of the Acoustical Society of America* 149(2021): 1791-1795] A recent scientific study summarized data on operational noise levels from offshore wind energy projects based on published measurements and simulations from the gray literature. Based on these data, the authors extrapolated the sound levels that could be generated from larger offshore wind turbines and assessed the impact ranges for behavioral response of marine mammals based on NMFS's acoustic thresholds (i.e., behavioral disruption for continuous noise may occur above a threshold of 120 dB rms). [Footnote 282: Id.] The results of the analysis indicated that a 10 MW geared turbine required 6.3 km to fall below that threshold, and a direct drive turbine—a newer technology—would be expected to cause behavioral disruption at distances up to 1.4 km from the turbine. [Footnote 283: Stöber, U., and Thomsen, F., How could operational underwater sound from future offshore wind turbines impact marine life? *supra.*] With turbine spacing at 1 nm apart, even the lower impact direct drive 10 MW turbine could potentially elevate underwater noise to levels capable of disrupting marine mammal behavior across the entire Project Area. Moreover, 10 MW is on the lower end of the wind turbine generator (WTG) size that is now being procured by the offshore wind industry. For example, Equinor recently announced their procurement of 138 Vestas V236-15 MW WTGs for the Empire Wind I and II projects located in the New York Bight. [Footnote 284: <https://www.equinor.com/en/news/20211018-empire-wind-turbine-supplier.html>] The Vestas 236-15 MW model is a gearbox turbine, [Footnote 285: <https://nozebra.ipapercms.dk/Vestas/Communication/Productbrochure/OffshoreProductBrochure/v236-150-mw-brochure/?page=6>. Gearbox turbine referenced.] and thus expected to emit higher levels of underwater noise relative to a direct drive turbine.

BOEM should conduct a detailed analysis of the operational noise levels expected to be generated by the Mayflower Wind project, both in terms of its potential impacts on marine mammals and their habitat, [Footnote 286: Jakob Tougaard, Oluf Damsgaard Henriksen, and Lee Miller. (2009) Underwater noise from three types of offshore wind turbines: Estimation of impact zones for harbor porpoises and harbor seal. *J. Acoustical Soc.* 125:6] but also on fish [Footnote 287: Hawkins, A. D., and Popper, A. N. (2016). "Quo Vadimus—A sound approach to assessing the impact of underwater noise on marine fishes and invertebrates," *ICES J. Mar. Sci.* 74, 635–651] and invertebrates [Footnote 288: Solan, M., Hauton, C., Godbold, J. et al. Anthropogenic sources of underwater sound can modify how sediment-dwelling invertebrates mediate ecosystem properties. *Sci Rep* 6, 20540 (2016).] that comprise the foundation of the trophic pyramid. We also recommend BOEM take immediate steps to reduce these potential impacts. Pending further study and the development of technology to permit acoustic decoupling of the turbine from the mast, we recommend BOEM require the use of direct drive WTGs as opposed to WTGs that rely on a gear box.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-83

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

g) BOEM Should Address Limitations of NMFS's Acoustic Thresholds

In determining the potential impact of noise from geophysical surveys and construction and operations activities, BOEM should request new guidelines on thresholds for marine mammal behavioral disturbance from NMFS that are sufficiently protective and consistent with the best available science. Multiple marine species have been observed to exhibit strong, and in some cases lethal, behavioral reactions to sound levels well below the 160 dB threshold defined by NMFS for Level B take, [Footnote 301: As defined pursuant to the Marine Mammal Protection Act "any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild." 50 C.F.R. § 216.3.] leading to calls from the scientific community for the Agency to revise its guidelines. [Footnote 302: E.g., Evans, D.L. and England, G.R., "Joint interim report: Bahamas marine mammal stranding event of 15-16 March 2000" (2001); Nowacek, D.P., Johnson, M.P., and Tyack, P.L., "Right whales ignore ships but respond to alarm stimuli," *Proceedings of the Royal Society of London B: Biological Sciences*, vol. 271, no. 1536 (2004): 227-231; Parsons, E.C.M., Dolman, S.J., Wright, A.J., Rose, N.A., and Burns, W.C.G., "Navy sonar and cetaceans: Just how much does the gun need to smoke before we act?" *Marine Pollution Bulletin*, vol. 56 (2008): 1248-1257; Tougaard, J., Wright, A.J., and Madsen, P.T., "Cetacean noise criteria revisited in the light of proposed exposure limits for harbour porpoises," *Marine Pollution Bulletin*, vol. 90 (2015): 196-208; Wright, A.J., "Sound science: Maintaining numerical and statistical standards in the pursuit of noise exposure criteria for marine mammals," *Frontiers in Marine Science*, vol. 2, art. 99 (2015)] Acceptance of the current NMFS's acoustic threshold for Level B take will result in BOEM's significant underestimation of the impacts to marine mammals and potentially the permitting, recommendation, or prescription of ineffective mitigation measures (e.g., under-protective exclusion zones).

Comment Number: BOEM-2021-0062-DRAFT-0035-02-85

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

2. Acoustic Impact Considerations for Sea Turtles

To date, the injury and behavioral zones for sea turtles have not been calculated correctly for other offshore wind projects. [Footnote 314: See, e.g., SFWF DEIS at H-58 (footnote stating: "Short-term, underwater noise from Project construction, specifically from pile driving and vessels supporting installation is the most extensive potential Project effect and is therefore used to define the analysis area based on current behavioral effects thresholds for these activities. This area extends approximately 1,716 feet from each monopile foundation, 175 feet from vibratory pile driving, and approximately 300 feet from the SFEC corridor and vessel transit lanes.") See also, e.g., SFWF DEIS at H-66 (stating, "Vibratory pile-driving noise can exceed levels associated with behavioral disturbance in sea turtles but only within a short distance (i.e., less than 200 feet) from the source. Given this low exposure probability to vibratory pile-driving noise and the fact that vibratory pile-driving activities would be limited in extent, short term in duration, and widely separated, vibratory pile-driving noise effects on sea turtles would be negligible at the individual and population levels.")] Moreover, fundamental gaps remain in our knowledge of the sensory (e.g., hearing and navigation) ecology of sea turtles. It has been determined that sea turtle hearing

sensitivity overlaps with the frequencies and source levels produced by many anthropogenic sources; however, more research is needed to determine the potential physiological and behavioral impacts of these noise sources on sea turtles. [Footnote 315: Ridgway, S.H., E.G. Wever, J.G. McCormick, J. Palin, and J.H. Anderson. "Hearing in the giant sea turtle, *Chelonia mydas*." Proceedings of the National Academy of Sciences of the United States of America, vol. 64, no. 3 (1969):884-890.; Bartol, S.M., J.A. Musick, and M.L. Lenhardt. "Auditory evoked potentials of the loggerhead sea turtle (*Caretta caretta*)." Copeia, vol. 3 (1999):836-840.; Dow Piniak, W.E., S.A. Eckert, C.A. Harms, and E.M. Stringer. 2012. Underwater hearing sensitivity of the leatherback sea turtle (*Dermochelys coriacea*): Assessing the potential effect of anthropogenic noise. OCS Study BOEM 2012- 01156. Herndon, VA: U.S. Department of the Interior, Bureau of Ocean Energy Management.; Martin, K.J., S.C. Alessi, J.C. Gaspard, A.D. Tucker, G.B. Bauer, and D.A. Mann. "Underwater hearing in the loggerhead turtle (*Caretta caretta*): A comparison of behavioral and auditory evoked potential audiograms." The Journal of Experimental Biology, vol. 215, no. 17(2012):3001-3009.; Piniak, W.E.D., D.A. Mann, C.A. Harms, T.T. Jones, and S.A. Eckert. "Hearing in the juvenile green sea turtle (*Chelonia mydas*): A comparison of underwater and aerial hearing using auditory evoked potentials." PLoS ONE, vol. 11, no. 10 (2016):e0159711] Currently, BOEM's standard operating conditions for activities such as pile driving are based on a 180 dB (RMS) re 1 uPa exclusion zone, [Footnote 316: BOEM. 2016. Commercial wind lease issuance and site assessment activities on the Atlantic Outer Continental Shelf offshore New York. Environmental assessment. OCS EIS/EA BOEM 2016-042. Herndon, Virginia: United States Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs.] which is the original generic acoustic threshold for assessing permanent threshold shift onset for cetaceans. [Footnote 317: NMFS. 2018. 2018 Revision to: Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing (Version 2.0). Underwater acoustic thresholds for onset of permanent and temporary threshold shifts. NOAA Technical Memorandum NMFS-OPR-59. U.S. Department of Commerce, National Oceanic and Atmospheric Administration.] For forthcoming construction activities, at minimum BOEM must use NMFS's most recent pile driving calculator to obtain an accurate injury and behavioral radii for sea turtles during impact and vibratory pile driving. As the offshore wind industry advances, studies are needed to determine critical ratios and temporary and permanent threshold shifts so that accurate acoustic threshold limits for anthropogenic sound sources can be added to NMFS's sound exposure guidelines for protected species like sea turtles, and additional monitoring and avoidance, minimization, and mitigation protocols can be developed to minimize impacts to sea turtles during offshore wind development and operation and other anthropogenic activities. Monitoring of sea turtle sensory ecology must be conducted as soon as possible to advise efforts, and a conservative approach should be adopted in the meantime to guard against impacts to these threatened and endangered species.

Comment Number: BOEM-2021-0062-DRAFT-0039-26

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

Underwater noise can negatively affect marine life via auditory interference or by obscuring the ability of organisms to hear sounds necessary for survival including but not limited to: locating prey, mates or offspring; predator avoidance; navigation and locating habitat; and communication. The DEIS should assess whether construction and operation noise will cause potential short and long-term impacts that may disrupt normal behavioral patterns including migration, breathing, nursing, breeding, feeding, and sheltering. Technical guidance for assessing acoustic impacts is available from the National Oceanic and Atmospheric Administration.

A.2.19.3 Materials and Waste Management

Comment Number: BOEM-2021-0062-DRAFT-0031-6

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

The maintenance activities of wind turbines, such as part replacements or lubrications, may also impact on marine species by leaking oils or wastes into the surrounding seawater and polluting marine species living environments. With the increasing height of wind turbine towers and the increasing size of offshore wind farms, the environmental impacts of wind farms on fishes and marine mammals are becoming more evident.” Environmental and Structural Safety Issues Related to Wind Energy, Kaoshan Dai, ... Zhenhua Huang, in Wind Energy Engineering, 2017.

A.2.19.4 General Wildlife

Comment Number: BOEM-2021-0062-DRAFT-0026-34

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

The Draft EIS must fully analyze environmental impacts if a HVDC Converter offshore substation platform (OSP) may be used in the Mayflower Wind project design. For DC Converter OSPs, a cooling water intake system (CWIS) will be necessary, and any impact to marine species in rebuilding plans and protected resources must be analyzed.

Comment Number: BOEM-2021-0062-DRAFT-0026-35

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

The environmental concerns are not just on the localized increases in water temperature around DC Converter OSPs that could result in mortality of some species intolerant of high temperatures. They also include the mortality of larval and juvenile fish (potentially adult fish too as the COP does not specify the size range of species that could be pulled into the intake) removed from the water column and killed during the filtration process, which removes suspended particles larger than 500 microns.

Comment Number: BOEM-2021-0062-DRAFT-0031-2

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

Offshore wind turbines may impact marine species. Wind turbines and their scour protection may change the nearby fish distributions and wind farm constructions may create an artificial reef, which impacts the biodiversity of marine species.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-1

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

C. BOEM's Impact Analysis Should Account for Ecosystem Uncertainty

In conducting its impact analysis, BOEM should adopt a precautionary approach to account for fundamental gaps in our understanding of species and their behavioral responses and employ the best available scientific methods to monitor and, if necessary, design mitigation strategies. As a general matter throughout the development and operation of offshore wind projects, BOEM should ensure the necessary research and monitoring is carried out to address the substantial uncertainties regarding offshore wind and wildlife interactions. For instance, we do not know the degree to which bats, marine birds, and migrating land and coastal birds may interact with offshore wind turbines in U.S. waters and whether those interactions will lead to population-level impacts. Many of these species are currently facing stressors on land, which may make their populations more vulnerable to additional take. Based on this research, mitigation options may be needed to ensure species' health and provide the certainty that will allow for further ramp up of the industry. Improved and sustained data compilation before and after construction as well as during operation would also advance understanding of species' occurrence in the Mayflower Wind Project Area and region. As the United States offshore wind industry moves forward, we recommend BOEM support the comprehensive analysis of these baseline data and ongoing data compilation and analyses and undertake a regional approach to data analysis to enhance collaboration with developers, scientists, managers, and other stakeholders.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-167

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM needs to rigorously review the potential impacts of offshore wind development on wildlife and their habitats, including potential impacts related to future projects at the scale envisioned by the President's offshore wind goals, to ensure appropriate mitigation measures are developed and adopted. Various potential impacts associated with offshore wind construction and operations could directly, indirectly, and cumulatively impact species and habitats in the coastal zone and offshore environment along the coast. In addition to a thorough examination of direct and indirect impacts, as well as mitigation measures, assessing cumulative impacts is essential to understanding the impact of offshore wind on species and ecosystems along the coast.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-193

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Ecosystem Change Should Not Be Framed as "Beneficial"

The Draft EIS should not use value-laden terms (e.g., "beneficial") to describe changes in ecosystems or species. It should instead be objectively described as ecosystem change. While we agree that some offshore wind activities may result in a change in the ecosystem and, in some cases, an increase in the abundance of certain species or in overall diversity, we caution against the Mayflower Wind Draft EIS representing these changes as "beneficial." This is especially the case because it is unclear what implications these changes may have on the wider ecosystem. We recommend that the Mayflower Wind Draft EIS remain objective in language used in its impact analysis (e.g., by using terminology such as "increase," "decrease," and "change").

Comment Number: BOEM-2021-0062-DRAFT-0035-02-4

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

D. Prescribed turbine array layouts are not a mitigation strategy

It is unclear whether there are benefits to wildlife and ecosystems from specific prescribed turbine layouts. While increased spacing (1 nm) and vessel transit corridors have been prescribed for some offshore wind developments in the Atlantic OCS, this increased spacing has not been used in Europe. Therefore, there is no operational comparison to be made between different spacing layouts and their resulting wildlife impacts. Conversely, increased spacing between turbines results in fewer turbines and less energy production within a project footprint, meaning more projects (and more space) would be necessary to meet state and national energy goals.

Comment Number: BOEM-2021-0062-DRAFT-0035-53

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

C. BOEM's Impact Analysis Should Account for Ecosystem Uncertainty

In conducting its impact analysis, BOEM should adopt a precautionary approach to account for fundamental gaps in our understanding of species and their behavioral responses and employ the best available scientific methods to monitor and, if necessary, design mitigation strategies. As a general matter throughout the development and operation of offshore wind projects, BOEM should ensure the necessary research and monitoring is carried out to address the substantial uncertainties regarding offshore wind and wildlife interactions. For instance, we do not know the degree to which bats, marine birds, and migrating land and coastal birds may interact with offshore wind turbines in U.S. waters and whether those interactions will lead to population-level impacts. Many of these species are currently facing stressors on land, which may make their populations more vulnerable to additional take. Based on this research, mitigation options may be needed to ensure species' health and provide the certainty that will allow for further ramp up of the industry. Improved and sustained data compilation before and after construction as well as during operation would also advance understanding of species' occurrence in the Mayflower Wind Project Area and region. As the United States offshore wind industry moves forward, we recommend BOEM support the comprehensive analysis of these baseline data and ongoing data compilation and analyses and undertake a regional approach to data analysis to enhance collaboration with developers, scientists, managers, and other stakeholders.

Comment Number: BOEM-2021-0062-DRAFT-0035-56

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

D. Prescribed turbine array layouts are not a mitigation strategy

It is unclear whether there are benefits to wildlife and ecosystems from specific prescribed turbine layouts. While increased spacing (1 nm) and vessel transit corridors have been prescribed for some offshore wind developments in the Atlantic OCS, this increased spacing has not been used in Europe. Therefore, there is no operational comparison to be made between different spacing layouts and their resulting wildlife impacts. Conversely, increased spacing between turbines results in fewer turbines and less energy production within a project footprint, meaning more projects (and more space) would be necessary to meet state and national energy goals.

Comment Number: BOEM-2021-0062-DRAFT-0037-10

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

As you know, we have significant concerns with the adverse impacts of offshore wind development, including the Mayflower Wind project, on our NOAA scientific surveys. We have done considerable work with you to ensure the NEPA documents for these projects adequately assess the impacts to our scientific surveys that occur in the project areas. Impacts to NOAA scientific surveys are not described in the COP prepared for this action. A discussion and analysis of project impacts to other uses of the lease area, including scientific surveys of marine resources and necessary federal survey mitigation activities, must be included in the EIS. We look forward to continuing to work with you on this important issue.

Comment Number: BOEM-2021-0062-DRAFT-0037-29

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

For benthic resources, fish, and invertebrate species, this section should include an assessment of species status and habitat requirements, including benthic, demersal, benthic-pelagic, and pelagic species and infaunal, emergent fauna, and epifaunal species living on and within surrounding substrates.

