

Empire Wind Construction and Operations Plan Scoping Report

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List of Abbreviations and Acronyms

Abbreviation	Definition
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMF	electromagnetic fields
Empire Wind	Empire Offshore Wind, LLC
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ID	identification
MBTA	Migratory Bird Treaty Act
NARW	North Atlantic right whale
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
PDE	Project Design Envelope
PDF	portable document format
WTG	wind turbine generator

1 Scoping Summary Statement for the Empire Wind 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:

- Determining the scope and the significant issues to be analyzed in depth in the Environmental Impact Statement (EIS); and
- 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 1501.7(a).

In July 2021, Empire Offshore Wind, LLC (Empire Wind) submitted a Construction and Operations Plan (COP) to BOEM seeking approval to construct and operate up to 174 wind turbine generators (WTGs) with a capacity to generate 816 megawatts under Empire Wind 1 and 1,260 megawatts under Empire Wind 2 (herein referred to as the proposed Project or Proposed Action) offshore of New York in federal waters. On June 24, 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 (83 *Federal Register* 13777).

The NOI commenced a public scoping process for identifying issues and potential alternatives for consideration in the EIS. The formal scoping period was from June 24 through July 26, 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 (54 United States Code § 300101 et seq.), as permitted by 36 CFR § 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 Empire Wind COP. The NOI requested comments from the public in written form, delivered by hand or by mail, or through the regulations.gov web portal.

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 reviews and catalogues the information and materials provided to BOEM during the scoping period for the proposed Project. The goal of the exercise 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 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:** 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 was considered to be a submission.
- **Comment:** A specific statement within a submission that expresses a sender’s specific point of view, concern, question, or suggestion. One submission may contain many 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-2021-0038
- Electronic submissions received via email to a BOEM representative
- Comments submitted verbally at each of the three public scoping meetings

BOEM did not receive any hard-copy comment submissions by hand or by mail. 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. The number of submissions received via each submission method is provided in Table 2-1.

Table 1-1 Public Scoping Meetings

Public Scoping Meetings Date	Time
June 30, 2021	5:00 p.m.
July 8, 2021	5:00 p.m.
July 13, 2021	1:00 p.m.

1.3.3 Comment Processing

1.3.3.1 Compilation of Submissions

BOEM’s process for analyzing public comments builds upon ICF’s commercial web-based CommentWorks® software product. Submissions were provided via Regulations.gov, email, or verbally at the public meetings (as shown in 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-2021-0038,” 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). 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-2021-0038-DRAFT-0047 was identified as comment BOEM-2021-0038-DRAFT-0047-1. When a comment pertained 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*, provides a listing of all the submissions received as well as all 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 91 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 Type	Number of Submissions Received
Regulations.gov submissions	55
Email to BOEM representative	5
Verbal submission at a public meeting	31
Total	91

The totals above included the following submissions by federal, state, and local government entities:

- Four submissions from federal agencies: U.S. Environmental Protection Agency (EPA), Region 2; U.S. Coast Guard; National Oceanic and Atmospheric Administration (NOAA); and Department of the Interior, National Park Service
- Two submissions from state agencies or representatives: New York State Department of Environmental Conservation and State and the Office of Parks, Recreation, and Historic Preservation; and Massachusetts Office of Coastal Zone Management
- One submission from a local government: City of New York, Office of the Deputy Mayor for Housing and Economic Development

In addition to the federal, state, and local government entities identified above, 39 submissions came from non-governmental organizations and the remainder were provided by individuals.

2.2 Comments

BOEM identified a total of 840 unique comments. Table 2-2 shows the distribution of comments by resource and NEPA topic. Section 2.3 defines the resource areas to which comments were assigned and summarizes the comments by each topic. The most commonly addressed resource topics included Birds, Commercial Fisheries and For-Hire Recreational Fishing, NEPA/Public Involvement, Planned Activities Scenario/Cumulative Impacts, and Mitigation and Monitoring.

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

Resource	Comments
Air Quality and Climate Change	14
Alternatives	
- Wind turbines	22
- Cables and landfalls	11
- Project relocation	5
- Other comments on alternatives	13
- Alternate technology or energy source	9
Bats	23
Benthic Resources	11
Birds	58
Climate Change	38
Coastal Habitat and Fauna	13
Commercial Fisheries and For-Hire Recreational Fishing	80
Cultural, Historical, and Archaeological Resources	26
Demographics, Employment, and Economics	
- Recreation and Tourism	7
- Employment and job creation	20
- Other	24
Environmental Justice	18
Finfish, Invertebrates, and Essential Fish Habitat	33
Land Use and Coastal Infrastructure	3
Marine Mammals	38
Mitigation and Monitoring	74
Navigation and Vessel Traffic	22
NEPA/Public Involvement Process	50
Other Resources and Uses	
- Aviation	1
- Marine Minerals	1
- Research Activities	2
- Other	3

Resource	Comments
Other Topics not Listed	
- Coastal Zone Consistency	1
- Noise	17
- Materials and Waste Management	11
- General Wildlife	18
- Electromagnetic Fields (EMF)	4
- Other	14
Planned Activities Scenario/Cumulative Impacts	40
Proposed Action/Project Design Envelope	35
Purpose and Need	11
Sea Turtles	11
Scenic and Visual Resources	17
Water Quality	5
Wetlands and Waters of the U.S.	2
General Support or Opposition	38

2.3 Definition of Resource Areas and Common NEPA Topics Raised

The following sections define each of the resource areas or NEPA topics that the comments were categorized under and summarizes the comments by each of the resource areas or topics listed. Comments have been summarized below, as appropriate, particularly for concerns that were raised by several commenters. Appendix A presents the individual comments that were extracted from each of the submissions, organized by resource area or NEPA topic.

2.3.1 Air Quality

Air quality comments included evaluating emissions from proposed Project construction, operations, maintenance, and decommissioning. Comments specific to climate change are described in Section 2.3.6, *Climate Change*. Topics raised in this category included the following:

- The EIS should consider adverse and beneficial air quality impacts, including impacts on Clean Air Act (CAA) and Outer Continental Shelf Air Regulations criteria emissions, greenhouse gases (GHG), and hazardous air pollutants, for all phases of the proposed Project including construction, operation, and decommissioning.
- The EIS should provide information to support the assertion that the proposed Project will provide beneficial impacts to air quality and reduce carbon emissions.
- The EIS should provide more information related to the proposed Project air quality regulations including a description of the proposed Project's compliance with all federal and state air emission and air quality regulations including those specific to emissions occurring onshore and within state waters subject to EPA's General Conformity rule, and to nonattainment areas in the proposed Project vicinity.
- The proposed Project should include a listing of all applicable air pollution permits and authorizations in its NOI for the EIS.
- The proposed Project should add mitigation measures related to the emission controls that will be implemented to adhere to air quality permitting standards.

- The proposed Project should provide its air quality modeling methodology to EPA for review early in the EIS process.
- The proposed Project, and others like it, are essential to combat global warming, promote improved air quality, decrease reliance on fossil fuels and GHG emissions, and contribute to achieving state and federal clean energy goals.
- The EIS should develop a social cost of carbon analysis to determine the cost of not procuring the projected Project wind capacity.
- The proposed Project should consider the impacts of reducing Project air emissions to environmental justice communities.
- The proposed Project will likely displace fossil fuel generation with an associated reduction in carbon dioxide emissions that will provide positive impacts on wildlife and the economy.
- The emissions calculations should quantify the carbon emissions and consider the carbon footprint of the entire turbine production process including manufacturing, transportation, installation, and decommissioning.
- Some commenters stated that offshore wind will make air cleaner by reducing the occurrence of fossil-fuel-burning power plants. Commenters noted that fossil fuel combustion affects respiratory health and can exacerbate asthma and other respiratory conditions.

2.3.2 Alternatives

Comments on alternatives included suggesting, questioning, or providing opinions about alternatives to the proposed Project. Additional comments related to alternatives and Project design are included in Section 2.3.21, *Proposed Action/Project Design Envelope*. Topics raised in this category included the following.

2.3.2.1 Wind Turbines

- The EIS should include a minimum of three alternatives based on turbine foundation type. This might include an alternative where all WTGs use gravity-based foundations, one alternative where all WTGs use monopile foundations, and a third alternative where the proposed Project uses a mix of both foundation types.
- Turbine spacing should include a clearance zone of at least 1,000 meters for the North Atlantic right whale (NARW).
- The EIS should consider inclusion of a fishing transit lane between Empire Wind-1 and Empire Wind-2.
- The EIS should explain the reasoning behind the selected array layout. The EIS alternatives should describe how that layout could change if larger, and therefore fewer, turbines were used and describe the layout that would be used for each possible turbine size.
- The EIS should consider a turbine layout that would minimize impacts on the scallop and clam industries. This would include turbines being placed in straight lines and following the bottom contour when feasible.
- Alternatives for WTG layout, location, and spacing, particularly related to impacts on fishing and survey vessel operations and transit, are important considerations for the alternatives analysis in the EIS.
- BOEM should consider eliminating certain turbines within the Lease Area that pose the greatest conflict with the fishing industry. This could be accomplished by increasing the capacity of each turbine.

- The proposed Project should adjust the array of turbines to a minimum spacing of 2 nautical miles.
- The proposed Project should be modified to eliminate the turbines closest to shore to reduce visual impacts on historic properties, recreation, and tourism.
- The EIS should consider using smaller-sized turbines along the northern perimeter of the Lease Area to reduce visual impacts.
- BOEM should consider establishing a minimum 2-nautical-mile setback (also consider 3 to 4 nautical miles) from the outermost layer of turbines in the array to the beginning of the adjacent fairway boundary. This is suggested in case the U.S. Coast Guard revises the width of adjacent towing vessel fairways. The 2-nautical-mile setback is imperative wherever the fairway is less than 9 nautical miles. This alternative would take into consideration the U.S. Coast Guard Marine Planning Guidelines to ensure a safe setback from the edge of the Traffic Separation Schemes.
- The EIS should consider an alternative where the site design and layout of turbines minimizes impacts on fishing, vessel traffic, and visual resources.

2.3.2.2 Cables and Landfalls

- A full range of reasonable alternatives to the proposed offshore and inshore export cable corridors and landing site options should be considered and evaluated to avoid and minimize impacts on sensitive habitats in the Project area.
- Offshore export cable routing alternatives that use common corridors with adjacent projects (OCS-A 0554 lease in the New York Bight) should be evaluated and discussed.
- The EIS should explain why Empire Wind-1 and Empire Wind-2 would require two independent cable routes and develop and analyze alternatives to this approach.
- The EIS should consider the tradeoffs between minimizing inter-array cabling and selecting the ideal layout configuration.
- The proposed cable route conflicts with the vessel anchorage area at Gravesend. The American Waterways Operators propose an alternate cable route to avoid this area.
- EPA suggested BOEM use the NEPAAssist Planning Tool when selecting the preferred alternative for cable routes and siting of onshore components.
- The EIS should consider alternative locations to the proposed substation site.
- The cable corridor should be the shortest, most direct path to avoid loss of voltage.

2.3.2.3 Project Relocation

- The EIS should consider alternate locations to the current Lease Area such as the two nearby wind energy areas, Fairways North and South. According to the Fisheries Survival Fund, in a prior Court of Appeals for the D.C. Circuit, BOEM indicated it would be considering alternate locations during the EIS process.
- BOEM should consider relocating Empire Wind-2 to avoid the scallop fishery that exists in that area.
- Commenters suggested that new lease areas that are much farther from shore are coming soon and projects should wait for those locations.

2.3.2.4 Other Comments on Alternatives

- The EIS should analyze the negative impacts of the No Action Alternative.
- The EIS should include a Habitat Impact Minimization Alternative that considers ways to minimize impacts on both important benthic habitats and Essential Fish Habitat (EFH) as well as

the sensitive life stages of species that rely on them. Construction methods, timing, and cable layouts should be evaluated to minimize impacts on Cholera Bank. This alternative should also consider specific turbine locations for removal to minimize fishing impacts.

- The alternatives analysis should be organized into three Project elements: (1) wind farm area; (2) offshore export cable routes and associated corridors; and (3) inshore export cable routes and associated corridors and landfall points. These elements could then be combined in different ways to develop the best overall alternative.
- BOEM should consider alternatives specific to each phase of the proposed Project including siting, construction, operation, and decommissioning.
- BOEM should review an alternative that entirely removes Empire Wind-1 to reduce impacts on the squid industry.
- The reasonable range of alternatives should also consider emerging technologies and methodologies and BOEM should consider approving the Least Environmentally Damaging Practicable Alternative.
- BOEM should analyze an alternative that combines all of the most disruptive components for each element of the proposed Project.
- The EIS should consider alternative cable routes and landfall locations that would reduce impacts on Lido Beach and the saltmarsh of the Important Bird Area.
- The EIS should characterize use of coastal areas that will be used for staging during construction.
- BOEM should consider doing a much smaller test project before developing the entire coast.

2.3.2.5 Alternate Technology or Energy Source

- Wind energy is not a constant or reliable supply of energy. For that reason, a commenter suggests running nuclear power plants full time. Nuclear power and gas or coal-fired power plants would be necessary to back up wind energy, so it would be a waste of money to invest in a non-reliable energy source.
- The United States should focus on building low-carbon footprint nuclear power plants instead of offshore wind.
- Renewable energy should be focused on rooftop solar panels and onshore wind instead of putting turbines off the coast of Long Beach, New York.

2.3.3 Bats

Bat comments included several references noting which species are found to forage or rest in the Lease Area and stressed the need to evaluate and consider turbine risks to bats. Topics raised in this category included the following:

- The EIS should consider the range of potential bat species that forage and rest in or near the Lease Area, including those species protected under the Migratory Bird Treaty Act (MBTA) and the Endangered Species Act (ESA). Some bat species can be found up to 70 nautical miles away from seashore.
- Empire Wind should adopt a precautionary approach for bats in all steps of offshore wind energy development due to limited studies and understanding of the risk for bats to collide with turbines in the Project area.
- Commenters had concerns about wind turbines injuring or killing bats moving through the Project area and about the cumulative impacts from other regional projects.
- The EIS should consider additional bat species in its review and coordinate with the U.S. Fish and Wildlife Service.

2.3.4 Benthic Resources

Benthic resource comments included the need to address biological, structural, or habitat impacts on benthic species and their habitat. Benthic habitat refers to habitat on the sea floor, including natural structures and vegetation. Topics raised in this category included the following:

- Empire Wind should use best engineering practices when designing export and array cables to minimize impacts on the sea floor including the use of nature-based design.
- The EIS should consider the dynamic nature of benthic environments and include information related to site-specific benthic resources.
- The EIS should include an analysis of the effects of benthic disturbance, such as scour, excavation, and seabed preparation, within protected benthic habitats and describe the proposed mitigation measures.
- Commenters noted that new hard structures on the ocean floor could create artificial reefs, which could increase biodiversity but also lead to displacement and introduction of invasive species.
- The EIS should analyze the ecological and economic impacts from the loss of seabed and the associated loss of benthic communities, including impacts on the forage base for other marine species due to construction, operation, and decommissioning activities. The analysis should discuss impacts due to habitat conversion from facility installation using site-specific data and an evaluation of impacts on higher trophic levels.
- Commenters expressed opposition to the proposed Project due to concerns regarding environmental impacts on the ocean floor, particularly involving the installation of drilled piers and underwater cables, and impacts on the cold pool.

2.3.5 Birds

Bird comments included addressing biological, structural, or habitat impacts on species or their habitats. Topics raised in this category included the following:

- The EIS should consider the full range of potential impacts on all bird species known to migrate, forage, and rest in or near the Lease Area, including those species protected under the MBTA and the ESA.
- The EIS assessment of cumulative impacts on birds should consider other proposed wind farms, habitat loss, barrier effects, climate change, and other potential influencing factors.
- BOEM should collect and evaluate data on bird species' vulnerability before, during, and after wind turbine construction to inform decision-making, improve mitigation, and advise future offshore wind efforts. Impacts should be considered for construction, operation, maintenance, and decommissioning stages of the proposed Project.
- The EIS should consider a 20-kilometer buffer around the Lease Area to capture annual and seasonal variations in avian movement within and around the proposed Project including the Atlantic Flyway migratory corridor. Consideration should also be given to birds found on surrounding protected areas.
- The EIS should discuss the biases and limitations of data from the monitoring and survey methods used. The EIS should use impact analysis models that account for limitations in the raw data and standardize across data sources. Reporting of results should include high and low estimates to communicate uncertainty and include seasonal risks (instead of just annual). It was requested that the data and analyses incorporated into the Draft EIS be made available to the public.
- The EIS should consider species prioritized for conservation by avian expert partners (such as including the Atlantic Flyway Shorebird Initiative, Partners in Flight, Atlantic Coast Joint

Venture, and North American Waterbird Plan) in addition to ESA listing and International Union for Conservation of Nature Red List status.

- BOEM should consider a detailed adaptive ecosystem-wide management plan, describing how all conservation obligations afforded to affected avian species by multiple statutes, conservation policies, agreements, and treaties will be met. This comprehensive plan should include methods and standards for monitoring, avoidance, and mitigation, informed by current science and best available technologies, in ecosystem-wide approaches. The best management practices defined by this plan could be extended to other offshore wind projects within the region and all along the Atlantic Coast that encompass important habitats for birds migrating along the Atlantic Flyway.
- Empire Wind should adopt a precautionary and conservative approach for birds in all steps of offshore wind energy development due to limited understanding of the risk for birds to collide with turbines in the Project area. The Draft EIS should use Collision Risk Modeling and be transparent about the limitations and uncertainty in the underlying data and analysis. A range of turbine specifications could influence collision risk, such as air gap, total rotor swept zone, turbine spacing, number of turbines in the array, and turbine height. In addition, density of flocks during different types of behaviors (e.g., migration, feeding) could influence collision risk.
- BOEM should consider alternatives in turbine specifications that could influence collision risk, including air gap, total rotor swept zone, and turbine height, and adequately assess collision risk to seabirds using science-based analysis of flight heights (averages and ranges), avoidance rates, and other relevant avian flight behavior.
- BOEM should use data from appropriate survey methods for each species, based on size, population levels, frequency of presence in the Project area, and altitude. Satellite telemetry technology and pressure sensors were recommended as well as radio telemetry as options for monitoring birds. Limitations of various survey and monitoring methods were noted, especially for migrating birds (based on seasonal timing of activity versus data collection frequency), species with daytime versus nighttime activity, species with small populations (who will be harder to detect), species that are difficult to distinguish due to size or similarity to other species, and species who displace themselves from surveys or wind farm arrays. Digital, vessel, and aerial surveys; marine radar monitoring; and acoustic monitoring could be used together to contribute to a robust dataset.
- BOEM should study bird collisions at offshore wind facilities in more depth during operations. Empire Wind should make bird collision data publicly available, and commit to upgrading collision monitoring technology, as available, as part of an adaptive management strategy.
- BOEM should develop a plan to evaluate displacement impacts over the next decade or more as additional offshore wind facilities are expected to be built in the Atlantic.
- BOEM should continue to interpret the MBTA to encompass “incidental takes” of migratory birds, including from wind turbines, and should disregard the U.S. Department of the Interior Memorandum M-37050 (December 22, 2017), “The Migratory Bird Treaty Act Does Not Prohibit Incidental Take,” which has been found to be unlawful in court.
- There should be a commitment to, and process outlined for, addressing unforeseen impacts through compensatory mitigation.

2.3.6 Climate Change

Comments related to climate change focused on the urgency to develop renewable energy options to offset the use of fossil fuels and slow climate change. Topics raised in this category included the following:

- The emissions calculations should quantify the carbon footprint using approved models to quantify the entire turbine production process including manufacturing, transportation, installation, and decommissioning.
- Some reviewers noted that offshore wind offers the potential to generate clean, renewable energy and offset climate change.
- The EIS should account for the environmental and economic benefits the proposed Project can offer related to climate change and account for the social cost of carbon.
- The EIS should contain a discussion of the consequences of doing nothing, failing to act to reduce carbon emissions, including the potential for substantial adverse economic and environmental outcomes.
- The EIS should compare the impacts of offshore wind to the reduction in the use of fossil fuels.
- Some commenters believe that wind power will create better availability of zero-emission resources for both upstate and downstate areas of New York.
- Support for the proposed Project was expressed due to a reduction in carbon emissions and climate change impacts on ocean and coastal wildlife communities.
- Some commenters noted that climate change-related increases in sea level rise will increase the vulnerability of local communities and create additional economic burdens on residents and local infrastructure.
- There are many climate-related issues that threaten this area including sea level rise, increased ocean temperatures, shifting species distribution, ocean acidification, increase in insect species that are vectors for disease, and severe weather. Renewable energies are a helpful step to combatting climate change and lessening these impacts.
- Climate change should be included in the cumulative impacts analysis.
- Some commenters expressed general support for wind energy as a means to reduce greenhouse gas emissions, move toward carbon neutrality, and reduce climate change and related impacts such as increased severe storm cycles, wildfires, and warming of the earth.
- The COP lacks a calculation of the Project's total carbon footprint and therefore should not be approved.
- Some commenters expressed support for the Project due to the addition of renewable energy to the National Grid and perceived reduction of climate-related impacts on fish, birds, and other wildlife and coastal communities.

2.3.7 Coastal Habitat and Fauna

Coastal habitat includes those areas closer to the shoreline than offshore waters. Topics raised in this category included the following:

- The EIS should assess the current conditions of the ocean bottom in the areas of the wind turbine arrays to assess wind turbine-associated changes to the character of the ocean bottom including water circulation changes and associated surface temperature changes, scour of the seafloor, creation of sediment plumes, and attraction of new species such as mussels, starfish, and moon snails to the ecosystem.
- The EIS should evaluate impacts of temporary work platforms and docks and onshore infrastructure, including substations, on water-dependent land use, coastal habitat, and wildlife.
- The EIS should assess the impacts from wind turbine placement on ocean currents and resulting changes to scallop larval flow, density, and distribution and impacts of new species attracted by the wind turbines.

- The EIS should assess risks to vulnerable habitats and species including impacts on plankton from installation of turbines and cables.
- The EIS should evaluate impacts on saltmarshes including an analysis of plants important to dune stabilization and nesting habitat for birds, including saltmarsh-dependent and migratory species, and other vertebrate species.
- Some commenters noted that the Project study area provides valuable intertidal and benthic habitat for various spawning fish and shellfish including mussels, clams, oysters, and blue crab, all of which contribute to the maintenance of water quality and provide important sources of food for birds and wildlife.
- The EIS should use at least 10 years of data in its assessment of natural resource conditions to reflect natural variations in ocean conditions and resulting variations in impacts on fisheries and marine mammals.
- Impact discussions should be expanded to include data for highly migratory species such as lobster and Jonah crab.

2.3.8 Commercial Fisheries and For-Hire Recreational Fishing

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:

- The EIS should provide a comprehensive assessment of historical and recent fishing including fishery participants, gear types (including vessels), and the relative dependency the area has on fishing. The EIS should include a discussion on shore-side support industries.
- The EIS should use the best available scientific information with a sufficient range of years (10 or more) to properly analyze marine trust resources.
- The proposed Project is anticipated to affect the ability of agencies to perform scientific surveys. The lack of survey information would directly affect fisheries management and quota setting, and conservation programs for protected species. In addition, analysis of impacts on fisheries-dependent data collections should be performed to quantify potential changes in effort.
- The EIS should include an analysis of the impact of construction and operation activities on the physical and biological components of the Cholera Bank area and to fishing of species dependent on that environment.
- Some commenters noted that the Project area provides a substantial percentage (10–37 percent) of the revenue for some vessels.
- The EIS should analyze the potential impacts related to fishing area displacement and changes to species composition, impacts on spawning success and future recruitment, and catch rates from construction, operation, and decommissioning the proposed Project. The EIS should gather recreational catch data and migratory species catch data to ensure all impacts on commercial and recreational fishing are analyzed.
- Some commenters recognized the efforts BOEM has taken to reduce impacts on fishing operations and recommended that the proposed Project continue to create opportunities to actively avoid or minimize impacts on fishing, especially scallops, squid, and herring/mackerel fishing in the Project area. The EIS should analyze the potential for future increases or decreases in fishing effort.
- The EIS should analyze the impacts of wind towers in trawling and shipping lanes, including impacts on the safety of workers on the trawling or shipping vessels.

- Commercial and recreational fishing in the Project area is a significant economic driver for multiple states in New England and the Mid-Atlantic. The EIS should consider all economic impacts on fisheries, vessels in transit, and fishery participants; and fishery participants should be compensated for lost income.
- The EIS should consider the decrease in fishing opportunities due to areas leased when assessing impacts on fisheries. It is important to identify the value of fishing grounds lost compared to the remaining available grounds, and the potential to contribute to overfishing of areas outside of the Lease Area.
- Commenters noted that the positive impacts on New York and New Jersey economies from the fishing industry are dependent on a healthy marine environment and, therefore, may be incompatible with industrial activities (such as siting a wind farm) in the area.
- Commenters noted that information submitted to BOEM regarding commercial fishing areas was not adequately considered and information and requests submitted by commercial fishing interests requesting modifications to the Lease Area to avoid important fishing areas, such as squid fishing areas, have not been incorporated into the analyses conducted to date. Commenters also noted that the economic impact of on squid fishing in the Project area did not use information provided.
- Commenters noted that the lease offer documentation specifies a 1-nautical-mile offset for wind towers rather than the 2-nautical-mile offset the U.S. Coast Guard has recommended. The EIS should analyze whether the proposed turbine spacing will accommodate commercial fishing and should analyze the safety impacts of the 1-nautical-mile versus 2-nautical-mile offsets.
- Commenters expressed support for the collaborative efforts between Equinor, the Responsible Offshore Development Alliance, and the fishing industry for siting of the Project layout and recommended the incorporation of Equinor's Fisheries Communication Plan into Project documentation, as it was not included in the NOI or COP.
- The EIS analysis should rely on a wide range of data when analyzing impacts and should incorporate an analysis of the impact of area fishing from vessels operating in adjacent ports and specific impacts on Rhode Island and Massachusetts commercial fishing in the Project area. The EIS should consider the availability and access to commercial species such as squid and sea scallops.
- Commenters expressed concerns related to the perception that fisheries comments on other, similar projects had been ignored or had been analyzed in the Draft EIS and dismissed in the Final EIS/Record of Decision.
- Commenters expressed support for the proposed Project and requested that BOEM commit to providing fishing access to the offshore development area and commit to early public involvement and engagement. Commenters also recommended the establishment of a fisheries advisory group.
- The EIS impact analysis should include the expectation that fisheries maintain access to the Project area after construction, possibly controlled with a permitting process. The proposed Project should remove traditional historical fishing areas from the proposed Project and consider turbine siting changes to better accommodate scallop fishing.
- Commenters expressed concern that access to productive offshore fisheries would be affected by the location of Project facilities, resulting in significant adverse impacts on local fisheries and the area economy. They recommended consulting with the American Sportfishing Association and the NOAA Northeast Fishery Science Center to gain an understanding of potential impacts.
- Commenters suggested creating artificial reef habitats at the base of substations and turbine foundations to encourage valuable game fish congregation and requested that the EIS address

artificial reef benefits to fisheries. The analysis should acknowledge that the impacts would differ depending on the fish species that used the artificial environment.

- The EIS should analyze impacts of using different types of scallop dredges commonly used in Atlantic scallop fishing, rather than only the dredges that dig into the ocean bottom.
- Commenters expressed support for the proposed Project if the Project design incorporates access for recreational fishing close to the towers, if stakeholders are engaged early in the process, and if science is used to inform decisions.
- Commenters recommended involving NOAA Northeast Fisheries Science Center, the New England and Mid-Atlantic Fisheries Management Councils, and the Atlantic States Marine Fisheries Commission to assist with defining appropriate fisheries monitoring and management to be conducted by the proposed Project.
- Commenters provided recommendations for data sources and agencies that should be considered in the EIS and requested the EIS provide separate but parallel analyses of commercial fisheries and private recreational and for-hire fisheries.
- Commenters requested that decommissioned turbine structures be left on the sea floor as marine habitat (referenced “Rigs to Reefs” program in the Gulf) and that BOEM provide global positioning system information to the fishing community.
- The EIS cumulative impact analysis for fishing should use data of known impacts from existing wind farms, including those in European countries.
- Some commenters voiced support for the creation of a compensation fund to benefit displaced fisheries and fisheries workers.

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:

- BOEM should ensure compliance with Section 106 of the National Historic Preservation Act including adequate consultation with State Historic Preservation Offices and other stakeholders throughout the EIS process.
- BOEM should ensure compliance with Section 106 of the National Historic Preservation Act and Executive Order 13175 by recognizing tribes’ sovereign status and providing adequate government-to-government consultation with tribal governments throughout the EIS process.
- Commenters expressed concern regarding the potential of the proposed Project to cause impacts, including visual impacts, on archaeological resources, historic architectural resources, historic properties, cultural landscapes, and ethnographic resources in general and at specific locations including Fire Island National Seashore, Gateway National Recreation Area, Point O’Woods, Jones Beach State Park Sea Scape, and National Historic Landmarks and Districts.
- Some commenters felt that the COP’s Visual Impact Assessment was not adequate to analyze visual impacts on historic properties and thus to propose appropriate avoidance, minimization, or mitigation measures.
- Commenters noted that the cumulative impacts assessment for cultural resources must include the cumulative effect that all the proposed wind farm projects in the area have on cultural resources and landscapes.
- One commenter asked if impacts on the fishing industry will be considered as part of the cultural resource surveys required under NEPA.
- Commenters expressed concern that the Project would disturb the viewshed of places where loved ones were laid to rest, particularly the memorial bench on Long Beach.

2.3.10 Demographics, Employment, and Economics

2.3.10.1 Recreation and Tourism

Comments related to onshore or offshore recreation as well as tourism activity associated with these resources, such as whale watching, boat rentals (except for fishing), onshore sports leagues, or revenue-generating tourist facilities, are captured in this section. Topics raised in this category included the following:

- The EIS should provide a comprehensive discussion of commercial and recreational fisheries and shore-side support services to offer a better understanding of fisheries' and coastal communities' dependence on fishing.
- The proposed Project should work with local fishermen to identify the number and extent of recreational fishing areas and identify recreation diving sites and surfing areas, to quantify the importance of these tourism industries to the area. The EIS should include an economic impact analysis of impacts on commercial and recreational for-hire fishermen including the economic impact of changes in fishing boat transit patterns.
- Some commenters expressed support for the proposed Project due to the potential for improved water quality and resulting tourist satisfaction when compared to facilities where energy is produced by fossil fuels.
- Some commenters stated the proposed Project should support the maintenance of public access to state and municipal facilities and tourism and should avoid construction during peak tourism season.
- Some commenters stated that siting a wind farm offshore but in the viewshed of popular resources would affect the appreciation of those areas, and improvements to infrastructure in those areas appears to be a poor investment.

2.3.10.2 Employment and Job Creation

Comments related to employment and job creation as a result of the construction, operation, and maintenance of the proposed wind farm are captured in this section. Topics raised in this category included the following:

- Some commenters expressed support for the proposed Project due to the potential investments in local infrastructure and increases in jobs and manufacturing.
- The EIS should analyze Project impacts on domestic supply chains including the associated increase in jobs and address the need to provide training and opportunities for local workers including displaced energy workers.
- The EIS should analyze the direct and cumulative economic impacts of job creation and workforce development from wind energy and disclose the extent to which the proposed Project will contribute to local hiring, green jobs, community investments, and local supply chains. The analysis should include the social and economic impact of onshore support facilities and industries.
- The offshore wind farm would diversify and strengthen the economies of coastal communities as well as provide new job opportunities, resulting in a beneficial economic impact. Commenters provided estimated numbers of dollars the proposed wind farm is expected to generate as well as numbers of potential job projections for construction, operations, and maintenance of the proposed turbines.
- Other commenters were concerned that manufacture of the turbines is performed overseas, and the main job growth opportunity for local communities will be short term during construction of the turbines.

- Some commenters voiced the opinion that having a wind farm within the viewshed of their communities and properties would have a negative impact on property values.
- Some commenters provided the opinion that the Project would provide “green” jobs and an economic boom to the Project area.

2.3.10.3 Other

The category captures other demographics, employment, and economics topics that were not captured in the subcategories above. Topics raised in this category included the following:

- The EIS should analyze impacts on port access, navigation within the New York/New Jersey harbor, and industrial businesses using the port.
- The EIS should analyze negative impacts on the Marine Transportation System during construction and operation.
- Some commenters were concerned that the proposed Project will affect scallop fishing in New England and the EIS should analyze the direct and cumulative economic impacts on that economy.
- Some commenters felt that the proposed Project would affect local property values and the EIS should assess impacts on housing values. In addition, some commenters proposed a rate reduction or property tax reduction as a form of compensation for those in the immediate vicinity of the proposed Project.
- The proposed Project should clearly disclose its decommissioning plan and be required to post a decommissioning bond to ensure decommissioning occurs regardless of the state of the company’s financial status.
- The EIS should address the concern that using offshore wind energy would not be cost effective for consumers and taxpayers including residents and businesses. Commenters feared that electricity rates and prices would rise from using offshore wind and would not be offset by any subsidies. In addition, commenters questioned the ability of turbines to produce and maintain nameplate power over time.
- The EIS should confirm that the New Jersey power grid can handle the new flow of offshore wind energy and that there would be no short- or long-term energy storage solutions.
- BOEM should fully consider the cumulative economic impacts associated with the proposed Project on demographics, employment, and economics as well as future growth in the offshore wind industry by accurately estimating investments versus economic output and job creation. Some commenters felt that a cost-benefit analysis of potential economic factors would be useful.
- Some commenters expressed concerns that Project costs will be passed on to taxpayers.
- The EIS should include a discussion of the impacts on commercial and recreational fishing and support businesses from Project construction and operation including displacement of fishing and resulting impacts on fishing pressure on other areas using all available data sources across a broad time frame of 10 years or more.
- Some commenters noted that the Project would create the potential to sell renewable energy credits to offset fossil fuel generated energy in other areas of the country.
- The EIS needs to look at the economic effects of the entire Project, both adverse and beneficial.
- Commenters voiced concerns over the difficulty and cost of maintaining wind turbines in a marine environment.

2.3.11 Environmental Justice

Comments pertaining to environmental justice included suggestions to assess adverse impacts on and benefits to these communities. Topics raised in this category included the following:

- Fossil fuel facilities are often sited disproportionately close to environmental justice communities. The EIS should consider the benefits the proposed Project could bring to these communities related to the broad economic, environmental, and health benefits of offshore wind compared to fossil fuel energy.
- Coastal and fishing communities often have large minority and low-income populations. The EIS should account for impacts on these communities and consider Executive Orders 12898, 13985, and 13175.
- Commenters suggested BOEM consider EPA's EJSCREEN tool to have a complete and up-to-date environmental justice analysis in the EIS.
- Commenters suggested BOEM organize an Environmental Justice Outreach Plan to engage members of the communities where onshore substations are proposed in order to ensure transparency and convey information regarding the impact the proposed Project may have on neighborhood resources, particularly during construction. This outreach should also encourage local input from community members, stakeholders, and other potentially affected groups to help ensure impacts on environmental justice communities are considered and mitigated.
- Commenters questioned the environmental justice study area in the COP and suggested narrowing it to the areas where the proposed onshore siting is expected to take place.
- Commenters were concerned that the onshore substation would be in Island Park, which has hosted Long Island's most polluting power plant for the past 50 years. The commenter felt that the burden of pollutants on the Island Park community is excessive.
- Commenters supported a robust discussion of environmental justice including properly compensating groups who may be adversely affected.
- Commenters were concerned about specific communities that might suffer disproportionate pollution and health disparities including Sunset Park, Island Park, Red Hook, and Gowanus.

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:

- The EIS should include a robust analysis of the effects of construction, operation, and decommissioning activities on managed and protected finfish and invertebrate species, and EFH, with particular attention given to the effects of the proposed Project on areas that have been designated as Habitat Areas of Particular Concern under the Magnuson-Stevens Fishery Conservation and Management Act, such as Cholera Bank, and on critically endangered species.
- The EIS should consider potential impacts on the Mid-Atlantic cold pool, which could result in effects on oceanographic processes, ecosystems, marine species life cycles, protected species, EFH, and the fishing industry.
- The EIS should include detailed information on the effects of Project construction and operations on highly migratory species, such as the federally listed as endangered Atlantic sturgeon and tuna species, small and large coastal sharks, and pelagic sharks, and analyze potential disruptions to migrating patterns.
- An EFH Assessment should be completed for the proposed Project that includes analyses of all potential impacts, including temporary and permanent, direct and indirect individual, cumulative, and synergistic impacts of the proposed Project.

- Commenters stressed that strong scientific understanding and supporting research are critical to draw conclusions and evaluate potential impacts on finfish, invertebrates, and EFH.
- The EIS should include an analysis of impacts on habitat displacement, conversion of marine habitats resulting from the introduction of new hard surfaces to the ocean floor, alterations to migration patterns and changes in behavior, and potential impacts on stratification and mixing due to the presence of monopiles.
- Commenters noted concern for impacts on the scallop industry caused by disruption to the ocean's thermal layers from placement of WTG foundations.
- The EIS should include broadband soundscape recordings pre-construction and post-construction to determine changes in wildlife density.

2.3.13 Land Use and Coastal Infrastructure

Comments focused on the importance of protecting the coastal habitats. Topics raised in this category included the following:

- The EIS should fully evaluate impacts at cable landfall locations, including impacts on submerged aquatic vegetation and coastal habitats.
- The EIS should propose mitigation to minimize impacts on the barrier islands. Impacts should be minimized at ecologically important areas such as the Island Beach State Park and the Barnegat Lighthouse State Park.
- Commenters expressed concern regarding the installation of electric cables in flood zones beneath Ocean City and the impacts on the environment, flood mitigation efforts, and traffic.

2.3.14 Marine Mammals

Comments about marine mammals addressed biological, structural, or habitat impacts on the species or their habitat, including species listed under the ESA and Marine Mammal Protection Act. Topics raised in this category included the following:

- The EIS should include information on seasonal abundance, distribution, habitat availability, foraging activity, population density and population trends, and migration routes of marine mammals and anticipated habitat uses (e.g., foraging, migrating), threats, and the prey these species depend on throughout the area that may be directly or indirectly affected by the proposed Project.
- The EIS should include specificity between marine mammal species groups (e.g., low frequency versus mid-frequency) to create clearer impact conclusions that are better supported and documented using the most up-to-date scientific information.
- The EIS should identify effects on individuals as well as impacts at the population level wherever possible.
- The EIS should contain a robust assessment of the potential effects of both the Empire Wind Project and the full build-out scenario on prey resources for the critically endangered NARW and other whale species. Potential impacts on plankton distribution, aggregation, and possible abundance shifts should be discussed.
- Impacts on species recruitment and larval distribution due to changes to ocean stratification and circulatory patterns resulting from the development of offshore wind projects should be discussed.
- Potential impacts due to increased risk of injury or mortality from vessel strike, elevated noise levels from pile driving and vessel traffic, increased injury or mortality due to entanglement or survey activities, habitat displacement, altered movements of feeding behaviors, increased stress,

disruption of benthic habitats and prey base, water quality impacts on species, and behavioral and physiological effects from electromagnetic fields (EMF) and heat from inter-array and export cables on marine mammals and their prey should be analyzed in the EIS.

- NOAA requested that BOEM work closely with Empire Wind to develop a Project schedule that minimizes potential impacts on NARW, particularly considering time-of-year restrictions for pile-driving activities when NARW are present in greatest densities in the Lease Area.
- Particular emphasis should be given to the conservation of ESA-listed species in developing and implementing robust strategies to avoid, minimize, and mitigate potential adverse impacts, and also monitoring of the efficacy of these strategies throughout the life of the proposed Project. BOEM and Empire Wind need to consider effects on all listed species; however, given the imperiled status of NARW, implementing measures to ensure that no right whales are injured or killed as a result of the Empire Wind Project is critical.
- The EIS should include the most current, best available science and scientific studies into the environmental review, and must consider a variety of local and regional data sources, including aerial survey records, for conducting an analysis of the immediate and cumulative effects of the proposed Project on marine mammals, particularly on species listed under the ESA and Marine Mammal Protection Act. NOAA provided a list of recommended scientific references for consideration related to the presence of ESA-listed species in or near the Lease Area.
- Commenters requested the EIS consider the full range of potential impacts of the Empire Wind Project cumulatively with those of all Atlantic offshore wind projects. The cumulative analysis should examine large-scale habitat displacement, climate change impacts, and additional energy expenditure required by marine mammals, including NARW, if it were to avoid all development in Lease Areas during their migration.
- The EIS should analyze NARW abundance patterns to confirm there is no overlap with Seasonal Management Areas or persistent Dynamic Management Areas. Based on numerous studies cited, the EIS analysis should assume that NARW is present in the Project area year-round.
- The EIS should consider spacing between offshore wind turbines and high-traffic areas through either increased spacing or based on consultation with the National Marine Fisheries Service and the U.S. Coast Guard to reduce potential collision and vessel strike impacts on NARW and other marine mammals. Additionally, the EIS should consider vessel speed restrictions or an adaptive plan to reduce potential collision and vessel strike impacts.
- Current minimization measures such as passive acoustic monitoring, marine mammal observers, shut-down procedures, and other mitigation measures proposed in the COP may be useful during construction and building spatiotemporal baseline data; however, they are not sufficient. Due to the uncertainty regarding NARW behavior in response to offshore wind foundations and vessel activity, the EIS needs to include additional measures and address the current data gap.
- Protection of NARW migration and foraging habitat is essential, and further research to determine whether right whales are engaging in these activities in the New York Bight should be conducted.
- Impacts on harbor porpoises must be minimized and mitigated to the full extent practicable during siting and development of the proposed Project, including nearshore areas being considered for cable landings.
- Due to 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 site assessment activities on these affected species and their stocks are avoided, minimized, mitigated, and monitored to the full extent possible.

- BOEM’s analysis should inform avoidance and mitigation strategies in a programmatic ecosystem-wide approach, potentially through a separate programmatic EIS, to protect NARW and all other species using the same habitats from the common threats of offshore wind projects being installed along the East Coast and that overlap with the NARW/marine mammal migratory corridors and foraging/calving habitats.
- The EIS should address all listed marine mammals to be found in the Empire Wind-1 and Empire Wind-2 Lease Areas, discuss the adequacy of current policies in protecting them, and provide a comprehensive programmatic approach to ensure that the proposed Project and other Atlantic offshore wind projects avoid/minimize adverse impacts on these species all along their spatiotemporal migratory movements.
- The EIS should incorporate the most recent and up-to-date scientific studies conducted for large whale species, including fin whale, humpback whale (*Megaptera novaeangliae*), NARW (*Eubalaena glacialis*), blue whale (*Balaenoptera musculus*), and sei whale (*Balaenoptera borealis*). New York State Department of Environmental Conservation aerial survey and passive acoustic data should be incorporated into the environmental review, along with numerous other data sources cited, and should be considered when developing Project-specific environmental protections.
- 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. More recent and comprehensive studies should be used to estimate NARW densities. As such, the estimated densities may significantly underrepresent the density and seasonal presence of large whales in the New York Bight.
- BOEM must require that all data are used to ensure that any potential shifts in habitat usage by North Atlantic right whales and other large whale species and stocks are reflected in sound exposure modeling associated with offshore wind development.
- Commenters suggested that an acoustic modeling team (e.g., JASCO) be formed that includes data holders (e.g., New York State Department of Environmental Conservation, New York State Energy Research & Development Authority, Wildlife Conservation Society, Northeast Fisheries Science Center, Woods Hole Oceanographic Institution) to collate an updated data set of best available scientific information to update the acoustic impact analysis.
- The EIS should evaluate the level and potential impacts of vessel-related noise during construction and should consider time and season restrictions for pile driving to reduce impacts on NARW migrations and breeding activities. Additionally, the EIS should use guidelines on noise thresholds for marine mammal disturbance that are consistent with the best available science.

2.3.15 Mitigation and Monitoring

Comments related to mitigation measures to address potential impacts and monitoring of biotic and abiotic conditions. This includes comments on already proposed mitigation and monitoring measures, as well as suggestions for additional mitigation and monitoring strategies for the proposed Project. Topics raised in this category included the following:

- Monitoring should be conducted before construction to assess baseline conditions, during construction, and post-construction in a timely and standardized manner to address potential disturbances in an adaptive management approach.
- Commenters requested mitigation measures be coordinated across the Atlantic Outer Continental Shelf and for BOEM to use monitoring data to inform future projects. Additionally, commenters requested ongoing transparency in mitigation and monitoring measures and that monitoring data be reported to other federal agencies and the public as appropriate.

- Best available studies and data should be utilized in determining and implementing mitigation measures, with a request for additional research to be completed to cover gaps in currently available scientific data.
- Commenters expressed desire for developers to consider and consult with experts regarding mitigation of impacts on salt marshes; marine and avian life, including endangered species such as the NARW; and benthic habitats caused by construction, maintenance, vessel strikes, and other Project-related factors.
- BOEM should consider the use of Nature-Based Design for scour protection as a means of mitigation.
- The EIS should explain if and how financial compensation would be provided to commercial fisheries to offset potential losses to fish stock and fishing gear and navigation risks. The EIS should include plans for compensatory mitigation for impacts caused by bird collisions and/or Project-related pollution.
- BOEM should consider the use of visual and acoustic clearance and exclusion zones surrounding driven piles, require visual and acoustic monitoring prior to and throughout pile-driving activity, and apply noise-reduction technologies where possible.
- The EIS should identify what mitigation measures are included as part of the Proposed Action and therefore 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.

2.3.16 Navigation and Vessel Traffic

Comments related to impacts on the ability to operate and navigate personal or commercial vessels and potential increases of vessel traffic. Topics raised in this category included the following:

- Commenters noted that there should be transparency on impacts on shipping lanes.
- Commenters indicated that the EIS should use the most recent and accurate data for navigational analysis. They noted that the automatic identification system may not be a reliable measure of navigation traffic because of the limitations on which vessels use the system and in which areas.
- The EIS should evaluate impacts of interference from the offshore wind farms on marine radars and offshore wind farms' potential effect on safe navigation and search and rescue operations if radar is affected.
- Commenters indicated that the currently proposed navigation lanes between turbines are not wide enough and that additional shipping safety fairways be established to preserve current and predicted future navigational practices.
- The EIS should clarify whether there will be any conflicts with anchoring and navigation around cables/corridors.
- Commenters noted the increased risk and danger of collision with turbines for both commercial and recreational vessels, especially during inclement weather, and the danger of increased vessel density due to constricting vessel traffic within turbine arrays.
- The EIS should address the turbines' impact on access to existing fishing locations by commercial fishing vessels.

2.3.17 NEPA/Public Involvement Process

Comments related to the preparation of the EIS and the NEPA process, including how public stakeholders, state and federal agencies, and tribes will be engaged. Topics raised in this category included the following:

- Commenters expressed concern that information needed to perform adequate review and provide comments was not available before the closing of the scoping period, including a visual impact assessment.
- Commenters noted that the number of projects for which BOEM is currently moving through the NEPA process makes it difficult to provide the level of detail of review and meaningful comments for each project that has been performed in the past.
- Commenters requested that the baseline conditions and environmental consequences analysis in the EIS for all resources use the best available science and consider all impacts resulting from the full life of the proposed Project. Commenters also asked that clear significance criteria and impact determinations be defined in the EIS in terms of duration and magnitude, and that any mitigation measures state if they are required or voluntary.
- Commenters asked that a summary be provided of any changes between versions of the COP.
- Commenters noted that the environmental review process should continue coordination with cooperating agencies and that their comments on and edits to the Draft and Final EIS be incorporated before publication. These commenters asked that necessary data needed for cooperating agency review be provided as quickly as possible.
- Commenters expressed a lack of trust in the public involvement process, citing a lack of advertisement for and awareness of public involvement opportunities, exclusion of the public and certain fishery groups at specific meetings, and that the public's concerns were not being incorporated into the Project design. Commenters also cited dissatisfaction in the timing of public involvement, stating that involvement should have begun earlier in the process.
- Commenters asked for continued consultation with the public, tribal, state, county, and local planning officials, agencies, stakeholders, and technical working groups throughout the EIS process and that feedback from the commercial fish industry in particular be incorporated into the turbine layout. Commenters also asked that a formal and enduring forum for gathering input from the recreational and commercial fishing communities be established.
- Commenters indicated that information and data used to make decisions should be made publicly available.
- Commenters requested that BOEM fully comply with NEPA, the National Historic Preservation Act, ESA, Marine Mammal Protection Act, and the Magnuson-Stevens Fishery Conservation and Management Act while developing the proposed Project.
- A commenter asked if adaptive management will be used so that lessons learned from the construction of Empire Wind-1 can be applied to Empire Wind-2.
- Commenters suggested information sources that BOEM use in the development of the EIS including the Atlantic Coast Port Access Route Study and supplemental Port Access Route Study.
- Commenters felt there has not been adequate opportunity provided for the public to voice their opinion regarding the Project.
- Commenters noted that BOEM should ensure that all of the benefits of the Project are included in the EIS.

2.3.18 Other Resources and Uses

Comments related to aviation, marine minerals, research activities, and other resources.

2.3.18.1 Aviation

Topics raised in this category included the following:

- A commenter asked that the impact analysis include any changes to Federal Aviation Administration flight patterns into John F. Kennedy Airport.

2.3.18.2 Marine Minerals

Topics raised in this category included the following:

- A commenter noted that mining occurs offshore as well as within navigation channels, such as in the Ambrose Channel.

2.3.18.3 Research Activities

Topics raised in this category included the following:

- A commenter asked that the Draft EIS explain how accurate resource information was gathered from within the wind areas, noting that NOAA will not commit to continuing its time series of fishery surveys within the wind farm arrays.
- A commenter commended the numerous geotechnical surveys and samplings that Equinor Wind has conducted to allow for flexibility to advance the most environmentally sound summary of export cable routes.

2.3.18.4 Other

Topics raised in this category included the following:

- A commenter noted that any place where bottom sediments will be disturbed during cable and turbine installation must be evaluated for sediment contamination to understand the potential for environmental effects associated with contaminant release.
- A commenter asked that construction-related impacts be assessed including vessel traffic, inadvertent releases and spills, management of debris and waste, and emergency preparedness for severe storm events.
- A commenter asked that operations and maintenance-related impacts be assessed including visual and noise impacts on sensitive natural resources, vessel traffic impacts, long-term habitat impacts, vibration impacts, impacts from cable heat transfer, and emergency preparedness for severe storm events.

2.3.19 Other Topics Not Listed

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

2.3.19.1 Coastal Zone Consistency

Comments in this category addressed compliance with state Coastal Management Program(s). Topics raised in this category included the following:

- One commenter noted that the Empire Wind project has not filed for Federal Consistency with Coastal Zone Management and noted that a voluntary filing would initiate review by Coastal Zone Management for consistency with Massachusetts enforceable program policies and provide opportunity for discussion regarding potential impacts on the fishing industry of Massachusetts.

2.3.19.2 Noise

Comments addressed noise and acoustics associated with construction and operations, including low-frequency noise. Topics raised in this category included the following:

- Commenters were concerned about the impacts noise from construction and operations of the proposed Project would have on marine wildlife including marine mammals, sea turtles, and scallops. Commenters felt that the Underwater Acoustic Mitigation Assessment in the COP relied on outdated data and was not applicable to the proposed operational noise. These commenters provided data on levels of noise affecting the behavior and communication of various species.
- A commenter suggested using gravity-based foundations for WTG installations rather than pile-driving foundations and monopoles for the two offshore substations to reduce the potential for noise impacts on marine wildlife.
- Commenters suggested mitigation measures to reduce noise including requiring decibel reductions during construction, revising guidance of harassment thresholds for acoustic exposure criteria for behavioral response, partnering with data scientists and acoustic modeling scientists to obtain the best available current data to inform the impacts and cumulative impacts analyses, and take all necessary actions to reduce the number of Level A takes to ensure Level B takes for large whales are as low as possible.
- Commenters asked that the EIS identify the level of low-frequency noise and infrasound generated by operation of the turbines, how far it will propagate, how it compares to the baseline noise levels, and impacts on human health, wildlife, and historic structures.
- Commenters asked for studies exploring the noise impact wind turbines could have on marine wildlife.

2.3.19.3 Materials and Waste Management

Comments in this category addressed the decommissioning and disposal of materials associated with the proposed Project. Topics raised in this category included the following:

- Commenters asked that the dredging, construction, installation, and decommissioning of the proposed Project not increase any community's exposure to pollution.
- Commenters encouraged BOEM to evaluate the use of foundations and scour protection as habitat as artificial reefs for fish and invertebrates to inform future decommissioning requirements.
- Commenters asked that the EIS include alternatives to ensure decommissioning, removal, and mitigation of the site regardless of economic, political, or environmental factors and noted that the EIS must ensure the developer is made responsible for removing the equipment when the proposed Project ends and will have adequate resources in trust to ensure decommissioning occurs.
- A commenter asked that an analysis of the land use and land degradation effects be made for the extraction of raw materials to support the proposed Project and for landfill to dispose of the proposed Project's equipment after decommissioning compared to that of other power sources that have low or no emissions during operations.
- Commenters expressed concern that oil and lubricants will leak into the marine environment.
- Commenters asked that a sufficient and mandatory decommissioning fund be included that includes proper disposal and recycling of all Project components.

2.3.19.4 General Wildlife

Comments in this category addressed harm or death to multiple types of species due to construction and operation. Topics raised in this category included the following:

- Commenters expressed concern for many types of marine and terrestrial wildlife that may be affected by activities associated with the construction, operations, and decommissioning of the proposed Project and other future offshore wind projects in the area.
- Commenters asked that all applicable protocols for evaluating wildlife impacts set forth in New Jersey's Department of Environmental Protection's Technical Manual for Evaluating Wildlife Impacts of Wind Turbines Requiring Coastal Permits be used including species surveys.
- Commenters expressed concern that the proposed Project could adversely affect the unique habitat in the Project area including the cold pool and water column stratification that is vital to fisheries and local ecosystem health.
- Commenters requested that the EIS note that many species are vulnerable to and could face significant impacts from climate change that could be ameliorated with the use of wind energy development with strong protections and mitigation for coastal and marine habitats and wildlife.

2.3.19.5 Electromagnetic Fields (EMF)

Comments in this category addressed the potential impacts of EMF on wildlife and humans. Topics raised in this category included the following:

- Commenters asked that the EIS provide baseline EMF levels and evaluate methods that reduce EMF to base levels for areas where cable burial is not feasible.
- Commenters noted that the New York State review will be reviewing conformance of the proposed Project design with criteria adopted by the Public Service Commission for EMF levels at the right-of-way edge.
- Commenters expressed concern regarding the impact the EMF fields will have on fish migration patterns, crustaceans' ability to locate food, and fish species that employ electrical currents for orientation.

2.3.19.6 Other

Topics raised on other themes included the following:

- Commenters were concerned at how the proposed Project would interfere with marine and aviation radar and noted that this could lead to false targets or masking of targets that could lead to human safety concerns.
- Commenters asked that solutions be found to address radar interference. The wind turbines will prevent the use of high-frequency radar for tracking oil spills, measuring hurricanes, and operating search and rescue.
- The U.S. Coast Guard expressed concern that the proposed Project may affect aviation and maritime search and rescue operations.
- The EIS should analyze impacts on U.S. Coast Guard search and rescue missions due to interference from high-frequency radars in the Project area.
- The proposed Project should investigate the assertion that the Department of Defense has a weapons training area in the New York Wind Energy Area and should analyze the impacts if the assertion is found to be true.
- Commenters expressed concerned regarding public safety and facility compatibility with the existing utility infrastructure.

- A commenter noted that an easement pursuant to Public Lands Law §3(2) of New York would be required to install cables and conduits in, on, or over New York State-owned underwater lands and that the application for the easement requires an analysis of the environmental impact of the proposed Project.
- A commenter suggested the use of high-voltage direct current export cables to reduce the number of export cables and landfall sites for this and future offshore wind projects.
- A commenter noted that BOEM must be transparent regarding how impacts are quantitatively or qualitatively assessed in the EIS and asked for transparency regarding this analysis.
- A commenter requested that language regarding ecosystem or species change in the EIS remain objective and not be framed as beneficial, as it is unclear what implication changes in the abundance of certain species or overall diversity will have on the wider ecosystem.
- A commenter asked that an analysis be included in the EIS to assess how large-scale wind turbine power plants can affect weather patterns including temperature wind velocity and how these weather changes have the potential to affect quality of life and energy demand and use.
- Commenters asked that the EIS include an analysis of human health and safety by including an estimate of deaths and injuries of workers over the lifecycle of the proposed Project and that mitigation measures be developed for these.
- Commenters requested that the risk of pacemaker malfunction when crossing a buried high-voltage cable be disclosed in the EIS.

2.3.20 Planned Activities Scenario/Cumulative Impacts

Comments on cumulative impacts suggested that the EIS include the full range of reasonably foreseeable projects, especially all potential offshore wind projects. Cumulative impacts could be severe for many different resources. Topics raised in this category included the following:

- The cumulative impacts assessment in the EIS should include the combined impacts from the proposed Project and all other past, current, and foreseeable activities, including all 16 offshore wind lease areas and all projects currently proposed off the East Coast as well as cover all stages of the proposed Project including construction, operation, maintenance, and decommissioning.
- The cumulative impact assessment in the EIS should consider the long-term beneficial impacts from pursuing offshore wind as they relate to climate change as well as the tradeoffs of failing to achieve decarbonization goals.
- The EIS should consider possible mitigation measures to address cumulative impacts and coordinate closely with other agencies. Integrated monitoring approaches should be implemented across offshore wind projects with an adaptive management approach. Cumulative impacts should be updated as circumstances shift and new information and technology becomes available.
- The EIS should analyze and report the cumulative effects on all affected resources including marine mammals, birds, endangered species, navigation, commercial and recreational fisheries, cold pools, noise, vessel strike risk, habitat displacement, and oceanographic conditions.
- BOEM should coordinate with other agencies and organization for data sharing, collaboration, and monitoring.
- The cumulative impacts assessment in the EIS should include a geographic area that encompasses all Project-related activities including the Lease Area, cable corridors, landing sites, the use of ports outside of the immediate Project area, vessel traffic, and other activities.
- The EIS should include cumulative impacts on fisheries, fishing operations, and other socioeconomic impacts related to surrounding communities related to Empire Wind and other projects along the Atlantic Coast.

- Additional research and information are needed to sufficiently develop baseline data and determine effects, impacts, and appropriate mitigation strategies from the Empire Wind Project and other regional projects.

2.3.21 Proposed Action/Project Design Envelope

Comments that addressed the Proposed Action and the Project Design Envelope (PDE) included suggestions to consider alternate technologies, account for impacts from all Project components, collaborate with adjacent wind farms, and undergo comprehensive surveys. Topics raised in this category included the following:

- The construction of the proposed Project must abide by the strictest safety and environmental standards.
- BOEM should allow for some flexibility in the scope of the EIS. The proposed Project and construction plan, especially for the cable landing and nearshore/onshore transmission construction, could change based on continued consultation with local jurisdictions or ongoing transmission studies.
- Commenters supported Equinor's plan to use gravity-based foundations wherever possible to minimize impacts on marine life and habitats.
- Commenters supported Equinor's decision to decrease the number of foundations from 242 to 176 turbines.
- NOAA indicated its ability to comment on the proposed Project is limited by the lack of benthic habitat mapping data and that these data would be helpful to have in the COP at the scoping stage to help identify more detailed alternatives.
- The EIS should analyze impacts from all aspects of the proposed Project including dredging, water withdrawals, pile driving, vessel traffic, anchoring, and transmission cable installation. The EIS should also analyze chemical emissions and impacts from decommissioning.
- The use of a PDE approach is an accepted permitting approach but that PDE needs to cover a range of reasonable design parameters without being too broad. It is not clear if the current PDE is the maximum impact scenario or why it is only considered the preliminary Proposed Action.
- BOEM should address the issue of offtake/power purchase agreements prior to any permitting decisions.
- BOEM should consider prohibiting high-resolution geophysical surveys during seasons when protected species are known to be present. BOEM should have seasonal construction restrictions and prohibit foundation installation when NARW or any other endangered species is in the Project area. For example, pile driving should be prohibited when endangered species are present.
- Acoustic and visual clearance zones should be required to ensure protected species are not in the affected area.
- The EIS should consider options to schedule construction activities to minimize interactions with migratory species, spawning, feedings, and breeding activities.
- With the flexibility that is inherent in the PDE, BOEM and other permitting agencies should be able to review the final design of the selected alternative before giving final approval for construction.
- Responsible development of offshore wind energy includes a full analysis using the best available science and data, adaptive management strategies, and measures to avoid or minimize impacts on wildlife and habitat.
- The EIS should include a full description of the entire proposed Project, including all Project elements and construction phases.

- The EIS should include an existing condition plan that locates and delineates resource areas based on site-specific surveys conducted by the proponent for species and habitat.
- The EIS should identify the preferred export cable corridor and base all analysis off the more detailed surveys that were initiated in 2020 and are continuing through 2021. The EIS should present a scope of work for a detailed survey and sampling plan that covers both proposed cable corridors.
- A commenter raised a question if cable burial depths would be deep enough and if scouring would be an issue.
- A commenter suggested the use of monopiles to reduce possible collisions and the Project footprint.
- A commenter suggested the proposed Project include the decommissioning and demolition of the EF Barrett power plant, and that removal of the natural gas plant should be a condition of approval.

2.3.22 Purpose and Need

Comments on the purpose and need related to meeting state and federal clean energy goals as well as turning to other energy options. Topics raised in this category included the following:

- Some commenters expressed support for the proposed Project as a way to contribute to New York and New Jersey's energy goals, and meet the White House's call for renewable energy, associated job creation, and stronger domestic supply.
- Commenters generally supported the purpose and need of reducing reliance on fossil fuels to meet local, state, and federal climate goals and mandates while creating thousands of jobs and bringing other economic benefits to the region.
- Some commenters expressed concern over the unreliability of wind as a source of power and over the potential impact on the fishing industry they felt the proposed Project could cause. These commenters advocated for other sources of power including nuclear.

2.3.23 Sea Turtles

Comments about sea turtles that address biological, structural, or habitat impacts on the species or their habitat included the following:

- Potential short-term impacts on sea turtles from Empire Wind activities include vessel collisions that cause injuries, death, and extreme or excessive disturbances in the marine environment that cause displacement, behavioral disruption, stress, hearing impairment, and changes in prey availability. Potential long-term impacts include changes in population distributions, reduction in prey distribution and availability, changes in hearing threshold shifts, barotrauma, auditory masking, and ecosystem changes.
- The EIS should take a conservative approach to Project impacts on turtles given the limited information on impacts (e.g., noise, vibration) and data on sea turtle movement, distributions, and habitat use patterns.
- The EIS should include cumulative impact analyses for all impact-producing factors from the proposed Project and other offshore wind and non-offshore wind activities offshore, nearshore, and onshore.
- Commenters recommend that, for forthcoming construction activities, BOEM should use the National Marine Fisheries Service's most recent pile-driving calculator to obtain accurate injury and behavioral radii for sea turtles during impact and vibratory pile driving. Additionally, speed restrictions for all vessels should be implemented.

- Commenters recommended NOAA-certified Protected Species Observers be utilized to monitor all exclusion zones for sea turtles during Project activities.

2.3.24 Scenic and Visual Resources

Comments on scenic and visual resources focused on the detrimental impact the wind farm would have on the landscape and viewing experience. Topics raised in this category included the following:

- Commenters noted that the proposed Project will be visible from the shoreline during the day and from lighting at night, which they felt would have a detrimental impact on the visual character that defines the coastline communities in the area. Commenters suggested eliminating the section of turbines closest to shore to help resolve this issue.
- Commenters expressed that they preferred the potential visual impact from offshore wind turbines to fossil fuel plants.
- Commenters expressed concern regarding visual impacts on the night sky in general and at specific areas including Fire Island National Seashore, Gateway National Recreation Area, and Wilderness Areas and suggested measures to be considered to reduce impacts on the night sky including shutting off lights when not needed, using the minimum brightness needed, and using warm color-temperature lights.
- A commenter asked that BOEM use the Seascape/Landscape and Visual Impact Assessment published in April 2021 when redoing the visual impact assessment.
- A commenter suggested that specific areas be included in the visual impact assessment as key observation points including Otis Pike Fire Island High Dune Wilderness, Watch Hill, Sailors Haven, Fire Island Lighthouse Keepers Quarters, and Fire Island Lighthouse on Fire Island National Seashore. They also suggested key observation points at Gateway National Recreation Area including Sandy Hook Lighthouse, Sandy Hook beaches, Riis Park Boardwalk, Battery Harris, Fort Tilden, and Fort Wadsworth.
- The visual renderings in the COP and the presentations were poorly done and not representative of the expected impact on visual quality. The EIS should include additional and better renderings.
- Commenters suggested that 15 miles is too close and the visual impacts from the proposed Project would be much higher than currently described. BOEM-conducted studies in New York, Massachusetts, and Rhode Island were cited to support this point.
- Socioeconomic impacts should be included in the visual impact assessment.
- The EIS should include visual renderings of how much of the turbines would be visible at high and low tide, at different elevations from shore (e.g., beach level, first floor of a building, second floor of a building, fifth floor of a building), and during daytime (with clear blue skies), nighttime, sunrise, and moonrise.
- The EIS should include visual renderings from the vantage points closest to the proposed Project (such as Sea Isle, Ocean City, and Avalon).
- The EIS should evaluate visual impacts of light pollution from the wind farm at night and explain how the radar-assisted night lighting would work.
- A commenter thought that the visual impact of the wind farm will be less detrimental than the existing smokestack at Beesley's Point and less detrimental than potential future impacts due to climate change.
- Commenters likened the scenic value of the current natural coastal views in the proposed Project area to that of the Grand Canyon. Commenters characterized the feeling of the current coastal view as serene, tranquil, beautiful, a sanctuary, and peaceful. These feelings were described as important to creating a sense of place for the New Jersey coast.