Comment Number: BOEM-2021-0062-DRAFT-0037-34

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The "Environmental Consequences" section of the EIS must consider impacts resulting from the construction, operation and maintenance, and decommissioning of the proposed facility, including survey and monitoring activities that are anticipated to occur following approval of a COP. Impact descriptions should include both magnitude (negligible, minor, moderate, major) and direction (beneficial or adverse) of

impacts and, where applicable, duration (short-term, long-term, permanent). 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 the proposed project, such as construction of landside facilities necessary to construct and support operations of the Mayflower Wind project. Impact producing factors from each phase of development should be considered, including site exploration, construction, operation and maintenance, and decommissioning.

Comment Number: BOEM-2021-0062-DRAFT-0037-35

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

All activities included in construction of the project should be considered, including the deposition of fill material, dredging, water withdrawals and associated egg/larval entrainment/impingement, pile driving, increased vessel traffic, anchoring, high-resolution geophysical surveys, seafloor preparation including handling of any unexploded ordnance detected in the area and boulder relocation, and transmission cable installation.

Comment Number: BOEM-2021-0062-DRAFT-0037-36

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

All relevant impact producing factors affecting marine resources should be evaluated, including, but not limited to, elevated noise levels, increased vessel traffic, turbidity and sedimentation, EMF, habitat alteration, presence of structures (WTGs, substations, and cables), and localized changes in currents.

Comment Number: BOEM-2021-0062-DRAFT-0037-39

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Impacts associated with decommissioning of the project should also be included, with details on how decommissioning would occur and the environmental consequences associated with project removal.

Comment Number: BOEM-2021-0062-DRAFT-0037-40

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Further, the assessment should include a robust analysis of the effects of any ongoing or planned surveys or monitoring of fisheries resources by the developer and the effects of those surveys on protected species (e.g., potential for entanglement of ESA listed whales, sea turtles, and Atlantic sturgeon in gillnet surveys). The assessment of these impacts should be completed at scales relevant to each impact type to enable meaningful comparisons between alternatives.

Comment Number: BOEM-2021-0062-DRAFT-0037-60

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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 ecosystems on which they depend, and any designated critical habitat within the action area. We have developed a checklist (ESA Information Needs document) to identify information needs for considering effects of wind projects on ESA-listed species and critical habitats and we strongly encourage you to use that as you develop the EIS. We also strongly urge you to carefully consider the information we have provided for the Vineyard Wind 1 and South Fork NEPA documents, as well as the issued Biological Opinions and MMPA authorizations and to incorporate that information and analysis into this EIS as appropriate.

Comment Number: BOEM-2021-0062-DRAFT-0037-61

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The construction and operation of a wind energy facility and installation of subsea 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 BOEM when making any determinations about construction and operation in the Mayflower Wind 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 noise during any geophysical and geotechnical surveys, pile driving, wind turbine operations, and other activities;
- Potential interactions, including entanglement, injury, and mortality, of listed species from proposed surveys or monitoring of fisheries resources;
- Any activities which may displace species from preferred habitats, alter movements or feeding behaviors, increase stress, and/or result in temporary or permanent injury or mortality;
- Disruption and conversion of habitat types that may affect the use of the area, alter prey assemblages, or result in the displacement of individuals during all phases of the proposed project;
- Impacts to water quality through sediment disturbance or pollutant discharge; project lighting as a potential attractant;
- Effects from electromagnetic fields and heat from inter-array and export cable to listed species and their prey (i.e., ability to forage, attraction, etc.); and
- Potential changes to pelagic habitat resulting from the presence of wind turbines.

Comment Number: BOEM-2021-0062-DRAFT-0037-68

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Lastly, any surveys or monitoring that are carried out related to the project (e.g., gillnet, trap/pot, trawl surveys to document fisheries resources) must carefully consider the effects to North Atlantic right whales and other ESA-listed species, and mitigation measures should be considered to eliminate the potential for entanglement of whales and to minimize risk to sea turtles and Atlantic sturgeon during such activities.

Comment Number: BOEM-2021-0062-DRAFT-0037-7

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

Of particular concern for this project area are effects to (1) sensitive habitat areas, (2) Atlantic cod, and (3) North Atlantic right whales. The project area overlaps with complex habitat areas, including eelgrass, designated as HAPCs for summer flounder and juvenile Atlantic cod, a species of economic and cultural significance to our region. The export cable route proposed through the Sakonnet River, in particular, has the potential to substantially impact juvenile cod and its habitats. In addition, the project area overlaps with a persistent tidal mixing frontal zone adjacent to Nantucket Shoals. These are areas of sharp discontinuities in water mass characteristics where water masses driven by tidal forces converge and are often important feeding locations. Small plankton prey items are often concentrated in these areas by physical forces and are areas where predators, including marine mammals and sea turtles aggregate seeking the prey.

Comment Number: BOEM-2021-0062-DRAFT-0038-14

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

It appears there is the potential for impacts to the marine species and terrestrial wildlife that live on and around Muskeget Island from construction during the laying of the submarine cable to the Falmouth area. NPS appreciates that the proposed cable route near Muskeget Island now appears concentrated along the western edge of the channel. However, at approximately less than five miles distance of the cable routes from the island, we are concerned about potential impacts to marine and terrestrial wildlife.

As noted above, NNLs are privately owned and managed. NPS recommends BOEM contact the Muskeget Island owner for more information on marine and terrestrial wildlife use of the NNL, including seasonality changes and sensitivities. NPS has had discussions with the National Marine Fisheries Service (NMFS) about how island marine and terrestrial wildlife might best be protected. We defer to both NMFS's and the US Fish and Wildlife Service (FWS) expertise and the results of ongoing studies and consultations as outlined in Appendix L1. - Offshore Designated Protected Areas Report to best protect these marine and wildlife resources.

Comment Number: BOEM-2021-0062-TRANS-111821-004-7

Commenter: Susanna Hatch

Commenter Type: Individual

Comment Excerpt Text:

Finally we believe strongly in environmental and wildlife protection. Offshore wind energy can be developed in a manner that protects wildlife and habitat and should advance as quickly as responsible development allows. A thorough and expeditious environmental assessment using the best available science and data as well as an inclusive stakeholder engagement process will ensure the responsible expansion of this industry off our shores.

A.2.19.5 Electromagnetic Fields (EMF)

Comment Number: BOEM-2021-0062-DRAFT-0021-36

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Impacts of electromagnetic fields (EMF) on fishery species are a concern to the fishing community. For example, studies have suggested that EMF can result in changes in behavior, movement, and migration for some demersal and pelagic fish and shellfish species.[Footnote 8: https://greenfinstudio.com/wp-content/uploads/2017/10/GreenFinStudio_EMF_MarineFishes.pdf] The extent to which EMF may or may not impact marine species must be thoroughly described in the EIS.

Comment Number: BOEM-2021-0062-DRAFT-0026-21

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

Introduction of electromagnetic fields from numerous, and potentially gridded, OSW power cables may have impacts to not only benthic species, but migrating and other electric and magnetic field-sensitive species, including sea turtles, marine mammals, and elasmobranchs. Cables carrying electric current may disrupt migrations of fish and other marine animals reliant on magnetic cues for orientation and navigation, but research has only just begun on this topic. [Footnote 12: See Klimley, A. Peter et al., A call to assess the impacts of electromagnetic fields from subsea cables on the movement ecology of marine migrants, Conservation Science and Practice, May 22, 2021]

Comment Number: BOEM-2021-0062-DRAFT-0031-5

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

In addition to the blocking effect, the noise and the electromagnetic fields around operating wind turbines may lead to negative effects on fishes as well. Marine mammals such as porpoises and seals may also react to wind farm noise and electromagnetic fields, especially during the construction phase.

Comment Number: BOEM-2021-0062-DRAFT-0034-4

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

Construction and Operation impacts to fish habitat:

- o EMF impacts during transmission operations need to be addressed.
- o EMF impacts to the west-to-east migrating finfish need to be addressed. The transmission lines will have extensive north to south coverage, and many important species are known to use electromagnetics in navigation.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-29

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Further, both marine and diadromous species can sense electric and/or magnetic fields and the generation of electromagnetic fields (EMFs) from subsea cables may affect the ability of organisms to navigate and detect prey. [Footnote 144: Normandeau, E., Tricas, T., & Gill, A., Effects of EMFs from Undersea Power Cables on Elasmobranchs and Other Marine Species, Bureau of Ocean Energy Management, Regulation, and Enforcement (2011); Peters, R. C., Eeuwes, L. B. M., & Bretschneider, F., On the electro-detection threshold of aquatic vertebrates with ampullary or mucous gland electroreceptor organs, 82 Biological Reviews 361–373 (2007).] Buried cables reduce, but do not eliminate, EMF. Demersal species living on or near the seabed, where cable EMF is stronger, are more likely to be exposed to EMF than pelagic species. [Footnote 145: Id.] Although there have been few studies of EMF impacts from buried cables on invertebrates, research has demonstrated that American lobster held in cages displayed behavioral differences when exposed to EMF. In that same study, little skate, an electrosensitive elasmobranch, demonstrated even greater sensitivity to EMF. [Footnote 146: Hutchison, Z.L., P. Sigray, H. He, A.B. Gill, J. King, and C. Gibson, Electromagnetic Field (EMF) Impacts on Elasmobranch (Shark, Rays, and Skates) and American Lobster Movement and Migration from Direct Current Cables. BOEM (2018), available at <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Vineyard-Wind-1-FEIS-Volume-2.pdf>.] As part of the Mayflower Wind project, BOEM and/or NMFS should establish a program for monitoring the effects of EMF from the project's subsea cables on marine wildlife, including finfish and invertebrates.

Comment Number: BOEM-2021-0062-DRAFT-0039-28

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The COP (page 6-160) indicates there are limited studies conducted to date on behavioral and physiological responses of benthic invertebrates to the effects of exposure to EMF. The discussion in the COP identifies research that shows that some benthic invertebrates (e.g., lobsters) are able to detect changes in EMF. The lack of detailed analyses related to potential impacts from EMF on lobster behavior and migration, particularly from AC magnetic fields, continues to be identified with each offshore wind

project proposal. EPA recommends that BOEM consider developing studies that would better address these potential impacts -- especially migration impedance -- on lobsters from EMF emitted by buried cable, as well as cable covered only by concrete mats or rocks.

A.2.19.6 Other

Comment Number: BOEM-2021-0062-DRAFT-0009-5

Organization: Association to Preserve Cape Cod, Inc.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Two potential sites for the project substation are being considered in Falmouth. Mayflower Wind's preferred location is the Lawrence Lynch site at 396 Gifford Street. The alternate location is the Cape Cod Aggregates site at 469 Thomas Landers Road. APCC commends the selection of two sites that appear, for the most part, to be previously disturbed. APCC looks forward to reviewing more information in the EIS process about the final selection of a substation site, particularly with regard to a stormwater management plan and a hazardous materials spill prevention and containment plan for the chosen site.

Comment Number: BOEM-2021-0062-DRAFT-0009-8

Organization: Association to Preserve Cape Cod, Inc.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mayflower Wind will play an important role in our nation's conversion to clean, renewable energy, and will help Massachusetts fulfill its commitment to achieving net-zero emissions by 2050. It is critically important that the project demonstrate its commitment to protecting marine and land-based environmental resources while also meeting its energy production objectives. APCC looks forward to reviewing more project details in the issue areas discussed above when the EIS is published by BOEM.

Comment Number: BOEM-2021-0062-DRAFT-0010-1

Commenter: Don Mallinson

Commenter Type: Individual

Comment Excerpt Text:

It is important to remember that the cost of "fuel" to generate electricity by wind turbines will never increase nor even fluctuate. Compare this to the wildly fluctuating cost of gasoline to fuel your car. Mother nature brings her wind "fuel" free of charge to where ever wind turbine farms are located. If a wind turbine fails and falls over, there is a brief plop in the water. When an oil tanker or fossil fuel pipeline fails it is a an environmental and economic disaster.

Comment Number: BOEM-2021-0062-DRAFT-0012-10

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana notes that many of the wind development areas and projects were proposed more than 10 years ago. Prior to issuing permits, BOEM and the National Marine Fisheries Service (NMFS) must use the best available science that meets the information standards of all relevant statutes. Due to changing ocean

conditions in the U.S. Atlantic Wind Energy Areas, Oceana also suggests that BOEM require new biological and ecological surveys of all proposed lease areas where the data is over five years old to ensure that development of these areas is appropriate and compatible with other marine conservation goals.

Comment Number: BOEM-2021-0062-DRAFT-0014-7

Organization: Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands

Commenter: Susan Starkey

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Make the energy available to impacted areas, directly in Falmouth and on the Cape & Islands if at all possible.

Comment Number: BOEM-2021-0062-DRAFT-0015-2

Commenter: Mark Akselson

Commenter Type: Individual

Comment Excerpt Text:

As things stand today, wind farm developers are incentivized to obtain their own exclusive public landing sites and sign contracts with municipalities in order to prevent rival wind developers from securing the most desirable locations. In the jargon of the industry, this is called “generator lead.” In plain sight, wind developers gain tacit municipal permitting approval through the payment of mitigation benefits, and in so doing, achieve the crucial goal of securing landfall access rights. (In essence, the companies are buying landfall access rights from the municipalities.) The end result of “generator lead” is that it creates a spider’s web of cables on the ocean floor and exponentially increases the scale of both onshore and offshore construction. As you might expect, people don’t want these cables buried under their public beaches or in front of their homes. This encourages municipalities and developers to keep land access agreements hidden from public scrutiny for as long as possible.

Comment Number: BOEM-2021-0062-DRAFT-0017-2

Commenter: Leslie Clift

Commenter Type: Individual

Comment Excerpt Text:

More research is needed to compare environmental impacts from installations of wind farms using pile driving techniques. More research is needed on environmental impacts resulting from the decommissioning of wind farms.

Comment Number: BOEM-2021-0062-DRAFT-0021-4

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

As the impacts analysis is developed, clear terminology will be important for readers to understand the complexity of the alternatives considered and the large number of impact-producing factors and environmental resources evaluated. In addition, both magnitude and direction of impacts should be specified when characterizing impacts and the EIS should define short and long term in the context of

impacts. The EIS should acknowledge the limitations of the current scientific knowledge on environmental effects and should provide justification, including supporting scientific studies, for all conclusions.

Comment Number: BOEM-2021-0062-DRAFT-0025-2

Organization: Business Network for Offshore Wind

Commenter Type: Other

Comment Excerpt Text:

The global offshore wind industry is growing exponentially. The Network has calculated that European markets now aim to achieve a cumulative deployed capacity of 116 GW by 2030, while Asian deployment targets (excluding China) total approximately 58 GW by 2030. Assuming China achieves approximately 50 GW, and including the U.S. goal of 30 GW, the globe intends to deploy on the order of 254 GW of offshore wind capacity by 2030. The U.S. goal of 30 GW by 2030 represents approximately 11.8% of cumulative global targets for 2030. To put this in context, global cumulative capacity is currently approximately 35 GW, and 6.1 GW of offshore wind capacity was commissioned during 2020. Europe, upon which the U.S. currently depends for components and expertise, likely lacks the manufacturing capacity to meet its own offshore wind goals, let alone supply other emerging offshore wind markets like the U.S. Accordingly, if the U.S. does not develop a robust domestic offshore wind supply chain, surging global demand for offshore wind project components, services, and raw materials could prevent the U.S. from reaching state and federal offshore wind deployment targets.

Comment Number: BOEM-2021-0062-DRAFT-0030-29

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Nature Conservancy recently released a new spatial tool (<https://maps.tnc.org/marinemap>) specifically designed to facilitate the rapid analysis of natural resource data in a user selected area of the ocean (eg a lease area), and the comparison of the area to the wider ocean region. The tool serves up data from the Northeast and Mid Atlantic data portals based on available regional data sets (eg NOAA NEFSC trawl survey) and accepted species models for more data poor species (eg marine mammals and avian species). We encourage BOEM and other evaluators of impacts on natural resource to use the tool and share any feedback or questions.

Comment Number: BOEM-2021-0062-DRAFT-0031-1

Organization: New Bedford Port Authority

Commenter Type: Other

Comment Excerpt Text:

I am writing in response to the request by BOEM for “Identification of Potential Alternatives, Information, and Analyses Relevant to the Proposed Action” identified above. In particular, I am writing to support the idea that there has been insufficient data submitted by the project proponent in support of this matter and that any EIS prepared by BOEM’s must sufficiently address the requirements of the OCSLA or MEPA.

Comment Number: BOEM-2021-0062-DRAFT-0034-14

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

Impacts to Edgartown's Hydropower Project in Muskeget Channel

Comment Number: BOEM-2021-0062-DRAFT-0035-02-189

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to benthic considerations, the design of an offshore wind farm (utilizing any foundation type), such as the location, number of turbines, and foundation types, may affect local and regional hydrodynamics. [Footnote 57: Segtnan OH, Christakos K. 2015. Effect of offshore wind farm design on the vertical motion of the ocean. *Energy Procedia* 80(2015): 213-222.] As discussed further in Section IV.F.5.f, as tidal currents move past offshore wind foundations, they generate a turbulent wake that contributes to a mixing of the stratified water column which, with large-scale wind energy buildout, could significantly affect the stratification of a water column, including in the Mid-Atlantic Bight "Cold Pool." [Footnote 58: Lentz, S.J., "Seasonal warming of the Middle Atlantic Bight Cold Pool," *JGR: Oceans* 122(2017): 941-954.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-192

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM Must Be Transparent as to How Impacts are Quantitatively or Qualitatively Assessed

The definitions of potential adverse and beneficial impact levels (i.e., negligible, minor, moderate, and major) include language that provides minimal guidance on how impacts may be quantified. BOEM should look to previous analyses for more meaningful definitions. For example, adverse moderate and major impact levels in previous analyses include "notable and measurable" and "regional or population-level impact." [Footnote 62: E.g., SFWF DEIS at 3.1.1, Table 3.1.1-1 and 3.1.1-2.] In addition, the definitions of negative factors included in previous analyses specify "habitat" and "species common to the proposed Project area," which places the impact analyses in an ecosystem context instead of a species-by-species context. [Footnote 63: E.g., Id.] For example, "The extent and quality of local habitat for both special-status species and species common to the Lease area," and "The richness or abundance of local species common to the Lease Area." [Footnote 64: E.g., Id. (emphasis added).] The terms "richness" and "abundance" are both quantifiable ecological terms that have been described in decades of ecological literature.