- A commenter asked about the status of the Rutgers study on visibility.
- Some commenters felt that the visibility of the turbines from shore would be an asset rather than a drawback.

2.3.25 Water Quality

Common topics raised in this category include the following:

- Commenters recommended that BOEM conduct an Empire Wind Project-specific (turbine level) and full build-out/cumulative offshore wind scenario on hydrodynamics, oceanographic, and atmospheric conditions that will aid in the evaluation of impacts on species distribution and the effects on hydrodynamic conditions, including effects on the Mid-Atlantic cold pool. Additional considerations include turbidity plumes and changes in dissolved oxygen and/or nutrients within the water column.
- BOEM should conduct studies to determine water quality baseline levels.
- The EIS should take into account Project cable locations in the analysis of impacts on water quality, specifically pollutants and chemicals found within the sediment and areas where cables may come ashore.

2.3.26 Wetlands and Waters of the U.S.

Comments on wetlands and waters of the U.S. suggest close coordination and compliance with laws and regulations. Topics raised in this category included the following:

- The EIS should include a range of design and construction measures to avoid and minimize impacts on wetlands, streams, and other waters of the U.S. from cables and other structures as well as explain how the proposed Project would comply with EPA's Clean Water Act regulations.
- Close coordination with the U.S. Army Corps of Engineers, National Marine Fisheries Service, EPA, and state coastal zone management offices is essential during this process.

2.3.27 General Support or Opposition

Many comments expressed general support for or opposition to the proposed Project. Commenters are generally supportive of the proposed Project because it may reduce fossil fuel dependence, reduce climate change impacts, increase job opportunities, and stimulate the economy. Some commenters expressed their support for offshore wind as long as it is developed responsibly and includes the appropriate mitigation. Commenters opposed to the proposed Project expressed concerns because it may adversely affect commercial fisheries, navigation, marine wildlife and habitat, visual quality, or the local economy.

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

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A.1. Introduction

ICF’s process for analyzing public comments builds upon our commercial web-based CommentWorks® software product. As a first step, we downloaded and processed electronic copies of the comments from the [www. Regulations.gov](http://www.Regulations.gov) site, so that we could then import these data into CommentWorks. A hierarchical outline was developed to include key issues provided by BOEM staff, issues addressed by the commenters, as well as categories identified in the Notice. ICF staff reviewed the comment letters, identifying the substantive excerpts within each submission (“bracketing”), and used the issue outline to associate each excerpt to the issue(s) to which it applies (“coding”). The end product of the bracketing and coding analysis is this “comment excerpt-by-issue report” – a report generated in CommentWorks that includes the *verbatim text* of substantive comment excerpts sorted by issue.

A note about the material presented in this report: Please keep in mind that this report includes 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.

A.2. 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-3.

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

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0038-DRAFT-0003	Aaron Ward	
BOEM-2021-0038-DRAFT-0004	Jake Monahan	
BOEM-2021-0038-DRAFT-0005	Michael Halpern	
BOEM-2021-0038-DRAFT-0006	Michael Ascari	
BOEM-2021-0038-DRAFT-0007	Kevin Costa	
BOEM-2021-0038-DRAFT-0008	Isaac Rysdahl	
BOEM-2021-0038-DRAFT-0009	David Rysdahl	
BOEM-2021-0038-DRAFT-0010	Abigail Meola	
BOEM-2021-0038-DRAFT-0013	Georgianna Page	
BOEM-2021-0038-DRAFT-0014	Jennifer Dowling	
BOEM-2021-0038-DRAFT-0015	Rhea Bozic	
BOEM-2021-0038-DRAFT-0016	Audrey Cree	
BOEM-2021-0038-DRAFT-0017	Margaret Weiss	
BOEM-2021-0038-DRAFT-0018	Tom Gallucci	
BOEM-2021-0038-DRAFT-0019	Platt	
BOEM-2021-0038-DRAFT-0020	Summer Sandoval	UPROS
BOEM-2021-0038-DRAFT-0021	Kevin Halpin	
BOEM-2021-0038-DRAFT-0022	M Gill	
BOEM-2021-0038-DRAFT-0023	Laura St Germain	
BOEM-2021-0038-DRAFT-0024		The Nature Conservancy
BOEM-2021-0038-DRAFT-0026	Joe Schmo	

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0038-DRAFT-0027	Donald Weigl	
BOEM-2021-0038-DRAFT-0028	Jane A Quinton	
BOEM-2021-0038-DRAFT-0029		Citizens Campaign for the Environment
BOEM-2021-0038-DRAFT-0030	Michael Pentony	NOAA National Marine Fisheries Service
BOEM-2021-0038-DRAFT-0031	Mary Krueger	Department of the Interior, National Park Service
BOEM-2021-0038-DRAFT-0032		Business Network for Offshore Wind
BOEM-2021-0038-DRAFT-0033	Charles Gary	
BOEM-2021-0038-DRAFT-0034	Meghan Lapp	Seafreeze Ltd/Seafreeze Shoreside
BOEM-2021-0038-DRAFT-0035		NJDEP
BOEM-2021-0038-DRAFT-0036	Anne Lazarus	
BOEM-2021-0038-DRAFT-0037	William O'Hearn	Offshore Power LLC
BOEM-2021-0038-DRAFT-0038	Andrew Berko	
BOEM-2021-0038-DRAFT-0039		Defenders of Wildlife
BOEM-2021-0038-DRAFT-0040	George Browne	
BOEM-2021-0038-DRAFT-0041		Oceana
BOEM-2021-0038-DRAFT-0042	Paul Eidman	
BOEM-2021-0038-DRAFT-0043		Save the Sound
BOEM-2021-0038-DRAFT-0044		Mid-Atlantic Fishery Management Council and New England Fishery Management Council
BOEM-2021-0038-DRAFT-0045		Office of the Deputy Mayor for Housing and Economic Development
BOEM-2021-0038-DRAFT-0046		Fisheries Survival Fund
BOEM-2021-0038-DRAFT-0047		NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation
BOEM-2021-0038-DRAFT-0048		BlueGreen Alliance
BOEM-2021-0038-DRAFT-0049	William Cook	Point O'Woods Association, submitted by Cultural Heritage Partners PLLC
BOEM-2021-0038-DRAFT-0050		American Bird Conservancy
BOEM-2021-0038-DRAFT-0051		The American Waterways Operators
BOEM-2021-0038-DRAFT-0052		Massachusetts Office of Coastal Zone Management

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0038-DRAFT-0053	William Cook	Point O'Woods Association, submitted by Cultural Heritage Partners PLLC
BOEM-2021-0038-DRAFT-0054		EPA Region 2
BOEM-2021-0038-DRAFT-0055		Transcontinental Gas Pipe Line Company, LLC
BOEM-2021-0038-DRAFT-0056		Clean Ocean Action
BOEM-2021-0038-DRAFT-0057		National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.
BOEM-2021-0038-DRAFT-0058		Climate Jobs NY
BOEM-2021-0038-DRAFT-0059		Responsible Offshore Development Alliance
BOEM-2021-0038-DRAFT-0060	Bonnie Brady	
BOEM-2021-0038-DRAFT-0061		International Brotherhood of Electrical Workers, Third District
BOEM-2021-0038-DRAFT-0062	Alena Walters	
BOEM-2021-0038-DRAFT-0063	Bonnie Brady	Long Island Commercial Fishing Association
BOEM-2021-0038-DRAFT-0064	Michael Emerson	U.S. Coast Guard
BOEM-2021-0038-DRAFT-0065	David Wallace	Wallace & Associates
BOEM-2021-0038-TRANS-063021-0001	Nancy Solomon	Long Island Traditions
BOEM-2021-0038-TRANS-063021-0002	Alex Valesso	
BOEM-2021-0038-TRANS-063021-0003	Charles	
BOEM-2021-0038-TRANS-063021-0004	Adrienne Esposito	Citizens Campaign for the Environment
BOEM-2021-0038-TRANS-063021-0005	Sophie House	
BOEM-2021-0038-TRANS-063021-0006	David Wallace	
BOEM-2021-0038-TRANS-063021-0007	Michael Halpern	
BOEM-2021-0038-TRANS-063021-0008	Paul Eidman	
BOEM-2021-0038-TRANS-063021-0010	Ben Orloff	
BOEM-2021-0038-TRANS-063021-0011	Richard Shurin	
BOEM-2021-0038-TRANS-063021-0012	George Poval	Olar Energy
BOEM-2021-0038-TRANS-063021-0013	Michael Stocker	Ocean Conservation Research
BOEM-2021-0038-TRANS-063021-0014	Shay O'Reilly	Sierra Club
BOEM-2021-0038-TRANS-070821-0001	Maria Dignan	Climate Jobs New York
BOEM-2021-0038-TRANS-070821-0002	Caroline Hahn	New York League of Conservation Voters
BOEM-2021-0038-TRANS-070821-0003	David Wallace	
BOEM-2021-0038-TRANS-070821-0004	Tara Noble	
BOEM-2021-0038-TRANS-070821-0005	Tom Barracca	
BOEM-2021-0038-TRANS-070821-0006	Michael Halpern	

Submission ID	Name	Government or Non-Governmental Organization Name
BOEM-2021-0038-TRANS-070821-0007	David Rysdahl	
BOEM-2021-0038-TRANS-071321-0001	Shilo Felton	National Audubon Society
BOEM-2021-0038-TRANS-071321-0002	Carrie Martin	Clean Ocean Action
BOEM-2021-0038-TRANS-071321-0003	David Wallace	Surf, Land and Ocean Fishery
BOEM-2021-0038-TRANS-071321-0004	Zachary Hirschfeld	New York Lawyers for the Public Interest
BOEM-2021-0038-TRANS-071321-0005	Alexander Kazowski	
BOEM-2021-0038-TRANS-071321-0006	Sara Reed	350 Brooklyn
BOEM-2021-0038-TRANS-071321-0007	Georgianna Page	350 Brooklyn
BOEM-2021-0038-TRANS-071321-0008	Brett Sparks	Fishery Survival Fund
BOEM-2021-0038-TRANS-071321-0009	Bonnie Brady	Long Island Commercial Fishery Association
BOEM-2021-0038-TRANS-071321-0010	Adrienne Esposito	Citizens Campaign for the Environment

A.3. Individual Comments by Resource or NEPA Topic

A.3.1 Air Quality

Comment Number: BOEM-2021-0038-DRAFT-0008-5

Commenter: Isaac Rysdahl
Commenter Type: Individual

Comment Excerpt Text:

Burning of fossil fuels also directly impacts the respiratory health of humans. Gowanus, the neighborhood in which I work and spend time is already struggling with a superfund site at the Gowanus canal and with high rates of asthma and respiratory conditions due to heavy industry and the burning of fossil fuels.

Comment Number: BOEM-2021-0038-DRAFT-0009-2

Commenter: David Rysdahl
Commenter Type: Individual

Comment Excerpt Text:

The burning of fossil fuels poison the air while contributing to climate change. Off shore wind will make our city's air cleaner because we can shut down the gas plants poisoning the air in places like Red Hook, Sunset Park, and Gowanus.

Comment Number: BOEM-2021-0038-DRAFT-0017-2

Commenter: Margaret Weiss
Commenter Type: Individual

Comment Excerpt Text:

If the whole point of this is to decrease greenhouse gas emissions, then they should clearly say what the greenhouse gas emissions of manufacturing, constructing, and operating these things are, and they do not. I think the bad effects would far out weigh the need.

Comment Number: BOEM-2021-0038-DRAFT-0019-2

Commenter: Alice Platt

Commenter Type: Individual

Comment Excerpt Text:

If the whole point of this is to decrease greenhouse gas emissions, then they should clearly say what the greenhouse gas emissions of manufacturing, constructing, and operating these things are, and they do not. I think the bad effects would far out weigh the need.

Comment Number: BOEM-2021-0038-DRAFT-0020-8

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Policy: Offshore Wind will help NY State operationalize and comply with the Climate Leadership and Community Protection Act (CLCPA)- the most progressive climate legislation in the country

Comment Number: BOEM-2021-0038-DRAFT-0047-13

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Provide ambient air quality data.

Comment Number: BOEM-2021-0038-DRAFT-0047-27

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Evaluation of air pollutant emissions associated with all phases of the construction and operation of the Project, including quantification of emissions of all Clean Air Act criteria pollutants, greenhouse gases (GHGs), and any hazardous air pollutant (HAP) or other air pollutants emitted by the Project.

- Description of Project's compliance with all federal and State air emission and air quality regulations, including those related to greenhouse gas (GHG) emissions.

- Description of Project's compliance with General Conformity requirements under the Clean Air Act for the New York-Northern New Jersey-Long Island, NY-NJ-CT Nonattainment area.

Comment Number: BOEM-2021-0038-DRAFT-0054-2

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #1 - In the "Summary of Potential Impacts" section of the NOI [Footnote : See 86 FR 33352 (June 24, 2021).], BOEM states "The draft EIS will identify and describe the potential effects of the Proposed Action on the human environment that are reasonably foreseeable and have reasonably close cause relationship to the Proposed Action. Potential impacts include, but are not limited to, impacts (both beneficial and adverse) to air quality, water quality, bats. The effects of these potential impacts will be analyzed in the draft and final EIS."

Although, as noted above, the NOI identifies the impact on air quality as the first potential impacts of the Proposed Action (Empire Wind Project or “EWP”, which includes Empire Wind 1 (EW1) Project and Empire Wind 2 (EW2) Project), the NOI omits to specify the CAA and 40 CFR Part 55 “OCS Air Regulations” as the regulatory requirements applying to the EWP, and the need to obtain an OCS air permit, which will address the impact on air quality of those EWP emissions that would occur on the OCS, at the project location and within 25 miles from the project.

EPA acknowledges that in the “Anticipated Permits and Authorizations” [Footnote 2: See 86 FR 33352 (June 24, 2021)] section of the NOI, BOEM directs the public/readers to consult the Empire Wind (EW) Construction and Operation Plan (COP) for a full listing of regulatory requirements applicable to the EWP (which would also indicate the permits and authorizations needed). However, EPA believes that by having this basic and important information such as what are the permits and authorizations required for an OCS wind project specified in the NOI, instead of having the public to sort through some large COP documents, would enable the public to have easy access to basic information, and, thus, would facilitate public involvement. EPA recommends that BOEM considers including a complete listing of the required permits and authorizations in its NOI for EIS for OCS wind projects.

Comment Number: BOEM-2021-0038-DRAFT-0054-3

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #2 - In the “Summary of Potential Impacts” [Footnote 3: See 86 FR 33352 (June 24, 2021)] section of the NOI, BOEM states “Beneficial impacts are also expected by facilitating achievement of State renewable energy goals, increased job opportunities, improving air quality, and reduced carbon emissions.” Nevertheless, based on our review, there is no information in the COP to support the above statement regarding the EWP’s beneficial impacts on improving air quality or reducing carbon emissions. Thus, since, as indicated by BOEM in the “Summary” [Footnote 4: See 86 FR 33351 (June 24, 2021)] section of the NOI, the EIS will be prepared for the review of the EWP’s COP, we recommend that BOEM requires EW to update its COP by including information and relevant calculations supporting that the EWP will contribute to improving the air quality and reduced carbon emissions. By including this information in the COP, it would be beneficial for BOEM, since, in its draft and final EIS it can rely and/or reference to that information.

Comment Number: BOEM-2021-0038-DRAFT-0054-4

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #3 - In the “Request for Identification of Potential Alternatives, Information, and Analyses Relevant to the Proposed Action” [Footnote 5: See 86 FR 33353 (June 24, 2021)] section of the NOI, BOEM asserts that “requests information on the Proposed Action, including data, comments, views, information, analysis, alternatives, or suggestions from Federal agenciesSpecifically 2. Potential effects that the Proposed Action could have on physical resources such as air or water (including wetlands), particularly air and water quality.” EPA offers the following comments, and suggestions in response to BOEM request related to potential effects of the EWP on air quality.

a. Based on our review, the EW COP does not sufficiently characterize the OCS air permitting requirements for its project. For instance, the COP fails to mention that as a major source subject to the Prevention of Significant Deterioration of Air Quality (PSD) regulations during construction and throughout its operational life, EW will be required to demonstrate through air quality impact analyses that none of its emissions will cause or contribute to violations of the NAAQS or PSD increment or

adversely impact the air quality related values in a Class I area. We recommend that BOEM requests EW to update its COP by including the air quality impact analysis it prepared for the OCS air permit upon submission to EPA.

b. Additionally, we recommend that BOEM requests EW to update the “Summary of Avoidance, Minimization, and Mitigation Measures” section of its COP to reflect the emission controls and emissions standards included in the OCS air permit application upon submission to EPA.

c. Moreover, as revealed by the EW COP, during its construction activities, the EWP emissions occurring onshore and within state waters will be subject to the EPA’s General Conformity (GC) rule. Thus, in order to support any statements/findings in its draft and final EIS that the EWP will contribute to improving air quality and the EWP will not cause significant adverse impacts on air quality, BOEM should ensure that the GC rule requirements that apply in nonattainment and maintenance areas (NAA/MA) impacted by EWP emissions are met. If GC requirements are not addressed, then hundreds of tons of NO_x, VOC, CO, PM₁₀ and PM_{2.5} emissions occurring onshore and/or within state waters in a NAA/MA will remain unaccounted for and uncontrolled, which could contribute to a delay in the NY, NJ, and other states ability to attain and maintain the NAAQS.

d. As provided by BOEM’s regulations, EW is required to perform air quality modeling performed in support of the activities proposed in the COP, and, to contact EPA to establish a modeling protocol to ensure that the meteorological files used, and modeling methodology are acceptable before initiating the modeling work. [Footnote 6: See 40 CFR §585.659 “Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf/What Requirements must I include in my SA, COP, or GAP regarding air quality.”] EPA recommends that BOEM encourages EW to contact EPA and submit its modeling protocol as soon as practically possible. By receiving the EW modeling protocol early in the OCS air permitting process would enable EPA to provide meaningful input to BOEM for the air quality portion of its draft EIS.

Comment Number: BOEM-2021-0038-DRAFT-0057-11

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, as BOEM has already observed, offshore wind generation will likely directly displace fossil fuel generation. Due to offshore wind’s ability to displace more highly polluting fossil resources with clean energy, the climate impacts of the proposed offshore wind buildout would be net climate beneficial. 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 36: 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. 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 37: E.g., Id. at H-68, E3-25, E3-29.]

Comment Number: BOEM-2021-0038-DRAFT-0057-14

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 environmental justice and 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 44: 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 45: See e.g., VW1 FEIS, at ES-14.] which can offer modest reprieve to environmental justice populations who suffer disproportionately from these impacts. [Footnote 46: Id. at 3-152.] These impacts, including the beneficial impacts, need to be considered in the Empire Wind Draft EIS.

Comment Number: BOEM-2021-0038-DRAFT-0057-15

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 47: 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-2021-0038-DRAFT-0062-7

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

NEED FOR CARBON BALANCE ANALYSIS CONTAINING MEASURES INCLUSIVE OF ALL ASPECTS OF LIFECYCLE

While certain emissions related to the project were calculated (construction related ship trips, etc.), a comprehensive carbon/ greenhouse gas emissions balance evaluation was not conducted. An entire lifecycle analysis of the project should be performed, taking into account the raw materials extraction, shipment of raw materials, fabrication of components, shipping of components, transportation of components to interim and final staging areas, the construction itself (which are the emissions noted in the existing report), and operations and maintenance of the turbines over the course of their expected useful lifetime (some of which is noted). This is needed in order to understand the true and comprehensive emissions associated with the Empire 1 and 2 projects. Carbon and other greenhouse gas emissions associated with decommissioning, deconstruction, and disposal such as cutting up of the blades, and burying them in landfills should also be quantified and available for public examination.

When weighed with the potential environmental damage the project is expected to induce, a reasoned review can then be made which positions the project for assessment versus reasonable alternatives.

Comparison to other types of power plants (which are also low-emission or emission-free in operation) and their associated particular environmental effects is not possible without this.

Include not just carbon released upon mining/sourcing and transport of raw materials for the wind turbine and the foundations but for all the steel and cable connections as well, together with carbon released in the transport and manufacture of the components, operations, maintenance, deconstruction at end of life, transport of the deconstructed parts, and transport and cutting of the expended blades so they can be put into landfills, and the digging and filling of the landfill trenches. The emissions generated by use of the energy it takes to construct the plant from its components and operate it is only a portion of the emissions produced and of the energy used.

Obvious or not, both the size and amount of infrastructure this plant will require is colossal, so it would not be a negligible accounting omission to fail to account for the raw materials transport, production, and mining that need occur to produce the components.

A.3.2 Alternatives

Comments associated with this issue appear in the sub-issues below.

A.3.2.1. Wind turbines

Comment Number: BOEM-2021-0038-DRAFT-0015-10

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

A reasonable alternative regarding the carbon/GHG lifetime emissions is to require Equinor to perform such calculations, submit them for state and federal review, and reopen the comment period once such information is available, withholding approval or disapproval until completed.

A reasonable alternative regarding Visual Impact on Historic Properties, Recreation and Tourism is to approve with modification, the modification being elimination of the turbines closest to shore at the narrow point of the pizza slice.

A reasonable alternative regarding Navigation and Vessel Traffic is to approve with modification, the modification being to increase the buffer zone considerably such that a proper fairway of at least three to four miles is placed around the exterior perimeter of the lease site (to include Empire 1 and Empire 2).

Comment Number: BOEM-2021-0038-DRAFT-0015-11

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

A reasonable alternative regarding visual impact is to approve with modifications, the modification being to eliminate the section of the turbines closest to shore, which are the primary ones which would make a visual impact from shore. The goal should be to eliminate the visual impact and preserve the view. Also, some say that they are already looking at tankers. However, tankers move and go on their way; the turbines are stationery and will reside there for our lifetimes and beyond.

Comment Number: BOEM-2021-0038-DRAFT-0015-2

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

My suggested alternative for Empire 1 on this point is to approve with modifications, with the modification being elimination of the nearest shore turbines, specifically including the first two “circles”

within the lease area as shown in Figure 9 (p. 17). Regarding the Hudson River concerns, extensive study should be made of that effect prior to approval or disapproval.

Comment Number: BOEM-2021-0038-DRAFT-0024-16

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Framing of Project Alternatives in the Draft EIS

We understand that BOEM's recent approach for framing Environmental Impact Studies (EIS) for projects that utilize an envelope project design is to forecast impacts based on what is believed to be the most impactful option within the envelope design. And while we concur that this type of approach seems valid for factors such as using the largest possible turbine height to project viewscape impacts, we do not believe this is the approach that BOEM should take when assessing the impacts of different foundation types. Particularly when assessing impacts between GBF and monopile foundations.

Instead, we strongly recommend that BOEM run scenarios for the utilization of these wind turbine foundation types as completely distinct alternatives in the Draft EIS. The project applicants have already selected jacket foundations for the two substations; thus, substation foundation type would be the same for each alternative. However, the proposed envelope design leaves the question open for whether GBF or monopiles will be used for the projected 174 wind turbine foundations. Based on this factor, we recommend that BOEM run a minimum of three alternatives based on turbine foundation utilization: 1) 100% use of GBF, 2) 100% use of monopile foundations, and 3) a scenario where the proportional utilization of the two turbine foundation types is informed by the most up-to-date assessment of the proportion of the proposed turbine locations that may be unsuitable for GBF, based on the most current information on sediment conditions. For example, 90% GBF and 10% monopile.

We believe that drafting the Draft EIS in this manner is critical to illuminate the differences in each approach and for transparently informing the record of decision on permit conditions designed to avoid, minimize, and mitigate construction impacts, as well as port and labor impacts. Unlike all the other offshore wind projects that BOEM has considered to date, the proposed use of GBF for Empire Wind 1 & 2 has the potential to completely avoid any pile driving noise impacts during turbine installation. This is, by far, the preferred impact avoidance option for all taxa of marine life, including, but not limited to, the whales, dolphins, and sea turtles that are commonly abundant in the New York Bight throughout the entirety of the prime offshore wind construction seasons.

Comment Number: BOEM-2021-0038-DRAFT-0024-18

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Depending upon the findings of state and federally supported benthic surveys, and results of site assessment plans conducted by Equinor, we encourage BOEM to consider the applicability of developing a Fisheries Habitat Impact Minimization Alternative designed to avoid impacting pre-existing complex fish/invertebrate habitat (as was done in the South Fork Wind DEIS). We recognize that Empire Wind 1 & 2 will not have the constraints inherent in the regional, uniform, 1 x 1 nm spacing agreement that exists in the Southern New England lease areas and thus the developers of Empire Wind may be able to avoid pre-existing hard bottom habitats more easily through micro-siting adjustments.

Comment Number: BOEM-2021-0038-DRAFT-0024-6

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Draft EIS should be structured so that the selection of turbine foundation type is presented as at least three separate alternatives 1) 100% GBF, 2) 100% monopile, 3) a mix of GBF and monopile proportionally informed by geophysical survey information. Anticipated environmental and labor impacts as well as anticipated permit conditions should be specified for each option, particularly concerning steps necessary to minimize and mitigate impacts of pile driving noise on marine life including but not limited to federally protected marine mammals, sea turtles, and Atlantic sturgeon.

Comment Number: BOEM-2021-0038-DRAFT-0034-16

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NMFS specifically requested what the fishing industry had been asking since before the EA and before the lease sale: that the fishing grounds be excluded and the area potentially be resited.

“Another alternative considered, but not analyzed in detail, includes the exclusion of areas from leasing due to conflicts between commercial scale wind facilities and fishing. According to the EA, this alternative was eliminated from further analysis in this EA because these concerns are related to larger scale wind development rather than site assessment activities analyzed under this EA. The EA indicates you plan to evaluate such alternatives in detail later if the WEA is eased and if the lessee submits a COP. As you are aware, significant concerns have been raised by the fishing industry, including re-evaluating the lease area. The fishing industry provided you with information on the area, including comments on the analysis of existing data as well as additional data to help illustrate areas of greatest concern. We recommend you consider eliminating areas of the WEA that pose the greatest conflict with the fishing industry prior to issuing a lease. We maintain that by eliminating these areas up front, conflicts with the fishing industry will be reduced.”

Again, BOEM ignored the request and leased the entire area. See attached BOEM Director memo, which contains various options for lease exclusion based on fishing activity but which leased the entire area regardless of fishing industry input as well as cooperating agency input. For BOEM to now say that the lease area was developed with fishing industry input and infer that BOEM has been responsive in any way to fishing industry concerns is purely a lie.

Rhode Island Congressional Delegation feedback: BOEM has already heard three times from the Rhode Island federal Congressional delegation about this project.

Comment Number: BOEM-2021-0038-DRAFT-0041-22

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, the EIS should include alternatives that require clearance zones for North Atlantic right whales 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 with requirements 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-2021-0038-DRAFT-0044-5

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The layout rules outlined in the COP (Volume 1, Section 3.3.1.8) are helpful in explaining Empire Wind’s overall approach to project layout. It would be useful for the description of alternatives section of the EIS to explain in more detail exactly how the rules were applied to generate the specific layout proposed for the two projects. For example, why does rule 2 (perimeter turbines) take precedence over rule 1 (regularity)? Also, the alternatives should describe how the layout would change if larger, and therefore fewer, turbines are ultimately used. The COP suggests that interior locations would be dropped if turbines larger than 12 MW are selected, but specific locations that may be dropped are not identified (Volume 2e, page 8-185). The description of alternatives in the DEIS should specify the layout that would be used for each of the turbine sizes under consideration, and the rationale for selecting each layout (fishing industry input, etc.).

Comment Number: BOEM-2021-0038-DRAFT-0046-14

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Other Sections: 8

Comment Excerpt Text:

Further, accommodating scallop fishing through turbine placement in the Empire Wind 2 area could mitigate turbine impacts on scallop fishing, just as Empire 1 turbine placement has sought to mitigate squid fishery impacts.

Comment Number: BOEM-2021-0038-DRAFT-0047-9

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Increased set-back distance (2 nm) from the Traffic Separation Schemes to conform to U.S. Coast Guard Marine Planning Guidelines. Alternatively, a set-back distance of approximately 1.5 nm from the Traffic Separation Schemes could be considered if 2 nm is not economically viable.

- Inclusion of a fishing transit lane between Empire Wind 1 and Empire Wind 2 as identified in the “New York Bight Transit Lanes Survey, Workshop, and Outreach Summary” (NYSERDA 2020). [Footnote 1: <https://www.nyftwg.com/new-york-bight-transit-lane-workshop-2/>] Defining an appropriate transit lane width should be based upon analysis weighing site-specific factors (i.e., vessel types, density, speed, etc.) and project viability.

- Use of smaller sized turbines along the northern perimeter of the lease area to reduce visual impacts.

Comment Number: BOEM-2021-0038-DRAFT-0051-2

Organization: The American Waterways Operators

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

However, it is critical that such projects not produce navigational hazards that put vessels, their crews, and the environment at risk, or obstruct the movement of commodities on which the nation’s economy depends. It is with these concerns in mind that we worked closely with the U.S. Coast Guard and other stakeholders through the Coast Guard-AWO Safety Partnership to provide towing vessel navigation information for the Atlantic Coast Port Access Route Study (ACPARS).

The study, finalized in 2017, recommended the creation of a 9 NM safety fairway for towing vessels transiting along the Atlantic Coast. The Coast Guard's advance notice of proposed rulemaking, published last year, unfortunately failed to allocate the recommended 9 NM for virtually all of the proposed towing vessel fairways, excepting one: the proposed 9 NM-wide fairway running from Barnegut to Montauk across the New York Bight. AWO has and will continue to urge the Coast Guard to expand all its towing vessel fairways to 9 NM, but in the meantime, we support the width of the proposed NY Bight fairway and appreciate the accommodation that BOEM has made by reducing the size of its proposed lease areas to avoid conflicts with this cut across. Provided the Coast Guard implements its proposal to allocate 9 NM for this fairway, our members do not see a conflict between Empire Wind's lease area and traditional towing vessel traffic, as illustrated below.

Comment Number: BOEM-2021-0038-DRAFT-0051-3**Organization:** The American Waterways Operators**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

The Coast Guard recommends that wind developers establish a minimum 2 NM setback from the outermost layer of turbines in a wind array to the beginning of the adjacent fairway boundary. Although the Coast Guard has not made this a requirement, the agency's recent proposals to reduce the size of most of the towing vessel fairways from the ACPARS- recommended 9 NM to 5 NM would make these setbacks all-the-more imperative for safety, and AWO urges BOEM to emphasize the importance of 2 NM setbacks in its work with wind developers. AWO is aware that some developers have decided to include these setbacks already, but as there are multiple instances in which adjacent wind lease areas are controlled by different developers, consistency is critical to safe transits past the wind energy structures.

If the Coast Guard revises its current proposals by expanding the width of the towing vessel fairways, then the 2 NM setback (or safety buffer as it is referred to in ACPARS) will already be included in the overall width of the fairway. Such is the case in the New York Bight area (as pictured above). However, in areas where 9 NM is not allocated by the Coast Guard for the entire width of the fairway, it is imperative for developers to provide 2 NM of additional space on either side of the fairway to protect both towing vessel transits as well as their own equipment.

Comment Number: BOEM-2021-0038-DRAFT-0052-3**Organization:** Massachusetts Office of Coastal Zone Management**Commenter Type:** State Agency**Comment Excerpt Text:**

The proposed project, located in the northwest portion of the New York Bight, is in or adjacent to Cholera Bank, an area heavily utilized by the commercial fishing industry. This area contains complex bottom features that are sensitive to disturbances which may impact both the physical and biological components of these habitats. In addition, disturbances may impact the populations of species utilizing the area that are relied upon by the commercial and recreational fishermen. Although the COP will be updated to include the reduction in the number of turbine foundations from 242 to 176, a further reduction in turbines to avoid and minimize the impacts to both habitats and fisheries should be considered in the alternative analysis. This reduction may be possible through the incorporation of higher nameplate capacity turbines and should include potential turbine locations for removal from those areas within the project site dominated by habitats that provide important functions for associated marine habitats and resources. The COP suggests potential turbine removal in some locations to minimize impacts to fish resources and fishing activity. A fisheries habitat impact minimization alternative should be included in the EIS to formally address opportunities to reduce impacts to the habitat within and adjacent to Cholera Bank. Construction methods, timing, and associated cable layouts should also be presented in the EIS as additional measures to minimize impacts to fisheries habitats. Further, installation of the WTGs, ESPs,

and offshore cables will have potential water quality impacts caused by both dredging and jetplow activities, including increases in total suspended solids within the vicinity of the cable work. The modeled water quality impacts should be quantified, evaluated, and presented in the EIS, along with measures to minimize and avoid impacts to water quality, seafloor habitats, and fisheries resources from cable laying and protection activities.