More transparent information on how the level of an IPF is quantitatively or qualitatively assessed is needed. As a general matter, the impact analysis should be undertaken in an objective, transparent, and, where possible, quantitative manner. In the absence of available data, BOEM should acknowledge that an IPF is indeterminate and that additional research is needed. BOEM should provide detail on how IPFs and associated criteria have been quantitatively or qualitatively measured in the Draft EIS.

Comment Number: BOEM-2021-0062-DRAFT-0039-4

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

The discussion should present sufficient information to allow the reader to understand how the project is designed to avoid or minimize impacts associated with the installation and operation of wind turbine generators (WTG) and associated cables. A full assessment of key impacts for the entire project should be presented in the DEIS, not later, as the analysis will help inform state and federal permitting for the project.

Comment Number: BOEM-2021-0062-TRANS-111021-003-1

Commenter: Kathleen Keating

Commenter Type: Individual

Comment Excerpt Text:

I am primarily commenting because I am new to the process of reviewing the offshore wind project, and I am primarily concerned with a project in my home state and the other projects along the east coast and my comment is that there should be a resource where citizens from other jurisdictions can also see the comprehensive plan of BOEM on all the wind shore projects and if that is available, I would like to know about that.

Comment Number: BOEM-2021-0062-TRANS-111821-004-4

Commenter: Susanna Hatch

Commenter Type: Individual

Comment Excerpt Text:

Studies have shown that we will need about 50 percent of our energy to come from offshore wind by 2050 in order to meet those goals.

Per our regional grid operator, ISO New England, around one-six to one-third of New England's old fossil fuel power plants will likely retire over the next decade, and it's imperative that we fill any gap with clean energies. Closing those plants and replacing them with offshore wind would also reduce pollution and improve air quality which is a significant public health issue particularly in overburdened communities.

Comment Number: BOEM-2021-0062-TRANS-111821-005-4

Commenter: Vallerie Oliver

Commenter Type: Individual

Comment Excerpt Text:

Please clearly identify the thresholds that apply to each impact, declaring that an impact is negligible, minor, moderate or major without explaining what those terms mean in the context of that impact in question fails to satisfy any analytical and public disclosure at the hard look mandate.

A.2.20 Planned Activities Scenario/Cumulative Impacts

Comment Number: BOEM-2021-0062-DRAFT-0012-11

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, it is critically important that the analysis in the EIS consider the cumulative effects of the project in the context of all U.S. Atlantic wind development and the full development of the Massachusetts Wind Energy Area.

Comment Number: BOEM-2021-0062-DRAFT-0012-13

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The project must include current, robust analysis of the effects of the project on species listed under the ESA and MMPA. This analysis must include a complete evaluation of the immediate and cumulative effects of the proposed project as well as the effects of all proposed and potential wind development in the region. Separating the effects of a group of actions that have significant effects into a series of smaller discrete actions that may individually not be significant is unacceptable and the government must recognize the cumulative effects

Comment Number: BOEM-2021-0062-DRAFT-0012-9

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Oceana expects that some of the reviews and permitting may be concurrent, but offshore wind development must adhere to the rigorous review process that uses best available science to consider immediate and cumulative impacts to ocean wildlife.

Comment Number: BOEM-2021-0062-DRAFT-0014-8

Organization: Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

One initial OSW installations, there are more to come to fully meet our MA State goals. We need all the OSW companies to collaborate on cumulative impact statements, studying impacts on sea life, shoreline wetlands, etc.

Comment Number: BOEM-2021-0062-DRAFT-0017-1

Commenter: Leslie Clift

Commenter Type: Individual

Comment Excerpt Text:

More research is needed first on the cumulative impacts of wind farms.

Comment Number: BOEM-2021-0062-DRAFT-0021-27

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The likely extent of impacts to all types of fishing will be important to understand in the context of developing mitigation agreements for affected fishing industry members. This is an important consideration for Mayflower Wind given that there appears to be more fishing activity (landings and revenue) in the vicinity of the cable corridors account as compared to the lease area (COP Vol. 2, Section 11.1.1.4). Thus, it is important to evaluate impacts in the entire project area, not just the lease area where the turbines will be installed. Fishing effort can change based on management actions such as changes to access areas, updated state-by-state quota allocations for a target species (e.g., black sea bass, summer flounder, bluefish), and other changes. It is important to account for the dynamic nature of fishing effort over time when evaluating impacts to fisheries and fishing communities. This is an area of the EIS where cumulative considerations are especially important and this project cannot be considered in a vacuum; many other wind farms are proposed throughout this region, and fishing will be affected over a large area if all these projects are installed.

Comment Number: BOEM-2021-0062-DRAFT-0021-37

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Modeling work has suggested that the physical presence of turbines can alter near-surface and near-bottom temperatures, and thus, habitat conditions for marine species, as well as juvenile transport of commercially important species like sea scallop (Chen, et al. 2021). The EIS should acknowledge both the individual project's potential to materially affect oceanographic and hydrodynamic conditions based on ongoing research efforts and the project's contribution to cumulative effects from development of several wind farms on a regional scale. The EIS should also utilize the findings from ongoing research funded by BOEM in its impact assessment to understand how wind energy facilities will likely affect local and regional physical oceanographic processes.

Comment Number: BOEM-2021-0062-DRAFT-0021-6

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The EIS must include a meaningful cumulative impacts assessment. We supported the criteria used in the Vineyard Wind 1 and South Fork EIS for defining the scope of reasonably foreseeable future wind development; however, that scope should be expanded to include the anticipated New York Bight lease areas. The EIS should also acknowledge the recent Department of Interior announcement of plans to hold up to seven new lease sales by 2025, even if these leases are not included in the analyzed scope of reasonably foreseeable future wind development. The cumulative effects of adjacent wind projects should be thoroughly evaluated. In addition, it will be important to consider that many lease areas are not proposed to be developed through a single project, but rather will be developed in stages through multiple projects.

The cumulative effects analysis should also consider the impacts of cables from many planned projects given the COP notes that an anticipated total of up to 25 cable crossings are expected (COP Vol. 1, p. 3-51). For example, this project and multiple others have export cable corridors through Muskeget Channel. As we have commented in the past, there are multiple benefits to coordinated transmission planning across multiple projects. For example, shared cable corridors could decrease the amount of disturbed habitat. Impacts to sensitive species could also be reduced if multiple cable installations are coordinated in terms of timing to avoid especially sensitive times of year.

To help stakeholders better understand the potential cumulative impacts of the offshore export cables planned for all projects, we recommend the creation of information products to show the planned locations of all export cables (e.g., through the Northeast and Mid-Atlantic Ocean Data Portals). We recognize that the final precise cable routes have not been determined for most projects and this should be noted in the information products. Earlier dissemination of draft proposals via these platforms would promote better understanding of these projects in relation to each other and to other activities.

Cumulative impacts and risks need to be evaluated for species that are widely distributed on the coast. Species such as bluefish, flounders, and others that migrate along the coast could be affected by multiple offshore wind projects, as well as other types of coastal development, at both the individual and population level. Climate change will also be an essential consideration in the cumulative effects analysis as the distributions and abundance of many species are changing (some increasing, some decreasing) due to climate change and other factors. The EIS should acknowledge that impacts from the construction of wind farms will occur in this context.

We continue to have significant concerns about the cumulative impacts of offshore wind development on fishery independent surveys. Major negative impacts to these surveys would translate into greater uncertainty in stock assessments, the potential for more conservative fisheries management measures, and resulting negative impacts for fishery participants and communities. We are encouraged by BOEM's commitment to working with NOAA on long term solutions to this challenge through the regional, programmatic, Federal Survey Mitigation Program, described in the Records of Decision for the Vineyard Wind 1 and South Fork projects.

Comment Number: BOEM-2021-0062-DRAFT-0026-25
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

RODA, other fishing industry representatives, marine scientists, fishery management councils, the environmental community, and others have consistently requested BOEM take a cumulative approach to offshore wind leasing. BOEM is doing the public and the environment a disservice by failing to adequately assess the cumulative impacts from large scale build out along the entire coast.

Cumulative impacts need to be thoroughly evaluated to consider the changes in fishing activity that will be forced on the industry. The alteration of benthic habitat, predator/prey interactions, increased pressure and conflicts from recreational users, relocation of the fishing activity to other productive areas will realize an increase in gear loss due to strike from shipping traffic from the concentration of vessel traffic and the cumulative effects of increased effort.

The expected impacts under NEPA review should include any cumulative measures, such as species that will interact with various build outs along the eastern seaboard due to migration patterns, vessel traffic and navigation considerations along the coast, long-standing scientific surveys and environmental monitoring, and job opportunities—both potentially lost employment in one industry and limitations of permanent jobs in another.

It is difficult to imagine that it would not also benefit developers, transmission interests, and the public for BOEM to clarify its approach to cumulative effects review and at a minimum implement regional planning processes as robust as those it employs for oil and gas leasing. Solely “fast tracking” the large number of projects based on existing (arbitrary) OSW energy production targets may leave us with no recourse to reverse any biological or ecological impacts and a hollow offshore construction industry without longevity.

Comment Number: BOEM-2021-0062-DRAFT-0026-29
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

RODA and its members are extremely concerned about ongoing impacts to fishing and the marine environment from the significant number of OSW survey activities in the U.S. Atlantic occurring over the past several years. To be clear, this is an enormous amount of activity, occurring round the clock, across a huge range of the Atlantic Outer Continental Shelf and inshore environments. BOEM must take immediate action to address ongoing impacts from unregulated OSW surveys, and complete a Programmatic Environmental Impact Statement evaluating the cumulative impacts of all reasonably foreseeable OSW survey effort prior to additional activity. Project-specific Environmental Assessments have not analyzed the readily conspicuous size and scale of these surveys' environmental, economic, and cumulative impacts.

Comment Number: BOEM-2021-0062-DRAFT-0029-11
Organization: Town of Nantucket
Commenter Type: Local Agency

Comment Excerpt Text:

BOEM also must consider the significant cumulative impacts involved in permitting this Project. In specifically requiring cumulative impacts analyses, NEPA and NHPA recognize the significant effects that projects can have on the surrounding landscape beyond the scope of a single development. Several wind farms are in development off the coast of Nantucket, including several projects by Vineyard Wind, Beacon Wind, Bay State Wind, South Fork Wind, Revolution Wind, and Sunrise Wind. These offshore wind projects will have both separate and cumulative adverse visual impacts upon historic properties, sites, and districts listed or eligible for listing in the National Register of Historic Places. This Project, and how it is evaluated and permitted, will set a precedent for upcoming projects in the area and along the entire Atlantic Coast. Therefore, it is essential to apply consistent criteria to this Project and subsequent future development sites. Due to the significant historic resources on Nantucket, BOEM must establish and implement best practices. The COP should be amended to reflect—and the DEIS should include—a complete assessment of all impacts to historic and cultural properties and include additional visual simulations for the Project area so that consulting parties can understand all adverse effects and offer meaningful comments.

Comment Number: BOEM-2021-0062-DRAFT-0030-2
Organization: The Nature Conservancy
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The great pace of offshore wind project review relative to our collective understanding of the potential impacts of offshore wind construction and operation on our ocean environment and uses, however, presents dual challenges and opportunities. BOEM is in an excellent position to fully develop the opportunities, especially as they relate to the advancement of technologies that allow for impacts to be completely avoided or otherwise significantly minimized. Robust assessment of the potential alternatives available for each Construction and Operations Plan (COP) will influence not only this specific siting decision, monitoring protocols, mitigation determinations, and environmental protections, but can establish expectations for future projects. Optimally, BOEM's project review will not only ensure that maximum anticipated impacts are appropriately minimized and mitigated, but it will also steer project

designs to avoid impacts in the first instance. This kind of forward-thinking and comprehensive environmental assessment, with an eye toward cumulative ecosystem wide impacts and benefits can ensure that offshore wind is deployed in an environmentally sustainable manner that also fully supports overall project viability.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-115

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Draft EIS must provide a quantitative assessment of the cumulative effects from wind farm build out in the OCS, including population viability analyses which consider changes in vital rates that result from both direct and indirect impacts. BOEM's cumulative impact level should reflect these estimates. In the past, BOEM has prescribed impact levels to birds based on immediate impacts or impacts to species detected during surveys within the proposed development footprint. These limited evaluations are not acceptable. We expect BOEM to be fully transparent in its impact level assignments in the Draft EIS, clearly outlining the best available science and analyses that lead to each impact level assignment.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-128

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

8. Cumulative Impact Analysis for Bats

Because there is so little research on bats offshore, impacts to bats are often only given cursory consideration. However, bat species on the east coast are facing stressors on land that may make their populations more vulnerable to additional take offshore. The northern long-eared bat and the Indiana bat are listed as threatened and endangered under the ESA due, in part, to high rates of mortality from white-nose syndrome, a highly pathogenic fungus.

Similarly, numerous other east coast bat species, such as the Indiana bat, little brown bat, eastern small-footed bat, big brown bat (*Eptesicus fuscus*), and tri-colored bat (*Perimyotis subflavus*) are affected by white-nose syndrome. Due to white-nose syndrome mortality, the USFWS recently issued a positive 90-day finding for the petition to list the tri-colored bat [Footnote 470: Endangered and Threatened Wildlife and Plants; 90-Day Findings for Five Species, 82 Fed. Reg. 60362, December 20, 2017. e-day-findings-for-five-species] and USFWS staff have communicated their intent to assess the little brown bat for potential ESA-listing. [Footnote 471: See National Domestic Listing Workplan Fiscal Years 2021-2025 (<https://www.fws.gov/endangered/esa-library/pdf/National-Listing-Workplan-FY21-FY25.pdf>) and Robyn Niver, USFWS, personal communication (2018).]

The COP notes that migratory bats are the most likely to be affected by offshore wind development, [Footnote 472: MFW COP, Appendix I2 at 6-1.] although cumulative impacts are not discussed. The three migratory bat species on the east coast, the silver-haired, eastern red, and hoary bat, are the bat species most highly impacted by land-based wind energy development, representing almost 80% of all bats killed at wind facilities in North America. [Footnote 473: Hoary bats, eastern red bats, and silver-haired bats represent 38%, 22%, and 18% of all bat fatalities at wind turbines in the United States and Canada, respectively. Arnett, Edward B., and Erin F. Baerwald. 2013. "Impacts of Wind Energy

Development on Bats: Implications for Conservation.” In *Bat Evolution, Ecology, and Conservation*, 435–56. New York, NY: Springer New York. https://doi.org/10.1007/978-1-4614-7397-8_21.] Recent research [Footnote 474: Frick et al. (2017); EPRI (2020); Friedenber and Frick (2021).] has implicated wind energy as causing potential population-level declines for hoary bats, and hoary bats and eastern red bats are expected to be recommended for listing in Canada in the near future. Other east coast bat species, such as little brown bats, tri-colored bats, big brown bats, northern long-eared bats, Seminole bats (*Lasiurus seminolus*), and Indiana bats have also been documented killed by wind turbines. [Footnote 475: Arnett and Baerwald (2013).]

Because of these existing stresses on bat species, accurately accounting for how offshore wind could affect their populations is critical. When conducting the cumulative impacts analysis for the Draft EIS, BOEM must include (i) the best available science (such as Motus data), (ii) that cave-hibernating bats are likely more common offshore than the COP represents, (iii) that seasonal use of the offshore environment by migratory bats does not imply low exposure and low impact, (iv) bats are likely attracted to wind turbines, and that (v) larger turbines may kill more bats than smaller turbines.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-129

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

a) The Geographic Scope for Cumulative Bat Impacts used by BOEM in Previous Analyses Is Inappropriate and Relies on an Unsupported Claim about Bat Movements

In previous NEPA analyses, the Geographic Analysis Area for cumulative impacts to bats was defined as 100 mi offshore and 5 mi inland. [Footnote 476: VW1 SEIS, at A-6, Tbl A-1., (June 2020); SFWF DEIS, Table E-1, 86.] The migratory movements of bats, especially migratory tree bats, are poorly understood, and many species of bats—both long-distance migrants like migratory tree bats but also cave-hibernating bats—are capable of flights in excess of 100 km, indicating that bats found offshore in wind development areas could also be found significant distances inland. Hoary bats, which are capable of long-distance flights over water, [Footnote 477: Hoary bats have colonized the Hawaiian Islands from the mainland multiple times. Russell, A. L., Pinzari, C. A., Vonhof, M. J., Olival, K. J., & Bonaccorso, F. J. (2015). *Two Tickets to Paradise: Multiple Dispersal Events in the Founding of Hoary Bat*

Populations in Hawai'i. PLOS ONE, 10(6), e0127912. <https://doi.org/10.1371/journal.pone.0127912>.] have been recorded traveling distances over 1,000 km [Footnote 478: Weller, T. J., Castle, K. T., Liechti, F., Hein, C. D., Schirmacher, M. R., & Cryan, P. M. (2016). *First Direct Evidence of Long-distance Seasonal Movements and Hibernation in a Migratory Bat*. *Scientific Reports*, 6(1), 1–7. <https://doi.org/10.1038/srep34585>.] and are thought capable of migrations in excess of 2,000 km. [Footnote 479: Id.] Research from Canada found that 20% of little brown bat movements exceeded 500 km, [Footnote 480: Norquay, K. J. O., Martinez-Nuñez, F., Dubois, J. E., Monson, K. M., & Willis, C. K. R. (2013). *Long-distance movements of little brown bats (Myotis lucifugus)*. Source: *Journal of Mammalogy*, 94(2), 506–515. <https://doi.org/10.1644/12-MAMM-A-065.1>] which is further supported by data from tracked little brown bats, which shows individuals using both coastal areas and making long-distance flights to locations significantly further inland than 5 mi. [Footnote 481: *Bird Studies Canada 2018*.] In addition to little brown bats, data in Motus tracks movements of individual silver-haired bats, eastern red bats, hoary bats, eastern small-footed bats, and Indiana bats from coastal areas on the east coast to areas in excess of 100 mi inland. [Footnote 482: Id.] These movements seem to refute BOEM's assertion in previous NEPA analyses that bats that could be exposed to offshore wind energy projects

would not be found far inland (and therefore exposed to land-based wind energy facilities) and instead support that a geographic scope of 100 mi inland was more appropriate.

BOEM should conduct a thorough review of the literature on bat migration and radio- and GPS-tagged bats and select a boundary that better reflects the potential habitat use of exposed bats for use in the Mayflower Wind Draft EIS (and other NEPA analyses). This revised boundary will likely require the cumulative impacts analysis to reflect that bats exposed to offshore wind projects are potentially exposed to multiple offshore wind facilities and land-based wind energy projects.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-13

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

At least two of the potential paths of the FECC through Muskeget Channel would be near the Vineyard Wind 1 and Vineyard Wind South Cables. [Footnote 91: See MWF COP, App. D1 at 2-4.] Because the export cable corridors for all three projects will traverse Muskeget Channel, BOEM must analyze the cumulative impacts from the different options proposed by Mayflower Wind and determine whether the cumulative impacts are reduced based on the option selected.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-132

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

V. The Economic Impacts Associated with the Project and Future Growth in the Offshore Wind Industry Must Be Adequately Considered

BOEM must accurately estimate the economic impacts associated with the Project. A March 2020 study by the American Wind Energy Association, which analyzed the economic impacts from offshore wind, found that the industry is expected to invest \$57 billion in offshore wind energy development, which is expected to contribute \$25.4 billion in annual economic output and approximately 82,500 jobs by 2030 based on a high estimate of a 30 GW offshore wind build out. [Footnote 492: American Wind Energy Ass'n, U.S. Offshore Wind Power Economic Impact Assessment (March 2020) at 1, https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf.] We urge BOEM to closely examine the cumulative impact on demographics, employment, and economics to ensure that it properly reflects the vast potential of offshore wind to create jobs and economic opportunity while generating clean, renewable energy.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-134

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, as BOEM noted in a prior analysis, offshore wind generation will likely directly displace fossil fuel generation. Due to offshore wind's ability to displace more highly polluting fossil resources,

the climate impacts of the proposed offshore wind buildout would be net climate beneficial. Consequently, cumulative effects of offshore wind development may result in long-term, low-intensity beneficial cumulative impacts on wildlife and long-term beneficial impacts on demographics, employment, and economics. [Footnote 501: E.g., Id. at H-68, E3-25, E3-29.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-154

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- BOEM's cumulative impacts assessment for marine mammals should include the risk to marine mammals of increased vessel activity associated with offshore wind development, analyze large-scale habitat displacement for North Atlantic right whales and other vulnerable species, consider how large-scale build out of offshore wind could affect the marine mammal prey base, and assess the potential impacts of underwater noise generated during operations on marine mammals and their prey, and propose the necessary steps to mitigate those impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-169

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Thus, consistent with Secretary Haaland's order and in light of the Administration's likely reinstatement of the previous regulatory requirement to consider cumulative impacts, BOEM should ignore the Trump Administration's repeal of 40 C.F.R. §1508.7, and include a cumulative impacts analysis in the Draft EIS that is consistent with the former 40 C.F.R. §1508.7: Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-170

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Longstanding case law interpreting NEPA also demands a robust cumulative impacts analysis in the Draft EIS. [Footnote 26: Courts recognized the requirement to examine the cumulative impacts of a project well before regulations requiring a cumulative impacts analysis were promulgated in 1978. For instance, in 1972, the U.S. Court of Appeals for the Second Circuit found that when making a determination regarding whether or not an action is subject to NEPA, agencies should consider, inter alia, "the absolute

quantitative adverse environmental effects of the action itself, including the cumulative harm that results from its contribution to existing adverse conditions or uses in the affected area.” Hanly v. Kleindienst, 471 F.2d 823, 830-31 (2d Cir. 1972). The Court went on to highlight that, “it must be recognized that even a slight increase in adverse conditions that form an existing environmental milieu may sometimes threaten harm that is significant. One more factory polluting air and water in an area zoned for industrial use may represent the straw that breaks the back of the environmental camel. Hence the absolute, as well as comparative, effects of a major federal action must be considered.” Hanly v. Kleindienst, 471 F.2d at 831. Likewise, in 1975, the U.S. Court of Appeals for the Seventh Circuit stated that, “NEPA is clearly intended to focus concern on the ‘big picture’ relative to environmental problems. It recognizes that each ‘limited’ federal project is part of a large mosaic of thousands of similar projects and that cumulative effects can and must be considered on an ongoing basis.” Swain v. Brinegar, 517 F.2d 766 (7th Cir. 1975) (recognizing that an EIS should consider comprehensive, cumulative impacts, but resolving the case on the grounds that the federal agency had impermissibly delegated the EIS to Illinois state authorities.) Similarly, in 1976, the U.S. Supreme Court acknowledged the importance of examining cumulative effects under NEPA, concluding that, “Cumulative environmental impacts are, indeed, what require a comprehensive impact statement.” Kleppe v. Sierra Club, 427 U.S. 390, 413 (1976). Although 40 C.F.R. §1508.7 currently remains repealed, in a January 20, 2021 executive order, President Biden ordered the “immediate review of agency actions taken between January 20, 2017, and January 20, 2021” that are inconsistent with his Administration’s policies of “promot[ing] and protect[ing] our public health and the environment”; conserving, “restor[ing] and expanding our national treasures and monuments”; “listen[ing] to the science”; and “reduc[ing] greenhouse gas emissions.” Exec. Order No. 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021). President Biden directed the heads of agencies to immediately review all regulations and other agency actions promulgated, issued, or adopted between January 20, 2017, and January 20, 2021, that are inconsistent with these Administration policies, and for any such actions identified, “the heads of agencies shall, as appropriate and consistent with applicable law, consider suspending, revising, or rescinding the agency actions.” Id. It is possible that the Biden Administration’s review of Trump Administration regulatory actions will result in a reinstatement of 40 C.F.R. §1508.7.]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-171

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The notice of intent states that:

The draft EIS will identify and describe the potential effects of the Proposed Action and the alternatives on the human environment that are reasonably foreseeable and have a reasonably close causal relationship to the Proposed Action and the alternatives. This includes such effects that occur at the same time and place as the Proposed Action and alternatives and effects that are later in time or occur in a different place. [Footnote 27: 86 Fed. Reg. at 60,272.]

Although the notice of intent did not expressly require a full cumulative impacts analysis citing to 40 C.F.R. §1508.7, BOEM must nevertheless conduct such an analysis.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-173

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Analysis of Cumulative Impacts

1. Scope of Reasonably Foreseeable Offshore Wind Development

Critical to a proper cumulative impacts analysis is its scope. In Vineyard Wind 1's June 2020 Supplemental EIS, BOEM greatly expanded the scope for future offshore wind energy development from what was considered in Vineyard Wind 1's Draft EIS (projects that had submitted COPs representing approximately 130 MW of offshore wind) to the state capacity planned commitment for existing Atlantic leases (21.8 GW, or approximately 22 GW of offshore wind in federal waters). [Footnote 32: Vineyard Wind 1 Offshore Wind Energy Project, Supplement to the Draft Environmental Impact Statement (June 2020), at ES (VW1 SEIS).] BOEM kept this expanded scope for the Vineyard Wind 1 Final EIS, issued on March 12, 2021. [Footnote 33: Vineyard Wind 1 Offshore Wind Energy Project, Final Environmental Impact Statement (Mar. 2021), at 1-5. (VW1 FEIS).] Likewise, the August 2021 South Fork Final EIS also used this broader scope for its cumulative impact analysis. [Footnote 34: South Fork Wind Farm and South Fork Export Cable Project, Final Environmental Impact Statement (August 2021), Table I-85 at I-132. (SFWF FEIS).] While this was a reasonably foreseeable scope for offshore wind development at the time, now that the first U.S. offshore wind facility has been permitted with Vineyard Wind 1, life has been injected into the industry and the scope of reasonably foreseeable offshore wind development has expanded. Paired with an ever-greater urgency to address increasing climate change impacts, the offshore wind industry is materializing quickly. As such, state capacity planned commitment should be re-evaluated to consider a larger role for pledged commitments in cumulative impacts assessment. We urge BOEM to further expand the scope of considered offshore wind development in Mayflower Wind's Draft EIS to include the Administration's goal of building 30 GW of offshore wind within the next nine years, future development in the newly identified Wind Energy Areas (WEAs) in the New York Bight, and North Carolina's new commitment for 8 GW of offshore wind by 2040. [Footnote 35: N.C. Exec. Order No. 218, Advancing North Carolina's Economic and Clean Energy Future with Offshore Wind (June 9, 2021), <https://files.nc.gov/governor/documents/files/EO218-Advancing-NCs-Economic-Clean-Energy-Future-with-Offshore-Wind.pdf><https://governor.nc.gov/executive-order-11-promoting-wind-energy-development>] Moreover, turbine technology and spacing needs are rapidly evolving and technical resource potential should be reexamined to ensure that the cumulative impacts evaluation is keeping pace with technology and political needs.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-174

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

2. BOEM Should Account for Technological Changes in Future Evaluations

As acknowledged in previous environmental reviews of offshore wind projects, [Footnote 36: See South Fork Wind Farm Draft EIS at E4-10 ("it is difficult to accurately predict future technology for . . . offshore wind"). South Fork Wind Farm and South Fork Export Cable Project, Draft Environmental Impact Statement (Jan. 4, 2021). (SFWF DEIS).] in assessing how future wind sites may be constructed, operated, and sited, it is reasonable to assume that future projects will employ higher output turbines that can generate more power by using fewer physical turbines of larger size. This could change impacts related to hub height, rotor diameter, and total height of turbines for future projects, as well as, inter alia, the number of turbines and the length of inter-array cables. [Footnote 37: See SFWF DEIS at E4.]

Projects, particularly projects further on the time horizon, may have increasingly larger turbines that could impact the design and layout of the operation. As BOEM has already noted, for future projects, BOEM should assume that "the largest turbine that is presently commercially available" be used to evaluate potential impacts. [Footnote 38: SFWF DEIS at E4-10.] Changes in turbine size could reduce the geographic footprint per MW of energy but may have negative impacts (larger rotation zones that could impact certain species like higher flying birds). We urge BOEM to ensure that future cumulative impact models continue to keep pace with technology.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-175

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. BOEM Must Ensure Robust Data Collection and Monitoring at the Project and Regional Levels to Properly Assess Cumulative Impacts

BOEM must ensure that Mayflower Wind undertakes robust monitoring in order to assess impacts and enable adaptive management. As previously noted, offshore wind remains a new technology in the United States and, as such, BOEM must closely monitor the impact of offshore wind construction and operations on marine wildlife and the ocean ecosystem to guide its adaptive management and future development.

It is necessary to understand baseline environmental conditions prior to large-scale offshore wind development in the United States so that offshore wind impacts can be clearly understood with relation to pre-development environments. To this end, BOEM must ensure the creation of a robust, long-term scientific plan to monitor the effects of offshore wind development on marine mammals, sea turtles, fish, bats, birds, and other species and their habitats before, during, and after the first large-scale commercial projects are constructed. This monitoring data must be made readily available to stakeholders and the public to help inform future decisions in the growing offshore wind industry and minimize risks associated with offshore development.

Without strong monitoring in place, it will not be possible to detect and understand potential impacts or differentiate the root causes of any changes observed and there will be a significant risk of setting an under-protective precedent for offshore wind development. Monitoring must inform and drive future project siting, design, implementation, and mitigation as well as potential changes to existing operations to avoid or minimize negative impacts to wildlife and other natural resources.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-176

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM must collaborate with state efforts and agencies (e.g., Massachusetts Department of Environmental Protection, Massachusetts Department of Public Utilities, Massachusetts Department of Fish and Game, Massachusetts Office of Coastal Zone Management, Rhode Island Coastal Resources Management Council, and Rhode Island Department of Environmental Management), scientists, non-governmental organizations, the wind industry, and other stakeholders to use information from monitoring and other research and evolving practices and technology to inform cumulative impacts analyses moving forward.

Likewise, the Draft EIS must include more specific information related to how monitoring impacts of offshore wind development and operation on wildlife and their habitats will inform management practices as new information becomes available. As monitoring should inform management practices, BOEM must require continued monitoring and employment of adaptive management practices in the Draft EIS as a condition of continued operation and maintenance by Mayflower Wind. This will ensure that BOEM can swiftly minimize damages of unintended or unanticipated impacts to coastal ecosystems or wildlife, as well as inform strategies for future wind projects to avoid potential impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-196

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

9. The Draft EIS Should Evaluate Cumulative Impacts to Avian Populations from this Project and All Other Foreseeable Development Offshore

In the past, BOEM has failed to provide any reasonable scientific evidence to support its cumulative impact assessment for birds resulting from wind farm construction and operation in the Atlantic OCS.

In regard to South Fork, BOEM assessed only localized impacts to forests from construction, namely, "the removal of 2.4 acres of deciduous forest for the interconnection facility and a small area (0.1 acre) of upland wildlife habitat at the selected O&M facility." [Footnote 397:SF WF DEIS, at H-48.] BOEM further asserted that the resulting impacts would be "localized and temporary, including avoidance and displacement, although no individual fitness or population-level effects would be expected." [Footnote 398: Id.] The assumption that removal of deciduous forest only creates short-term impacts and that displacement and habitat loss do not impact survival and fecundity is simply false. This will be equally true of the Long Island Pine Barrens. BOEM must take a full annual and life cycle approach in the Draft EIS, addressing the various population vital rates which may be affected for species potentially impacted from build out of Mayflower Wind.

Loss et al. (2013) estimates that the average annual mortality rate for birds from turbines onshore is 3.58 birds/MW (95% C.I.=3.05-4.68). [Footnote 399: Loss SR, Will T, Marra PP. 2013. Estimates of bird collision mortality at wind facilities in the contiguous United States. *Biological Conservation* 168:201–209.] The Draft EIS must use this range to estimate potential cumulative impacts from the Project over, at minimum, the predicted 30-year lifespan of the Project. While the exact turbine models to be deployed are not yet known, BOEM should provide, at minimum, estimates based on the specifications provided in the COP. [Footnote 400: MFW COP, Volume II, p. 201.] Furthermore, BOEM should model how the Loss et al. estimates could change in response to increased height and rotor swept area for larger turbines, enlisting existing flight altitude data from nearshore studies.

These calculations only address direct mortality from collisions and do not include the rates of mortality driven by barrier effects and habitat loss. Barrier effects and displacement can have significant energetic costs for birds and can additionally result in increased foraging rates. Both can have consequences for individual survival and can decrease rates of egg laying and fledging.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-71

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5. Cumulative Impacts - Marine Mammals

a) BOEM Should Prepare a Programmatic EIS for the North Atlantic Right Whale

To best account for the impacts of the simultaneous development of multiple lease areas on the North Atlantic right whale, we stress that the agency must prepare a full Programmatic EIS encompassing all United States' East Coast renewable energy development as soon as possible to inform future offshore wind development. Currently, impact analyses are undertaken, and mitigation measures prescribed, on a project-by-project basis leading to inconsistency and inefficiency. It would be highly beneficial to collectively consider available information on North Atlantic right whales in United States' waters to build a picture of responsible development accounting for the lifespan and migratory movements of the species, which have the potential to overlap with every WEA along the United States' East Coast on a twice-yearly basis (i.e., northern and southern migration). A Programmatic EIS is also particularly timely given the climate-driven shifts in North Atlantic right whale habitat use observed over the past decade [Footnote 257: Albouy, C., Delattre, V., Donati, G. et al. "Global vulnerability of marine mammals to global warming" *Scientific Reports*, vol. 10, No. 548 (2020); Silber, G.K., Lettrich, M.D., Thomas, P.O., et al., "Projecting Marine Mammal Distribution in a Changing Climate," *Frontiers of Marine Science*, vol. 4, no. 413 (2017).] as well as significant changes in their conservation status and major threats. [Footnote 258: EarthTalk, January 18, 2010, "Despite Gains, One Third of the World's Marine Mammals Seen at Greater Risk," *Scientific American*, <https://www.scientificamerican.com/article/earth-talks-marine-mammals/>, accessed July 22, 2020.; Marine Mammal Commission, "Status of Marine Mammal Species and Populations," <https://www.mmc.gov/priority-topics/species-of-concern/status-of-marine-mammal-species-and-populations/>.] Such an approach will ensure that alternatives and mitigation measures are considered at the scale at which impacts would occur and may potentially help increase the pace of environmentally responsible offshore wind development along the United States' East Coast.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-72

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Vessel Speed Restrictions and Vessel Noise Reduction Must Be Incorporated into Cumulative Impact Analysis

Notwithstanding the preparation of a Programmatic EIS, all future cumulative impact analysis must include the following considerations concerning vessel speed restrictions and vessel noise reduction.