Comment Number: BOEM-2021-0038-DRAFT-0057-17

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM SHOULD ANALYZE THE ENVIRONMENTAL IMPACTS FROM GRAVITY-BASED FOUNDATIONS AND MONOPILE FOUNDATIONS AS SEPARATE ALTERNATIVES

Our organizations recommend that the EIS analyze the impacts from gravity-based 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 two very different technologies. BOEM should consider how to present several scenarios (e.g., 100% use of gravity-based foundations, 100% use of monopile foundations, a mix of gravity-based 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-2021-0038-DRAFT-0065-12

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Array Layout

It has become clear that Empire Wind can only estimate how much money they can generate from their lease. When they first won their lease's they planned for about 800 MW of output. The clam industry interacted with representatives of the developers and pleaded with them to spread their turbines out so that the fishing industry could continue to operate in the lease area. Their reply was that the Varrazzano Bridge ship channel is only about a third of a mile wide and that should be enough for the fishing industry. That argument is so poor that it was not worth a response, but the fact is a vessel over 30 feet in length would not attempt to turn around under the bridge.

Comment Number: BOEM-2021-0038-DRAFT-0065-14

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The fishing industry has demanded the turbines be two NM apart in both directions, which would allow fishing by large vessels in good weather. With the larger turbines, they would still get more power out of the same lease than their original plan. However, the developers are so greedy that they have packed almost as many large machines into the lease as they had planned using smaller turbines. They are going

to get almost twice the electrical output out of their lease. Therefore, opening within the lease would be so unsafe that captains would avoid even attempting to fish or even possibly transiting the areas.

Comment Number: BOEM-2021-0038-DRAFT-0065-2

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The clam industry has suggested that the turbines spacing be separated out to two by two Nautical Miles (MM) and placed in straight lines and when possible, follow the bottom contour. These suggestions would, in the clam industry's opinion, solve two problems, allow for fishing by mid-size vessels within the array and open up the array so that vessels safely transit through the area without having to seem many miles to avoid navigate through the crowded turbine array (s).

Comment Number: BOEM-2021-0038-DRAFT-0065-3

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

From the clam industry's perspective, attempting to work with the wind developers has been an unpleasant exercise. When the original bids were sold, it was estimated that with 3.6 MW turbines a lease area could produce about 800 MW of energy. With the creation of much larger turbines with a minimum of 12 MW and possibly larger machines they can generate vastly more power from the same lease. They can produce more power than they originally designed from their lease by operating with fewer larger turbines, which could allow wider spacing, which would allow mid-size fishing vessels to operate within the array and still produce more power than originally planned. However, the energy companies instead filled their lease space with as many large turbines as possible to increase their revenue. The developers found a way to make more money per lease at the U.S. fishing industry's expense.

Comment Number: BOEM-2021-0038-TRANS-063021-0004-5

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

And the last and final thing I will say is that we are thrilled to hear about the fact that Empire Wind is looking at two different foundations, one is the gravity based one which is the least impacting foundation of all the choices in the wind industry. We would simply encourage that this document look at using the most gravity based foundations for as many turbines as possible given their really minimal impact to our oceans and marine life.

Comment Number: BOEM-2021-0038-TRANS-063021-0012-2

Organization: Olar Energy

Commenter: George Poval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We are very pleased that Empire are talking about gravity based rather than pile driving and other methods that are much more damaging to the sea life, and so we are very excited to see this happening here.

Comment Number: BOEM-2021-0038-TRANS-070821-0003-2

Commenter: David Wallace

Commenter Type: Individual

Comment Excerpt Text:

We have proposed on numerous occasions to separate those turbines two miles, two nautical miles, two nautical miles apart in straight lines so that we could operate within those turbine arrays, however, we have found that no one -- none of the developers are interested or willing to spread their turbines out even though they thought that they could get 800 megawatts out of a lease area and now with the greatly expanded power of the new turbines, they can get up to two times that amount of power which means that they are going to generate twice as much revenue as they thought that they could, but unfortunately at the fishery's expense.

A.3.2.2. Cables and landfalls

Comment Number: BOEM-2021-0038-DRAFT-0030-11

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

A full range of reasonable alternatives to the proposed offshore and inshore export cable corridors should also be considered and evaluated, including an alternative to avoid and minimize impacts to important, sensitive, and complex habitats located in the project area. Such habitats include natural hard bottom complex substrates (particularly those with macroalgae and/or epifauna), SAV, dense faunal beds (e.g., cerianthid beds), and shellfish habitat and reefs, other biogenic reefs, prominent benthic features, coastal marshes, subtidal and intertidal flats (e.g., mudflats), and designated Habitat Areas of Particular Concern (HAPC). HAPCs are designated as high priorities for conservation due to the important ecological functions they provide, their vulnerability to anthropogenic degradation and development stressors, and/or their rarity. BOEM should consider an alternative that evaluates how cable installation and operation may impact these different habitat types and identify ways to avoid and minimize impacts to sensitive and complex habitats.

Comment Number: BOEM-2021-0038-DRAFT-0030-12

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Given the location of this project and habitats in and near the project area, it would be reasonable to evaluate ways to avoid and minimize impacts to sensitive habitats along both the offshore and inshore cable routes. This is an accepted practice for cables and other utilities projects and should be a component of the evaluation of impacts from offshore wind development. This may include evaluating modification or expansion of the cable corridors to ensure cables can be routed around complex and sensitive habitats. This alternative should also consider methods used to lay the cable within, or adjacent to, complex habitats for both the offshore and inshore landing locations. Options for avoiding and minimizing impacts related to the methods of construction and routes, that allow for full cable burial to minimize permanent habitat impacts and potential interactions with fishing gear, should be also considered. This is a reasonable alternative that should be considered in the NEPA document as an individual alternative that may be mixed or matched with other alternatives.

Comment Number: BOEM-2021-0038-DRAFT-0030-14

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Coordinated Cable Routing

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.

Comment Number: BOEM-2021-0038-DRAFT-0044-17

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP proposes connecting Empire Wind-1 and Empire Wind-2 to shore independently via two cables along two distinct cable routes, with multiple export cable landfalls for Empire Wind- 2 to reduce impacts to the onshore power grid. As noted above, the EIS should explain why the use of multiple cables is needed, develop and analyze alternatives to this approach, and acknowledge that the use of two cable routes greatly increases offshore impacts, including habitat disturbance and modification, as well as safety concerns for fisheries that use bottom tending mobile gear. The turbine layouts selected for the projects will influence the amount of inter-array cabling required. The Empire Wind-1 project uses more inter-array cabling per MW of power generated than Empire Wind-2 (214 km for 816 MW vs. 267 km for 1,260 MW, page ES-3 of Volume 1 of the COP). Tradeoffs between total cable length and layout configuration should be considered when estimating impacts.

Comment Number: BOEM-2021-0038-DRAFT-0044-2

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Also, given that the two independent projects require two separate cable routes, increasing impacts vs. a single corridor, it would be helpful for the EIS to explain why the project is being developed in two phases and why two cable corridors are required. Our assumption is that this is because combined offtake cannot be achieved at one or the other location, but this is not explained in the COP.

Comment Number: BOEM-2021-0038-DRAFT-0047-79

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Decommissioning

- Provide additional information on decommissioning cable protection and scour protection areas, particularly since the reef like habitat that would form over the course of the facility's operation would be significantly disturbed. The Agencies commend BOEM for requiring the complete removal of export and interarray cables during decommissioning, provided measures are taken to monitor water quality and minimized resuspension of sediment in areas of known or potential contamination.

Comment Number: BOEM-2021-0038-DRAFT-0051-4

Organization: The American Waterways Operators

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Empire Wind's construction and operations plan specified the location of underwater export cables running from the proposed wind arrays to receiving stations off the New York coast.

[see original attachment for illustration of Empire Wind's construction and operations plan on New York coast conflict]

The orange export cable shown above would appear to conflict with the vessel anchorage area at Gravesend. The variant route, represented by the dotted line, follows the navigation lane and stays out of the anchorage area. This would be industry's preferred route. Unless adequately buried, submarine cables risk being damaged by vessel anchors.

Comment Number: BOEM-2021-0038-DRAFT-0054-5

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #4 - We encourage BOEM to use the NEPAAssist Planning Tool [Link: <https://nepassisttool.epa.gov/nepassist/nepamap.aspx>] for project planning and scoping in relation to environmental considerations, particularly when selecting the preferred alternative for cable routes and siting of the onshore components. The web-based application draws environmental data from EPA Geographic Information System (GIS) databases to provide immediate screening of environmental assessment indicators.

Comment Number: BOEM-2021-0038-DRAFT-0057-91

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the preferred route for the Island Park cable landing will likely avoid major impacts to this ecosystem, the developer has also proposed alternate routes which would have serious long-term impacts on Lido Beach and through the saltmarsh of the IBA. [Footnote 372: EOW COP Fig. 2.1-7, p. 2-28.] The alternate routes are still under consideration by the developer. We ask that BOEM evaluate the environmental impacts of these routes as distinctly separate alternatives in the Draft EIS, and we encourage BOEM to use the developer's "preferred route" in the Preferred Alternative of the Draft EIS for this Project.

Comment Number: BOEM-2021-0038-TRANS-063021-0011-1

Commenter: Richard Shurin

Commenter Type: Individual

Comment Excerpt Text:

So I read -- I attempted to read the report to see what other sites were considered besides our very small community for this substation and it looks like nothing else was considered. So I would urge you and whoever has the authority on these matters to please look for another site for the substation.

Comment Number: BOEM-2021-0038-TRANS-071321-0005-3

Commenter: Alexander Kazowski

Commenter Type: Individual

Comment Excerpt Text:

additionally, you know, gather more research sure as to how to appropriate transition lines because as we all know, electricity, generation over a longer transmission lines will actually lose some of its volt, its power over time, the further it has to travel down lines.

A.3.2.3. Project relocation

Comment Number: BOEM-2021-0038-DRAFT-0034-13

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

we attempted to meet with Equinor to discuss potential deconflicting of the Equinor 1 area, we were told that because of Equinor's need to produce a certain amount of electricity from the site and therefore couldn't fully remove our fishing areas, our needs could not be met.

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

Commenter: Andrew Berko

Commenter Type: Individual

Comment Excerpt Text:

5. Where's the logic building such an immense and vast complex inside a lease area so close to the shore when new lease areas MUCH further from shore will be established in the not-too-distant future?

Comment Number: BOEM-2021-0038-DRAFT-0046-16

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Empire Wind Call Area was based on an unsolicited bid that BOEM accepted and moved forward with. No effort was made to evaluate whether other areas outside the footprint of the Call Area were more suitable for a windfarm. More specifically, the COP looks for alternatives only within the lease footprint. For its part, the NOI states that "potential alternatives that the draft EIS could analyze include approving the COP with some no-surface occupancy areas within the Lease Area, navigation corridors or buffers within the Lease Area, time of year restrictions and other possible reasonable alternatives."

FSF raised the issue of failure to consider alternative locations at the lease issuance stage and litigated it. BOEM successfully defended in part on the basis that alternative locations would be considered at the COP phase. So far, no alternative locations have been considered. There was no effort to evaluate, for instance, areas shore-ward of the wind area and outside the traffic lanes as suitable alternative locations for a wind farm. Moreover, there has been no consideration of the two nearby delineated wind energy areas, the Fairways North and South, as potential alternative locations for part or all of the Empire Wind

array. A failure on BOEM's part to sincerely consider these viable potential lease areas as true alternatives to the current Empire lease area would likewise fail to live up to the promises BOEM made to the Court of Appeals for the D.C. Circuit in both its filings and at oral argument. This is especially true given that the recently proposed "OCS-A 0554" lease in the New York Bight directly abuts the current Empire 2 lease area, which will only exacerbate the anticipated cumulative effects on scallop populations in these areas. BOEM must live up to its litigation commitments in its DEIS.

Comment Number: BOEM-2021-0038-DRAFT-0046-3

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Indeed, using data and information actually taken from the Mid-Atlantic, in a paper whose lead author is the principal federal scallop scientist, it was explained that scallops return to scallop beds after they have been actively fished, and do so repeatedly. [Footnote 1: Hart, D., et al., "Spillover of sea scallops from rotational closures in the Mid-Atlantic Bight (United States)," ICES JOURNAL OF MARINE SCIENCE, 77(5) (2010), <https://scholarworks.wm.edu/cgi/viewcontent.cgi?article=3019&context=vimsarticles> (last accessed July 26, 2021).] This is precisely why the U.S. scallop fishery is managed using access areas, which are periodically rotated to allow younger scallop populations to mature to a profitable size. It is also why FSF has continued to request that BOEM consider alternative locations to the Empire Wind 2 lease area, which would occupy valuable scallop grounds. See *infra* at 2 & 4.

Comment Number: BOEM-2021-0038-TRANS-071321-0008-6

Organization: Fishery Survival Fund

Commenter: Brett Sparks

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

And then finally we would continue to suggest that BOEM has still not seriously considered alternative locations for the Empire Wind lease. We were told that this is something that would be taken up during the environmental impact studies, so we would request that BOEM consider alternative locations at this time because we are getting closer to actual installation of these turbines, the location has never been truly considered as far as alternative areas and we would ask that be done.

A.3.2.4. Other comments on alternatives

Comment Number: BOEM-2021-0038-DRAFT-0020-10

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Need to analyze pollution and negative impacts of "No Action" alternative which means a continued dependence of existing polluting fossil fuel facilities like the three plants in Sunset Park

Comment Number: BOEM-2021-0038-DRAFT-0026-1

Commenter: Joe Schmo

Commenter Type: Individual

Comment Excerpt Text:

Why open up the whole coast at once? Can we do a smaller project to see what the impact is?

Comment Number: BOEM-2021-0038-DRAFT-0030-10

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

The proposed project area is designated essential fish habitat (EFH) for numerous managed fish species and trust resources for which NMFS has conservation and management responsibilities, including but not limited to, Northern longfin squid (*Doryteuthis pealii*), Atlantic sea scallops (*Placopecten magellanicus*), and summer flounder (*Paralichthys dentatus*). It is especially important that the habitat impact minimization alternative considers ways to minimize both impacts to important benthic habitats as well as the sensitive life stages of species that rely on them. Longfin squid is a species that may be particularly vulnerable to project impacts as it spawns in the project area by depositing eggs in large clusters on open sandy bottom habitats. Longfin squid spawning and demersal egg development largely occur in the spring and summer months when construction is expected to occur. Cholera Bank is one of the three most important longfin squid spawning and fishing areas on the northeast U.S. Atlantic coast. Therefore, construction methods, timing, and associated cable layouts should also be considered in this evaluation as additional measures to minimize impacts to fisheries habitats. Given the unique habitat features within this lease area, and the important fisheries that rely on these habitats, we consider an alternative that minimizes impacts to Cholera Bank and associated sensitive habitats and benthic features to be a reasonable alternative that should be considered in the NEPA document.

Comment Number: BOEM-2021-0038-DRAFT-0030-6

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 [*Italics: 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. And 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-7

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony
Commenter Type: Federal Agency

Comment Excerpt Text:

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. Similar to the structure of the draft COP and 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-2021-0038-DRAFT-0030-9
Organization: NOAA National Marine Fisheries Service
Commenter: Michael Pentony
Commenter Type: Federal Agency

Comment Excerpt Text:

While the minimization of impacts should be considered in the development of all alternatives, given the particular regional importance of Cholera Bank, it is essential that you consider a discrete alternative that reduces impacts to fish habitats that are more sensitive and vulnerable to impacts within and adjacent to Cholera Bank, such as prominent benthic features (e.g., sand ridges and banks; ridge and swale complexes) and complex habitats. This alternative should not only consider specific turbine locations for removal, but portions of the lease area dominated by habitats that provide important functions for associated living marine resources. While the COP suggests potential WTG removal in some locations to minimize fishing impacts (e.g., “Empire Wind Open Area Layout” depicted in Figure 8.8-37), we recommend that you include a fisheries habitat impact minimization alternative to consider impacts to the habitat within and adjacent to Cholera Bank.

Comment Number: BOEM-2021-0038-DRAFT-0034-26
Organization: Seafreeze Ltd/Seafreeze Shoreside
Commenter: Meghan Lapp
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Now is the time for BOEM to take action and protect reasonable uses of the ocean, i.e. the squid industry, per the Outer Continental Shelf Lands Act. BOEM should include and approve an Alternative in the EIS that removes the entirety of Equinor 1 from buildout approval. Seafreeze and others in the squid industry have requested this since before the EA. Since before the lease. Since before site characterization. Since before Equinor was awarded the NY RFP in 2019 for the site. Since before the NOI and EIS process. We have requested it early and often. Our Senate delegation requested it. NMFS suggested it. Our state R.I. DEM Division of Marine Fisheries highlighted not only the importance and value of the Equinor 1 lease are to the squid fishery and the Rhode Island economy, particularly to businesses like Seafreeze Shoreside, but also the inaccuracies of existing BOEM/NOAA fisheries analysis with regards to this value.

Comment Number: BOEM-2021-0038-DRAFT-0034-28

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Therefore, BOEM should create and approve an alternative excluding the entirety of Equinor 1 from any wind facility construction. It should also include the full range of alternatives originally in the BOEM Director's memo dated March 14, 2016 for excluding areas of the lease to accommodate fishing concerns, in order to develop a reasonable range of alternatives per NEPA

Comment Number: BOEM-2021-0038-DRAFT-0039-10

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

[Underlined: Consideration of alternatives]

The EIS must identify a wide range of reasonable alternatives for every component/phase of EW development before identifying the most environmentally preferable alternative which has the least impact on marine and coastal ecosystems. Those alternatives must include project modifications as well as emerging technologies and methodologies. Given the multidecadal lifespan of the OSW projects with continued impacts from their operation and maintenance activities, permanent non-mitigatable changes to marine ecosystems must be avoided or reduced by adopting the least impacting alternative at every stage in responsible OSW development.

Comment Number: BOEM-2021-0038-DRAFT-0041-18

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 the mitigated or minimized.

Comment Number: BOEM-2021-0038-DRAFT-0057-16

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 48: 40 C.F.R. § 1502.1.] This requirement has been described in former regulations as "the heart of the environmental impact statement." [Footnote 49: 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 50: *Monroe County Conservation Council v. Volpe*, 472 F.2d 693 (2d Cir. 1972).] Even under current regulations, which several commenters are challenging as illegal, the agencies must "[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 51: 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.

To ensure BOEM can perform a sufficient NEPA review of the Empire Wind Project, the Construction and Operations Plan (COP) must provide enough specifics on each possible configuration covered by the proposed project design envelope (PDE) to enable evaluation of impacts on affected species and to fully evaluate the proposal. For example, it would be insufficient to simply identify the total number of turbines that might be built, because the timing of pile driving is also critical to evaluating noise-related impacts to marine mammals and other species. Additionally, 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. The design envelope alternative also cannot be 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 52: Id. § 1502.1.]

Comment Number: BOEM-2021-0038-DRAFT-0064 -5

Organization: U.S. Coast Guard

Commenter: Michael Emerson

Commenter Type: Federal Agency

Comment Excerpt Text:

The Coast Guard requests BOEM include an alternative that takes the Coast Guard Marine Planning Guidelines (MPG) into account, particularly the two nautical mile setback from the edge of the Traffic Separation Schemes.

Comment Number: BOEM-2021-0038-TRANS-063021-0012-4

Organization: Olar Energy

Commenter: George Poval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We also would like to ask that in this process, and I haven't really heard of it much, I have heard people talk about judging wind not against nothing, but against what is currently being done and I agree with that. I would also like to place into the discussion, as part of the no action alternative that must be done for this process, we should be also looking at the current impacts of the current uses in the area and what the impacts that they have are so that we can have a clearer picture of what impacts of the wind farm would be and how they would be different from say things that are happening right now like the dredging and dragging methods that are used by some of the fishing groups to basically get what they need and leave the disaster behind them.

A.3.2.5. Alternate technology or energy source

Comment Number: BOEM-2021-0038-DRAFT-0036-5

Commenter: Anne Lazarus

Commenter Type: Individual

Comment Excerpt Text:

Roof-top wind and solar will produce the electricity we need.

Comment Number: BOEM-2021-0038-DRAFT-0039-61

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS must evaluate all reasonable alternatives to current COP activities and adopt that alternative which has the least/minimal impact to EFH. Such a Fisheries Habitat Minimization Alternative would avoid siting foundations in/routing cables through complex habitats to decrease the overall adverse impacts to EFH and lessen the direct mortality of fish and invertebrates. [Footnote 55: South Fork Wind Farm and South Fork Export Cable Project DEIS, 3-18, 3-36]

Comment Number: BOEM-2021-0038-DRAFT-0047-43

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Other Sections: 10.1

Comment Excerpt Text:

Socioeconomics Impacts:

- Tourism and Recreational Activities:
 - Avoidance of construction during peak summer tourism season from Memorial Day through Labor Day, especially summer holiday weekends.
 - Evaluation of impacts from temporary beach closures.
 - Characterize potential use of nearshore coastal and beach areas for pipestring staging during construction. Evaluate alternative locations to minimize disturbance.
-

Comment Number: BOEM-2021-0038-DRAFT-0065-18

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

European Countries and Ocean Wind Farms

Who is pushing for ocean wind energy? It is the European and some ENGOs are the groups pushing ocean wind energy. The European are interested because they build most of the wind turbines, cables and install the arrays with their ships and labor. They are the most advances and already have the technology. The EGOs are pushing to reduce the greenhouse gases, and think that producing 3,000 tons of steel to build and install a turbine does not produce greenhouse gases. Reduction is greenhouse gases is necessary to slow or stop the warming of the earth. The Paris Agreement require all member countries to cut greenhouse by 2030, which most likely will not happen. It is obvious that wind and solar energy cannot supply constant electric power to the country 100 percent of the time and batteries are not the answer. Therefore, a back system is necessary and nuclear power is the solution if the public will agree, otherwise gas-fired power plants will be needed to carry the load when renewable cannot cover the demand.

France has already cut their greenhouse gases by more than anyone else has, and they know what their electric power will cost is. Their nuclear power plants run full time and the cost of operation is known. For the rest the countries with large renewable systems they will need a 100 percent backup system made up of nuclear, gas or coal fired power plants. That requires twice as much capacity and capital. Nevertheless, with renewable systems, operating at about 40 percent of capacity the capital investment is being wasted about 60 present of the time. The reverse is true for the backup system that operates at 60 percent and is down 40 percent of the time. Replacing transportation with electric vehicles is going to make the problem worsen. This renewable system is a large waste of capital that the ratepayers must pay.

The same thing can be said for the back up systems, either nuclear and/or natural gas power plants. The entire system is very expensive and inefficient.

Whatever wind capacity is installed, the United States energy system will need more generating power to cover the shortfall in capacity compared to demand. The United States will find that nuclear and gas-fired power plants will need to be built for the reasons above. Because of that fact, it makes no sense to build large offshore wind farms, like Empire Wind when wind farms can never solve the problem, the power must be on all of the time.

Comment Number: BOEM-2021-0038-DRAFT-0065-20

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In the United States the power distribution system in general goes from the west to the east on the east coast. The grid is set up to have smooth distribution of electric power to the customers along the east coast. There are very few large substations on the coast, but those that are there were built as part of a large, now out of service power plants. If there is large plant still operation the wind developers want them closed so that they can connect their export cable (s) to the plants distribution grid. Otherwise, they must build large substations on the coast or run their export power cable to the west and tie into inland substations, which are mostly closed coal, fired power plants. The states are closing some nuclear and coal power plants and the wind developers are taking over those substations. However, that creates another problem, all of the capacity that is being taken out by closing nuclear, coal and gas power plants must have the same amount of non-wind power to carry the load when the wind does not blow, which is about sixty percent of the time. It is logical that instead of build wind farms in the ocean, the United States should build modern low carbon foot print power plants at the sites where the substations are and run them at 100 percent of the time which would save huge amounts of money and have a safe and reliable electrical system.

Comment Number: BOEM-2021-0038-DRAFT-0065-8

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

If the objective is lower green house gas discharge, more not less nuclear power will be required. However, gas fires plants which are cheaper to build and can be built quickly will become the backup system in the near term. The gas plants must be on line to keep the power on. The cost of keeping the gas-powered plants on line, in standby mode, will drive their cost up because they will be down about 40 percent of the time. The backup power will operate about 60 percent of the time when the wind farm cannot meet the demand, which will be about 40 percent of the time.

Comment Number: BOEM-2021-0038-DRAFT-0065-9

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The ENGO and the federal and state governments have been sold a bill of goods by the ocean wind developers. They know that the sensible plan is to build nuclear power plants that run 24 hours a day for years. The wind turbines are not a reliable power source.

Comment Number: BOEM-2021-0038-TRANS-070821-0006-2

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

I am not totally against clean energy at all, I am in fact in support of building solar panels on top of peoples' roofs and wind turbines in specific places but not here off the coast of Long Beach, New York and in New York City.

Comment Number: BOEM-2021-0038-TRANS-071321-0004-2

Organization: New York Lawyers for the Public Interest

Commenter: Zachary Hirschfeld

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Third and finally, the environmental review must ensure that the energy produced will serve both peak and baseload demand on New York's grid so that we can replace three dirty peak power plants in Sunset Park as well as the 16 other peak power plants across New York City with cleaner, more resilient resources of energy. To this end, this project must be compatible with battery storage systems to deploy its wind energy on days when energy usage is highest.

A.3.3 Bats

Comment Number: BOEM-2021-0038-DRAFT-0015-3

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

Therefore, again, we have no idea of what the effects of the presence and operation of the turbines will be on birds and bats, since we do not know what is out there or when it is there. Nor does the NYSERDA Avian and Bat study truly examine the current real life conditions in that part of the ocean. The study by Ecology and the Environment (consulting company) could better be considered a bench study that looked at other studies. No actual observations were made for this E&E study, for example using observer ships placed at sea to see what is out there. The Equinor Tetra Tech 2018 Bat Study placed only one detector, during one year (2018), and had an undue number of "unidentified" detections, meaning the species could not be determined. This study lacks both information over time and should have been conducted over more than one year (Equinor could have easily examined 2019 as well), and with only one detector lacks statistical significance and should have used a greater number of detectors deployed at the same time interval.

Comment Number: BOEM-2021-0038-DRAFT-0015-5

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

My suggested alternative for Empire 1 on this second point is to require more study on the effects of marine life, and avian and bat migration prior to approval or disapproval. More clarity should be brought to defining the species recorded, with a much lower percentage of "unknowns" in the study findings. Also, a greater number than one (1) study ship should be deployed, as the one ship encountered various difficulties which impeded the entirety of study tasks while at sea.

Comment Number: BOEM-2021-0038-DRAFT-0031 -23

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Migratory bats found at Gateway include little brown myotis (*Myotis lucifugus*), silver-haired bat (*Lasiurus noctivagus*), red bat (*Lasiurus borealis*), and hoary bat (*Lasiurus cinereus*).

Comment Number: BOEM-2021-0038-DRAFT-0039-34

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

A comprehensive survey of bats offshore and along the coasts of the Gulf of Maine, mid-Atlantic, and the Great Lakes detected bats up to 70 nm from the mainland, although their activity generally declined with increased distance from shore. [Footnote 133: Peterson, T. S., Pelletier, S. K., & Giovanni, M. (2016). Long-Term Bat Monitoring on Islands, Offshore Structures, and Coastal Sites in the Gulf of Maine, Mid-Atlantic, and Great Lakes - Final Report. Prepared by Stantec for the U.S. Department of Energy.] However, there is very little data available on the interaction of bats with offshore wind energy turbines.

As discussed below, there is increasing evidence that various bat species do regularly use the offshore environment and thus the potential of their collisions with EW1/EW2 wind turbines, and offshore substations (visible and lighted structures) resulting in habitat avoidance, displacement, potential injury, or mortality. [Footnote 134: BOEM. (2021). EW COP Appendix S: Bat Impact Assessment for the Proposed Empire Offshore Wind: Empire Wind Project (EW 1 and EW2) in the New York Bight] The bat species potentially present in the EW1/EW2 project areas are already facing multiple stressors on land including WTG collisions, deadly diseases like the fungal white-nose syndrome, habitat loss, etc., which increases their vulnerability to additional take from the expansion of the built-environment in coastal and marine habitats. The ongoing loss of habitats, coastal climate change impacts, increased human activities onshore leading to changes in shoreline and marine environment, etc. can potentially alter the behavior of cave-dwelling and tree-roosting bats, and alter the migratory paths of the tree roosting species, thus increasing their use of the offshore environment.

In its EIS, BOEM must evaluate all potential impacts to bats including cumulative impacts from other regional OSW and non-OSW offshore and coastal activities, adopt a precautionary approach where the data is inadequate or absent, consider alternatives to all aspects of the EW COP, and develop wildlife impact avoidance and mitigation strategies at the outset in consultation with USFWS and other relevant agencies.

Comment Number: BOEM-2021-0038-DRAFT-0039-35

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Nine species of native bats have presence in the New York – New Jersey area. [Footnote 135: Bats of New York, https://www.dec.ny.gov/docs/administration_pdf/batsofny.pdf] [Footnote 136: New Jersey Agricultural Experiment Station: The Facts About Bats in New Jersey, <https://njaes.rutgers.edu/fs1207/>]

- Of the six cave dwelling resident bats [little brown bat (*Myotis lucifugus*), northern long-eared bat (*M. septentrionalis*), eastern small-footed bat (*M. leibii*), Indiana bat (*M. sodalis*), tricolored bat (*Perimyotis subflavus*), and the big brown bat (*Eptesicus fuscus*)], the Indiana bat is listed as endangered [Footnote

137: US Fish and Wildlife Service - Environmental Conservation Online System (ECOS): Indiana bat (*Myotis sodalis*) <https://ecos.fws.gov/ecp/species/5949>] and the northern long-eared bat is a threatened species under the ESA. [Footnote 138: US Fish and Wildlife Service - Environmental Conservation Online System (ECOS): Northern Long-Eared Bat (*Myotis septentrionalis*) <https://ecos.fws.gov/ecp/species/9045>] The USFWS is currently conducting a court-ordered review to determine, by December 2022, if the northern long-eared bat warrants uplisting to endangered status under the ESA. [Footnote 139: https://www.biologicaldiversity.org/species/mammals/northern_long-eared_bat/pdfs/Dkt-96-Northern-Long-ear-Bat-Remedy-Order.pdf] The listing status of the tricolored bat is also being reviewed by the USFWS. [Footnote 140: USFWS - Environmental Conservation Online System (ECOS): Tricolored bat (*Perimyotis subflavus*) <https://ecos.fws.gov/ecp/species/10515>]

- The three migratory tree bat species include the silver-haired bat (*Lasiurus noctivagans*), eastern red bat (*Lasiurus borealis*), and the hoary bat (*Lasiurus cinereus*).

Motus data indicate tree-roosting as well as cave-dwelling bat species making cross-water flights near Cape Cod, e.g. eastern red bats, [Footnote 141: Tracking eastern red bats: Motus Wildlife Tracking System <https://motus.org/data/tracksSelect?e=2013-01-01&l=2021-12-31&s=100250>] hoary bats [Footnote 142: Tracking hoary bats: Motus Wildlife Tracking System <https://motus.org/data/tracksSelect?e=2013-01-01&l=2021-12-31&s=100270>], and eastern small-footed bats. [Footnote 143: Tracking eastern small-footed bats: Motus Wildlife Tracking System <https://motus.org/data/tracksSelect?e=2013-01-01&l=2021-12-31&s=100420>] The northern long-eared bat has been tracked making long distance flights over open water in, [Footnote 144: Tracking northern long-eared bat: Motus Wildlife Tracking System <https://motus.org/data/tracksSelect?e=2013-01-01&l=2021-12-31&s=100450>] and documented roosting and hibernating on offshore islands of [Footnote 145: Brown, J., McAlpine, D., & Curley, R. (2007). Northern Long-eared Bat, *Myotis septentrionalis* (Chiroptera: Vespertilionidae), on Prince Edward Island: First Records of Occurrence and Over-Wintering. *Canadian Field Naturalist*, 121(2), 208-209; Dowling, Z., Sievert, P., Baldwin, E., Johnson, L., Von Oettingen, S., & J. Reichard, J. R. (2017, June). Flight Activity and Offshore Movements of Nano-Tagged Bats on Martha's Vineyard, MA: Final Report. OCS Study BOEM 2017-054.] the Gulf of Maine. The northern long-eared bats have also shown to be present on both Martha's Vineyard and Nantucket confirming that they do cross open water. In 2015 a tagged Indiana bat (*Myotis sodalis*) was detected on Cape Cod and Nantucket [Footnote 146: Tracking northern long-eared bat: Motus Wildlife Tracking System <https://motus.org/data/tracksSelect?e=2013-01-01&l=2021-12-31&s=100450>] and a recent survey showed offshore movements of little brown bats between Martha's Vineyard and Cape Cod. [Footnote 147: Dowling, Z. R. 2018. Not Gone with the Wind: Addressing Effects of Offshore Wind Development on Bat Species in the Northeastern United States. Chapter III: Flight activity and offshore movements of nano-tagged bats on Martha's Vineyard. University of Massachusetts Amherst, PhD Dissertation] Acoustic survey efforts identified *Myotis* calls at 63% of all surveyed coastal and offshore sites (in Gulf of Maine, mid-Atlantic, Great Lakes) and confirmed their presence at 89% of the sites. [Footnote 148: Peterson et al. 2016.] Eastern red bats appear to be the most widespread and active off the Atlantic Coast, accounting for 40% of all detected bat activity offshore in a 2016 survey. 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 149: Peterson et al. 2016.]