Vessel strikes remain one of the leading causes of large whale injury and mortality and are a primary driver of the existing UMEs. Serious injury or mortality can occur from a vessel traveling above 10 knots irrespective of its length, [Footnote 259: NOAA-NMFS, "Reducing ship strikes to North Atlantic right whales." Available at: [Marine Mammal Science, vol. 37, pp. 251-267 \(2020\).\] The number of](https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales#:~:text=All%20vessels%2065%20feet%20(19.8,endangered%20North%20Atlantic%20right%20whales. To reflect the risk posed by vessels of any length, the Commonwealth of Massachusetts established a mandatory vessel speed restriction for all vessels (including under 20 m) in the Cape Cod Bay SMA.] and vessels of any length travelling below this speed still pose a serious risk. [Footnote 260: Kelley, D. E., Vlasic, J. P. and Brilliant, S. W.,)

recorded vessel collisions on large whales each year likely grossly underestimates the actual number of animals struck, as animals struck but not recovered, or not thoroughly examined, cannot be accounted for. [Footnote 261: Reeves, R.R., Read, A.J., Lowry, L., Katona, S.K., and Boness, D.J., "Report of the North Atlantic Right Whale Program Review." 13–17 March 2006, Woods Hole, Massachusetts (2007) (prepared for the Marine Mammal Commission); Parks, S.E., Warren, J.D., Stamieszkin, K., Mayo, C.A., and Wiley, D., "Dangerous dining: surface foraging of North Atlantic right whales increases risk of vessel collisions." *Biology Letters*, vol. 8, p. 57-60 (2011).] In fact, observed carcasses of North Atlantic right whales from all causes of death may have only accounted for 36 percent of all estimated death during 1990-2017. [Footnote 262: Pace III, R. M., Williams, R., Kraus, S. D., Knowlton, A. R. and Pettis, H. M., "Cryptic mortality of North Atlantic right whales," *Conservation Science and Practice*, e346 (2021).]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-79

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

e) BOEM Should Develop Regional Construction Calendars to Reduce Cumulative Noise Impacts

Offshore wind energy development in the Rhode Island and Massachusetts WEAs includes multiple leaseholders developing individual projects on parallel timelines. If not well coordinated, these combined activities have the potential to lead to significant cumulative noise impacts on marine mammals and other marine life. BOEM should proactively address this issue and develop regional construction calendars in coordination with its sister agencies that schedule (spatially and/or temporally) noisy pre-construction and construction development activities in a way that reduces cumulative noise impacts.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-82

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should explicitly consider the cumulative effects of offshore wind on oceanographic conditions, including stratification and waves, and the resulting effects on fish habitat, as part of the Mayflower Wind EIS. NYSERDA is funding research to model the effects of offshore wind development on Cold Pool stratification. [Footnote 298: See, <https://portal.nyserderda.ny.gov/servlet/servlet.FileDownload?file=00Pt000000DS6ouEAD>.] BOEM should incorporate the results of this study and findings from Europe [Footnote 299: Schultze, L. K. P., et al. "Increased mixing and turbulence in the wake of offshore wind farm foundations," *supra*; Carpenter JR, et al., Potential Impacts of Offshore Wind Farms on North Sea Stratification, *supra*.] into the analysis for Mayflower Wind. In addition, BOEM, in collaboration with NOAA and the states of Rhode Island and Massachusetts, should establish baseline stratification conditions for the area off southern New England and design and implement a monitoring system capable of detecting deviations from that baseline. In addition, BOEM should undertake research similar to that conducted in Europe [Footnote 300: See, e.g., Schultze, L. K. P., et al. "Increased mixing and turbulence in the wake of offshore wind farm foundations," *Id.*] to better understand the effects of individual turbines and the cumulative effects of large-scale build out of offshore wind energy on mixing and stratification in the area off southern New England.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-88

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

H. Impacts to Birds

The Draft EIS must address population-level, cumulative impacts to avian populations from developing the Project and other areas in the Atlantic outer continental shelf (OCS) expected to be developed in the reasonably foreseeable future. In doing so, BOEM must consider impacts to a broader range of avian species which may be impacted by the Project, and not limit its evaluation to federally-listed species. Recognizing that much remains unknown regarding the impacts of offshore wind to avian species in the United States, the Mayflower Wind Draft EIS must require an explicitly defined monitoring and adaptive management plan. Monitoring and adaptive management plans must include sufficient standardized monitoring before, during, and after construction.

Most importantly, the adaptive management plan must explicitly outline a strategy to employ adequate mitigation measures, based on the impacts observed through monitoring efforts. In this manner, the Draft EIS can account for the reasonably foreseeable impacts of developing this and future projects and a commitment to addressing those impacts. Further, BOEM should call for incorporation of best monitoring and management practices into a regional adaptive management plan to adequately measure and mitigate cumulative impacts to birds from offshore wind developments expected across the Atlantic OCS for the reasonably foreseeable future.

Comment Number: BOEM-2021-0062-DRAFT-0037-25

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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. It is important that the geographic area encompass all project related activities, including the lease area, cable corridors, landing sites, and the use of ports outside of the immediate project area.

This analysis should also include any necessary landside facilities and the staging locations of materials to be used in construction. You should ensure that findings for each effect/species are supported by references where possible and in context of the proposed project to allow for a well-reasoned and defensible document.

Comment Number: BOEM-2021-0062-DRAFT-0037-50

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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, vessel activity, fisheries management actions, disposal sites, and other development projects. Consistent with efforts to evaluate the cumulative effects for both the Vineyard Wind and South Fork Wind projects, offshore wind development projects that have been approved and those in the leasing or site assessment phase should also be evaluated. Specifically, the cumulative effects analysis should consider all 16 COPs BOEM recently announced it plans to process by 2025. We encourage you to use the final cumulative impact analysis from the previous wind projects to help inform discussions of cumulative effects on marine resources from other offshore wind development projects for this EIS. However, for this project, additional focus on cumulative impacts of multiple projects potentially impacting marine resources in the area at the same time and over consecutive seasons should also be incorporated. Although lease auctions for the New York Bight have not yet been conducted, consideration of the impacts from potential projects in the New York Bight Wind Energy Areas are warranted, particularly if the lease areas are defined and auctions completed before the EIS for this project has been finalized.

Comment Number: BOEM-2021-0062-DRAFT-0037-51

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS should evaluate cumulative impacts of project construction, operation, and decommissioning. Consideration of impacts from multiple projects throughout the region and outside the Rhode Island/Massachusetts Wind Energy Area is particularly important for migrating species of 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.

Comment Number: BOEM-2021-0062-DRAFT-0037-52

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

An assessment of the potential impacts of the Mayflower Wind project-specific (turbine level) and the full build-out/cumulative offshore wind scenario on hydrodynamics, and oceanographic and atmospheric conditions, will help evaluate impacts on species distribution and the effects to hydrodynamic conditions. The potential impact of offshore wind development is not well known, but the large scale energy extraction and the physical presence of wind turbine foundations could have a significant impact on wind speeds, wave heights, currents, vertical stratification of the water column, and primary production in this region, which could affect the ecology, habitat, and egg/larvae and prey distribution of a number of federally managed fish species and protected species. We recognize there is uncertainty regarding the scope and scale of these impacts; however, it is critical that these issues are thoroughly addressed and that the EIS makes use of the best available scientific information, including the consideration of preliminary results of ongoing studies [Footnote 13: hen, C., Zhao, L., Gallager, S., Ji, R., He, P., Davis, C., ... & Bethoney, D. (2021). Impact of larval behaviors on dispersal and connectivity of sea scallop larvae over the northeast US shelf. *Progress in Oceanography*, 195, 102604.], to support any conclusions regarding these impacts. In particular, the EIS should contain a robust assessment of the potential effects of both the Mayflower Wind project and the full build-out scenario on prey resources for critically endangered North Atlantic right whales and other species. Potential impacts to plankton distribution should be clearly discussed as their distribution, aggregation, and possible abundance may shift, and this could have a

significant impact on North Atlantic right whales, along with other large whales and numerous species of planktivorous pelagic fish, as zooplankton are the primary source of prey for many higher trophic level organisms. Given the consideration of including an offshore converter station that will withdraw large amounts of water, consideration of impingement and entrainment of plankton must be factored into this analysis. In addition, consideration of impacts to species recruitment and larval distribution due to changes to ocean stratification and circulatory patterns resulting from the development of wind projects should be discussed in this section. This analysis is particularly important given the location of the Mayflower lease area near Nantucket Shoals.

Comment Number: BOEM-2021-0062-DRAFT-0037-53

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

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, displaced fishing effort, cable routing and burial, 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. Vessel strikes are a documented threat to a number of protected species including Atlantic sturgeon, sea turtles, and large whales, including critically endangered North Atlantic right whales. The EIS should evaluate, in detail, the cumulative effects of increased vessel traffic during all phases of the project.

Comment Number: BOEM-2021-0062-DRAFT-0037-54

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS should fully evaluate the cumulative effects of overlapping acoustic and benthic disturbance impacts on cod spawning aggregations and juvenile cod HAPC across multiple spawning, settlement, and recruitment seasons. As discussed above, Atlantic cod spawn in southern New England between November and April and the project overlaps with juvenile cod HAPC. Because cod stocks region-wide are depleted in part due to low recruitment in recent years, adverse impacts to the spawning and recruitment of Atlantic cod associated with project construction in this region may result in significant long-term cumulative impacts to the southern New England spawning component of the Georges Bank stock. Currently, the Georges Bank Atlantic cod stock, of which the southern New England population is a component, is at only 7 percent of the target for maximum sustainable yield [Footnote 14: National Marine Fisheries Service - 3rd Quarter 2021 Update Table A. Summary of Stock Status for FSSI Stocks 15]. While recent information indicates that cod in southern New England, unlike stock components, has increased in abundance during the last 20 years [Footnote 15: Langan, J. A., McManus, M. C., Zemeckis, D. R., & Collie, J. S. 2020. Abundance and distribution of Atlantic cod (*Gadus morhua*) in a warming southern New England. *Fishery Bulletin*, 118(2), 150-162.], the Georges Bank stock overall remains at historic lows. Therefore, impacts to the southern New England stock component will likely affect the entire Georges Bank stock and further constrain stock recovery. Impacts to cod spawning aggregations and habitats that support increased survivorship and recruitment, including cumulative impacts from multiple offshore wind development projects, may be detrimental to their recovery and result in significant long-term cumulative impacts to the stock and the species at large. The EIS must evaluate the potential cumulative effects to cod populations from construction activity occurring during periods of cod

spawning over multiple years as well as long-term and permanent impacts to cod HAPC associated with this and other adjacent projects.

Comment Number: BOEM-2021-0062-DRAFT-0037-55

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

An assessment of cumulative impacts of existing and proposed transmission cables should also be considered in the EIS. 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. In addition, the cumulative analysis of transmission cables should include a discrete analysis on cumulative estuarine impacts from export cables. Specifically, the EIS should assess cumulative impacts of multiple cables routed through the Narragansett Bay Estuary, including the Sakonnet River and Mount Hope Bay. The EIS should analyze how multiple projects connecting to available substations in estuarine environments may impact these important areas. Estuaries provide critical nursery grounds for many marine species that rely on these areas for growth, feeding, breeding, and protection. The cumulative impacts of multiple projects impacting estuarine environments over several consecutive seasons should be analyzed in detail. The EIS should include specific focus on the Narragansett Bay Estuary. As part of the cumulative effects analysis, measures to minimize the additive impacts should be considered, including the evaluation of land-based alternatives as well as facility and infrastructure upgrades for cables that may be routed through estuaries; and designated cable routes and coordination and consolidation with adjacent projects in marine waters to minimize cumulative impacts.

Comment Number: BOEM-2021-0062-DRAFT-0037-56

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS should evaluate the cumulative impacts of multiple projects on fishing operations, such as changes to time and area fished, gear type used, fisheries targeted, and landing ports. Some fishing vessels operate in multiple areas that may be subject to wind project development. While some may choose to continue to fish in these areas, others may be displaced from one or more project areas and fish in different areas outside the project areas. Therefore, it is important to evaluate how all existing and potential future wind projects could affect overall fishing operations due to effort displacement, shifts from one fishery to another, changes to gear usage and frequency, changes to fishery distribution and abundance, and increased fishing effort due to fishing in less productive areas. It is not enough to simply state that economic impacts of this project can be mitigated by fishing elsewhere without considering and addressing other factors that may impede effort displacement, including development of other wind projects in adjacent and nearby waters. 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 such as fishing regulations that limit where and when a particular vessel can fish with particular gear for a particular species. Shifts in fishing behavior, including location and timing, may result in cumulative impacts to habitat as well as target and bycatch species (both fish and protected species) that have not been previously analyzed in fishery management actions. Finally, reduced regional scientific survey access to project areas could increase uncertainty in associated stock assessments and result in more conservative quotas that would negatively impact fishery operations in all fisheries.

Accordingly, the analysis should also consider cumulative impacts of all wind projects in the context of existing fisheries management measures.

Comment Number: BOEM-2021-0062-DRAFT-0037-77

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

The NEPA document, and the EFH, benthic resources, finfish and invertebrates sections, in particular, should accurately describe the project area, including both the export cable corridor and lease area, and the resources that rely upon these habitats. The document should fully describe the distinct habitat features of the entire project area and the importance of different habitat types for providing structure and refuge, particularly for juvenile species and other sensitive life stages. The evaluation of project impacts should not only consider impacts of the project against the cumulative geographic scope (e.g. the OCS), but also clearly evaluate anticipated impacts of project construction and operation to the distinct habitat types found in the lease area, along the export cable route, and inshore landfall locations. The document should analyze the effects to the physical habitat features and the biological consequences of those effects. It will be important to consider impacts of the project on all life stages (adults, juveniles, larvae, eggs), and we recommend focusing on species and life stages that may be more vulnerable to impacts.

Comment Number: BOEM-2021-0062-DRAFT-0038-13

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

NPS notes that several offshore wind projects are currently proposed in the vicinity of the Mayflower Wind project and have the potential to result in cumulative impacts to the same NPS resources and values. In order for the public and other stakeholders to have an accurate understanding of the proposed project and its impacts, NPS recommends BOEM address the other current and likely potential future proposals through its NEPA review. We note that views of the Mayflower Wind Project from the NHLs will be visible in the background of other offshore projects.

Comment Number: BOEM-2021-0062-DRAFT-0039-17

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

• The majority of the emissions from the project are associated with vessel engines. To reduce long term cumulative emissions from the vessels used for the Mayflower project (and presumably others) we recommend that BOEM require procurement of best available technology, i.e., the most efficient and lowest emitting vessels available during the vessel-contracting stage of the project (such as Tier 4 certified engines or alternative fueled vessels). In addition, the DEIS should evaluate the following mitigation options for these vessels: ? the purchase of lower emitting or electrified crew vessels for ongoing operations and maintenance;

- anti-idling practices;
- retrofitting of older equipment; and
- add-on air pollution control devices.

Comment Number: BOEM-2021-0062-DRAFT-0039-29

Organization: U.S. EPA

Commenter Type: Federal Agency

Comment Excerpt Text:

We encourage BOEM to continue to expand and refine the Cumulative Activities Scenario originally developed for the Vineyard Wind project. The discussion in the scenario provides an appropriate avenue for BOEM to consider interrelated impacts of the various projects within a geographic region over time and whether additional mitigation or impact reduction measures need to be considered. The Mayflower Wind project is one of several that could be under construction concurrently with other projects in the same general area. We continue to recommend a strong focus on cumulative impacts to complex bottom habitat, endangered species and marine related commerce including commercial fishing. The analysis should also consider impacts to navigation as additional offshore wind projects are approved and constructed over time. We also recommend that the activities scenario examine landside effects of the potential for increased noise, traffic, and air impacts from port activity to support the development and operation of offshore wind facilities over time.

Comment Number: BOEM-2021-0062-TRANS-111821-002-3

Commenter: Heidi Richie

Commenter Type: Individual

Comment Excerpt Text:

And also just note that I also serve over the Massachusetts executive office of environmental affairs habitat working group and appreciate the work that's going on there. And the new regional wildlife science entity that is now getting up and running is also appreciated. There is so much information to be gathered and it's very important to coordinate across the entire region, all the habitats, all the projects and considering cumulative impacts as well as the impacts of the one particular project.

Comment Number: BOEM-2021-0062-TRANS-111821-005-2

Commenter: Vallerie Oliver

Commenter Type: Individual

Comment Excerpt Text:

We are simply asking, look hard at the science before you leap. If you show us that everything is hunky dory, we are good with that. I think that in this case what we'd like to ask Mayflower Wind is to make sure that the draft environmental impact statement includes the true cumulative impact analysis that address and directs the effects of all existing and planned future projects including all the other wind farms that are planned south of the island of Nantucket and Martha's Vineyard.

A.2.21 Proposed Action/Project Design Envelope

Comment Number: BOEM-2021-0062-DRAFT-0021-12

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

As we have commented to BOEM in the past, export cables can damage marine habitats, raise concerns about electromagnetic fields, and pose a risk to fisheries using mobile bottom-tending gear. The amount of export cabling placed in the ocean must be minimized. BOEM must take a stronger role in facilitating coordinated transmission across projects and across developers to ensure that impacts are minimized. The Mayflower Wind COP states that offshore transmission cable easements within Massachusetts and Rhode Island waters have not yet been acquired for this project (COP Vol 1., p. 1-26); therefore, it appears to us that there is still an opportunity to work towards coordinated transmission planning for this and other nearby projects (e.g., Beacon Wind and future projects which may occur in the remaining sections of the MA/RI wind energy area).

Comment Number: BOEM-2021-0062-DRAFT-0021-13

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The COP also notes that DC cables will be used for the Brayton Point export cables and conversion stations will be built both onshore and offshore. The Falmouth export cables are anticipated to be AC. If the offshore conversion station requires a cooling system, this should be described in the COP and the impacts analyzed in the EIS. We have significant concerns about the environmental impacts of cooling systems at conversion stations, as outlined in our recent letter to BOEM on the Notice of Intent to prepare an EIS for the Sunrise Wind project. [Footnote 5: https://www.mafmc.org/s/211004_NEFMC-MAFMC-to-BOEM-re-NOI-to-Prepare-EIS-for-Sunrise-Wind.pdf] Alternative types of cooling systems, e.g., closed loop, and/or AC cabling alternatives should be considered, in addition to open loop DC systems only.

Comment Number: BOEM-2021-0062-DRAFT-0021-23

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

The EIS should describe the amount and type of scour protection that may be needed for the turbine and offshore substation foundations, as well as the amount of external cable armoring that may be required if sufficient cable burial depth cannot be achieved and at crossings with other cables. Consideration should also be given to materials that reduce the potential for interference with existing fisheries in the area. It should be noted that there are different considerations for different fisheries. For example, the commercial fishing industry is concerned about the use of concrete mattresses due to the potential for hanging/snagging mobile gears. Some recreational fishery stakeholders have noted improved fishing opportunities around the scour protection materials used for the Block Island wind farm off Rhode Island and CVOW pilot project off Virginia. In addition, the turbine and substation foundations may create a wake effect. This could increase the amount of suspended sediment in the immediate area which could negatively impact filter feeding organisms, including commercially important species such as sea scallops. It could also have impacts on the dispersal of pelagic larvae in the area. These impacts must be thoroughly considered in the EIS.

Comment Number: BOEM-2021-0062-DRAFT-0021-32

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Cables should be buried as much as possible to avoid the concerns listed above regarding external cable armoring materials where they are unburied. The COP suggests a target burial depth of 3.2 to 13.1 feet for all cables (e.g., COP Vol. 1, p. 3-43) and additional cable protection required in 10-15% of the export cable routes and 10% of inter-array cables (COP Vol. 1 p. 3-59 and 3-94). We are concerned about the potential for the cables to become unburied given the dynamic seafloor and the amount of dredge activity in the area. Burying the cables as deep as possible will help to minimize these risks. It will take time for fishermen to learn the locations of the cable protection materials. The EIS should provide maps of benthic features so that readers can use these maps to evaluate conclusions reached regarding both habitat and fisheries effects of development.

Comment Number: BOEM-2021-0062-DRAFT-0021-38

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

COP Vol. 1, Section 3.3. describes decommissioning and states that some components of the project may be fully removed, while other components may remain in place after decommissioning, depending on the decommissioning plan, which will be developed later. For example, Mayflower Wind “will assess the removal of scour protection depending on which strategy minimizes environmental impacts” (p. 3-89). These decisions will be made based on future environmental assessments and future consultations with various agencies. We recommend that all project components, including cables, should be removed from the offshore environment to the extent possible. Abandoned, unmonitored cables could pose a significant safety risk for fisheries that use bottom-tending gear and the long-term risks to marine habitats are unknown.

Comment Number: BOEM-2021-0062-DRAFT-0021-5

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

We understand that the BOEM regulations allow offshore wind project developers to revise their COPs throughout the environmental review process and understand that the final project design must fall within the analyzed project design envelope. The project design envelope approach is logical given the time needed to complete environmental review and continuous advances in technology. However, as described in more detail in the next section, we are concerned that allowing flexibility in final project design has resulted in too wide of a design envelope for this COP and uncertainty in the actual impacts of the project. To address this concern, we request that BOEM publicly announce whenever a COP has been revised and include a list of the specific changes. We also recommend that the EIS consider a narrower design envelope than that described in the COP based on developments that will likely occur between the drafting of the COP and the EIS (e.g., phasing out of smaller turbine sizes and decisions regarding foundation types, and the number and design of offshore substations).

Comment Number: BOEM-2021-0062-DRAFT-0021-7

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

BOEM's Federal Register notice (86-FR-60270) states that Mayflower Wind has capacity ranging from 1,600-2,400 MW. We were unable to find these total project capacity numbers in the COP. This information should be included in that document. Thus far 804 MW have been procured by Massachusetts, and Mayflower Wind is seeking additional contracts. Total capacity is important to understand because it relates to the purpose and need for the project and to the alternatives developed and analyzed. The size of the project is directly related to environmental impacts. The EIS should clarify how the project schedule included in the COP (Vol. 1 Section 3.2) may vary if additional procurements are or are not secured by a certain date.

Comment Number: BOEM-2021-0062-DRAFT-0021-9

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Two offshore export cable corridors (ECCs) are under consideration: the Falmouth ECC, which is 87 miles in length and could include up to 5 cables, and the Brayton Point ECC, which is 124 miles in length and could include up to six cables. The COP and EIS should explain why two ECCs are being considered, especially given that the Brayton Point ECC is almost 40 miles longer than the Falmouth ECC. For example, if both corridors may be needed to integrate the project with the onshore grid, this should be explained in the COP and the EIS. It is unclear whether both locations are required for the maximum 2,400 MW project, or if they may be needed at smaller scales of the project.

Comment Number: BOEM-2021-0062-DRAFT-0023-16

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

Finally, it is our understanding based on the Mayflower Wind Indicative Construction Schedule on page 3-9 of the COP that the earliest date Mayflower Wind anticipates for offshore construction activity is Q2 2025 and that onshore export cable construction, installation and testing is not expected to begin until Q3/Q4 of 2025. And, given the issues raised herein, the CRMC has requested Mayflower Wind not to submit a CRMC State Assent application until the issues raised herein are adequately address and due diligence completed by Mayflower Wind for inclusion within a state application for review and consideration by the CRMC. The CRMC appreciates the opportunity to provide comments to BOEM on the NOI for Mayflower Wind project. The CRMC stands ready to assist BOEM further as necessary.

Comment Number: BOEM-2021-0062-DRAFT-0026-20

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

The EIS should evaluate a range of burial depths and monitoring techniques. Array design and spacing between turbines are fundamental determinants of the future, or lack thereof, of commercial fishing operations within wind development areas. It is extremely important that interarray and export cables are buried to sufficient depths to reduce the risk of fishing gear interactions. The fishing industry has consistently requested this to be a minimum of 8-10 ft. to avoid interactions; if a shallower depth is permitted, it must be paired with remote monitoring to ensure the cable remains sufficiently buried at all

times. BOEM must provide clear standards as to what this depth is, how it is determined, and monitoring protocols to ensure there are no future interactions. Moreover, the project layout should be designed to minimize instances where cables transect fishing tow areas.

Comment Number: BOEM-2021-0062-DRAFT-0026-22
Organization: Responsible Offshore Development Alliance
Commenter Type: Other

Comment Excerpt Text:

It is extremely important to consider impacts from inter-array and export cables for all species found in the lease area. The EIS must analyze impacts from installation (including the duration of impacts after installation) and impacts from the cables themselves. The COP identifies a target burial depth of between 3 to 7 ft, depending on seabed conditions. The fishing industry has consistently requested cables be buried as deep as possible, generally at a minimum of 8-10 ft. below the seabed. If these depths cannot be achieved, at a minimum BOEM must require developers to work directly with the fishing industry to design cable protection methods that are as compatible (as possible) with fishing practices. As the Cable Burial Feasibility Assessment (Appendix G4) is proprietary and inaccessible to the public, it is impossible to determine if any consideration was given to impacts to biological species from cables was included in the developers' assessment.

The amount of cable used should be minimized to reduce risk of hanging up by fishing gear. The proposed layout has three substations in the middle of the turbine layout may result in increased challenges for fishing vessels trying to operate within the WEA while avoiding towing over cables.

Comment Number: BOEM-2021-0062-DRAFT-0030-10
Organization: The Nature Conservancy
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the Conservancy recognizes the need to provide project applicants with flexibility, especially given the challenging construction environment the ocean presents, evaluation of only the maximum impacts that could occur within the PDE misses the opportunity to identify preferred available technologies that will be less impactful and perhaps even more cost-effective (assuming cost of mitigation and related permit conditions are calculated and factored into project costs). The PDE review approach also encourages developers to suggest availability of certain technologies in the COP, which despite their theoretical availability, are not necessarily intended by the applicant based on other project design and economic considerations. Identification of available technologies is one of the regulatory approaches that ensures an equal economic playing field among competitors while also allowing for a more comprehensive means of reducing cumulative impacts. For example, the technology standards set by the federal Clean Air Act and the federal Clean Water Act reflect economic availability, technological feasibility, and the ability of a particular technology to achieve reductions that are necessary to achieve cumulative benefits in either air quality or water quality while also preventing immediate harms. For this reason, if a project applicant proposes a range of technologies in its COP, BOEM should conduct a full evaluation of the impacts and benefits associated with each of the technologies proposed within the PDE. This step is important if we are to improve long-term outcomes for the offshore wind industry and the ocean environment.

Comment Number: BOEM-2021-0062-DRAFT-0030-11

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Conservancy has consistently recommended that while the PDE approach seems valid for factors such as considering the view-scape impacts associated with the largest possible turbine height, the PDE approach does not allow for effective evaluation of impacts and benefits associated with different foundation types consistently offered by project developers as within the "reasonable range" of designs within the PDE (*i.e.*, gravity-based, piled jacket, suction bucket, and monopile foundations are all proposed in the Mayflower Wind PDE). The Conservancy recommends again that with respect to proposed foundation types, BOEM evaluate each foundation type and/or combination foundation types as separate reasonable alternatives in the EIS, *inclusive of anticipated permit conditions*.

Comment Number: BOEM-2021-0062-DRAFT-0030-17

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Because the PDE approach allows the project applicant the option to submit a "reasonable" range of design parameters within its permit application, it follows that Mayflower Wind proposed the use of only foundation types that it considered to be viable. The Mayflower Wind COP represents to BOEM that foundations (or substructures) may consist of "four substructure concepts: monopile, piled jacket, suction-bucket jacket, and gravity-based structure (GBS). The Project will develop and install up to two different substructure concepts for the WTGs and may use a third different concept for the OSPs". [Footnote 2: Mayflower Wind COP Volume I, Section 3.3.1] This proposed blended approach provides a great opportunity to further our understanding of the benefits, project-related costs (inclusive of anticipated permit conditions), and impacts associated with different foundation types. The project applicant's proposal further supports our recommendation that the EIS should evaluate each foundation type as separate reasonable alternatives in the EIS, the .

Comment Number: BOEM-2021-0062-DRAFT-0030-25

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As with the need to evaluate foundation type to promote impact avoidance as a first consideration for project developers, turbine selection also should be evaluated in a similar manner in terms of operational noise. There is a relationship between turbine size in terms of their nominal power and the operational noise they generate. Thus, evaluations of the noise generated by the 1.5-2MW turbines referenced in the COP (6.7.4.1.4) by Thomsen et al in 2006, [Footnote 12:Thomsen, F, K. Lüdemann, R. Kafemann & W. Piper. (2006). . Cowrie, Ltd.] or even the 6MW turbines at Block Island may not be applicable to 13 MW or 15 MW turbines potentially being considered for this project. In addition, gear-box turbines, which some of the newest and largest turbines are employing, have been shown to be louder than the direct drive turbines used at Block Island, and unless intentionally mitigated for, operational noise is conveyed underwater where it travels further and faster. BOEM should prioritize minimization of operational noise as it evaluates impacts of turbine selection. According to Stöber and Thomsen (2021) "the shift from using selection of direct drive technology as an alternative to gear box technology is expected to reduce

the sound level by 10 dB. Using the National Oceanic Atmospheric Administration criterion for behavioral disruption for continuous noise (., level B), a single 10 MW direct drive turbine is expected to cause behavioral response in marine mammals up to 1.4 km distance from the turbine, compared to 6.3 km for a turbine with gear box. And since Mayflower Wind and many of the other projects moving forward through the permit process are considering turbines larger than 10MW, BOEM should be prioritizing project design selections that minimize operational noise to levels that do not raise concerns for marine life. This is particularly important for operational noise that will cover large areas and persist through the life of the projects. As suggested above, BOEM's evaluation of the impacts and benefits associated with use of particular technologies is critically important because it is the direction from BOEM that will aid project applicants to be able to incorporate potentially costly mitigation and permit conditions into original project designs (., factor in the long-term sound mitigation costs associated with a noisier turbine in comparison to a quieter one).

Comment Number: BOEM-2021-0062-DRAFT-0030-26

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In their COP the developers propose that the offshore AC to DC converter station(s) will utilize an open loop cooling system. Draft designs have not yet been provided, and there is little discussion of the cooling water discharge beyond indicating that there will be heated sea water discharged with Sodium Hypochlorite added to reduce marine growth.

Comment Number: BOEM-2021-0062-DRAFT-0030-4

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

1) BOEM should reconsider how it reviews Project Design Envelope (PDE) approach for COPs;

Comment Number: BOEM-2021-0062-DRAFT-0030-9

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM's approach to the review of the PDE should allow it to provide direction and articulate preferences for specific foundation-types, installation methods and mitigation approaches so that our collective understanding of impacts associated with these varied approaches evolves.

Through its guidance in 2018, BOEM reinforced a project review approach that allows a permit application to describe a reasonable range of project designs, referred to as the PDE approach. While the PDE approach is described as a voluntary option for project applicants, all project applicants to date have relied on the PDE approach for NEPA review. This is because the PDE approach allows a project applicant to identify a range of designs within a single permit application without committing up front to one specific design during construction. As long as BOEM analyzes the maximum impacts that could occur from any of the proposed designs, and as long as the project is ultimately constructed within that approved range of impacts, any approach proposed in the COP is allowed

Comment Number: BOEM-2021-0062-DRAFT-0033-8

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

BOEM's analysis of the export cable corridors should evaluate adequate cable burial depths, avoidance of dynamic areas with known high seabed mobility, mariner notifications for shallow-buried and exposed cables, methods to expeditiously repair/rebury cables, use of remote sensing cable technology for continuous monitoring of burial depth (e.g., distributed temperature sensing), monitoring (routine and after major storm events), and adaptive management if repeated cable exposures occur.

Comment Number: BOEM-2021-0062-DRAFT-0034-1

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

- Explanation as to why an Operations & Maintenance (O&M) Facility based in Vineyard Haven is not being considered an option given a concurrent proposal for the port to serve as an O&M hub for the offshore wind industry; this should include impacts of siting in the proposed ports as compared to Vineyard Haven.

Comment Number: BOEM-2021-0062-DRAFT-0034-15

Organization: Martha's Vineyard Commission

Commenter Type: Local Agency

Comment Excerpt Text:

How to Ensure that the Cable Remains Buried

Portions of the Falmouth Export Cable Corridor have the trappings of a dynamic environment, most notably - but not limited to - Muskeget Channel. The DEIS should explain how the cable is proposed to remain buried. Impacts of loose cable, and proposed response, should be identified in the DEIS.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-140

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

-Mayflower Wind' project design envelope is so broad as to impair review and should be revised.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-178

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Our organizations are eager to see responsibly developed offshore wind power advance and recognize the benefits of a carefully implemented project design envelope (PDE) approach. Offshore wind energy technology and construction practices are evolving rapidly, and project design and planning takes years. A flexible permitting system that ensures developers can capitalize on new opportunities for environmental impact mitigation or cost reduction can be beneficial for both the industry and wildlife. Project developers should not be discouraged from pursuing opportunities to take advantage of technologies and practices currently progressing through the research and development process that could help facilitate the increasingly responsible development of offshore wind energy.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-179

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

However, the PDEs cannot be so open ended that a meaningful evaluation of the impacts of the design and an analysis of reasonable alternatives becomes difficult, if not impossible. For instance, the type of foundations used, timing of construction, and other details are extremely important to be able to evaluate impacts to marine wildlife as well as to the assessment of reasonable alternatives, which, as stated above, can and should include the use of different project designs. In order to assess project designs as reasonable alternatives, they must be compared.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-180

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Mayflower Wind PDE, as proposed in the COP, is quite broad, including a range of turbine foundations with limited information about which foundations will be used. [Footnote 43: The Mayflower Wind COP considers four categories of foundations, monopiles, piled jackets, suction-bucket jackets and gravity-based structures, of which the project will develop and install up to two. MFW COP at 3-12.] This has the potential of making it difficult to compare potential designs and choose a preferred alternative that has been adequately vetted against other alternatives that may have different impacts. If the preferred alternative has a PDE that is so broad that it allows for two or more substantially different project designs (e.g., pile-driven foundations vs. quiet foundations), it effectively does not choose between alternatives. This has the effect of allowing the developer to make that choice at a later time without NEPA oversight. In order to encompass the full range of reasonably foreseeable impacts, BOEM's analysis must include an alternative that combines the most disruptive components for each option included in the envelope. If the PDE is conceived or analyzed so broadly that it impairs BOEM's duty to effectively "inform decision

makers and the public of the reasonable alternatives which would avoid or minimize impacts," as NEPA requires, [Footnote 44: 40 C.F.R. § 1502.1.] it undercuts NEPA review.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-30

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. Mayflower Should Not Use Open Loop Cooling Systems for DC Cables in order to Minimize Impacts on Marine Organisms

Mayflower Wind's COP proposes that the offshore AC to DC conversion station utilize a cooling system that is open loop. [Footnote 147: MWF COP at 3-105.] While Mayflower Wind provides few details on the cooling system for the DC converter, it states that de-ionized water will be used to cool the electrical equipment. It notes that the water will be cooled with seawater pumped up for this specific purpose and that the "water is pumped up, used for cooling and discharged to sea again." [Footnote 148: Id.] Mayflower Wind also states that Sodium Hypochlorite will be injected at the intake of the seawater to inhibit marine growth in the cooling equipment with an expected concentration of 10–200 parts per million. [Footnote 149: Id.]