In view of the confirmed observations of various bat species using the offshore environment, it is extremely likely that some if not all could be present in the EW1/ EW2 lease area at various times, either foraging, roosting, or in transit during seasonal migrations.

Comment Number: BOEM-2021-0038-DRAFT-0039-36

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Collisions with WTGs and noise pollution are the primary impacts of OSW on bats. More than half a million bats are likely killed every year in the US and Canada from collisions with land-based wind turbines. [Footnote 150: Hayes, M. A. (2013). Bats Killed in Large Numbers at United States Wind Energy Facilities. *BioScience*, 63(12), 975–79. <https://doi.org/10.1525/bio.2013.63.12.10>] Fatal collisions of bats with land-based WTGs [Footnote 151: Rollins, K. E., Meyerholz, D. K., Johnson, G. D., Capparella, A. P., & Loew, S. S. (2012). A Forensic Investigation Into the Etiology of Bat Mortality at a Wind Farm: Barotrauma or Traumatic Injury? *Veterinary Pathology*, 49(2), 362–71.] mostly at low wind speeds on warm nights during migration are now well-documented. [Footnote 152: Arnett, E., Huso, M., Schirmacher, M. & Hayes, J. (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>] Migratory tree-roosting bat species seem to be particularly attracted to WTGs on land, with the three species found in NY-NJ (hoary bats, silver-haired bats, eastern red bats) accounting for almost 80% of all bat fatalities at wind facilities in North America. [Footnote 153: Arnett, E. B. & Baerwald, E. F. (2013). Impacts of Wind Energy Development on Bats: Implications for Conservation. *Bat Evolution, Ecology, and Conservation*, 435–56. 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.] Some of these bats have also been recorded altering course towards turbines. [Footnote 154: Cryan, P. M., et al. (2014). Behavior of Bats at Wind Turbines. *Proceedings of the National Academy of Sciences of the United States of America*, 111(42), 15126-15131. <https://doi.org/10.1073/pnas.1406672111>] This attraction to turbines could be from bats perceiving WTGs as potential roosting sites, using the structures for navigational purposes while migrating, [Footnote 155: South Fork Wind Farm and South Fork Export Cable Project Draft Environmental Impact Statement (DEIS), Table H-36, 86 Fed. Reg. 1520 (Posted January 4, 2021).] mistaking smooth turbine surfaces for water, foraging prey that congregate near lighted turbines/structures that attract insect prey, [Footnote 156: BOEM. (2021). South Fork Wind Farm and South Fork Export Cable DEIS - Development and Operation Biological Assessment] or could be due to an as yet unknown reason. Mortality of the cave dwelling bat species found in NY-NJ (little brown bat, northern long-eared bat, tricolored bat, and big brown bat) at land-based WTGs has also been documented. [Footnote 157: BOEM. (2021). South Fork Wind Farm and South Fork Export Cable DEIS - Development and Operation Biological Assessment]

Comment Number: BOEM-2021-0038-DRAFT-0039-37**Organization: Defenders of Wildlife****Commenter Type: Non-Governmental Organization****Comment Excerpt Text:**

Better understanding of bat presence and behavior in the EW lease area is needed to afford them protection from potential adverse impacts from project activities. Lack of knowledge on the precise spatiotemporal movements of specific bat species cannot and must not be used to draw any conclusions on the potential presence of any native bat species in the EW area. Both tree-roosting and cave-dwelling bats populations have high mortality from collisions with terrestrial WTGs, [Footnote 158: NYSERDA - NYS-ETWG. (2021, July). State of the Science Workshop on Wildlife and Offshore Wind Energy 2020 – Cumulative Impacts: Bats Workgroup Report] and most, if not all, of the 9 bat species found in NY-NJ have been tracked crossing open waters of the northeast Atlantic. The EIS must consider impacts to all bat species with a presence in this region. The EIS must include the endangered Indiana bat because it has been shown to be present in the region and tracked crossing the coastal waters. [Footnote 159: Tracking Indiana bat: Motus Wildlife Tracking System <https://motus.org/data/tracksSelect?e=2013-01-01&l=2021-12-31&s=100460>] BOEM must consider all available science and technology-based recommendations on avoidance and mitigation measures at the outset lest more species become listed within the proposed lifetime of the EW projects.

Comment Number: BOEM-2021-0038-DRAFT-0047-22

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Discuss seasonal distribution, aggregation, abundance and migration routes.

- Discuss sonar and echolocation for bats.

Comment Number: BOEM-2021-0038-DRAFT-0047-24

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Evaluation of northern long-eared bat (NLEB) activity year-round within the vicinity of the Project.

Comment Number: BOEM-2021-0038-DRAFT-0047-36

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Avian and Bats:

- Behavior and physiological impacts from aviation lighting.

- Evaluation and consideration of the Block Island Wind Farm post-construction acoustic surveys, and vessel-based surveys on the Fugro Enterprise that were completed in 2017 when assessing impacts to avian and bats.

Comment Number: BOEM-2021-0038-DRAFT-0047-37

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Rare, Threatened and Endangered (RTE) Species:

- Assessment of impacts to RTE species along all alternative routes, including landfall sites.

- Avoidance of work during time periods to avoid impacts to RTE species.

- Evaluation of potential impacts to the northern long-eared bat (NLEB), including tree clearing during construction activities.

Comment Number: BOEM-2021-0038-DRAFT-0057-76

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 do regularly use the offshore environment. BOEM should leverage new information on bat presence offshore, including data submitted to the Motus Wildlife Tracking System, [Footnote 305: 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 G, 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 the Empire Wind lease area (Figure 1).

[see original attachment for map illustrating bat activity along the East Coast]

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 July 11, 2021)

Comment Number: BOEM-2021-0038-DRAFT-0057-77

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 because it claims that the Indiana bat is not believed to be found near the Project. [Footnote 306: EOW COP, Appendix R, p. R-5.] However, in 2015, a tagged Indiana bat was tracked making a potential cross-water flight over Long Island Sound (see flight path in Figure 1). [Footnote 307: 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.] Given the proximity of this detection to Empire 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 consider potential impacts to Indiana bats. BOEM should consult with USFWS about potential impacts to Indiana bats and these impacts should be analyzed in the Draft EIS.

Additionally, Indiana bat calls can be difficult to distinguish from those of certain other *Myotis* species, [Footnote 308: 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 309: EOW COP, Appendix R, p. R-15.] so it is inappropriate to dismiss the possibility of Indiana bats occurring in the Empire Wind lease area just because no bat calls were positively identified as belonging to an Indiana bat. [Footnote 310: Id.]

Comment Number: BOEM-2021-0038-DRAFT-0057-78

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

POTENTIAL IMPACTS TO CAVE-HIBERNATING BATS, INCLUDING THE FEDERALLY-LISTED NORTHERN LONG-EARED BAT, FROM OFFSHORE COMPONENTS OF THE PROJECT MUST BE ASSESSED

The Empire Wind COP indicates that cave-hibernating *Myotis* bats are not expected to be present in the Lease Area and therefore risk to these bats from project operations is low. The COP makes this determination based on two inaccurate claims, that (1) in the Mid-Atlantic, *Myotis* bat species have never been detected further than 11.5 km offshore, [Footnote 311: EOW COP, p. 5-85.] and (2) cave-hibernating bats are rarely observed offshore. [Footnote 312: EOW COP, p. 5-84.]

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 313: 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. Notably, 22.8% of all bat passes detected in acoustic surveys conducted for Empire Wind were classified as high frequency, unknown species. [Footnote 314: EOW COP, Appendix R, p. R-8.] Although the COP dismisses these calls as likely eastern red bat (*Lasiurus borealis*) calls, given the paucity of data about how bats use the offshore environment, it is inappropriate to assume that none of these high frequency, unknown species calls belong to *Myotis* bats [Footnote 315: EOW COP, Appendix R, p. R-15.] and that *Myotis* are not present in the Project Area.

Furthermore, cave-hibernating bats may be found offshore more frequently than the COP's assessment implies. 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 316: Peterson et al. 2016.] 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 north of the Project Area (see Figure 1). [Footnote 317: Bird Studies Canada 2018; See also Dowling, Zara D. 2018. "Not Gone with the Wind: Addressing Effects of Offshore Wind Development on Bat Species in the Northeastern United States. Chapter III: Flight activity and offshore movements of nano-tagged bats on Martha's Vineyard." University of Massachusetts Amherst, PhD Dissertation; Dowling, Z., P. R. Sievert, E. Baldwin, L. Johnson, S. von Oettingen, and J. Reichard (2017). Flight Activity and Offshore Movements of Nano-Tagged Bats on Martha's Vineyard, MA. OCS Study BOEM 2017-054.

U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, VA. 39 pp.]

The presence of the federally threatened northern long-eared bat (*M. septentrionalis*) 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 318: Bird Studies Canada 2018.] Furthermore, a northern long-eared bat was acoustically detected 34 km offshore around South Fork Wind Farm. [Footnote 319: Revolution Wind Farm (RWF) COP at 4.3.7.1, p. 516.] Although Empire Wind's COP claims that the use of the Lease Area by northern long-eared bats "is unlikely, resulting in very limited risk," [Footnote 320: EOW COP, p. 5-91.] this claim is not justified given the presence of northern long-eared bats offshore on the OCS coupled with the quantity of high frequency, unknown species calls within the Project Area that could, potentially, be from northern long-eared bats. BOEM

should consult with USFWS about potential impacts to northern long-eared bats from the offshore components of Empire Wind and the Draft EIS should assess potential impacts of the offshore components of the project on northern long-eared bats and other cave-hibernating bats.

Comment Number: BOEM-2021-0038-DRAFT-0057-79

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

SEASONAL USE OF THE PROJECT AREA BY MIGRATORY TREE BATS DOES NOT IMPLY LOW IMPACT

Empire Wind’s COP emphasizes the seasonal use of the offshore environment by migratory tree bats, [Footnote 321: EOW COP, p. 5-89 and 5-95.] and acknowledges that there is “some risk apparent during fall migration.” [Footnote 322: EOW COP, p. 5-95.] When preparing the Draft EIS, BOEM should note 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 suggest that seasonal-only exposure can still present significant risk to bats.

The majority of migratory tree bats fatalities from land-based wind energy occur during the spring and fall migration period. [Footnote 323: 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—population-level declines that could occur during the lifetime of Empire Wind—and these declines are associated with a 22% risk of extinction if widespread mitigation measures are not adopted. [Footnote 324: Frick et al. 2017.] Although this research focused on hoary bats, the study authors caution that other migratory tree bats, such as eastern red bats 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 the 2018 acoustic survey for Empire Wind found that 70% of all detected bat passes belonged to eastern red and silver-haired bats. [Footnote 325: EOW COP, p. 5-89.]

Although no hoary bats calls were recorded within the Lease Area in the 2018 survey, [Footnote 326: EOW COP, p. 5-95.] the COP’s suggestion that Empire Wind’s operations will be “very low risk to this species” [Footnote 327: Id.] may not be correct. In the 2018 survey, 3.6% of all bat passes were categorized as unidentified, low frequency calls.

Although these calls could have originated from big brown bats (*Eptesicus fuscus*) or silver-haired bats, it is possible they could be hoary bat calls. Furthermore, hoary bats have been shown to travel without echolocating, indicating that a lack of recorded hoary bat calls does not necessarily mean hoary bats are not present. [Footnote 328: Corcoran and Weller 2018.] Recent research that documented inconspicuous echolocation in hoary bats only detected normal hoary bat calls on 6 out of 79 flights, [Footnote 329: Id. Note than for 34 of the 79 hoary bat flights, the authors recorded a previously undocumented type of low energy, “micro” call which require closer distances to microphones to detect.] whereas other bat species that passed the acoustic detectors were always recorded echolocating.

Limited research does support that migratory tree bats are less prevalent over the OCS than land and their presence seems to decrease with distance from shore, [Footnote 330: Peterson et al. 2016.] but these species may be more common in Empire Wind’s Project Area than the COP implies. 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 331: 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 332: Id.] Data in Motus also indicate eastern red bats and hoary bats have made cross-water flights near Cape Cod (see Figure 1). [Footnote 333: 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 334: 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.

With limited research available on bats offshore, BOEM must consider the evidence from land-based wind and assess the potential that seasonal interactions with offshore wind turbines could cause significant impacts on migratory tree bats.

Comment Number: BOEM-2021-0038-DRAFT-0057-80

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 335: 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 336: 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 337: 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 acknowledges that bats are likely to be attracted to wind farm structures. [Footnote 338: EOW COP, p. 5-95.] Further, that bats have been found roosting aboard support vessels during the construction of Block Island Wind Farm is suggestive that presence of artificial roosting structures may prove attractive to bats in the offshore environment. [Footnote 339: RWF COP at 4.3.7.2, p. 420.] Although more research is needed to characterize how bats are using the Project Area and the OCS, it would be reasonable to assume that bats—particularly migratory tree bat species that seem to be attracted to land-based wind turbines—may experience a similar attraction to turbines offshore and that these turbines might be particularly attractive due to representing sparse resources, which could put bats at increased risk for collision. If offshore wind turbines are attractive to bats, the impact assessment in the COP, which relies heavily on bat surveys in the absence of turbine structures, may dramatically underestimate risk. 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 of turbine structures to minimize impacts.

Comment Number: BOEM-2021-0038-DRAFT-0057-81

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM CANNOT ASSUME THAT FEWER, LARGER TURBINES REDUCE RISKS TO BATS

In Empire Wind’s PDE, the design scenario with higher numbers of smaller capacity turbines (vs. fewer, larger turbines) is considered to have the greatest impacts on bats. [Footnote 340: 340 EOW COP, p. 5-92. Note that this volume of the COP uses 240 x 10 MW turbines as the maximum design scenario, as volume 2 of the COP has yet to be updated to reflect updates to the PDE that used 174 x 12 MW turbines as the maximum design scenario.] Although no research has been done on tower height and bat fatalities in the offshore environment, research onshore has shown that bat mortality may increase with tower height, [Footnote 341: 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 342: 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.Ettersson, 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 343: 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 344: 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-2021-0038-DRAFT-0057-82

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BAT RISK OFFSHORE IS LIKELY GREATER THAN CHARACTERIZED IN THE COP

For the reasons discussed above, the COP does not adequately reflect the risk to bats offshore. Cave-hibernating bats are found more often and further offshore than described, seasonal exposure to WTGs does not preclude serious impacts, and bats may be attracted to offshore wind facilities, thereby increasing the likelihood of collisions. The measures outlined in the COP are inadequate to monitor and, if necessary, mitigate impacts to bats.

Determining risk and adaptively managing to minimize impacts relies on monitoring, but traditional fatality monitoring is not feasible offshore. Given the challenges of conducting fatalities assessments at offshore sites, [Footnote 345: 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 346: Assessing bat fatalities based on carcasses found on vessels 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-83

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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. USFWS was recently ordered by a federal court to determine whether the northern long-eared bat warrants listing as an endangered species under the ESA by December 2022, after remanding the agency’s threatened listing in 2020. [Footnote 347: *Ctr. for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020).]

Similarly, numerous other east coast bat species, such as the Indiana bat, little brown bat, eastern small-footed bat, big brown bat, 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 348: Endangered and Threatened Wildlife and Plants; 90-Day Findings for Five Species, 82 Fed. Reg. 60362, December 20, 2017.

<https://www.federalregister.gov/documents/2017/12/20/2017-27389/endangered-and-threatened-wildlife-and-plants-90-day-findings-for-five-species>] and USFWS staff have communicated their intent to assess the little brown bat for potential ESA-listing. [Footnote 349: 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 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 350: 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 351: Frick et al. (2017); EPRI (2020).] 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 352: 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-2021-0038-DRAFT-0057-84

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 353: Vineyard Wind Draft EIS 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 354: 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 355: 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 356: Id.] Research from Canada found that 20% of little brown bat movements exceeded 500 km, [Footnote 357: 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 358: 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 359: 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 is 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 Empire 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-2021-0038-DRAFT-0057-85

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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

For the reasons discussed above, previous cumulative impacts assessments likely seriously underestimate risk to bats. 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.

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 360: 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 361: 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 362: 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.

The Draft EIS for Empire Wind should specifically include 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, fund, and encourage their development and testing at Empire 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. At land-based wind facilities, pre-construction bat activity surveys are poorly correlated with post-construction fatalities. [Footnote 363: 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. https://tethys.pnnl.gov/sites/default/files/publications/Pre-Post-construction_Synthesis_FINAL_REPORT.pdf.] 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 364: EOW COP, p. 5-89, 5-95; 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 ~7°C.] 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 365: 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 Feb. 20, 2021).] ultraviolet lighting (which many bat species can see), [Footnote 366: NREL Wind Research, Technology Development and Innovation Research Projects <https://www.nrel.gov/wind/technology-development-innovation-projects.html> (last visited Feb. 20, 2021)] and ultrasonic noise emitters (to possibly ‘jam’ bats’ radars and make wind facilities unappealing to bats). [Footnote 367: <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 368: <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-2021-0038-DRAFT-0060-1**Commenter:** Bonnie Brady**Commenter Type:** Individual**Comment Excerpt Text:**

The effects of this two-WEA project on the Eastern Red Bat and other tree bats, while not endangered or critically threatened, must be studied more effectively within the WEAs before the project should move forward. One year of acoustic survey work is not enough to determine the level of migrations that occur through the Empire Wind areas. A single bat acoustic detector on a roving offshore research vessel for one year is not even close to enough research before deciding to plaster 174 turbines through a historic bat migration offshore corridor in the Northeast. Over 100 sittings per day during the fall migration from September through November, the carnage that would result from over 174 spinning turbines could literally push the several species into threatened status. This documented bat migration offshore within the Empire Wind 1 2 WEAs is significant, as it is a northeastern migration previously unaware to bat biologists. It must be further investigated over a longer period of time than purely one year. It must be broadened to include study of the entire area of both WEAs for a period of no less than three years to get a baseline data before considering moving forward with the project, especially considering the wind turbines are deadly to bats, both from strikes and barometric pressure changes.

Comment Number: BOEM-2021-0038-DRAFT-0062-14**Commenter:** Alena Walters**Commenter Type:** Individual**Comment Excerpt Text:**

BATS

The COP in the Bat Assessment makes similar conclusions about bats as it did for Aves. I.e. even though bats pass through the lease area during migration, “impact to populations is unlikely because low numbers of individuals are expected to be exposed to the Project during migration”, presumably at any one time and relative to the entire distribution. “Therefore”, it concludes, “population-level impacts are unlikely.” Except for that subset of the bat species which are known to not be found that far from shore, the conclusion that population-level impacts are unlikely are certainly not supported by the assertions.

The assessment only considered “collisions” with turbines to be hazardous to bats, whereas the change in pressure from air being swept near the turbine blade is enough to collapse the lungs of a bat and kill it, without any contact with the parts of the turbine necessary for the turbine to cause its death. Likewise strong air currents from the rotor sweep can throw the bat and injure its delicate wings without any turbine contact.

The bat assessment reads, “The EW 1 onshore substation site ...consist[s] primarily of highly urbanized environments and existing infrastructure with little natural habitat areas. Since the EW 1 area is highly urbanized, it is not expected to provide bat habitat and will not be discussed further.” This is untrue. Though inaccessible to people except by boat there is much land abutting natural estuaries between Island Park and the Rockaways to the immediate west of Daly Boulevard that have trees which could easily serve as bat roosts, and likewise there is much bat foraging area.

Seatuck.org’s Bat Map Long Island Survey site map shows two locations each of which less than ¾ mile from the proposed Daly Boulevard Oceanside substation where bats have been sited, one location is in Oceanside and one in Long Beach, NY. Additionally, open covered storage facilities such as exist on coastal locations on Long Beach Island near the Long Beach bridge which may serve as bat roosts.

A.3.4 Benthic Resources

Comment Number: BOEM-2021-0038-DRAFT-0024-7

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The scope should evaluate how the project may impact benthic habitats in the project area and consider how Nature-Based Design of scour protection and cable mattresses can potentially provide benthic/fishery habitat mitigation and enhancement opportunities.

Comment Number: BOEM-2021-0038-DRAFT-0030-16

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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, such as the Mid-Atlantic cold pool, and how they influence the distribution and abundance of marine resources. 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 in the project area that may be directly or indirectly impacted by project construction and operation, including complex habitats and prominent benthic features in the project area, as described above.

Comment Number: BOEM-2021-0038-DRAFT-0030-54

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

We would also note that impacts to complex habitats and benthic features, such as those found in the project area, are known to result in long recovery times and are potentially permanent. Such impacts 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. Benthic features (e.g., sand ridges and banks; ridge and swale complexes) and complex habitats are more vulnerable to permanent impacts or may take years to decades to recover from certain impacts. The variability in recovery times by habitat type and components should be fully discussed and analyzed in the document.

Comment Number: BOEM-2021-0038-DRAFT-0031 -12

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

From an ecological perspective, the benthic environments within these coastal and marine jurisdictional areas include a variety of resources of concern to the NPS, including physical benthic habitat characteristics as well as the biotic communities associated with them (e.g., aquatic vegetation and fauna living in and depending on these habitats), all of which affect and are affected by the water column.

Limited information is available for the submerged benthic habitats, however seafloor habitat mapping projects were completed for both Fire Island National Seashore and the Sandy Hook unit of Gateway in response to Hurricane Sandy. Offshore wind development can impact benthic ecosystems in a variety of ways depending on the location and development phase. In addition to direct impacts, such development may result in indirect impacts associated with artificial reef effects, seafloor disturbance, and the introduction of energy emissions (e.g., noise, vibrations, and electromagnetic fields) that could have long-term impacts on benthic ecosystem structure and function.

NPS appreciates the efforts made, as described in Appendix T to the COP, to survey and describe the benthic environment of the project area. Reports associated with the projects include data such as bottom surface features, sediment characteristics, and vegetative and macrofaunal species distributions, descriptions and management interest; results of these reports and other local benthic analyses, including cumulative impacts to seagrass beds (and suitable habitat as indicated by historical seagrass distribution) and other declining benthic resources, should be considered as part of the analysis of potential impacts to the benthic environment. If construction or operation activities will occur in or near the marine and coastal environments of Fire Island or Gateway, additional collaboration may be required to ensure those activities do not disturb any sensitive park benthic resources.

Comment Number: BOEM-2021-0038-DRAFT-0046-10

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, the DEIS needs to account for the disruption of ecosystems due to sedimentation and scour of the ocean bottom. As FSF has explained previously, concentrated and visible sediment plumes around

offshore wind turbine arrays have been well documented in Europe and around the world. These sediment plumes, such as those below, alter benthic habitats where scallops settle and filter-feed. Scallops tend to settle on relatively coarse bottoms where they can attach to the seafloor. Attractive scallop bottom also includes consistent ocean currents that enable effective filter-feeding. Sedimentation and scour can render the ocean bottom in these areas inhospitable to scallop settlement, and sedimentation can prevent scallops from filter-feeding effectively, whether due to burial by excessive sediment loads or due to suspended sediments in the water column.

Comment Number: BOEM-2021-0038-DRAFT-0047-10

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Discussion of sediment quality, type, and chemistry including grain size analysis of all to-be disturbed sediment, in any areas where sediment disturbing activities will occur.
 - Evaluation of contaminant concentration in sediments with grain sizes less than 90% sand and gravel for the complete depth of material to be disturbed.
 - Identification of existing erosional or non-depositional sedimentary environs.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-18

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Discuss existing benthic and shellfish resources.

Comment Number: BOEM-2021-0038-DRAFT-0047-32

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Benthic and Shellfish Resources:

- Impacts from excavation, sidecasting, sediment dispersal.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-69

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Benthic Disturbance:

- Quantify cable and scour protection disturbance areas.
 - Pre- and post-construction monitoring.
-

- Nature-inclusive designs. For example, selecting alternative materials that minimize or avoid the use of traditional concrete mattresses. These designs have co-benefits to fishing and shipping industries, as concrete mattresses introduce hazards to mariners.
- Avoid impacts to hard bottom habitats and minimize impacts to other benthic habitats.
- Require a vessel anchoring plan to protect sensitive habitats or other areas to be avoided.

Comment Number: BOEM-2021-0038-DRAFT-0056-9

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Habitat Change

a. Introducing hard substructures into the marine environment creates artificial reefs leading to the settlement of marine organisms in the area. This can be positive, as well as negative. It increases biodiversity but can also potentially introduce new harmful species (including invasive species) and disrupt food chains.

b. The creation of these large homogenous changes to the sea floor will change the environment and the impact it has on the marine life is uncertain but could result in displacement.

Comment Number: BOEM-2021-0038-DRAFT-0057-21

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

One of the primary environmental considerations for gravity-based foundations is the impact to the benthos. Gravity-based foundations require more seabed preparation and scour protection relative to monopile foundations. Scour protection may comprise rocks (i.e., crushed rock or boulders), rocks bags, or concrete blocks that are placed around the monopile or gravity-based foundation to prevent scouring of seabed material. [Footnote 68: Empire Wind Construction and Operations Plan (EOW COP) at 3-17- to 3-18.] The amount of seabed covered by the gravity-based foundation and associated scour protection is over seven times larger than what is required of a monopile foundation and associated scour protection. [Footnote 69: Id. at Table 3.3-9; Gravity-based foundations require 609 feet in diameter of scour protection (excluding filter layer) relative to 226 feet in diameter for monopiles. This translates to approximately 7.25 times more area of seafloor covered for gravity-based foundations than monopiles.] However, because seabed preparation for gravity-based foundations is undertaken to a greater depth below the seafloor than monopiles (18.7 feet below the seafloor relative to 8.2 feet), the volume of scour protection required for the entire project (approx. 174 turbines total for Empire Wind 1 and 2) is approximately 8 times that required if monopiles were used (i.e., 145,037 cubic yards relative to 17,551 cubic yards). [Footnote 70: Id.]

Due to the greater degree of seabed preparation and scour protection for gravity-based foundations, BOEM must carefully consider how potential negative impacts to the benthos, particularly designated Essential Fish Habitat for large numbers of species, [Footnote 71: According to the 2019 Empire Wind environmental mitigation plan prepared for the NYSERDA Environmental Technical Working Group (E-TWG), EFH has been designated in the lease area for various life stages of more than two dozen nonmigratory managed species, including finfish, sharks and rays, and invertebrates. Designated EFH for three (3) coastal migratory pelagic and seventeen (17) highly migratory managed fish species also occurs in the lease area. Available at: <https://a6481a0e-2fbd-460f-b1df-f8ca1504074a.filesusr.com/ugd/>

78f0c4_289703fdb51f4bc3a30b7e3f1dc71d85.pdf.] 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 and mud; [Footnote 72: Battista, T. W. Sautter, M. Poti, E. Ebert, L. Kracker, J. Kraus, A. Mabrouk, B. Williams, D.S. Dorfman, R. Husted, and C.J. Jenkins. 2019. Comprehensive Seafloor Substrate Mapping and Model Validation in the New York Bight. OCS Study BOEM 2019-069 and NOAA Technical Memorandum NOS NCCOS 255. 187 pp. doi:10.25923/yys0-aa98. Available at: <https://repository.library.noaa.gov/view/noaa/21989>] 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.

To minimize and mitigate potential scour protection impacts for all foundation types, including gravity-based foundations, BOEM should consider requiring scour protection follow 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 73: 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.

A.3.5 Birds

Comment Number: BOEM-2021-0038-DRAFT-0021-4

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

we afraid of how these wind turbines will effect migratory birds and marine life.

Comment Number: BOEM-2021-0038-DRAFT-0024-13

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As highlighted in project briefing materials presentation by BOEM, the Empire Wind Energy Area seasonally contains a high abundance of displacement-sensitive and collision-sensitive bird species. It is thus of particular relevance that the Draft EIS fully describe potential population level impacts to avian species from developing the Empire Wind project in context of potential cumulative impacts of other forecasted projects in the region, and that this assessment not be limited to Endangered Species Act listed species.

Comment Number: BOEM-2021-0038-DRAFT-0031 -19

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Habitats within the Fire Island National Seashore are important refuge for a wide variety of migratory and resident birds. A total of 333 avian species have been observed within the Seashore; 67 have been documented to breed within the Seashore (Mitra and Putnam 1999, Trocki 2008). The Seashore is within the Atlantic Flyway, a major North American migratory bird route that spans the northern habitats of the

Arctic islands, coastal Greenland, and Canada to as far south as Jamaica and South America (Bird and Nature 2009). The Seashore provides a resting and feeding area for migratory birds traveling this route.

Migrating and wintering birds of prey also are inhabitants of Fire Island National Seashore. The northern harrier (*Circus cyaneus*) and American osprey (*Pandion haliaetus*) may use marsh habitats on the island for nesting, while short-eared owls (*Asio flammeus*), long-eared owls (*Asio otus*), and snowy owls (*Nyctea scandiaca*) are occasional winter inhabitants. Other birds of prey using the park may include the red-tailed hawk (*Buteo jamaicensis*) and the bald eagle (*Haliaeetus leucocephalus*) (Trocki 2008). Fire Island is one of the best-known hawk migration areas on the Eastern seaboard. Peregrine falcons (*Falco peregrinus*), merlins (*Falco coumbarius*), Cooper's hawks (*Accipiter cooperii*), sharpshinned hawks (*Accipiter striatus*), harriers (*Circus* spp.), and short-eared owls (*Asio flammeus*) also winter on Fire Island.

Comment Number: BOEM-2021-0038-DRAFT-0031 -21

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Fire Island National Seashore is used by an array of special-status species including migratory birds, butterflies (migratory Monarch Butterflies) and bats including the federally listed Northern Long-Eared Bat *Myotis septentrionalis*. Federal- and state-listed species include the Piping Plover (*Charadrius melodus*), the roseate tern (*Sterna dougallii*), the least tern (*Sterna antillarum*), and the common tern (*Sterna hirundo*). All four are shorebirds that rely on maritime beach and dunes for nesting between March and July. Birds have been found to nest at differing locations from year to year, but the Fire Island Wilderness and several of the bay islands appear to be the most popular nesting sites.

Comment Number: BOEM-2021-0038-DRAFT-0031 -22

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

The Jamaica Bay and Sandy Hook Units of Gateway National Recreation Area provide important habitat for birds migrating along the North Atlantic Flyway. Fresh water, wetland and maritime forests provide critical foraging habitat and a resting place on the Atlantic migratory flyway. Three hundred twenty six (326) species of birds, including 62 breeding species, have been documented using the habitats of the Jamaica Bay Wildlife Refuge (U.S. Fish and Wildlife Service 1997). Research using nano-tags is being conducted by USFWS and Audubon to identify migratory routes of the federally listed piping plover and other shorebirds within the proposed project area. Offshore of Staten Island lie Hoffman and Swinburne Islands which are important habitat for colonial nesting waterbirds, wading birds, and seabirds. One hundred forty (140) acres of airfield at Floyd Bennett Field is managed as habitat for grassland birds.

Comment Number: BOEM-2021-0038-DRAFT-0031 -25

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

The wildlife group for which the park is best known is birds, particularly the waterbirds, seabirds, shorebirds, and waterfowl that frequent its estuarine and coastal shorelines. The park is visited annually by 34 species of migratory shorebirds (Harrington, pers. comm. n.d.). Jamaica Bay, for example, averages

mid-winter ground counts of birds at about 11,000, with a peak (during the years from 1980 to 1992) of 36,000 (USFWS 1997b). The migratory and mid-winter concentrations of waterfowl in the Raritan/Sandy Hook Bay complex (which includes both Sandy Hook and the park sites on the shore of Staten Island) average over 60,000 birds (USFWS 1997c).