Open loop cooling systems of this kind have long been shown to have negative impacts from entrainment and impingement of marine life, particularly eggs, larvae, young juvenile fish, and invertebrates with planktonic life stages. [Footnote 150: Final Environmental Impact Statement for the Port Delfin LNG Project Deepwater Port Application, Appendix I Delfin LNG Ichthyoplankton Report (2016). https://www.energy.gov/sites/default/files/2018/11/f57/final-eis-0531-port-delfin-lng-app-i-2016-11_0.pdf] Because of entrainment and impingement, as well as thermal pollution, existing industrial open loop cooling systems have been phased out and restrictions on construction of new ones have been enacted. New cooling systems should be required to be closed loop, which is considered best technology available. This has been the case in New York State for a decade. [Footnote 151: New York State Department of Environmental Conservation (2011). CP-#52 / Best Technology Available (BTA) for Cooling Water Intake Structures. https://www.dec.ny.gov/docs/fish_marine_pdf/btapolicyfinal.pdf]

Comment Number: BOEM-2021-0062-DRAFT-0035-02-31

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Given the proximity of Mayflower Wind's proposed converter station to known cod spawning areas [Footnote 152: Zemeckis, D. R., Dean, M. J., and Cadrin, S. X., Spawning dynamics and associated management implications for Atlantic cod, *North American Journal of Fisheries Management*, 34, 424–442 (April 2014).] and the emphasis that state and federal agencies have placed on rebuilding cod populations, the proposed open loop cooling system is inconsistent with longstanding goals of the NOAA and the New England Fishery Management Council. In addition, open loop cooling for all offshore wind converter stations is problematic due to the potential of fouling of intake pipes. Studies from Block Island have shown that fouling organisms quickly colonize offshore wind turbine foundations. [Footnote 153: Hutchison, Z. L., Bartley, M. L., Degraer, S., English, P., Khan, A., Livermore, J., Rumes, B., & King, J. W. (2020). Offshore wind energy and benthic habitat changes lessons from block island wind farm. *Oceanography*, 33(4), 58–69. <https://doi.org/10.5670/OCEANOGRAPHY.2020.406>] As organisms like barnacles,

mussels, and tunicates reproduce and settle, they can constrain flow through intake pipes. Fouling will be exacerbated by gelatinous plankton blooms that routinely occur throughout the entire region and during storms that suspend sediments. Inherent risks of fouling will require preventive maintenance and will add additional risk of clogging and interference with cooling, thus potentially impacting the reliability of energy delivery.

We recommend that BOEM coordinate with the EPA to require Mayflower Wind to redesign the conversion station to use closed loop cooling. Providing this guidance prior to developing a Draft EIS will reduce the burden on federal agencies in terms of effort needed to calculate the impacts of open loop cooling to a long list of marine species and also save money for the Project developer, who can pivot their cooling design to closed loop prior to the completion of the design for the proposed open-loop cooling system. In addition, by promptly sending this signal to all developers, BOEM can forestall other projects from pursuing open loop cooling systems such that their COPs propose closed loop cooling for AC to DC conversion stations.

Comment Number: BOEM-2021-0062-DRAFT-0037-2

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

We rely on the information in the Mayflower Wind COP to help inform the comments and technical assistance provided during the scoping process. The COP was only recently made available to us with the publication of the NOI, so our comments related to the COP are limited. Furthermore, it is our understanding that sections of the COP are still being updated and will be submitted at a later date. Sections of the COP, including habitat data, that are relevant to comments and technical assistance we provide during this scoping process are not yet accessible (e.g., marine site investigation report). Furthermore, it is our understanding that additional benthic surveys along both cable routes are planned for this spring. This creates significant challenges for us to offer you detailed feedback during the scoping process. Absent this information, we are limited to the extent of technical assistance we can provide at this time. As a result, we expect to provide additional comments and technical assistance upon review of any new and updated information, including potential alternatives to minimize and mitigate impacts of the project on marine and estuarine resources. As we have discussed with you, receipt of this information after the regulatory process has begun is putting a substantial strain on our ability to review these projects as efficiently as possible. We look forward to continuing to work with you on this issue so that we can most effectively keep you informed of issues and concerns related to NOAA trust resources. We understand that during the NEPA process, applicants are authorized to make modifications and updates to their COPs. We request, however, that if the COP is updated or changed at any time during the regulatory process, you notify the cooperating agencies immediately and make the most updated COP available to the agencies and the public. In addition, it is critical that you describe which sections and information in the COP have been updated so we may focus our efforts and provide an efficient review. This description should specifically outline any changes to the proposed action and other information that may affect consultation with our agency. As we have discussed in the past, any updates to the COP that occur after initiation of consultation with our agency may affect our consultation timelines. To reduce the potential need for multiple reviews, supplemental consultation and comment, and subsequent project delays, it is essential to ensure that project information is complete before initiating the environmental review for a project or continuing to advance the process for existing projects. Should unexpected revisions to the project occur, coordination with us as soon as possible is critical to help prevent inefficiencies and confusion that can result from multiple reviews, as well as delays that may affect project timelines and consultation initiation and conclusion.

Comment Number: BOEM-2021-0062-DRAFT-0037-5

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

As described in BOEM’s project design envelope (PDE) guidance, a "PDE approach is a permitting approach that allows a project proponent the option to submit a reasonable range of design parameters within its permit application." While we understand and support the PDE approach, we note that it is critical to ensure that the range of design parameters are reasonable. A PDE that is too broad would impact your ability to provide a meaningful effects analysis in both the NEPA document and your consultation documents (BA and EFH Assessment). An analysis based on an overly broad PDE may grossly overestimate the effects of the action on protected species and habitat, which would likely result in very conservative mitigation measures.

The *Federal Register* notice refers to a "preliminary proposed action" described as including up to 147 turbines, with several different potential foundation types considered under the PDE that may include monopiles, piled jackets, suction-bucket jackets, or gravity base structures. It is unclear if the proposed action is expected to be further modified or refined during the NEPA process and at what point in the process any modifications may occur. As noted above, we must have all necessary information, including an adequate and complete BA and EFH Assessment, to initiate consultation. Modifications to the proposed action after consultation has been initiated may lead to delays in the project timeline, as these changes may affect our analysis in any consultations that are underway, including potential changes to EFH conservation recommendations and/or terms and conditions or reasonable and prudent measures being considered in the ESA consultation. The NEPA document should evaluate a reasonable PDE, with a proposed action that is consistent between the NEPA document and the consultation documents.

Comment Number: BOEM-2021-0062-TRANS-111821-005-5

Commenter: Vallerie Oliver

Commenter Type: Individual

Comment Excerpt Text:

Please clearly identify the size and number of wind turbine generator is in the DEIS, and if that changes, we ask that you reevaluate the project before the final impact statement.

A.2.22 Purpose and Need

Comment Number: BOEM-2021-0062-DRAFT-0021-3

Organization: New England and Mid-Atlantic Fishery Management Councils

Commenter Type: Other

Comment Excerpt Text:

Massachusetts has procured 804 MW from this project, but the project proposed via the COP has the potential to be substantially larger, up to 2,400 MW, and “Mayflower Wind is actively exploring additional offtake opportunities” (COP Vol. 1, p. 1-2). The amount of power required to meet the project purpose and need should be clearly stated in the EIS and the COP, and the impacts analysis should clearly reflect the project size(s) being considered. The total size of the project will influence both the range of

alternatives and the impacts associated with the project, since more power means either a greater number of turbines and/or larger turbines.

The PDF “posters” in the online virtual page [Footnote 2: <https://www.boem.gov/renewable-energy/state-activities/mayflower-wind-scoping-virtual-meetings>] are very valuable for providing a summary of the project in a more easily accessible format than searching for the relevant sections of the over 900-page COP (not including appendices). Past projects have included posters on commercial and recreational fishing activities in the lease area, which we have found useful, and would like to see included for all projects. This project includes a commercial fishing density poster but not one for recreational fishing. Generally, we recommend consistency in the information provided in these posters across projects.

Comment Number: BOEM-2021-0062-DRAFT-0023-14

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

As described within Section 1.3 Purpose and Need of the COP, it appears that Mayflower Wind has secured a single Power and Purchase Agreement (PPA) with the Commonwealth of Massachusetts to deliver 804 MW of offshore wind generated electricity. At this time, however, despite Mayflower Wind actively exploring additional offtake opportunities through Massachusetts solicitations, there are no other PPAs in effect. The Point of Interconnection (POI) for the contractually obligated 804 MW appears to be Falmouth, MA. The POI was previously identified as Bourne, MA as set forth in Mayflower Wind’s original interconnection request. See Mayflower Wind COP at 2-14. In addition, the delivery point for the 804 MW is indicated as Bourne, MA in the executed PPA between Eversource Energy and Mayflower Wind Energy, LLC, dated January 10, 2020. See PPA at 71 (reference D.P.U. 20-16/20-17/20-18; Exhibit JU-3-B). Given the available information it appears that absent a new PPA requiring the POI at Brayton Point, there is no purpose and need for the proposed Brayton Point ECC at this time. Thus, we can conclude there is no current purpose and need for the export cable into RI state waters, a hurdle Mayflower needs to surmount because the Category B requirement at 650-RICR-20-00-1.3.1(A)(1)(b) requires that the applicant “Demonstrate the need for the proposed activity or alteration.” Accordingly, if there is no new PPA (beyond the existing single 804 MW contractual obligation), then there is no purpose and need for the Brayton Point export cable into RI state waters.

Comment Number: BOEM-2021-0062-DRAFT-0023-4

Organization: Rhode Island Coastal Resources Management Council

Commenter Type: State Agency

Comment Excerpt Text:

As described within Section 1.3 Purpose and Need of the COP, it appears that Mayflower Wind has secured a single PPA with the Commonwealth of Massachusetts to deliver 804 MW of offshore wind generated electricity. At this time, however, despite Mayflower Wind actively exploring additional offtake opportunities through Massachusetts solicitations, there are no other PPAs in effect. The Point of Interconnection (POI) for the contractually obligated 804 MW is Falmouth, MA. The POI was previously identified as Bourne, MA as set forth in Mayflower Wind’s original interconnection request. See Mayflower Wind COP at 2-14. In addition, the delivery point for the 804 MW is indicated as Bourne, MA in the executed PPA between Eversource Energy and Mayflower Wind Energy, LLC, dated January 10, 2020. See PPA at 71 (reference D.P.U. 20-16/20-

17/20-18; Exhibit JU-3-B). Given the available information it appears that absent a new PPA requiring the POI at Brayton Point (Somerset, MA), there is no purpose and need for the proposed Brayton Point

export cable route at this time. Thus, the CRMC concludes there is no current purpose and need for the export cable into Rhode Island state waters. Mayflower Wind will need to adequately address this issue because the CRMC state application Category B requirement at 650- RICR-20-00-1.3.1(A)(1)(b) requires that the applicant "Demonstrate the need for the proposed activity or alteration." Accordingly, if there is no new PPA (beyond the existing single 804 MW contractual obligation), then there is no purpose and need for the Brayton Point export cable into Rhode Island state waters.

Comment Number: BOEM-2021-0062-DRAFT-0024-1

Organization: Rhode Island Department of Environmental Management

Commenter Type: State Agency

Comment Excerpt Text:

At this time, the Purpose and Need for the Proposed Action is unclear. The project could provide up to 2.4 gigawatts (2,400 megawatts, or MW) of energy to into the NE-ISO; however, only an 804-MW power purchase agreement with Massachusetts has been established. It is unclear whether the purpose and need to be met is for 2.4 GW or 804 MW. A requirement should be set to allow permitting agencies to suggest potential project alternatives that minimize project impacts, while meeting a clearly defined need. For example, are two cable corridors necessary to meet the project purpose and need?

Comment Number: BOEM-2021-0062-DRAFT-0026-14

Organization: Responsible Offshore Development Alliance

Commenter Type: Other

Comment Excerpt Text:

Under recently adopted regulatory revisions, the National Environmental Policy Act (NEPA) must be approached to fulfill the agency's purpose and need in addition to those of the applicant, and legal history indicates the applicant's desires are secondary considerations to the agency's primary authority. [Footnote 5: See 40 C.F.R. § 1502.13.] The purpose of NEPA is "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation." [Footnote 6: 42 U.S.C. § 4321.] Typically a purpose and need statement must incorporate this overarching purpose in conjunction with action-specific legislation, which in this case is the Outer Continental Shelf Lands Act (OCSLA).

Such an approach is evidenced by BOEM's 5-year plan for oil and gas, which has the stated purpose to implement requirements of OCSLA Sec. 18(a)(3) to "balance the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impacts to the coastal zone." Following from this correctly framed purpose and need, the 5-year plan then provides a thorough analysis of relevant energy demands and future needs forecasts. [Footnote 7: BOEM, Outer Continental Shelf Oil and Gas Leasing Program: 2017-2022 Final PEIS (Nov. 2016) p. 1-2]

An appropriate purpose and need statement for this action would lead BOEM to prioritize OCSLA and NEPA's focus on environmental safeguards and eliminating damage to the environment. It would *not* be based on achieving states' OSW goals or the profit goals of a utility company determined outside of the NEPA process, as those would predispose the outcome of environmental review. The NEPA environmental analysis should inform OSW planning and decision making, not the inverse. [Footnote 8: This point highlights the need for a Programmatic EIS for the U.S. offshore wind leasing program.] Regardless, an agency cannot circumvent its NEPA obligations "by adopting

private interests to draft a narrow purpose and need statement that excludes alternatives that fail to meet specific private objectives” nor can it “craft a purpose and need statement so narrowly drawn as to foreordain approval of” a project proposed by a private party. [Footnote 9: Nat’l Parks & Conservation Ass’n v. Bureau of Land Mgmt., 606 F.3d 1058, 1072 (9th Cir. 2010).]

Comment Number: BOEM-2021-0062-DRAFT-0033-1

Organization: New York State Department of State

Commenter Type: State Agency

Comment Excerpt Text:

The federal and state governments have ambitious renewable energy targets, including New York’s own mandate to develop 9 gigawatts of offshore wind power by 2035 as codified in the landmark Climate Leadership and Community Protection Act (NYS Climate Act). It is incumbent upon all resource management agencies to prioritize the functional co-existence of multifarious uses of ocean space and resources, minimize negative impacts while maximizing the integrity and utility of our shared resources, and preserve our economic interests.

Comment Number: BOEM-2021-0062-DRAFT-0037-71

Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office

Commenter Type: Federal Agency

Comment Excerpt Text:

When we serve as a Cooperating Agency and we are adopting another agency’s EIS, we ensure all resources under our jurisdiction by law and over which we have special expertise are properly described and the effects sufficiently evaluated, documented, and considered in the lead agency’s EIS. Of particular importance is that the Draft and Final EIS address comments and incorporate edits NMFS provides during document development and Cooperating Agency review. As a Cooperating Agency per 40 CFR 1501.8, we must determine that the Final EIS properly addresses our comments and input in order for NMFS to determine the EIS is suitable and legally defensible for adoption, per 40 CFR 1506.3 and NOAA’s NEPA procedures [Footnote 26: NOAA Administrative Order (NAO) 216-6A “Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and EO 13690, Floodplain Management; and 11990, Protection of Wetlands” issued April 22, 2016 and the Companion Manual for NAO 216-6A “Policy and Procedures for Implementing the National Environmental Policy Act and Related Authorities” issued January 13, 2017.], and subsequent issuance of an ITA.

As such, the document body must contain the following items: the purpose and need of NMFS’ action, a clear description of NMFS’ roles and responsibilities as both a cooperating and adopting agency (language we previously provided to BOEM for the South Fork Draft EIS), and a range of alternatives which incorporate a description of NMFS’ action, to include the No Action alternative.