Comment Number: BOEM-2021-0038-DRAFT-0031 -26

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Breezy Point and Sandy Hook support some of the highest concentrations of beach-nesting birds in the entire New York Bight coastal region, including threatened piping plovers and other rare bird species, such as least terns, black skimmers, and common terns. Other nesting waterbirds at Breezy Point include great black-backed gull, herring gull, and American oystercatcher. The gulls, terns, and oystercatchers nesting at these park sites feed throughout Rockaway Inlet and Jamaica Bay.

Breezy Point and Sandy Hook are also concentration areas for other migratory shorebirds, waterfowl, and raptors and other landbirds, especially during the summer and fall migrations. The raptor banding station at Breezy Point banded 2,414 raptors during the period from 1978 to 1987 and sighted 15,715 raptors.

The most numerous species sighted were American kestrel (*Falco sparverius*) and sharp-shinned hawk (*Accipiter striatus*), with a total of 9,244 and 4,373 birds, respectively, sighted during that period (USFWS 1997b). Spring hawk counts at Fort Hancock on Sandy Hook average nearly 5,000 birds, with the same two species dominating (USFWS 1997c). Other species consistently sighted include Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), osprey (*Pandion haliaetus*), peregrine falcon (*Falco peregrinus*), and merlin (*Falco columbarius*).

Comment Number: BOEM-2021-0038-DRAFT-0031 -27

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Jamaica Bay's islands, because they are somewhat isolated from predation, support large numbers of colonial-nesting waterbirds as well as a variety of migratory species. At least 326 species of birds have been sighted at Jamaica Bay on its islands and at the wildlife refuge, including confirmed breeding by 62 of those species (USFWS 1997b). A mixed-breed heronry on Canarsie Pol includes a variety of nesting waders, including glossy ibis, great egret, snowy egret, cattle egret, black-crowned night-heron, and tricolored heron. Recent information from the New York City Audubon (Phillips, pers. comm. 2013) indicates herons and egrets also nest at Elder's Point, Subway Island and Little Egg and that breeding at Canarsie Pol has declined from predation by raccoons and human disturbance in recent years. Although no wading birds nested here in recent years, Canarsie Pol also has nesting by the state-listed threatened common tern, as well as by great black-backed gull, herring gull, and American oystercatcher. Common terns occur on several other islands in the bay, including Jo Co Marsh and Silver Hole Marsh, with smaller numbers at Duck Creek Marsh, East High Meadow, Ruffle Bar, and Subway Island. An average of about 1,000 common terns and a maximum of 1,630 common terns nested on the combined seven colonies in Jamaica Bay between 1984 and 1996 (USFWS 1997b). Laughing gulls (*Larus atricilla*) recolonized Jamaica Bay in 1979; over 99.9 percent of nesting by this species in the state of New York from 1979 to 2007 was associated with the colony at Joco Island in the park. As of 2008, an estimated 1,280 nests were active at this site (Washburn, Lowney, and Gosser 2012).

Comment Number: BOEM-2021-0038-DRAFT-0031 -28

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Ospreys also nest in the Jamaica Bay Unit and elsewhere in the park. Approximately 18 osprey pairs nest in Jamaica Bay, 14 pairs at Sandy Hook, and 1 pair on Staten Island. Clapper rails (*Rallus longirostris*) and common moorhens (*Gallinula chloropus*) nest in the saltmarshes. American oystercatchers nest at several islands in Jamaica Bay; they also have nested along the airport shoreline. A variety of other birds breed on the islands and uplands in the bay, including one of only two New York State sites for, and the northernmost nesting extent of, the boat-tailed grackle (*Quiscalus major*). Shorebirds known to breed in or around Jamaica Bay include killdeer (*Charadrius vociferus*), American oystercatcher, willet, spotted sandpiper (*Actitis macularia*), upland sandpiper, and American woodcock (*Scolopax minor*). In addition to providing wintering and nesting habitat, Jamaica Bay is one of the most important migratory shorebird stopover sites in the New York Bight region, especially during fall migration (July to November). The shorebirds use much of the bay during the migration stopovers but tend to focus on the intertidal areas during low tide and move to East and West Ponds on Ruler's Bar Hassock during higher tides. The water in East Pond is artificially lowered after July 1 each year. From 1981 to 1990, there was an average of 27 and a maximum of 36 shorebird species counted at the East and West Ponds in the Jamaica Bay Wildlife Refuge during the fall. The most abundant shorebirds during that period were black-bellied plover (*Pluvialis squatarola*), semipalmated plover (*Charadrius semipalmatus*), greater yellowlegs (*Tringa melanoleuca*), ruddy turnstone (*Arenaria interpres*), sanderling (*Calidris alba*), semipalmated sandpiper (*Calidris pusilla*), least sandpiper (*Calidris minutilla*), dunlin (*Calidris alpina*), and short-billed dowitcher (*Limnodromus griseus*). Jamaica Bay is also important during spring migration (March to June) on the ponds for several of these same species, as well as red knot (*Calidris canutus*). Hunting is prohibited in the park by virtue of its New York City location, which may contribute to the high numbers of individual ducks and duck species. In one year-round survey of birds at Jamaica Bay, 263,000 individuals of 32 species were recorded (USFWS 1997b).

Comment Number: BOEM-2021-0038-DRAFT-0031 -29

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

The combination of geographic location and configuration coupled with productive bay wetlands, flats, and waters in Raritan and Sandy Hook Bays make this another important migratory staging area in the park for many species of waterfowl on the Atlantic Flyway. Peak migration occurs in late October, but November aerial counts in New Jersey waters still average nearly 45,000 birds (USFWS 1997c). The number of horned grebes (*Podiceps auritus*), as well as common and red-throated loons (*Gavia immer*, *G. stellata*), during migration is regionally significant. Especially notable are the overwintering scaup concentrations, primarily greater scaup, which have increased in this area recently and are an important component of the Atlantic Flyway population. Other significant species populations include Canada geese in the Raritan River and the Navesink system, American black ducks, canvasbacks (*Aythya valisineria*), mallards (*Anas platyrhynchos*), and brant, along with lesser numbers of bufflehead, oldsquaw (*Clangula hyemalis*), mergansers (primarily red-breasted mergansers [*Mergus serrator*]), common goldeneye (*Bucephala clangula*), and American wigeons (*Anas americana*). These waterfowl are not evenly distributed but rather tend to concentrate along the southern Raritan Bay and Staten Island shorelines, where moderate-sized flocks of scaup and American black ducks and smaller groups of brant occur. Shrublands and woodlands can offer important feeding or resting habitat for songbirds (or "passerines")

in the park, such as sparrows, warblers, and other perching species. As noted above, grasslands at Fort Hancock on Sandy Hook and open areas at Breezy Point support very large spring raptor migrations as well.

Comment Number: BOEM-2021-0038-DRAFT-0031 -30

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Grasslands at Floyd Bennett Field became habitat for certain open-country bird species after the airfield was decommissioned in 1950, and stayed that way until the last few decades, when open areas began to transition into shrub and forest. In 1985, a portion of Floyd Bennett Field was cleared and mowed to create grasslands; about 140 acres are still maintained using these techniques. This area is unique in that it is a large grassland in the urban area of New York City, supporting feeding and resting grassland species that are not seen elsewhere in the city. In addition, several birds have or now use this habitat for nesting, including grasshopper sparrow (*Ammodramus savannarum*), horned lark (*Eremophila alpestris*), eastern meadowlark (*Sturnella magna*), upland sandpiper, savannah sparrow (*Passerculus sandwichensis*), northern harrier, American kestrel, and common barn owl (*Tyto alba*). Use of this area by grasshopper sparrows (a state-listed species) increased significantly in average abundance between 1984 and 1992. Since 1996, however, there have been no grasshopper sparrows nesting at Floyd Bennett Field.

Comment Number: BOEM-2021-0038-DRAFT-0031 -31

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Overwintering grassland birds at Floyd Bennett Field include northern harrier, roughlegged hawk (*Buteo lagopus*), American kestrel, common barn owl, short-eared owl (*Asio flammeus*), horned lark, eastern meadowlark, and savannah sparrow. The bobolink (*Dolichonyx oryzivorus*) is a regular migrant visitor in the grasslands. Grassland birds, especially upland sandpipers, also use the grassland habitat along the runways at John F. Kennedy International Airport (USFWS 1997b). The combination of geographic location and configuration coupled with productive bay wetlands, flats, and waters in Raritan and Sandy Hook Bays make this another important migratory staging area in the park for many species of waterfowl on the Atlantic Flyway.

Comment Number: BOEM-2021-0038-DRAFT-0036-2

Commenter: Anne Lazarus

Commenter Type: Individual

Comment Excerpt Text:

These structures will adversely affect the marine ecology and environment. Birds and bats forage and migrate in the area where this proposed wind energy project will be located at Jones Beach. Both the blades and the towers themselves will bring down bird and bat species.

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

Commenter: Andrew Berko

Commenter Type: Individual

Comment Excerpt Text:

4. What studies, if any, have been conducted to evaluate the effects of such a vast complex on both native and migratory bird species that fly at night?

Comment Number: BOEM-2021-0038-DRAFT-0039-14

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4.5 Migratory Bird Treaty Act (MBTA)

The MBTA (16 U.S.C. 703–712) makes it “unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior.” This protection applies to the >800 species of birds that have presence in the US.

In 2009, BOEM entered into a MOU with USFWS to “strengthen migratory bird conservation through enhanced collaboration between the MMS and the FWS. In assessing impacts to and protecting biological resources, BOEM consults with the FWS on activities that may affect threatened and endangered species, evaluates the effects on migratory birds and important habitats such as offshore and nearshore foraging, staging, molting, and roosting habitats. BOEM regularly conducts studies that provide information for protection and conservation of migratory birds, including protected species. It is in the interests of both agencies that potential impacts be thoroughly assessed and that mitigation measures be considered and implemented as appropriate.” [Footnote 41: Migratory Bird Treaty Act. U.S. Fish & Wildlife Service - Migratory Bird Program | Conserving America’s Birds (USFWS)]

The EW area is within the Atlantic Flyway migratory corridor used by multiple listed avian species (see Section 5.3). The EIS must address potential impacts from the proposed EW to the Atlantic Flyway and listed species and provide measures to ensure that EW activities avoid, minimize, and mitigate impacts to these and other species.

Comment Number: BOEM-2021-0038-DRAFT-0039-29

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

EW project area is within the Atlantic Flyway avian migratory corridor whose coastal and pelagic environments encompass critical feeding, foraging, breeding habitats of hundreds of resident and migrant bird species. The diverse geographies of the Flyway support complex ecosystems with highly variable spatiotemporal compositions - migrant terrestrial and marine birds which follow the coastline or fly directly over open water of the Atlantic ocean during seasonal migration, temporary summer residents which include those species which breed only in a specific area and those which breed in that area and also further up the coast and all of which migrate south in fall to warmer regions, winter residents which return to the area from their summer breeding sites further north, winter residents which return to the area from summer breeding sites in the southern hemisphere, and year-round residents. The EW area has documented presence of diverse group of avian species including migratory raptors and songbirds, coastal shorebirds, waterfowl, and waders, and pelagic birds. [Footnote 95: US Fish and Wildlife Service (USFWS), Division of Migratory Birds. Atlantic Flyway Shorebird Conservation Initiative] Among these species are dabblers, geese, swans, coastal diving ducks, sea ducks, horned grebe, plovers, red knots, phalaropes, skuas, jaegers, auks, small, medium, and large gulls, small and medium terns, storm-petrels, shearwaters, northern gannet, double-crested cormorant, brown pelican, great blue heron, osprey, and

common nighthawk. [Footnote 96: BOEM. (2021, Jun). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources]

Comment Number: BOEM-2021-0038-DRAFT-0039-30

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Among the broad groups of avian species found in the EW area are several listed and at-risk avian species protected by multiple statutes, conservation policies, agreements, and treaties. [Footnote 97: EW Construction and Operations Plan. (2021, June). Volume 2b: Biological Resources, Tables 5.1-3, 5.3-1], [Footnote 98: North American Waterbird Conservation Plan, U.S. Shorebird Conservation Plan, Memorandum of Understanding between U.S. Minerals Management Service and Fish and Wildlife Service on the implementation of Executive Order 13186 (01/17/2001) on “Responsibilities of Federal Agencies to Protect Migratory Birds”, United Nations Convention on the Conservation of Migratory Species of Wild Animals (CMS), & the International Union for Conservation of Nature (IUCN) whose members include BOEM, USFWS, & NOAA.] In its preparation of the EIS, BOEM must consider impacts from EW construction, operation, maintenance, and decommissioning to all species of concern:

- roseate tern (*Sterna dougallii*) - federal and NY Endangered
- piping plover (*Charadrius melodus*) - federal Threatened, NY Endangered, IUCN Near Threatened
- rufa red knot (*Calidris canutus rufa*) – federal Threatened, IUCN Near Threatened, CMS [Footnote 99: <https://www.cms.int/en/species/appendix-i-ii-cms>] Endangered
- black-capped petrel (*Pterodroma hasitata*) - currently a candidate for federal listing [Footnote 100: USFWS. (2018). Proposal to list the black-capped petrel as threatened.]
- golden eagle (*Aquila chrysaetos*) - NY Endangered
- black tern (*Chlidonias niger*) - NY Endangered
- bald eagle (*Haliaeetus leucocephalus*) - NY Threatened
- least tern (*Sternula antillarum*) - NY Threatened
- common tern (*Sterna hirundo*) - NY Threatened

USFWS Birds of Conservation Concern [Footnote 101: USFWS. (2008). Birds of conservation concern.]-

Red-throated loon

Horned grebe

Great shearwater

Audubon’s shearwater

Gull-billed tern

IUCN - Near Threatened-

Black scoter

Common eider

Blackpoll warbler

Razorbill

Sooty shearwater

IUCN - Vulnerable

Black-legged kittiwake

Atlantic puffin

Long-tailed duck

Migratory avian species with documented trans-Atlantic routes through the Atlantic OSW areas are also protected under various regional State regulations. So in its EIS, BOEM must also include species of greatest conservation need designated by NY conservation laws and Wildlife Action Plans, species prioritized for conservation by avian experts from the Atlantic Flyway Shorebird Initiative, Partners in Flight, Atlantic Coast Joint Venture, and the North American Waterbird Plan. The following NY SGCN migrating birds must be prioritized in the EIS impacts analysis: [Footnote 103: Sorte F. A. L. & Fink, D. (2017). Projected changes in prevailing winds for transatlantic migratory birds under global warming. *Journal of Animal Ecology*, 86, 273–284; NY Species of Greatest Conservation Need (SGCN).]

American golden plover

Bicknell's thrush

Bobolink

Buff-breasted sandpiper

Semipalmated sandpiper

Upland sandpiper Whimbrel

Comment Number: BOEM-2021-0038-DRAFT-0039-31

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Impact producing factors of EW activities that imperil birds are collisions with visible/ lighted project structures including wind turbines, sub-stations, and vessels, and noise from pile-driving, WTGs, and sub-stations all of which can cause mortality and injury, habitat alteration and displacement from temporary disturbances, and/or permanent habitat loss and avoidance.

These activities can have impacts to birds and their prey well beyond the duration of construction activities. [Footnote 104: Perrow, M. R., Gilroy, J. J., Skeate, E. R., & Tomlinson, M. L. (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.]

Birds are disturbed from foraging, staging, roosting, and nesting habitat in the immediate footprint of construction, and up to at least 20 km from an operating OSW. [Footnote 105: 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*, 162, 105157.] Nesting and foraging shorebirds can be disturbed from coastal anthropogenic activities more than 200 meters away. [Footnote 106: Glover, H. K., Weston, M. A., Maguire, G. S., Miller, K. K., & Christie, B. A. (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 impacted from the noises associated with pile driving [Footnote 107: Hansen K, A., Hernandez, A, Mooney, T. A., Rasmussen, M. H., Sørensen, K., & Wahlberg, M. (2020). The common murre (*Uria aalge*), an auk seabird, reacts to underwater sound. *Journal of the Acoustical Society of America*, 147, 4069–4074.] and vessel traffic can disrupt wintering marine birds. [Footnote 108: 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.] Beach nesting birds may be present in the EW area from spring through early fall and marine birds would be present in EW area during winter. Timing of survey and construction activities is critical to avoid impacting summer beach nesting birds as well as wintering seabirds.

Comment Number: BOEM-2021-0038-DRAFT-0039-32**Organization:** Defenders of Wildlife**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

All current avian monitoring technologies and survey methodologies have limitations in their scope and specific use in addition to inherent sampling biases. The EIS must use models produced from standardized monitoring/survey data collection methods and address the biases of each method used in the COP. The EIS must include:

- i. accurate estimates of avian populations The EIS must include population-level impacts s local population-level assessment of collision impacts
- ii. thorough evaluation of local population-level cumulative impacts in addition to flyway- wide impacts on a broad range of bird species with a presence in the EW area particularly passerines and other nocturnal migrants, seabirds, and species most at risk, employing complementary methods and technologies. Since all current OSW areas occur within migratory pathways of trans-Atlantic songbirds and shorebirds, BOEM must conduct a quantitative assessment of the cumulative effects including population viability analyses from OSW build out in the Atlantic OCS to mitigate the increased likelihood of large-scale migratory collision events or displacement events as the total OSW footprint increases.
- iii. detailed adaptive ecosystem-wide management plan, based on above analyses, describing how all conservation obligations afforded to impacted avian species by multiple statutes, conservation policies, agreements, and treaties [Footnote 109: North American Waterbird Conservation Plan, U.S. Shorebird Conservation Plan, MOU between U.S. Minerals Management Service and FWS on the implementation of EO 13186 (01/17/2001), UN- CMS, & IUCN] will be met. This comprehensive plan must include methods and standards for monitoring, avoidance, and mitigation, informed by current science and best available technologies, in ecosystem-wide approaches. The best management practices defined by this plan could be extended to other OSW projects within the region and all along the Atlantic coast which encompass important habitats for birds migrating along the Atlantic Flyway.
- iv. Application of Collision Risk Models (CRMs) in analyzing potential collision impacts on at- risk species in the offshore environment which may occur within 20 km of the EW footprint. CRMs provide a mechanism for testing outcomes against model predictions (e.g. observed vs expected collision rates). The collision risk analysis in the EIS must be complete and transparent as CRMs are extremely sensitive to input parameters such as avoidance behavior, flight height, flight activity, flux rate, corpse detection rate, rotor speed, bird speed, and collision risk. CRMs should also consider differences in daytime and nighttime flight patterns. [Footnote 110: Band, B. (2012). Using a collision risk model to assess bird collision risks for offshore windfarms. SOSS report for The Crown Estate, Norway.]
- v. include mortality data and displacement data in cumulative impacts analyses and adaptive management strategies, to validate CRMs, and to measure long-term impacts on at-risk species.

vi. analyze the migration timing, variations in flight height, and the distance from shore at which nocturnal migrants reach maximum migration height, using a combination of radar, telemetry, aerial surveys, and acoustic monitoring technologies and present a full analysis of the results in the EIS.

vii. consider alternatives in turbine specifications that could influence collision risk, including air gap, total rotor swept zone, and turbine height, and adequately assess collision risk to seabirds using science-based analysis of flight heights (averages and ranges), avoidance rates, and other relevant avian flight behavior. The cumulative impacts analysis in the EIS must incorporate results from BOEM's own analysis of the vulnerability of avian species to the WTGs of the OCS wind energy projects to be developed in the foreseeable future. [Footnote 111: Robinson, W. 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. OCS Study BOEM 2013-207.] 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. When calculating risk to birds, the EIS must consider this variability of large concentrations of birds even in short periods of time in its analysis of seasonal abundance.

viii. Adopt a full annual and life cycle approach to address cumulative impacts on population levels of impacted species. Use average annual avian mortality rate from onshore turbines (3.58 birds/MW (95% C.I.=3.05-4.68)) [Footnote 112: Loss, S. R., Will, T., & Marra, P. P. (2013). Estimates of bird collision mortality at wind facilities in the contiguous United States. *Biological Conservation*, 168, 201–209.] to estimate potential cumulative impacts from EW over the predicted 30-year lifespan of the project. These calculations only address direct mortality from collisions. They do not include the rates of mortality driven by barrier effects and habitat loss which have significant energetic costs for birds with lowering of individual survival and decreased rates of egg laying and fledging. In the past BOEM has failed to provide reasonable scientific evidence to support its cumulative impact assessment for birds resulting from OSW construction and operation in the Atlantic OCS. For the SFWF project, BOEM assessed only localized impacts to forest habitats from onshore construction [Footnote 113: South Fork Wind Farm and South Fork Export Cable Project DEIS, H-48.] including avoidance and displacement of wildlife, which it considered to be temporary. [Footnote 114: South Fork Wind Farm and South Fork Export Cable Project DEIS]

ix. The EIS must consider the impacts of EW activities beyond the onshore and offshore project footprint on species like the migrating red knots and other shorebirds which rely on mudflats along the coast to rest and refuel during their fall migration, and the common and roseate terns which rely on them to stage before migrating.

Comment Number: BOEM-2021-0038-DRAFT-0039-33

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Development of avoidance and mitigation strategies requires accurate estimates of avian populations, their precise seasonal location and movements, and a comprehensive assessment of cumulative impacts of all activities in the region and of climate change. In the EIS, BOEM must use appropriate combination of multiple methods/technologies to collect baseline geospatial data/trends of avian species which likely use the EW area for comprehensive assessment of EW impacts and to track potential changes in distribution or migratory patterns before and after EW construction. Limitations of each data collection method should be explicitly stated. EIS must address the impacts to both migrants and breeding season residents as their risk will likely be different, and must explicitly detail BOEM's plan to implement collision

detection and minimization measures during the operation of EW and other planning areas to avoid serious population-level impacts.

The EW COP relies on data from Marine-life Data and Analysis Team (MDAT) projections, NYSERDA digital aerial surveys, and relevant literature to assess impacts to birds. However, MDAT data have several shortcomings:

- MDAT projections are only rough estimates of relative density and not actual total proportion of avian populations in the Atlantic OCS and are not intended to assess avian habitat use at the project scale.
- MDAT avian density models referenced in the COP have extreme sampling bias as there is no standardization across data sources such as vessel and aerial surveys which have their own sampling biases. These data do not come from standardized protocols but are opportunistic observations from pelagic birding trips most of which occur during chumming activities. This may not necessarily inflate the overall number of birds but does confound model results by artificially creating higher densities of seabirds in vessel paths.
- MDAT regional avian activity survey data are outdated and have spatiotemporal limitations to detect changes in avian distribution from EW development. While their survey coverage extends beyond the EW footprint, some species may experience displacement for ~20 km from an OSW array. [Footnote 115: Peschko et al. (2020) Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season]
- Based on MDAT distribution models, the EW area may not have consistent impacts to avian populations during operation. But these models have limited reliability across species and better methods for predicting impacts have not yet been applied in the US offshore environment. While collision events during migration may be less frequent, they have the potential to affect large, population-level consequences during a short time. There are several monitoring and survey methods available to collect baseline data on the spatiotemporal presence and trends of avian species in the EW area before and during construction to be compared with data collected post-construction. But all these methods have limitations in their scope and specific use. For example:
 - Personned or digital aerial transect surveys:
 - ? cannot be used to effectively evaluate OSW impacts to vulnerable species that rarely occur within an OSW project footprint but inclement weather conditions could bring them to the area resulting in large take, e.g. nocturnal trans-Atlantic migrants such as the endangered black-capped petrel whose population is so low that even small levels of take can have population-level effects.
 - ? are inadequate to distinguish smaller avian taxa at the species level
 - ? underestimate populations in capturing migration events which are infrequent, e.g. nocturnal migrant passerines from across North America convene along southern New England coast before embarking on their fall trans-Atlantic migration to the south. Beach nesting birds like piping plover, oystercatcher, and roseate tern, may briefly venture across the Mid-Atlantic Bight into EW area during migration while foraging adults and sub-adults may be present in the EW area in spring and summer.
 - ? are appropriate only for larger bodied species that spend significant time within the survey area but not for diving seabirds like alcids.
 - Vessel surveys frighten away marine birds, [Footnote 116: Henkel, L. A., Ford, R. G., Tyler, W. B., & Davis, J. N. (2007). Comparison of aerial and boat-based survey methods for Marbled Murrelets *Brachyramphus marmoratus* and other marine birds. *Marine Ornithology*, 35(2), 145–151.] e.g. *Sterna* terns and small gulls, for which no survey method is adequate. Flight height estimates from vessel surveys are generally biased low and should not be relied on to estimate average flight height. [Footnote

117: Harwood, A. J. P., Perrow, M. R., & Berridge, R. J. (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.]

- Satellite telemetry technology, although valuable in documenting changes in migratory routes and species distributions, is generally limited in its application to few species and sample sizes.

- Current system of automated radio telemetry receivers needs adequate network of receivers established in the offshore environment and does not accurately estimate flight height. Remote tracking studies that rely on the Motus [Footnote 118: Motus Wildlife Tracking System - an international collaborative research network that uses coordinated automated radio telemetry to study the ecology and conservation of small flying animals such as birds, bats, and large insects. <https://motus.org/receiver-deployment/>] passive very high frequency (VHF) radio tracking system provide data on the nocturnal migration of birds over open water, e.g. piping plovers which fly “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: 36-1,031m)”. [Footnote 119: Loring, P. H., McLaren, J. D., Goyert, H. F., & Paton, P. W. C. (2020). Supportive wind conditions influence offshore movements of Atlantic Coast Piping Plovers during fall migration. *The Condor*, 122 <https://doi.org/10.1093/condor/duaa028>] This flight pattern may put this endangered species at high risk of collision with turbines if they pass through EW area. BOEM must invest in the construction and maintenance of a full network configuration of VHF receiving towers throughout the offshore environment for detailed characterization of flight paths to inform its impact analyses.

- Acoustic monitoring as a sole standardized monitoring method to characterize the communities of nocturnal migrants within the EW area is inappropriate since not all migrants emit nocturnal flight calls (e.g. Empidonax flycatchers and vireos, two of the most abundant nocturnal migrant groups) and thus would not be accounted for. [Footnote 120: Evans, W. R. & Rosenberg, K. V. (2000). Acoustic Monitoring of Night-Migrating Birds: A Progress Report in Strategies for bird conservation: The Partners in Flight planning process; USDA Forest Service Proceedings of the 3rd Partners in Flight Workshop; 1995 October 1-5; Cape May, NJ: RMRS-P-16; https://www.fs.fed.us/rm/pubs/rmrs_p016/rmrs_p016_151_159.pdf] Acoustic monitoring also does not adequately assess flux which is a necessary value for assessing collision risk and estimating population-level impacts.

To overcome the limitations described above, the EIS must provide the following as part of the avoidance/mitigation measures:

i. an avian activity monitoring plan for EW and surrounding area which must include:

- monitoring requirements and implementation strategies

- methods to collect the most effective data and to fill knowledge gaps to inform future OSW operation and siting processes

- coordination with other stakeholders, including the project developers, NY state agencies, and the Regional Wildlife Science Entity, to support the development of a regional monitoring plan for birds and other wildlife.

- commitment to, and process outlined for addressing unforeseen impacts through compensatory mitigation (see below).

- all available methods and technologies, e.g. radar, vessel and aerial surveys, acoustic monitoring, and telemetry, which complement each other and must be used in combination to provide a comprehensive assessment of EW impacts to avian populations in a coordinated framework. Some of the survey and monitoring methods/technologies and their scope include:

? personned or digital (for higher altitudes if safety is an issue) aerial transect surveys coupled with vessel surveys to track larger bodied species of all relevant taxa and to inform OSW siting that minimizes avian impacts while also measuring the realized level of impacts from before and after construction. Distance sampling is the most obvious method to address inaccuracies in transect surveys and we recommend that BOEM incorporate this accepted method into EW survey protocols along with predictive models where available.

? satellite tracking information from Movebank [Footnote 121: Max Planck Institute’s free, online database of animal tracking data. <https://www.movebank.org/cms/movebank-main>] and Icarus Initiative [Footnote 122: International Cooperation for Animal Research Using Space (ICARUS). Scientists working to develop a satellite-based system to observe small animals such as birds, bats, and turtles. <https://www.icarus.mpg.de/en>] for larger bodied shorebirds, along with additional research and tagging of priority bird species.

? radio telemetry for evaluation of full life cycle of sensitive smaller bodied species.

? satellite telemetry technology supplemented with pressure sensors to obtain fine scale movement data and flight altitude

? marine radar methods to monitor nocturnal migrants. Migration of various birds (including at-risk species like red knot, piping plover, and whimbrel) over the Atlantic Ocean has been documented. [Footnote 123: Sorte, F. A. L. & Fink, D. (2017). Projected changes in prevailing winds for transatlantic migratory birds under global warming. *Journal of Animal Ecology*, 86, 273–284.] While nocturnal migrants are known to typically fly above the rotor swept zone for current wind turbines in operation, they may also fly lower, potentially within the rotor swept zone, during inclement weather and cross winds. [Footnote 124: Van Doren, B. M., Horton, K. G., Stepanian, P. M., Mizrahi D. S., & Farnsworth, A. (2016). Wind drift explains the reoriented morning flights of songbirds. *Behavioral Ecology*, 27, 1122–1131.]

? aerial surveys over the southern New England/mid-Atlantic OSW planning areas to capture annual and seasonal variations in avian movement that are not adequately accounted for by the current MDAT regional avian activity surveys. Begin surveys as soon as possible and repeat frequently enough to cover within and between seasonal and annual variation in avian distribution to capture changes in distribution caused by OSW & inform collision risk analysis.

? science-based monitoring protocols for automated radio telemetry currently being developed by NYSERDA and USFWS [Footnote 125: Williams, K., Adams, E., & Gilbert, A. (2020). USFWS Migratory Birds.] who are also testing the feasibility of floating receiving stations. Financially support efforts to advance this technology by adopting it into regional monitoring protocols for OSW and employing data from these efforts into this EIS and other OSW impacts analyses in the future. Fund further telemetry studies on other less known life stages, time periods, and appropriate geographic scope, and incorporate those results in the EIS.

All monitoring reports must be made publicly available in real time.

ii. Expand on the monitoring framework proposed in the Draft EIS for South Fork and the FEIS for Vineyard Wind I, which is to be developed by the industry in coordination with the federal and state jurisdictions. This framework includes:

- 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 up to 150 Motus tags per year for up to 3 years 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

- Annual monitoring [Footnote 126: South Fork Wind Farm and South Fork Export Cable Project DEIS, Table G-2]

iii. Invest in research to understand the effects of displacement and mortality relative to turbine size and spacing. There is no substantial evidence to suggest that larger turbines spaced farther apart lower bird collision risks. Turbulence above and below the rotor swept zone can affect flight performance. If this makes the birds more susceptible to physical interactions with turbines, then larger turbines would only increase that risk. The risk of collision with the tower itself and turbulence around the rotor swept zone must also be evaluated.

iv. Support the development technologies to detect bird collisions or mortalities informed by onshore post-construction mortality studies. The Department of Energy recently funded development of collision detection technology to detect small object collisions with WTGs. [Footnote 127: Oregon State University. Wind turbine sensor array for monitoring wildlife and blades collisions. <http://research.engr.oregonstate.edu/albertani/wind-turbine-sensor-array-monitoring-wildlife-and-blades-collisions>] Similar technologies being tested elsewhere might become available in time if/when EW COP is approved and ready to be implemented. [Footnote 128: Dirksen, S. (2017). Review of methods and techniques for field validation of collision rates and avoidance amongst birds and bats at offshore wind turbines. Report number: SjDE 17-01] Require lease applicants to report mortality events promptly and publicly and require turbine developers to integrate these systems into their turbines.

v. The impacts of less energy production from increased spacing with fewer larger turbines within the footprint of OSW project versus the additional habitat loss impacts from more of smaller projects (and more space) required to meet state and national energy goals must be balanced in the context of avian conservation. Fund studies to address this alternative through financial support of OSW project developers or using tax revenues.

vi. Pursue studies to verify CRM utility in the offshore environment and its integration into viable collision detection requirements for EW and future OSW projects

vii. Require modification of schedules/activities to protect breeding ESA-listed species from potential onshore impacts of EW projects. The developers must hire trained spotters to prevent any harm to nesting chicks (e.g. the endangered piping plover which nests on the beach) within 100 m of onshore construction activities. No construction activities may be allowed on the beach or intertidal zone within 100 m of the chicks or nests, as this would starve breeding adults of necessary foraging habitat.

viii. Require Empire Wind developers to use adaptive management, defined by USFWS Wind Energy Guidelines as “flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood” [Footnote 129: USFWS (2012). Chapter 1. What is Adaptive Management?] and to collect robust monitoring data to inform strategies to avoid, minimize, and mitigate adverse impacts to birds. The EIS should explicitly outline protocols for monitoring, adaptive management, and mitigation. BOEM could make its South Fork Draft EIS recommendation on installing bird deterrent devices (including painting a turbine blade black) a requirement in this EIS. [Footnote 130: South Fork Wind Farm and South Fork Export Cable Project DEIS, Table G-1] Doing so could provide an opportunity to institute adaptive management to inform BMPs for future OSW projects. The framework for adaptive management should include cost effective operational adjustments and advances in detection and avoidance technology, e.g. “smart curtailment” to

contain reasonable loss of energy production, seasonal adjustments based on mortality data as needed to compare with defined thresholds, etc. This framework also requires interagency (BOEM and USFWS) coordination and commitment beyond EW project that would be applicable to OSW projects planned and proposed off Atlantic coast.

ix. Apply compensatory mitigation to offset potential long-term adverse impacts from EW project. Migratory birds pose huge conservation challenges since their lifecycle spans multiple regions/countries requiring significant investment of resources to restore equivalent quality habitats at multiple sites. The large number of migratory species potentially affected by EW will require directed environmental compensatory mitigation for meaningful beneficial outcomes, e.g. the \$63 million mitigation package compensated for migratory seabirds in Mexico led to the recovery and delisting of Pacific Brown Pelican. [Footnote 131: Endangered and Threatened Wildlife and Plants: Removal of the Brown Pelican (*Pelecanus occidentalis*). 74 Fed. Reg. 59444 (November 17, 2009).] Mitigation more effectively compensates for impacts when conducted on a project- and population- specific basis. If a project-specific approach is not feasible, then a compensatory mitigation fund should be set up by OSW developers (funding amounts to be based on likely or actual impacts) which would be administered by trustees of federal agencies. Quantifying compensatory mitigation for birds should be based on a generous estimate of collision mortalities of listed species and nocturnal migrants and must 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. [Footnote 132: 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.] Seabirds are long lived, have delayed maturity, and low fecundity which means that adult survival is the main driver of population change. Mortality from OSW development is likely additive and, if skewed to breeding adults, will likely have a greater potential to drive declines in population

Comment Number: BOEM-2021-0038-DRAFT-0047-23

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Discuss sea duck abundance. [*Italics:* Note: Use the most recent Atlantic Coast Sea Duck Surveys.]