A.2.23 Sea Turtles

Comment Number: BOEM-2021-0062-DRAFT-0035-02-155

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Impacts to sea turtles (Section IV.G):

- BOEM should update their injury and behavioral radii for acoustic impacts to sea turtles from pile driving activity.

Comment Number: BOEM-2021-0062-DRAFT-0035-02-84

Organization: National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

G. Impacts to Sea Turtles

1. Status of Sea Turtles in the Project Area

Of the four sea turtle species known to occur in the Project Area, the loggerhead and leatherback sea turtles occur regularly, primarily during summer and fall. [Footnote 303: Kraus, S.K., et al., 2016, supra.] Confirmed recent sightings of Kemp's ridley sea turtles also indicate that this is a regularly occurring species off Massachusetts and Rhode Island. [Footnote 304: Kraus, S.K., et al., 2016, supra. The COP seems to discount Kemp's ridley as a common species as they are less abundant than loggerheads and leatherbacks; however, the species is expected to occur regularly in the Project Area. (MFW COP Vol. II at 6- 253).] No green turtles have been sighted during the NLPSC surveys, but this species has been previously sighted in the region and is known to utilize shallow developmental habitats around eastern Long Island and Cape Cod.[Footnote 305: Kenney, R.D. and K.J. Vigness-Raposa. 2010. Technical report 10. Marine mammals and sea turtles of Narragansett Bay, Block Island Sound, Rhode Island Sound, and nearby waters: An analysis of existing data for the Rhode Island Ocean Special Area Management Plan. Rhode Island coastal resources management program/Ocean Special Area Management Plan (Ocean SAMP). Draft report. Wakefield, Rhode Island: Rhode Island Coastal Resources Management Council. Appendix A, 634-970.] In general, recent survey data indicate a downward trend in sea turtle sightings in the Rhode Island and Massachusetts WEAs and surrounding areas. [Footnote 306: Quintana, E., et al., 2019, supra; O'Brien, O., et al., 2021a, supra.]

The COP uses sea turtle density estimates from the Navy OPAREA Density Estimate (NODE) for the Northeast OPAREAs. [Footnote 307: MFW COP Vol. II at Figs. 6-40, 6-42, and 6-44.] However, the Navy's density estimates generated via modeling are outdated, only using NMFS aerial survey data collected prior to 2005. Further, no turtle density modeling has been conducted using the site-specific NLPSC data. Sightings per Unit Effort analyses have been conducted for leatherback and loggerhead turtles in the WEAs for some of the NLPSC campaigns. [Footnote 308: Id.; Quintana, E., et al., 2019, supra.] These analyses provide relative density estimates and maps which provide a visual depiction of sightings in relation to the trackline area surveyed but cannot be extrapolated to unsurveyed areas and do not take into account perception and availability biases, which are all critical variables in analyzing abundance/density of turtles (simply because turtles are typically difficult for observers to detect unless

they are close to the survey trackline, and they can dive for long periods of time and not be available for detection at the water's surface). There have not been enough sightings data to conduct density modeling for all species during all survey years. Due to the limited survey data for turtles obtained during some of the NLPSC campaigns, all turtle data should be combined in order to generate site-specific seasonal and/or annual density estimates for species and species groups where possible (e.g., species-specific estimates for leatherback and loggerhead turtles, group-specific estimates for hardshell turtles which would include loggerhead and Kemp's ridley turtles). In addition to the sea turtle sightings data recorded during the NLPSC campaigns, more recent AMAPPS and other regional data sources, including stranding [Footnote 309: Sea Turtle Stranding and Salvage Network. <https://www.fisheries.noaa.gov/state-coordinators-sea-turtle-stranding-and-salvage-network>] and tagging data, [Footnote 310: Dodge, K.L., B. Galuardi, and M.E. Lutcavage. 2015. Orientation behaviour of leatherback sea turtles within the North Atlantic subtropical gyre. *Proceedings of the Royal Society B* 282:20143129] should also be assessed in order to determine the current occurrence of sea turtles in the Project Area.

Given that the ability to detect sea turtles during aerial surveys is highly variable, increased investment in tagging and tracking studies [Footnote 311: See, e.g., Dodge, K.L., et al. Id.; Dodge, K.L., Galuardi, B. and Lutcavage, M.E., "Orientation behaviour of leatherback sea turtles within the North Atlantic subtropical gyre," *Proceedings of the Royal Society B*, vol. 282, art. 20143129 (2015); Winton, M.V., Fay, G., Haas, H.L., Arendt, M., Barco, S., James, M.C., Sasso, C., and Smolowitz, R., "Estimating the distribution and relative density of satellite-tagged loggerhead sea turtles using geostatistical mixed effects models," *Marine Ecology Progress Series*, vol. 586, pp. 217-232 (2018).] would complement data collected via aerial surveys and provide a more complete picture of sea turtle occurrence and habitat use in the region. Increased sea turtle tagging and tracking studies are needed to better understand movement, dive patterns and surface time, and habitat use which can, among other uses, help advise monitoring and avoidance, minimization, and mitigation strategies and generate more accurate estimates of sea turtle takes. Satellite telemetry data are available from rehabilitated and released Kemp's ridley and green turtles [Footnote 312: Robinson, N.J., Deguzman, K., Bonacci-Sullivan, L., DiGiovanni Jr., R.A., and Pinou, T., "Rehabilitated sea turtles tend to resume typical migratory behaviors: satellite tracking juvenile loggerhead, green, and Kemp's ridley turtles in the northeastern USA," *Endangered Species Research*, vol. 43, pp. 133-143 (2020); New England Aquarium, unpublished data.] that suggest rehabilitated turtles are a good proxy for wild-caught turtles. Considering the costs and probably limited success rate of in-water tagging work for these three species, acoustic telemetry of rehabilitated turtles may also be an effective means of gathering useful data. There is already significant investment underway for acoustic telemetry arrays in the WEAs for highly migratory fish species, [Footnote 313: See, e.g., <https://www.masscec.com/about-masscec/news/massachusetts-rhode-island-boem-award-11-million-regional-fisheries-studies-guide>.] presenting an opportunity for cost-effective data collection on sea turtles. Thus, a combination of satellite tags (to collect data on surface availability to parameterize density models) and acoustic telemetry will improve understanding of sea turtle habitat use.

A.2.24 Scenic and Visual Resources

Comment Number: BOEM-2021-0062-DRAFT-0029-10

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

Finally, we support Mayflower Wind's decision to use Aircraft Detection Lighting Systems (ADLS) on its turbines and expect to see this promise upheld in the Final EIS. ADLS lessens nighttime visual impacts and we encourage BOEM to require ADLS on this Project and all others in the Lease Area. Nantucket's

dark skies are important historically and culturally and we appreciate the promise to lessen nighttime visual impacts through the use of ADLS.

Comment Number: BOEM-2021-0062-DRAFT-0029-12

Organization: Town of Nantucket

Commenter Type: Local Agency

Comment Excerpt Text:

As the COP makes clear, this Project will have immediate and long-term adverse visual impacts to Nantucket, which hold that views of an undeveloped ocean are integral to the character, setting, feeling, and association of Nantucket's historic properties and cultural heritage.

Comment Number: BOEM-2021-0062-DRAFT-0038-10

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

Protecting the night sky and reducing impacts from artificial light at night are responsibilities the NPS takes seriously. Night skies are one of the many resources protected under the National Park Service Organic Act. The NPS is concerned about potential light pollution impacts to wildlife behavior and survival, visitor experience, cultural resources, and indigenous values associated with the night sky or lightscapes. NPS protects natural dark skies and lightscapes associated with parks by identifying source specific impacts and engineered solutions to reduce, mitigate or prevent unnecessary light, and by educating and working cooperatively with neighboring communities, local governments, and the public to minimize outdoor lighting impacts wherever possible considering public safety and other management objectives.

In addition, night skies are often an important resource for NHLs and National Register properties such as lighthouses, affecting aspects of cultural properties, the historic setting, and the visitor experience and enjoyment. NPS encourages BOEM to assess the potential effects of the undertaking on NHLs and other cultural resources and resolve any adverse effects on the night skies and lightscapes through avoidance and mitigation measures. We note that there are two observatories within the Nantucket Island NHL,

Loines Observatory & Vestal Street Observatory, whose views of the night sky may be impacted by night lighting.

In the case of the Mayflower Wind Project, NPS encourages measures to protect the night sky. The Mayflower Wind COP - Volume 1 describes the following with regards to night lighting of the WTGs:

Mayflower Wind will align with the latest Offshore Structure Private Aids to Navigation Marking Guidance from the U.S. Coast Guard (USCG, 2020). It is anticipated that this guidance will include lighting to be placed on all structures and will be visible throughout a 360-degree arc from the surface of the water. Quick flashing yellow lighting energized at a 5 nm (9.26 km) range will be included for corner towers and significant peripheral structures. Outer boundary towers will include 2.5 second flashing yellow lights energized at a 3 nm (5.6 km) range. Interior towers will include 6 or 10 second flashing yellow lights energized at 2 nm (3.7 km) range. All lighting will be synchronized by structure location and all temporary construction components will be marked with quick yellow obstruction lights visible through 360-degrees at a 5 nm (9.26 km) distance.

NPS appreciates the opportunity to review and comment on the nighttime visual simulations once they are available as proposed in Appendix T:

In addition to the photographic simulations, one video that includes both daytime and nighttime views will be developed to capture safety lighting, blade motion, and shifting daylight effects. A set number of simulations of offshore views, onshore views and one video simulation will be developed for submittal with the COP.

Appendix Y3 describes the efficacy of using Aircraft Detection Lighting System (ADLS) to reduce the total amount of time that an obstruction lighting system would be activated. By turning the aviation obstruction lights on only when aircraft enter the light activation volume (3.55 nautical mile buffer around the wind project at altitudes up to 3,500 feet above the highest wind turbine), historical air traffic data suggest ADLS controlled obstruction lights would have been reduced by over 99% in system activated duration. NPS supports use of such a system and requests that Mayflower Wind, LLC implement such a system for this project. We look forward to reviewing the updated Appendix Y3 once a specific ADLS have been selected for the Mayflower Wind project.

In general, NPS recommends the following measures protective of night skies. We are of the professional opinion that they would be beneficial for this project.

Security - Security lighting should be directed downward and shielded. Some lights should have motion sensors added.

Control - lights should be off when not needed. This applies to both the construction phase and operation phase.

Brightness – the minimum lumen output needed should be used.

Warm color-temperature light - use amber lights, when possible, instead of white light.

Comment Number: BOEM-2021-0062-DRAFT-0038-8

Organization: National Park Service DOI

Commenter Type: Federal Agency

Comment Excerpt Text:

Appendix S describes the Analysis of Visual Effects to Historic Properties for the project. Appendix T provides the Visual Impact Assessment for the project. Both were recently updated. NPS appreciates the inclusion of locations at Nantucket Island and Martha's Vineyard, including Gay Head Light as Key Observation Points (KOPs) in the VIA. The VIA indicates that Gay Head Light is out of viewshed and the project would not be visible from this KOP. It is unclear whether the KOP was established at ground level or at the top story of the structure. If the former, we recommend that KOP for Gay Head Light be reevaluated at the elevation of the top story, an important viewing location historically and for visitors. Gay Head Light is generally open for public visitation and many area visitors view the surrounding seascapes and landscapes from this high point on the Island with dramatic open views. As such, views from this area will be important to providing an accurate and complete VIA.

The seascape and landscape impact assessment analyzes and evaluates impacts on both the physical elements and features that make up a landscape or seascape as well as the aesthetic, perceptual, and experiential aspects of the seascape or landscape that make it distinctive as a setting for historic resources.

We further recommend the VIA assess the turbines under different lighting, atmospheric, and seasonal conditions, as well as blade movement. Based on our initial review, it appears the visual simulations included in the VIA may not represent the full spectrum of visibility under certain lighting conditions, and therefore the wind turbine generators (WTGs) may be more visible at certain times of day or year than presented. The NPS recommends that primary simulations should always represent the highest visibility scenario. We advise that additional simulations are provided to show the range of visibility under a

variety of conditions. It is recognized that atmospheric conditions over the ocean may reduce visibility in under some conditions. However, since it is generally accepted that visual simulations underrepresent the actual visibility of proposed changes, artificially adding atmospheric haze further reduces the effectiveness of the simulations and should be avoided. For the offshore component, we request visual simulations for both static images and light-flashing animation at night from multiple KOPs, including from Nantucket Island.

A.2.25 Water Quality

Comment Number: BOEM-2021-0062-DRAFT-0034-11
Organization: Martha's Vineyard Commission
Commenter Type: Local Agency

Comment Excerpt Text:

Temporal tradeoffs should be explored when considering impacts of suspended sediment during drilling and dredging activities on marine life mobility.

Comment Number: BOEM-2021-0062-DRAFT-0037-37
Organization: National Marine Fisheries Service Greater Atlantic Regional Fisheries Office
Commenter Type: Federal Agency

Comment Excerpt Text:

The document should also evaluate the potential impacts of chemical emission, including the release of chemical residues from wind farm operating materials and corrosion protection systems.

Comment Number: BOEM-2021-0062-TRANS-111021-002-3
Commenter: Jerome Virgil
Commenter Type: Individual

Comment Excerpt Text:

So now we are going to have wind turbines in the middle of the sound and we are going to have substations in the middle of the sound, but more importantly what I am worried about is the bad spills like the Exxon Valdez.

The high voltage pipeline, the 315 kilovolt line that goes from the substation to the offshore substation to the Falmouth Substation is invariably an oil filled pipe with the center Conductor that's filled with a dielectric oil so that the wire won't short out.

Eversource put a similar high voltage line years ago from their South Massachusetts substation to the South Boston substation. During the process of building that, this line faulted a number of times. They had to dig up the road and they had to freeze the pipe with liquid nitrogen so they could bolt them so they could pick up the faulted section, fill it back with oil and unfreeze the pipe.

Now, I am not privy to the reasons for the engineering flaws in the construction, I haven't heard any further problems with this, but as a contingency plan, Mayflower Wind definitely needs an emergency disaster plan that will cover disasters that could happen and that it would effect all the -- have a big environmental consequence to the sound.

A.2.26 Wetlands and Waters of the U.S.

Comment Number: BOEM-2021-0062-DRAFT-0039-37

Organization: U.S. EPA

Commenter: Timothy Timmermann

Commenter Type: Federal Agency

Comment Excerpt Text:

The evaluation of indirect impacts should include any clearing impacts for the proposed terrestrial construction activities resulting in a change (either permanent or temporary) of cover type within a wetland (e.g., converting a forested wetland to an emergent or scrub/shrub wetland). In addition, construction related indirect impacts, including water quality impacts and erosion or sedimentation impacts to wetlands or waterbodies should be analyzed. For example, the discussion should include the potential for construction and permanent impacts where the transmission cables make landfall.

A.2.27 General Support or Opposition

Many comments expressed general support for the proposed Project and one comments expressed general opposition toward the Project. Some commenters provided comments of support without providing a justification. Other commenters referred to generic resource topics as a justification for their support or opposition. Table A-2 provides a list of submissions that contained statements of general support or opposition. Commenters were generally supportive of the proposed Project because it may meet local energy needs, provide clean energy, slow the effects of climate change, contribute to the offshore wind market and supply chain, and increase job opportunities. The opposition comment worried the Project would go against public interest.

Table A-2 List of Submissions Containing Statements of General Support or Opposition

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0062-DRAFT-0001	Francine Klein	
BOEM-2021-0062-DRAFT-0002	Robert Gould	
BOEM-2021-0062-DRAFT-0003	Carl Wirsén	
BOEM-2021-0062-DRAFT-0004	Joseph Stewart	
BOEM-2021-0062-DRAFT-0005		SouthCoast LGBTQ + Network
BOEM-2021-0062-DRAFT-0006		Buzzards Bay Area Habitat for Humanity
BOEM-2021-0062-DRAFT-0007		Falmouth Running Club / Cape Cod Marathon
BOEM-2021-0062-DRAFT-0008		Associated Industries of Massachusetts
BOEM-2021-0062-DRAFT-0009		Association to Preserve Cape Cod, Inc.
BOEM-2021-0062-DRAFT-0011	Stephen Waller	
BOEM-2021-0062-DRAFT-0014		Faith Communities Environmental Network (FCEN) of Cape Cod and the Islands
BOEM-2021-0062-DRAFT-0015	Mark Akselson	
BOEM-2021-0062-DRAFT-0025		Business Network for Offshore Wind
BOEM-2021-0062-DRAFT-0028		New England for Offshore Wind
BOEM-2021-0062-DRAFT-0029		Town of Nantucket
BOEM-2021-0062-DRAFT-0032		RENEW Northeast, Inc.
BOEM-2021-0062-TRANS-111521-002	Pattie Terpkosh	

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0062-TRANS-111521-003	Robert Rio	
BOEM-2021-0062-TRANS-111821-003	Kelly Schlem	
BOEM-2021-0062-TRANS-111821-004	Susanna Hatch	

A.2.28 Submissions from Anonymous Commenters

BOEM received one submission from an anonymous commenter. Table A-3 provides the Submission ID number associated with the anonymous submission. Topics raised by the anonymous commenter included concern about wind turbine reliability and longevity, changes to the fishing industry, changes to scenic and visual resources, negative impacts to sea life, and effects to water quality from debris during operations.

Table A-3 List of Submissions from Anonymous Commenters

Submission IDs
BOEM-2021-0062-DRAFT-0020