Comment Number: BOEM-2021-0038-DRAFT-0050-1

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

However, we have serious outstanding concerns about what we see as insufficient protective measures, monitoring, and compensatory mitigation for impacts to birds as this new industry gets underway.

Our primary concerns and recommendations are as follows:

- Impacts to trans-Atlantic migratory birds must be studied and addressed.
- Impacts to ESA-listed species must be further considered.
- Effective post-construction bird impact monitoring must be conducted.

- Compensatory mitigation must be provided for impacts to birds.

Comment Number: BOEM-2021-0038-DRAFT-0050-2

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

An EIS for Empire Wind must substantively evaluate the impacts of this project on trans-Atlantic migratory land birds. Large numbers of these birds make migratory flights between the northeastern U.S. and wintering grounds in the Caribbean and South America. For example, DeLuca et al. (2015) [Footnote 1: DeLuca et al. 2015. Transoceanic migration by a 12 g songbird. *Biology Letters* 11: 20141045.] found that the Blackpoll Warbler, a songbird weighing less than half an ounce, makes a nonstop fall migratory flight from New England / Southeast Canada as far as northern South America. La Sorte and Fink (2017) [Footnote 2: La Sorte and Fink. 2017. Projected changes in prevailing winds for transatlantic migratory birds under global warming. *Journal of Animal Ecology* 86: 273-284.] found that another nine species follow a similar fall migration pattern, including species of conservation concern such as Bicknell's Thrush. Dokter et al. (2018) [Footnote 3: Dokter et al. 2018. Seasonal abundance and survival of North America's migratory avifauna determined by weather radar. *Nature Ecology & Evolution* 2: 1603-1609.] used weather radar data to estimate trans-Atlantic migration patterns in the U.S. They found that an estimated 219 million birds followed a trans-Atlantic migration pattern in the fall, and 63 million in spring.

Very little data exists regarding trans-Atlantic migrants' flight heights and behavior in the airspace off our shores. As was found by FWS's Avian Radar Project [Footnote 4: <https://www.fws.gov/radar/>] in the Great Lakes, nocturnal migrant birds may fly within the rotor-swept zone of offshore wind turbines off the Atlantic coast, creating risk of collisions. What's more, these birds migrate in flocks, meaning that a large number of birds could be killed in a single event. As you know, these birds are protected under the Migratory Bird Treaty Act.

Comment Number: BOEM-2021-0038-DRAFT-0050-3

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In particular, the relatively wide width of the project footprint, with its generally east-west orientation makes it potentially more likely to be encountered by south- and north-bound trans-Atlantic migrants leaving or moving toward Long Island, New York and other areas to the north.

Comment Number: BOEM-2021-0038-DRAFT-0050-4

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We urge the developer and/or agencies to use radar within the project area to assess flight altitude and relative abundance of trans-Atlantic migrants during spring and fall migration. We recommend that this be augmented with acoustic monitoring so species can be identified to the greatest extent possible. The latter should be complemented by GPS tagging birds to obtain data on their migratory flight paths. Studies must examine whether risk increases with different climatic conditions, and must be conducted over multiple years to assess inter-annual variability.

Comment Number: BOEM-2021-0038-DRAFT-0050-5

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We appreciate the studies and analysis that went into assessment of likely impacts to ESA-listed species, but have serious outstanding concerns due to remaining uncertainty. Roseate Terns, Red Knots, and Piping Plovers are at risk of colliding with turbines, but in what numbers remains to be seen. Similar to our concerns for trans-Atlantic migrants, the shape and orientation of the proposed Empire Wind project may make fatal interactions with these species more likely than at other proposed facilities.

Comment Number: BOEM-2021-0038-DRAFT-0050-9

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Other Sections: 15

Comment Excerpt Text:

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.] found that the abundance of Red-throated Loons decreased as far as 16km from the nearest facility. Displacement effects will be longer-term and become more important as more facilities are constructed. Displacement effects would emerge over the longer term, becoming more pronounced as more turbines are installed.

Monitoring must also be conducted to evaluate displacement impacts. This would need to occur over an area likely to encompass multiple lease areas, and over an appropriately long time frame. This requires a broad-scale approach more appropriate for a collaborative industry, federal, and state effort.

Comment Number: BOEM-2021-0038-DRAFT-0056-7

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Various species of birds visit the shores of New Jersey and New York on an annual basis, including the Red Knot, a federally threatened migratory bird.

1. Displacement of Habitat

a. Behavioral responses to offshore wind farms may cause birds to avoid previously used habitats. This phenomenon has been dubbed displacement. At Robin Rigg offshore wind farm in Scotland, the monitoring program showed evidence of a decrease in the number of common scoter (*Melanitta nigra*) one year after construction.

2. Risk of Collision

a. There is concern for birds colliding with wind turbines. This has been a big issue with onshore wind projects, specifically in the middle of the country.

b. Weather increases the risk of collision, and the ocean is an area with some of the harshest weather conditions, which will only increase due to climate change impacts.

3. Migration Barriers

a. The barrier effect may have a negative impact of birds. The birds' behavioral avoidance response to the wind farm may lead to detours circumventing the structures, ultimately extending the total flying distance and energy use. This energy loss is critical for birds experiencing other stressing factors to their populations.

b. Furthermore, for species such as the common eider (*Somateria mollissima*) the reproductive success is related to the females' body reserves during the breeding period. By increasing the energy use for common eiders their body mass may drop, thus affecting the breeding output.

c. Results from the monitoring programs at Nysted and Horns Rev offshore wind farms in Europe showed that all birds generally avoid wind farms if they block migration pathways. The specific level of avoidance depends on the species with some going further out of their way to avoid the area. Over 50 percent of the birds avoided passing through the wind farms at half a mile to a mile.

Comment Number: BOEM-2021-0038-DRAFT-0057-54

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 broad range of avian species which may be impacted by the Project, not limited to ESA-listed species, and be informed by the best available science. Recognizing that much remains unknown regarding the impacts of offshore wind to avian species in the United States, BOEM's evaluation of the Project in the Draft EIS must be based on an explicitly defined monitoring and adaptive management plan. This must include a commitment to sufficient standardized monitoring before and after construction, consistent with recommendations of the NYSERDA's Environmental Technical Working Group, and monitoring guidelines that emerge from the Regional Wildlife Science Entity.

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 incorporate 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. BOEM should promote the adoption of recommended standards across all projects moving forward to ensure that inferences from collected data can be compared across projects.

Comment Number: BOEM-2021-0038-DRAFT-0057-55

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 221: 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 222: Exec. Order No.13186, 3 C.F.R. 1 (Jan. 10, 2001),

https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/Req-EO13186migratorybirds.pdf.] North American Waterbird Conservation Plan, [Footnote 223: 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 224: 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 225: 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 226: 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 International Union for Conservation of Nature [Footnote 227: IUCN Member List, <https://www.iucn.org/about/members/iucn-members>.] (hereinafter collectively referred to as the “conservation obligations”).

As we have commented to BOEM before, we are aware that the DOI and the USFWS are now relying on a new rule [Footnote 228: 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 229: 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 previous administrations have done in the past, with explicit recognition that incidental take is prohibited. This would also be consistent with the memorandum of understanding that BOEM signed with USFWS in 2009 to protect migratory bird populations. [Footnote 230: 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] 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 231: National Audubon Society v. U.S. Department of Interior, No. 18-cv-08084 (S.D.N.Y 2019).] and we expect BOEM and USFWS to respect the court’s ruling.

The MBTA states that, “[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 232: 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 233: 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 234: 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 235: 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 236: Id. at 42-44.] The unlawful reinterpretation does not relieve BOEM or FWS from their obligations for conservation of birds under the aforementioned federal laws, EO and MOU, as well as the MBTA.

Comment Number: BOEM-2021-0038-DRAFT-0057-56

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to ESA-listed species, 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 237: 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 238: Id.] with documented migratory paths through the Atlantic OCS, [Footnote 239: 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 the International Union for Conservation of Nature (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.

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. The Draft EIS should consider impacts to species protected under New York and New Jersey’s 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 in the New York Bight. Many species that occur in 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. For example, Razorbill and Atlantic Puffin are both considered threatened in the state of Maine, occur regularly within the planned Project footprint, and are expected to be highly vulnerable to habitat loss from offshore wind. Additionally, recent research suggests that similar species are sensitive to underwater noise [Footnote 240: 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-57

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM must 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-58

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Most notably, BOEM must consider impacts to Northern Gannet. This species' primary winter distribution overlaps with the Project array. [Footnote 241: Stenhouse IJ, Berlin AM, Gilbert AT, Goodale MW, Gray CE, Montevecchi WA, Savoy L, Spiegel CS. 2020. Assessing the exposure of three diving bird species to offshore wind areas on the U.S. Atlantic Outer Continental Shelf using satellite telemetry. Diversity and Distributions: ddi.13168.] The Northern Gannet is considered vulnerable to both collision and displacement from offshore wind [Footnote 242: 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.] and is also likely to face range loss as a result of climate change. [Footnote 243: Wilsey C, Bateman B, Taylor T, Wu JX, LeBaron G, Shepherd R, Koseff C, Friedman S, Stone R. Survival by Degrees: 389 Bird Species on the Brink. National Audubon Society: New York.]

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-2021-0038-DRAFT-0057-59

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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

It would be inappropriate to rely on Marine-life Data and Analysis Team (MDAT) results to evaluate the total proportion of avian populations impacted by the Project. 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. The NYSERDA/Normandeau surveys 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 following section.

BOEM should instead consider the population-level impacts of the project to potentially affected local populations, based on the best available science. Black Skimmers, as an example, are state-endangered in New Jersey and a species of special concern in New York. New Jersey and New York make up the northernmost range of the species along the Atlantic coast, so removing individuals from these local state breeding colonies may have a lower impact on the metapopulation along the Atlantic Coast.

However, even small levels of take from the Project could be detrimental to the persistence of the populations in New York and New Jersey.

The COP also suggests that Brown Pelicans will not be significantly impacted by the Project because the Project is located at the northern limit of the species' range. Brown Pelicans are considered vulnerable to collision with offshore wind turbines. If the level of take from turbines within the New York Bight is enough to reduce the number of individuals within the area, this could potentially lead to a reduction in the species' range--which would be a significant impact to the population. Additionally, young-of-the-year Brown Pelicans disperse well north of their typical breeding range, so take of these individuals would negatively impact their recruitment into local rookeries.

BOEM should make sure in the Draft EIS to not minimize take to avian populations for the reasons outlined above.

Comment Number: BOEM-2021-0038-DRAFT-0057-60

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 Long Island, adjacent to the Project Area, during migration. Red Knots, Piping Plover, and other shorebirds regularly visit Long Island's barrier islands and likely cross the Project Area as they head out over the Atlantic Ocean.

Nocturnally migrating passerines from across North America similarly convene along New Jersey's coast prior to beginning their southward trans-Atlantic migration in the fall. Nocturnally migrating passerines often cross the New York Bight from stopover locations on Long Island, southern Connecticut, and Massachusetts and then make landfall along the New Jersey Coast. Beach nesting birds, like Piping Plover, American Oystercatcher, and Black Skimmer, cut across the Mid-Atlantic Bight and the Project Area to reach breeding grounds along New York and 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. Transect surveys are likely to underestimate the impacts to these populations, even when these species happen to be recorded during surveys. Therefore, transect surveys are inadequate for assessing the movements of birds migrating over the Atlantic OCS and are clearly not effective for nocturnal movements.

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. Radio telemetry is appropriate for smaller bodied birds, including song birds, 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. Radio telemetry has been deployed extensively along the New York Bight coastline. BOEM must include the most recent available analyses from these data in the Draft EIS. 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 the Project developers to expand these monitoring methods to evaluate impacts of the Project, and outline these requirements within the Draft EIS.

Currently, there are no relevant radar data for the New York Bight. NEXRAD is very coarse and does not provide adequate resolution of flight altitudes to characterize collision risks for birds. We expect that BOEM will include marine radar as part of the monitoring requirements in the EIS for the Project.

Comment Number: BOEM-2021-0038-DRAFT-0057-61

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

THE DRAFT EIS SHOULD ACCOUNT FOR THE LIMITATIONS IN THE SURVEY METHODS USED TO ASSESS THE PROJECT AREA FOR AVIAN SPECIES PRESENT

Given that there are no studies 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

Empire Wind's COP bases the exposure assessment on NYSERDA/Normandeau surveys and MDAT projections. [Footnote 244: EOW COP, Vol. III, p. 47.] Personned aerial surveys paired with vessel surveys, like those used in the NYSERDA surveys, can inform offshore wind siting that minimizes avian impacts, while also measuring the realized level of impacts when comparing survey results before and after construction. However, both aerial and vessel surveys have limitations and associated biases. They are most appropriate for larger bodied species that spend a great deal of time within the survey area (e.g., alcids, gannet, phalarope, ducks). Transect surveys are less appropriate for assessing risk to migrants, as the surveys are not repeated frequently enough to catch migration events. Migration behavior is a dynamic response to endogenous and exogenous factors that require oversampling to ensure that infrequent events are not missed by chance alone.

Many species are left out of 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 WEAs under consideration. 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 WEAs during inclement weather). 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 245: 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 246: 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 complimentary) 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 Project developer to institute digital aerial surveys pre- and post-construction and include this requirement 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-meter turbine blades in development in Virginia [Footnote 247: 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 have not been verified. Additionally, Common Terns are considered threatened in New York and a species of concern in New Jersey. 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 mis-identification 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 248: 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 249: 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-62

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 are not appropriate for addressing potential environmental impacts. The Draft EIS must address the biases of each monitoring method used in the COP 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 250: 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 251: 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.] Aerial and vessel transect surveys are also unreliable for estimating flight height, as estimates of flight altitude are affected by the distance between observer and target and the aspect between the two.

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. We expect a full analysis of the data from the NYSERDA/Normandeau surveys of the Project to be made publicly available and incorporated in the Draft EIS. This analysis should explicitly provide species-specific detection rates and species-specific photo identification success rates.

The COP also relied on flight heights discerned from NYSERDA surveys 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 252: 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.] Additionally, the number of species-specific detections was generally too low to provide an adequate sample from which to evaluate trends in flight height. 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. Much of the data do not come from standardized protocols and are instead opportunistic observations from pelagic birding trips. Additionally, many of these opportunistic observations occur during chumming activities. This does not necessarily over inflate the number of birds overall, but it does confound model results by artificially creating higher densities of seabirds in vessel paths.

Comment Number: BOEM-2021-0038-DRAFT-0057-63

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

c) Effect of Survey Effort on Assessment Reliability

We applaud NYSERDA's efforts to date to survey avian activity along the New York Bight. However, these surveys are too temporally and spatially limited to detect changes in avian distribution from the Project development. While the survey coverage extends well beyond the Project footprint, it does not do so in all directions. Some species may experience displacement for up to 20 km from an offshore wind turbine array. [Footnote 253: 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 in order 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 aerial surveys over the New York Bight wind 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-2021-0038-DRAFT-0057-64

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 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, and Upland Sandpiper, including the risk to birds as they migrate through the projects. The Draft EIS should include the most recently available scientific information.

Based on MDAT models, the Mid-Atlantic Bight is a rich avian resource, containing a relatively high density of birds and relatively high diversity of species. 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. The Project is placed within an essential migratory pathway for trans-Atlantic migratory songbirds and shorebirds. BOEM's Draft EIS needs to evaluate the cumulative risk of collision, as the likelihood of large migratory collision events will increase as the total offshore wind footprint increases.

Comment Number: BOEM-2021-0038-DRAFT-0057-65

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

a) Collision Risk for Passerines and Other Nocturnal Migrants

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 are not appropriate for characterizing collision risk to nocturnal migrants. Likewise, radar studies conducted on Block Island, [Footnote 254: 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 New York Bight 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 prior to and following construction. BOEM should follow the monitoring protocols for automated radio telemetry currently in development by NYSERDA and USFWS. [Footnote 255: Williams K, Adams E, Gilbert A. (n.d.). USFWS Migratory Birds: Pam Loring, Scott Johnston Univ. of Rhode Island: Peter Paton:21. Accessed at https://www.briloon.org/uploads/BRI_Documents/Wildlife_and_Renewable_Energy/AutomatedVHF/NYSERDA%20PAC%20Webinar%20Radio%20Telemetry%2020200826_Final.pdf] We applaud this interagency effort to develop robust, scientifically sound monitoring protocols and to test the feasibility of floating receiving stations. Metocean platforms provide an excellent opportunity to deploy telemetry, acoustic, and marine radar technology in wind energy areas prior to construction and should be built to accommodate these instruments. BOEM needs to financially support the efforts to further this technology, adopt these methods into regional monitoring protocols for offshore wind development, ensure the success of this technology moving forward, and incorporate data from these efforts 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 WEA. 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 256: 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 257: 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 the Project'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 258: 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 EOW COP Volume II, p. 19.] This risk cannot be discounted simply because it may be considered by the developer to be

atypical. Under our changing climate, we can expect unfavorable crosswinds to become more frequent, and therefore must take a conservative approach to evaluate risk so that this risk is not underestimated.

Many species of conservation obligation, including ESA-listed Red Knot and Piping Plover, migrate over the Atlantic Ocean, many which take off from Long Island's southern shoreline. 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, 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. Relying on the current system of automated radio telemetry receivers to minimize risk is inappropriate, as the network of receivers has not been established 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 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)," [Footnote 259: 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).] putting this ESA- listed species at high risk of collision with turbines, should their paths cross through the Project Area. The same study documented that Piping Plovers do, in fact, cross the Project Area, with 1 of approximately 60 successfully tagged Piping Plover crossing the Project Area. The authors suggest that this number would likely be higher if birds were sampled from New York and Connecticut and further suggested potentially high cumulative risk for the species.

It is imperative that BOEM invests in supporting further tracking efforts by constructing and maintaining a full network of telemetry receiving towers throughout the offshore environment to inform its Draft EIS. 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, BOEM should outline their plans to fill these knowledge gaps 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(G)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 modern turbine height, and provide for tracking these migratory birds during the life of the project and over all the cumulative projects in the Atlantic OCS.

Additionally, the Draft EIS should explicitly outline BOEM's plan to implement collision detection and minimization measures during the operation of the Project and other planning areas. The mitigation measures outlined in the COP are wholly inadequate to monitor and mitigate risks to nocturnal migrants. 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 be clear in the Draft EIS of its plans to address this concern.

Comment Number: BOEM-2021-0038-DRAFT-0057-66

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 260: 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. BOEM 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-2021-0038-DRAFT-0057-67

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 261: 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 262: 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.

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 263: 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_Band1ModelGuidance.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 264: 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 265: Transparent Modeling of Collision Risk for Three Federally-Listed Bird Species to Offshore Wind Development, US Fish and Wildlife Service 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 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. Collision risk models 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 266: 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-2021-0038-DRAFT-0057-68

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

THE DRAFT EIS CANNOT IGNORE THE HABITAT LOSS THAT BIRDS MAY EXPERIENCE BEYOND THE FOOTPRINT OF THE PROJECT CONSTRUCTION AND OPERATION

As we have mentioned above and in previous comments regarding proposed offshore wind projects on the Atlantic OCS, BOEM should not limit the impact assessment to the project footprint. Birds are not only disturbed from foraging, staging, roosting, and nesting habitat in the immediate vicinity of development. Evidence from construction and operation at offshore wind farms suggest that marine birds may be disturbed up to at least 20 km from an operating wind farm. [Footnote 267: 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.] Though flight-initiation distances are highly variable, nesting and foraging shorebirds can be disturbed from coastal anthropogenic activities more than 200 meters away. [Footnote 268: 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 269: 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.] Underwater noise impacts to diving birds must be considered in the Draft EIS, and cannot be limited to an assessment of the Project footprint.

Additionally, vessel traffic can largely disrupt wintering marine birds, [Footnote 270: 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 271: 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 in the New York Bight, it is likely that coastal bird communities will be heavily disturbed during construction activities.

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, and Black Skimmer, may be present in and around the Project March through September; Red Knots, Semipalmated Sandpiper, and Black-bellied Plover may be affected by construction activities in spring and fall. Marine birds, such as Northern Gannets, shearwater, and petrel, will be present within the Project Area 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.

While Piping Plover and Red Knot may fly through the Project Area, 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 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 rely on the mudflats along New Jersey's coast to rest and refuel during their fall migration. 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 Project footprint. As we further discuss in Section IV(I)1 on the Empire Wind 2 potential cable routes, the Empire Wind 2 cable landing falls within a globally recognized Important Bird Area (IBA). If BOEM approves a cable route option through undeveloped sections of this IBA, it will not be possible to avoid construction that causes significant disruptions to the bird communities that rely on this IBA throughout the year. BOEM should take steps to avoid cable routes with significant ecological impacts, as the preferred cable route proposed is less likely to cause significant disturbance.

Comment Number: BOEM-2021-0038-DRAFT-0057-69

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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, BOEM must provide its plan to monitor bird activity in the Project and surrounding area before, during, and after construction. We suggest that BOEM clearly outline monitoring requirements and coordinate with other stakeholders, including the Project developer, NYSERDA, 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 complimentary tools that provide data necessary for evaluating impacts, though none of these tools provides the full picture when used alone.

Comment Number: BOEM-2021-0038-DRAFT-0057-70

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 FWS Land-Based Wind Energy Guidelines. [Footnote 272: 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 273: 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 274: Verhoef JP, Eecen PJ, Nijdam RJ, Kortering 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 275: 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. The DOE is currently evaluating the development status of these integrated systems based on their readiness for offshore wind deployment. [Footnote 276: 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 standardize the 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.

In previous EIS documents, BOEM has suggested that mortality monitoring 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 Empire Wind COP does not include this or any specific monitoring to assess direct mortality. The Draft EIS must address this inadequacy in the COP and mandate a protocol for adequately monitoring mortality events.

The Draft EIS should specifically include the adoption of collision detection technologies when they are verified and commercially available and BOEM's support for 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-2021-0038-DRAFT-0057-71

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

b) Monitoring for Displacement and Barrier Effects

We appreciate the steps BOEM has taken to date to improve monitoring standards at projects in the Atlantic OCS and we expect BOEM to further expand these requirements to better cumulative impacts across projects.

Within the Draft EIS for South Fork and the Final EIS for Vineyard Wind 1, 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 up to 150 Motus tags per year for up to 3 years 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
- Annual monitoring [Footnote 277: SFWF DEIS, 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 be a result of 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 278: “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]

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. BOEM and developers should follow recommendations by USFWS Northeast Migratory Bird Office 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 279: 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-2021-0038-DRAFT-0057-72

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

THE DRAFT EIS SHOULD EVALUATE CUMULATIVE IMPACTS TO AVIAN POPULATIONS FROM THE 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 the South Fork project, 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 280: SFWF 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 281: 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. BOEM must take a full annual and life cycle approach in the Draft EIS for Empire Wind, addressing the various population vital rates which may be affected for species potentially impacted from build out of the Project.

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 282: 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 283: EOW COP, Vol. I, Table 4.4-1, p. 58] 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.

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. BOEMs 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-2021-0038-DRAFT-0057-73

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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, reduces 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. The size of turbines has grown substantially over the past decade, and this trend is expected to continue. Vineyard Wind specified in its project design envelop for Vineyard Wind 1 plans to use 14 MW turbines, which have a 220-meter rotor swept zone and are estimated to reach a maximum height of 260 meters above sea level. University of Virginia is currently developing 200-meter-long blades to power a 50 MW turbine, with a potential rotor swept zone of approximately 400 meters.

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 meters above sea level. Studies, like those from Krijgsveld et al. (2009), [Footnote 284: 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 285: 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 286: 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. As turbines increase in size, they are more likely to encroach on airspace occupied by nocturnal migrants [Footnote 287: Id.] while not necessarily avoiding airspace occupied by relatively lower flying foraging marine bird species. Conversely, studies by Loss et al. (2013), [Footnote 288: 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 289: 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 290: 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.

Turbulence above and below the rotor swept zone can 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.

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 will need to fund studies to answer these questions either through tax revenue or through the preferred method of financial support from offshore wind project developers.

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-2021-0038-DRAFT-0057-74

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 and minimize impacts to birds.

According to USFWS Land-Based Wind Energy Guidelines (2012), [Footnote 291: USFWS (2012). U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. p. 8. Available at https://www.fws.gov/ecological-services/es-library/pdfs/WEG_final.pdf.] 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.

Further, the Supplement to the Draft EIS for the Vineyard Wind I 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 292: VW1 SEIS, Table A-10 (emphasis added).]

The Draft 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 (BOEM 2016a). 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 (MMS 2007:Section 2.7). 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 293: SFWF DEIS, Table H-40.]

To provide regulatory certainty to lease applicants, the Draft EIS should explicitly outline protocols for monitoring, adaptive management, and mitigation.

The South Fork Draft EIS suggested the following minimization measures:

Install bird deterrent devices (including painting a turbine blade black [May et al. 2020]) to minimize bird attraction to operating turbines and on the offshore substations (OSSs), where appropriate and where DWSF determines such devices can be employed safely...The SFWF wind turbine generators (WTGs) would be widely spaced apart allowing bird species to avoid individual WTGs and minimize risk of potential collision. [Footnote 294: 294Id., Table G-1.]

While painting turbines black is an admirable action, the proposed action was hardly a commitment. Additionally, the referenced study by May et al. (2020) suggests that the efficacy of this deterrent requires further study. [Footnote 295: May R, Nygård T, Falkdalen U, Åström J, Hamre Ø, Stokke BG. 2020. Paint it black: Efficacy of increased wind turbine rotor blade visibility to reduce avian fatalities. *Ecology and Evolution* n/a. Available from <https://onlinelibrary.wiley.com/doi/abs/10.1002/ece3.6592> (accessed August 24, 2020).] Should BOEM make this a requirement, this could provide an excellent opportunity to institute adaptive management—studying the efficacy of black turbine blades in reducing collisions in order to inform best management at future wind farms. 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).

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.

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 contain reasonable 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. There are systems currently in operation that

provide data and early warning thresholds to wind farm operators and commercial and military airfields that feed into operational curtailment. 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 the Project under consideration. BOEM and USFWS must commit to providing a structure that ensures this across the offshore wind landscape.

Comment Number: BOEM-2021-0038-DRAFT-0057-75

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

COMPENSATORY MITIGATION FOR BIRDS

Compensatory mitigation is another tool that should be used to offset adverse impacts of the Project.

Given the current technology, there are no viable options for effectively minimizing the 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 Project and other offshore wind development, 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, efforts in part which led to the recovery and delisting of Pacific Brown Pelican. [Footnote 296: 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.](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 losses of birds to 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 \$21M. [Footnote 297: 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.

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-2021-0038-DRAFT-0062-10

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

LIGHT DISRUPTION OF NIGHT-MIGRATING BIRDS

The COP did not adequately explore discuss or quantify the potential for lighting on the wind turbines to disrupt and disorient night-migrating birds. There is evidence birds aggregate in high densities, decrease flight speeds, follow circular flight paths, and vocalize more frequently around an intense light source, indicating disorientation caused by and attraction to the light source; Bird densities recorded near light installation exceeded magnitudes 20 times greater than baseline densities for the area. [See PNAS October 17, 2017 114 (42) 11175-11180 Van Doren, Horton, Dokter, Klinck, Elbin, Farnsworth <https://www.pnas.org/content/114/42/11175>

Even if, given FAA regulation, Equinor deems these losses unmitigatable, given that this wind turbine power plant is being planned to be built in the Atlantic Flyway of migrating birds, these effects should be explored and discussed so that an earnest estimation of the total environmental effects of the project including bird mortality cost can be addressed as part of the environmental assesement.

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

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

THE COMMENT PERIOD SHOULD BE EXTENDED

The comment period should be extended because Appendix W, the Environmental Mitigation Appendix was missing. Clicking on this document opened a two page document containing a link that led to Equinor's website and a navigable virtual gallery which only had visual impact simulations but no environmental mitigation plan on the webpage or on any page easily navigable. The appendix is missing from the COP.

The comment period on visual impact should be extended because the Visual Impact Study has not yet been published for the stated reason that plans are being revised.

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

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

WIND TURBINE INJURIES TO BIRDS; CONCLUSIONS DRAWN FROM SAMPLING AT THE LEASE AREA; STANDARD FOR ASSESSING A RISK OF COLLISION TO BE "LOW"

The Avian Impact Assessment of the COP appeared to reason that if an individual of the species would pass through the Lease Area only during migration, the risk of collision with a turbine in the lease area is "low".

The Avian Impact Assessment appears to be classifying the risk of collisions with turbines in the lease area of birds of a certain species as "low" if the species naturally has less abundance than other species.

While risk of collision in absolute numbers would obviously be lower for species with lower naturally occurring abundance, this obviously cannot be said to necessarily represent that risk of collision is low at the lease area for migrating birds of that species.

While the assessment index is described as "The relative importance of the Lease Area for a taxonomic group, as compared to other surveyed areas in the region"

With perhaps one exception, it appears that the data were not adjusted for known relative abundance of the respective migratory species.

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

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

WIND TURBINE INJURIES TO BIRDS;

Except of course for the pelagic species, the graphed aerial photography data (and model output of models which use this data) seem to suggest that the risk to birds of being harmed by turbines in the lease area is relatively low because they hug the coastline as they migrate. However, most migrating birds are known to do proportionally more of their longer-stint migration at nighttime. Additionally, most species feed at or closer to the coast when they do feed and tend to feed in daytime with better visibility.

The aerial photography was conducted only during the daylight hours. This can result in an underestimate of risk of collision in more distant offshore areas because the birds' presence at the coastline may be disproportionately represented and their presence offshore underrepresented in the analysis of aerial data that has only been taken during the day.

NOAA-deployed dual-polarization radar (microwave radar pulses emitted at two angles instead of one) allow for good discrimination of targets. For example, a sleet particle in the process of formation can be discriminated from a droplet of rain using dual-pol data. Confirmation of radar return signatures for

different species and for species of interest could have been spot-confirmed either with in-person observations on deployed vessels or by drone.

Deployment of boats with portable radar devices are an inexpensive and informative way to document actual use of offshore areas by migrating birds and unlike sweep radar from land would additionally be able to yield a tighter understanding of flight altitude under different conditions to be able to predict conflict with flight paths and altitudes of migrating birds with turbine rotors. The a priori potential for harm of turbine rotors each of which is three quarters the length of a football field in diameter is so great that a better study design was, and still is, warranted.

In September of 2019, in both Brookhaven and Longbeach town meetings regarding the proposed projects I voiced strong concern to Equinor over the lack of radar field studies. It is unfortunate that they were never initiated and that aerial photography combined with predictive modelling was continued to be used instead. A project of this magnitude and cost should have employed radar as an accessible tool to provide more data and more reliable information that possesses a higher utility for understanding the effects of this project on migrating birds. It is difficult to assess the environmental effects of this project with the particular field study that has been selected to be performed, and it's difficult to reconcile the design of these studies with the ultimate objective of determining potential conflict of migrating birds with hazards in the lease area, opting for aerial static spot photography which is taken at a flash in time, and with each aerial survey only covering a small fraction of the total lease area and not opting to use radar that has the ability to detect any object moving within its range over periods of time, covering more area and track moving objects.

Comment Number: BOEM-2021-0038-TRANS-063021-0002-1

Commenter: Alex Valesso

Commenter Type: Individual

Comment Excerpt Text:

At this point, I, you know, just like to understand as far as the environmental review is concerned, you know, when you do these analyses and you prepare this impact statement, there is obviously going to be projections on the impact you have to wildlife especially birds. I am sure that you may already know that the amount of birds that have been lost due to human activity over the course of the last 50 years has been a total of over three billion, and it's well-known that these types of projects are very harmful to birds and can kill many of them during the course of every year. My question is what is considered by this project in general to be an expected anticipated number of birds that will be killed as a result of this and is there an acceptable number that is in your minds as being somehow just within parameters that you are just okay with. Personally I think that this project is something that will cause a lot of harm to seabirds that are already having a hard time and I'd like just to understand exactly what that impact is anticipated to be.

Comment Number: BOEM-2021-0038-TRANS-063021-0004-3

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Number two, is that we also hear about, you know, impacts to birds and impacts to fish. Again, it's unfair to compare a wind farm to nothing. So when there is analysis done on impacts to birds, it should be done in the context and the comparison of what are fossil fuels impacts to birds. When someone says we know that wind farms impact birds, yeah, we also know that fossil fuels and climate change impacts birds. Which one has the greater impact, which one has the lesser impact and this is very important because what we are doing right now, is we are not deciding wind or nothing, we are deciding the future of energy

infrastructure in New York State and also in America, and that future needs to be evaluated by what infrastructure we have available to us.

Comment Number: BOEM-2021-0038-TRANS-071321-0001-2

Organization: National Audubon Society

Commenter: Shilo Felton

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We applaud NYSEERDA's efforts to inform baseline information of marine birds and nocturnal migrants in the New York Bite, however, the aerial surveys supported by NYSEERDA are a starting point and do not cover enough of the area surrounding the wind energy areas including Empire Wind to adequately evaluate displacement. Additionally, the MDAT (ph) assessments which are of a larger scale are not robust enough to assess potential impacts from the project. The Long Beach landing site falls within a globally recognized important bird area and the offshore wind array is likely important foraging migratory habitat for a variety of bird species. We ask that BOEM outline in its Environmental Impact Statements the agency's plan for coordinated monitoring across the region to understand potential impacts to birds for construction and operation of the Empire Wind lease area and others within the New York Bite and to inform adaptive management strategies and implement potential compensatory mitigation needs.

Comment Number: BOEM-2021-0038-TRANS-071321-0005-2

Commenter: Alexander Kazowski

Commenter Type: Individual

Comment Excerpt Text:

Additionally, my concern is more importantly for the wildlife that really has no voice in this decision making process and I echo one of the other colleagues' opinions about maybe scoping more about where these birds are impacted the most in their flight patterns essentially since they migrate in the evening where they might not be able to see these turbines in the air

A.3.6 Climate Change

Comment Number: BOEM-2021-0038-DRAFT-0007-2

Commenter: Kevin Costa

Commenter Type: Individual

Comment Excerpt Text:

The Environmental Impact Statement should be sure to assess the consequences/opportunity costs of failing to act. Innumerable studies show that the consequences of the status quo, business-as-usual will be an expensive economic and environmental catastrophe that will impact us for decades if not centuries to come. The EIS should include the consequences of inaction, particularly the negative externalities caused by fossil fuel emissions.

Comment Number: BOEM-2021-0038-DRAFT-0008-4

Commenter: Isaac Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

Although I am only thirty years old, I have seen and experienced a world which is quickly losing its biodiversity due to anthropogenic climate change caused in large part from the burning of fossil fuels. Even these last two weeks our world has seen extreme loss. For example the billions of sea creatures dying due to the heat waves.

Humans are in no way immune to these losses. The world health organization estimates 166,000 people died from heat waves during the years of 1998-2017. I fear the numbers that will die in the next two decades. Finding alternatives to burning fossil fuels for power is extremely necessary to slow the earths warming.

Comment Number: BOEM-2021-0038-DRAFT-0015-4

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

Carbon Dioxide and Greenhouse Gas Emissions- There has been no public accounting of the carbon/GHG footprint of the construction and operation of Empire 1. Therefore, it is unknown whether the project will actually reduce greenhouse gas emissions and to what extent. This appears to be a key point upon which the public should be offered the opportunity to make comment. The transport of the construction materials, and the huge number of ship trips required for construction, the diesel fuel consumption associated with this project, plus the numerous other emissions for the raw materials acquisition, component production, transport of components and maintenance of the units have not been presented to the public. The carbon intensity of production, transport, construction, operation and maintenance should be made available to the public and represents a significant flaw in the planning and public notice process.

I would recommend Equinor be required to utilize a calculation tool similar to the US Department of Energy's "GREET Model", which measures "well to wheel" emissions for vehicles. The turbines' footprint should be calculated starting with extraction and transport of raw materials, fabrication of major components, transport of major components to the shoreside staging area, plus the entire suite of construction related transit factored in. A separate calculation should be made for the operations and maintenance of the units over their projected lifespan, to include any fossil fuels stored within the turbines or transmission lines (lubricating fluids, transmission fluids and any other). Combined, this would represent the lifecycle emissions of the proposed project (not including decommissioning).

Comment Number: BOEM-2021-0038-DRAFT-0020-9

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

OSW will play a necessary role in reducing greenhouse gas emissions from fossil

Comment Number: BOEM-2021-0038-DRAFT-0024-1

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. We are already seeing the consequences: chronic droughts, fire, floods, rising seas, record high temperatures, more frequent extreme storms, fishery disasters, and significant economic losses. 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.

Comment Number: BOEM-2021-0038-DRAFT-0024-9

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Draft EIS should be framed in the context of how the project will contribute to regional decarbonization, and clean energy goals, and the consequences of the no-action alternative.

Comment Number: BOEM-2021-0038-DRAFT-0027-3

Commenter: Donald Weigl

Commenter Type: Individual

Comment Excerpt Text:

With the growing impact of severe storms from climate change, there exists a much greater threat of shipping accidents and spills severely impacting our environment as well potential damage to wind support structures.

Comment Number: BOEM-2021-0038-DRAFT-0029-10

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

[Italics: We are not winning the war to save our planet. In fact, we are losing it.] Climate change is altering ecosystems faster than species can adjust. World Wildlife Federation scientists have estimated that most species on this planet (including plants) will have to “move” faster than 1,000 meters (3280 feet) per year if they are to keep within the climate zone which they need for survival. Many species will not be able to redistribute themselves fast enough to keep up with the coming changes. These species may well become extinct.

When evaluating offshore wind projects, it is imperative that we do not frame this decision as the choice between offshore wind and nothing. The choice is between offshore wind and fossil fuels. [Bold Italics: As BOEM moves forward with the COP and EIS, it should measure the visual impacts, community impacts, and impacts on birds, fish, and marine species against the comparable fossil fuel infrastructure.]

Comment Number: BOEM-2021-0038-DRAFT-0029-2

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

New York City and Long Island are on the front lines of climate change. The NYSERDA white paper on the Climate Leadership and Community Protection Act asserts that a major obstacle facing New York in meeting our climate change goals is the “tale of two grids”. Upstate uses 88% zero-emission resources but only represents 1/3rd of the energy load, while downstate is 2/3rds of the load and 69% fossil fuels. [Bold: The only clear pathway to implement a just transition from polluting fossil fuels to renewable energy downstate is by utilizing offshore wind.]

Comment Number: BOEM-2021-0038-DRAFT-0029-4

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

1. Wildlife Impacts and Climate Change

As part of the Environmental Impact Statement and Construction and Operations plan for Empire Wind, impacts to fish, birds and marine species need to be assessed and mitigated to the greatest extent possible.

However, it is important to note in the study that climate change is a significant threat to these important species. Fisheries, bird populations and marine species are all adversely impacted by ocean acidification, warming waters, changing ocean currents and extreme weather events.

Climate change impacts have caused significant damage and continue to be a significant threat to downstate New York and are continuing to adversely impact our estuaries and our coastal communities. The environmental benefits of advancing offshore wind farms to reduce climate impacts needs to be weighed against any potential impacts associated with construction and maintenance of offshore wind farms. [Bold Italics: CCE believes that offshore wind is one significant part of the antidote in fighting climate change. We cannot and should not put the antidote on pause while allowing impacts of climate change to intensify.]

Long Island and New York City are already experiencing the negative ecological and economic impacts of climate change. We need to be at the forefront of the transition to renewable energy and of offshore wind development in the US.

Comment Number: BOEM-2021-0038-DRAFT-0029-5

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The National Ocean and Atmospheric Administration (NOAA) predicts under a worst- case scenario a 6 ft sea level rise will cause most of the barrier islands and Long Island homes south of Merrick Road (route 27A) to be flooded or under water, with more than 150 municipalities impacted. Homes and infrastructure are already being raised, including roads in Freeport, Lindenhurst, Smithtown, and Southampton, as well as the Shelter Island ferry, while residents in the most vulnerable communities are facing managed retreat and home buyouts. These communities are in an exceptionally vulnerable position to extreme weather events.

Comment Number: BOEM-2021-0038-DRAFT-0029-6

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Superstorm Sandy destroyed or damaged 95,000 buildings on Long Island and caused \$19 billion in damages to New York City. We are experiencing the increasing occurrence of “hundred-year storms” and increased precipitation during rain and snow events, and the problem will only get worse. NOAA predicts that in a worst-case sea level rise scenario, the average high tide in NYC will be 2 feet higher than the storm surge during Superstorm Sandy. Costs of repairing damage from extreme weather events like Superstorm Sandy and Hurricane Irene coupled with the need to raise homes and pay increased flood insurance premiums are impacting struggling homeowners in coastal communities. In addition to major storms, south shore communities are already experiencing “sunny day flooding” due to higher tides. This means on sunny day there is still street flooding and property damage.

Comment Number: BOEM-2021-0038-DRAFT-0029-7

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Warmer winters coupled with longer, hotter summers are creating more hospitable conditions for invasive species, deer ticks and mosquitos that carry diseases and reduced agricultural yields. Increased

summer temperatures and more severe heat waves degrade air quality, increase health costs, and put lives at risk.

Comment Number: BOEM-2021-0038-DRAFT-0029-8

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Ocean acidity has increased 30% since the industrial revolution and there are documented negative impacts to sea scallops, squid, clams, oysters, and other species in the northeast.

Comment Number: BOEM-2021-0038-DRAFT-0029-9

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The catastrophic lobster die off in the Long Island Sound is mainly attributed to warmer waters. The native lobster species and its historic maritime industry declined 90%. The industry accounted for tens of millions of dollars annually. The loss of this fishery is not only an economic loss but also means this historic maritime culture is slipping away.

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

Commenter: Andrew Berko

Commenter Type: Individual

Comment Excerpt Text:

6. The current plan does NOT include a calculation for the total carbon footprint over the life of the Empire Wind Farm versus other non-fossil fuel alternatives. Such an omission is unconscionable and demonstrates the lack of vision and propriety. A COP that omits this essential estimate coupled with the aforementioned “common-sense” reasons, should NOT be approved.

Comment Number: BOEM-2021-0038-DRAFT-0044-23

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Climate change should also be an essential consideration in the cumulative effects analysis.

Comment Number: BOEM-2021-0038-DRAFT-0047-50

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Climate Related Impacts:

- Assessment of Project’s consistency and alignment with state-level climate change and energy policies and laws, including but not limited to the Climate Leadership and Community Protection Act (CLCPA or “NYS Climate Act”). This includes CLCPA’s required GHG emissions reductions of 40% from 1990 levels by 2030 and 85% from 1990 levels by 2050, as well as the following requirements for the New York State’s electricity generation: 70% renewable energy by 2030, 100% zero emission by 2040, and 9,000 megawatts of offshore wind by 2035.

- Consideration of environmental impacts associated with the construction and operation of the Project in light of current and future changes to the environmental as a result of climate change including sea-level rise, warming ocean temperatures, and increasing frequency and intensity of extreme weather events.
- Evaluation of habitat changes and spatial shifting of marine populations due to climate change.
- Evaluation of the Net Carbon Footprint of the Project.

Comment Number: BOEM-2021-0038-DRAFT-0057-10

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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

- “alter ecological characteristics of benthic habitat, EFH [essential fish habitat], invertebrates, and finfish, primarily through increasing water temperatures.” [Footnote 28: 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 29: E.g., Id. at E3-4, 3-15, E2-7.]
- ocean warming affects coastal habitats and “influence[s] finfish and invertebrate migration and may increase the frequency or magnitude of disease.” [Footnote 30: E.g., Id. at 3-6.]

These climate impacts will 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 31: 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 32: E.g., Id. at H-45.] For sea turtles, climate change would alter existing habitats, rendering some areas unsuitable for some species and more suitable for others. [Footnote 33: 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 34: E.g., Id. at E3-15, E3-17.] as well as “reduced breeding, and/or foraging habitat availability, and disruptions in migration.” [Footnote 35: E.g., Id. at E3-19.] These impacts must be accounted for in the Empire Wind Draft EIS.

Comment Number: BOEM-2021-0038-DRAFT-0057-12

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 38: 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 39: Id.] These values range from \$11 to \$212 (in 2007 dollars) per metric ton of CO₂. [Footnote 40: 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 41: 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 42: 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 or more of offshore wind.

Comment Number: BOEM-2021-0038-DRAFT-0057-13

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 Empire Wind Draft EIS. These impacts include, as noted in previous BOEM analyses:

- 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 43: SFWF DEIS at E3-29.]

Comment Number: BOEM-2021-0038-DRAFT-0057-2

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Empire Wind—which is actually two projects, Empire Wind 1, a 816 MW project, and Empire Wind 2, a 1,260 MW project—if responsibly developed to avoid, minimize, mitigate, and monitor potential environmental, cultural, and economic impacts, will provide substantial benefits to society and the environment. The Project is part of the urgent transition away from dirty, climate-altering fossil fuels to the clean energy economy envisioned by the Biden Administration that is necessary to avoid catastrophic warming.

This rapid transition to a clean energy economy is paramount to preserving wildlife and the environment. Absent a substantial shift from carbon intensive sources of energy to solutions like offshore wind, we face ever worsening impacts from climate change that will further drive countless species to extinction in both

marine and terrestrial environments, threatening entire ecosystems. These complicated biological support systems enable the United States' continued success across commercial and social sectors. Protecting these complicated webs of biodiversity for future generations is vital to preserving the economic, social, and environmental well-being that our society relies on for our health and survival. [Footnote 7: World Institute for Development Economics Research, *The Economics of Transnational Commons* 97-102, Clarendon Press, (1997).]

Comment Number: BOEM-2021-0038-DRAFT-0057-31

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 81: 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-2021-0038-TRANS-063021-0005-1

Commenter: Sophie House

Commenter Type: Individual

Comment Excerpt Text:

It's also important that the Environmental Impact Statement include the potential for greenhouse gas emissions reductions that can come from the displacement of dirty fossil fuel generation. Evaluation of offshore wind must also include the history and legacy of fossil fuel pollution in host communities like Sunset Park, Brooklyn, where the community has many fossil fuel facilities that cause disproportionate pollution and health disparities. Climate change is an urgent issue as we have seen recently with heat waves in the Pacific northwest and the continued devastation of wild fires in the west. As others have mentioned this evening, the benefits of clean energy development shouldn't be compared to a hypothetical blank slate but to the status quo of a continued dependence on fossil fuel power. As climate change worsens, we need to ensure a reliable up to date electric grid, and BOEM should make sure that we establish the contributions of Empire Wind to serving peak and base load demand on New York's grid.

Comment Number: BOEM-2021-0038-TRANS-063021-0010-3

Commenter: Ben Orloff

Commenter Type: Individual

Comment Excerpt Text:

The boardwalk from which he views his mother's -- the site of the dispersal of her ashes itself will be underwater but more than that I want to say there is a kind of climate tourism, a climate visibility causing these things to be seen really has tremendous power at points in two directions, one is the direction of climate justice that the many harms that are caused by the fossil fuel economy are understood more

clearly when there is a visual alternative, when people can grasp that renewable energy is not really an obstruction but something right here in our region.

Comment Number: BOEM-2021-0038-TRANS-063021-0012-3

Organization: Olar Energy

Commenter: George Poval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Having said that, we have a real commitment that is needed for everybody to take into consideration the different groups but remember what we are dealing with is averting climate change and all of those groups are already being adversely effected by that. So we look forward to in depth discussions on bringing the power, essentially into Barrett power plant. To displace the dirty fossil fuels that are being used there and have been used there for the last 50 plus years, and we would hope that the discussion would include community benefits for just such siting of the electrical transfer station.

Comment Number: BOEM-2021-0038-TRANS-070821-0001-1

Organization: Climate Jobs New York

Commenter: Maria Dignan

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

At a moment when we must make large scale investments to restart our economy, we should action on clean energy at the level we know we need to to take on climate change.

Comment Number: BOEM-2021-0038-TRANS-070821-0001-5

Organization: Climate Jobs New York

Commenter: Maria Dignan

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The related onshore transmission upgrades to handle the load from Empire Wind is vastly needed for both New York City and Long Island. By investing in our electrical grid, we can create a resilient energy infrastructure for decades to come.

Comment Number: BOEM-2021-0038-TRANS-070821-0002-1

Organization: New York League of Conservation Voters

Commenter: Caroline Hahn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Offshore wind is critical to meet New York's renewable energy goals, reduce our reliance on fossil fuels and rebuild around a green energy economy which will provide family supporting jobs and improve public health. New York has committed to 70 percent renewable energy by 2030 and 100 percent clean energy by 2040 including 9,000 megawatts of offshore wind. We are excited to see Empire Wind and Equinor move forward which in total will generate nearly 2 gigawatts of clean power, enough to power over 1 million New York homes and help New York to meet our ambitious climate energy goals.

Comment Number: BOEM-2021-0038-TRANS-070821-0004-1

Commenter: Tara Noble

Commenter Type: Individual

Comment Excerpt Text:

I am a life long resident of New York and I am joining today just a member of the public because after yet another record breaking and deadly month of heat waves, it seems to me that our absolute number one priority for all energy projects should be simply do they help us get to a carbon neutral future, and if the answer is yes, then we are obligated to pursue them without delay. Of course I would also like to see these projects go forward in a way that preserves our existing environment and supports a strong and just economy for all and I appreciate the work that has already been done to that end, now I urge all those involved to avoid delay because ultimately there is no greater threat to fish, birds, local communities, coast lines and the ocean itself than climate change and getting renewables on-line quickly is the only option we have.

Comment Number: BOEM-2021-0038-TRANS-070821-0005-3

Commenter: Tom Barracca

Commenter Type: Individual

Comment Excerpt Text:

In addition, I am a former reliability engineering manager for National Grid when they were under the LIPA agreement, and I am very very supportive of the delivery plan of the -- of the 2000 megawatts of clean power into the New York Con Edison territory as well as the LIPA load pocket that they are going to bring in in southwest Nassau County. As many people might know that there is an aging power plant, EF power plant in Island Park that's been upgraded many times and it is still operating and, you know, National Grid should be commended to make the best use of that but quite frankly it's time for renewable power to be brought into Long Island and into New York City and Empires plan to inject clean power into those two load pockets is perfect timing in the next couple of years.

Comment Number: BOEM-2021-0038-TRANS-070821-0007-1

Commenter: David Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

We are already seeing the effects of climate change with droughts, heat waves, intense storms and obviously we know all know this is just the beginning and I think what my kids will ask me one day, like what did I do, and I don't really have a great answer to those kids very often. I volunteer for different organizations but then something like this comes along and this is something we can do, we can put this Empire Wind off of our shores and cut pollution and cut our reliance on carbon in our city and I think it will start,

Comment Number: BOEM-2021-0038-TRANS-071321-0001-1

Organization: National Audubon Society

Commenter: Shilo Felton

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Audubon protects birds and the places birds need now and in the future. Our report Survival By Degrees found at climate.audubon.org shows 389 species of North American birds at risk of extinction should we reach a global warming scenario, the three degrees Celsius above pre industrial levels. Audubon New York and National Audubon Society support the need for responsibly sited and operated offshore wind development to meet our clean energy goals to mitigate climate change.

Comment Number: BOEM-2021-0038-TRANS-071321-0006-1

Organization: 350 Brooklyn

Commenter: Sara Reed
Commenter Type: Individual

Comment Excerpt Text:

I am speaking out today that ask you when you evaluate this project, you think about this big picture. I am asking that the upcoming Environmental Impact Assessment, fully account for the benefits and harm reduction represented by investments in renewable energy that displace fossil fuel infrastructure. In particular, I want to emphasize that the EIA should assess the potential to reduce greenhouse gas emissions.

Comment Number: BOEM-2021-0038-TRANS-071321-0006-3

Organization: 350 Brooklyn
Commenter: Sara Reed
Commenter Type: Individual

Comment Excerpt Text:

In making its evaluation, the EIA must compare the benefits of wind power not to a theoretical blank slate but to the world that we live in now, a world that continues to rely on fossil fuels that aggravate the climate crisis.

Comment Number: BOEM-2021-0038-TRANS-071321-0007-2

Organization: 350 Brooklyn
Commenter: Georgianna Page
Commenter Type: Individual

Comment Excerpt Text:

The Environmental Impact Statement should include and assess the opportunity cost of inaction. As stated in an article by Stephanie McClellan, Director of the Special Initiative of Offshore Wind at the university of Delaware, carbon pollution is making oceans more acidic and less oxygen rich and the warming temperatures are fundamentally changing ocean eco systems jeopardizing coastal fisheries and the millions of people who rely on healthy fish for food. In addition, rising sea levels due to events like Hurricane Sandy are causing regular flooding in coastal communities, threatening clean water supplies and rusting away costly infrastructure driving even more pollution into the seas. A complete benefit cost analysis must include all of the myriad harms and cost of continued fossil fuel emissions.

Comment Number: BOEM-2021-0038-TRANS-071321-0010-1

Organization: Citizens Campaign for the Environment
Commenter: Adrienne Esposito
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

I think it's extremely important that as NYSEDA and BOEM look into the cumulative impacts of wind, we cannot just compare it to wind or nothing. But rather it needs to be a comparative analysis if we do a wind project and climate change continues. So for instance, we hear concerns as we should about damage to birds, so if we don't do wind and we continue to rely on fossil fuels, what is the damage to birds? So any impacts to birds caused by the wind farm needs to be juxtaposed against damage to birds by not developing renewable clean energies because it's climate change that's killing birds, whether it's birds that don't have a food source anymore because of shift in weather patterns, there is drought because of shift in weather patterns, loss of habitat because of shift in weather patterns. I think it's important for us to look at not just a wind farm in isolation but what it means if we do nothing as a society to combat climate change.

Comment Number: BOEM-2021-0038-TRANS-071321-0010-3

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition because of climate change, harmful alga blooms are being fueled, not solely because of increased temperatures but yes in part because of increased temperatures. So if we do absolutely nothing to combat climate change, there are consequences to the same resource that some are seeking to protect. So I am urging BOEM to look at this in a holistic fashion that allows us to make a comprehensive analysis and evaluation of the overall impacts to our ecosystem and to our environmental resources whether we do wind or whether we don't do wind.

A.3.7 Coastal Habitat and Fauna

Comment Number: BOEM-2021-0038-DRAFT-0034-5

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We submitted concerns about ecological implications and studies showing the detrimental impacts siting wind facilities on productive fish habitat could have on the resource we rely on for our business. One paper specifically focused on potential impacts to squid, but was downplayed by BOEM.

Comment Number: BOEM-2021-0038-DRAFT-0046-4

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is not scallop dredges but rather wind turbine arrays which fundamentally change the character of the ocean bottom. In addition to causing scour of the seafloor, creating sediment plumes, and altering ocean currents (all discussed in greater detail below), wind turbines attract new species to the ecosystem within and near a wind turbine array, drastically altering overall species composition. Cf. COP at 8-191. For instance, mussel species congregate on the turbine structures themselves, forming dense colonies that compete for food with local scallops and foul the ocean bottom with their waste. [Footnote 2: Van Berkel, et al., The Effects of Offshore Wind Farms on Hydrodynamics and Implications for Fishes, OCEANOGRAPHY, Vol. 33, Issue 4, p. 108-117 (2020).]

Comment Number: BOEM-2021-0038-DRAFT-0046-5

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Other known predators of scallops, such as starfish and moon snails, also congregate near these structures. [Footnote 3: Id.] FSF is requesting that BOEM consider these alternative studies and real-world considerations in conducting its DEIS, so as to truly ascertain (and distinguish) the current status of the ocean bottom where scallop fishing occurs from the anticipated changes that would occur following development of an offshore wind turbine array in this area.

Comment Number: BOEM-2021-0038-DRAFT-0046-6

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the COP accurately represents that scallop larvae are pelagic, it incorrectly asserts that these turbines will not interfere with ocean currents and scallop settlement within a windfarm area. See COP at 5-169. Rather, scientists are far from certain that scallop larvae will settle as they naturally do within the disrupted current patterns within a windfarm. This is an important issue for the scallop industry and one that the fishery has begun studying using research set-aside funds.

Comment Number: BOEM-2021-0038-DRAFT-0046-7

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM's DEIS should consider this study, performed by Dr. Changsheng Chen of the University of Massachusetts School of Marine and Science Technology ("SMAST") which, based on modeling, concluded that wind farm arrays will disrupt scallop larval flow. [Footnote 4: Available at https://s3.amazonaws.com/nefmc.org/Doc.14.a-UMASSD_WHOI_short_report_05_6_12_2021_revison.pdf (last accessed July 26, 2016).]

Comment Number: BOEM-2021-0038-DRAFT-0047-25

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Evaluation of micro-gyres and circulation changes around structures and potential effects to the Mid-Atlantic cold pool.

- Evaluation of scouring and sedimentation from turbine bases.
 - Evaluation of air circulation changes from turbines and resulting sea surface temperature impacts.
 - Evaluation of sand scouring, effects of littoral drift and storms on cable burial.
 - Assessment of seafloor and land disturbance from offshore wind components, including but not limited to turbine structures, cables, etc.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-26

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Sediment Suspension and Deposition:

- Estimated levels and time of year (these may impact benthic species and egg and larval survival).
 - Modeling of the extent, distance of total suspended solids (TSS) concentration and quantity of deposition.
 - Modeling of Class C contaminant concentration in the water column at 500 feet from the activity.
 - Consideration of actual monitoring data from installed offshore wind turbines during and after installation, including measured deposition rates/distances and extent of generated turbidity plumes.
-

- Assessment of impacts from cofferdam excavation.

Comment Number: BOEM-2021-0038-DRAFT-0047-31

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Identification of Best Management Practices to reduce risks from extreme environmental conditions (i.e., rough seas, complex currents, and cold waters), vulnerable habitats and at-risk species.

- Shifting habitats from introduced structures.
- Regime shifts due to changing food sources.
- Changes in habitat from turbine and cable installation.
- Impacts on Plankton.

Comment Number: BOEM-2021-0038-DRAFT-0047-39

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Coastal Resources Impacts:

- Evaluation of potential impacts to land use and water-dependent uses along the shoreline from the siting of new infrastructure (e.g., export cables, substations, O&M facility, temporary docks/work platforms) that will need to be constructed to accommodate the Project. .
- Consideration of impacts to Coastal Erosion Hazard Areas (New York State Environmental Conservation Law Article 34)
- Discussion of the New York City Waterfront Revitalization Program (WRP) and related land use plans within affected communities.

Comment Number: BOEM-2021-0038-DRAFT-0047-72

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- A thorough alternatives analysis should evaluate avoiding impacts from development and minimizing the impacts of any encroachment. [Italics: Note: Saltmarshes are one of the most important and notable habitats of New York State’s marine district, particularly along the south shore of Long Island. They provide significant ecological and socio economic benefits, including water quality improvement, aquatic productivity, habitat, flood protection and stormwater treatment, and form the basis for designating different State- and federally- recognized Significant Coastal Fish and Wildlife Habitat (SCFWH) sites located in Long Island. Saltmarshes are critical for many recreationally and commercially important fish, shellfish, and waterfowl species, and are substantially responsible for the high biological and economic productivity of Long Island’s South Shore. New York has invested significant resources in restoring and protecting salt marsh habitats.]

Comment Number: BOEM-2021-0038-DRAFT-0057-86

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM MUST CONSIDER THE ENVIRONMENTAL IMPACTS FROM THE EMPIRE WIND 2 CABLE LANDING ROUTES PROPOSED THROUGH SENSITIVE HABITAT

The Project's proposed cable landing on Island Park will impact the globally important West Hempstead Bay/Jones Beach IBA on Long Island. The COP incorrectly claims that Long Beach is not included in the IBA. [Footnote 369: EOW COP, p. 5-63.] In reality, the IBA is characterized, in large part, by the barrier island beach (Long Beach and Lido Beach included) and surrounding saltmarsh. Despite being a heavily trafficked beach in the summer months, the IBA continues to provide essential habitat for nesting Piping Plover and American Oystercatcher. Saltmarsh and Seaside Sparrows rely on the saltmarsh for nesting. This IBA is the site for the most recent record of breeding Black Rail within the state of New York [Footnote 370: McGowan, K. J., and K. Corwin, eds. 2008. The Second Atlas of Breeding Birds in New York State. Cornell University Press.] and will likely provide critical habitat to restore this species' historic range. The saltmarsh provides important wintering and breeding habitat for American Black Duck and Brandt, both species in decline and under heavy management by the Atlantic Flyway Council. American Black Duck are also a High Priority Species of Greatest Conservation Need within the state of New York. [Footnote 371: New York State Department of Environmental Conservation. 2015. State Wildlife Action Plan. Accessed at <https://www.dec.ny.gov/animals/7179.html>. Updated 2015.] The IBA also serves as valuable habitat for wintering waterfowl and stopover and staging habitat for a variety of migratory songbirds and shorebirds.

Comment Number: BOEM-2021-0038-DRAFT-0057-87

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to sensitive avian species, the developer's consultation with USFWS reveals potential for the project to impact ESA-listed plants seabeach amaranth and sandplain gerardia. Seabeach amaranth provide important shade structure and camouflage for beach-nesting shorebirds, like Piping Plover, including their eggs and chicks. The plant also provides dune stability and is associated with habitat for other taxa, including tiger beetles and sea turtles. New York's remaining seabeach amaranth occurs only along the barrier island beaches of Long Island. Sandplain gerardia is associated with the nutrient poor, sandy soils of Hempstead Plain that may intersect with the Project's cable route beyond Long Beach.

Only four populations remain in the state--all on Long Island. Given the limited range of both of these species, it is critical that the developer survey for the species prior to construction and avoid areas where the species are present. Neither seabeach amaranth or sandplain gerardia are easily propagated and transplanted. While propagation of sandplain gerardia is more commonly used as a recovery tool, the population within New York and across the species range are so limited that avoidance should be prioritized. In the case avoidance is impossible, we ask BOEM to require the developer to publish and fund long-term plans to propagate, establish, and manage these species in accordance with their USFWS species recovery management plans.

Comment Number: BOEM-2021-0038-DRAFT-0057-88

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Project study area also provides valuable intertidal and benthic habitat for various spawning fish and shellfish. Point Lookout and Hemstead provides an important site for horseshoe crabs to breed and lay eggs. The tidal flats of the salt marsh provide important habitat for sand lance and other forage fish, and beds for mussels, clams, oysters, and blue crab—all important sources of food for a variety of birds and other wildlife and valuable for maintaining water quality.

A.3.8 Commercial Fisheries and For-Hire Recreational Fishing

Comment Number: BOEM-2021-0038-DRAFT-0030-17

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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. 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. Although some information is contained in the COP, the discussion of commercial and recreational (party/charter and private angler) fisheries affected should more comprehensively assess historic and recent 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., shore-side support services such as dealers, processors, distributors, suppliers, etc.); and coastal communities dependent on fishing. 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-2021-0038-DRAFT-0030-22

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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.

Comment Number: BOEM-2021-0038-DRAFT-0030-24

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 increased gear conflicts, bycatch, catch rates, 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-2021-0038-DRAFT-0030-66

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Fisheries Management Comments

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 and contains a good description of where fishing occurs relative to the project area. Our commercial and party/charter socioeconomic impact summary reports (available at https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development?utm_medium=email&utm_source=govdelivery) provide an overview of the landings, revenues, gear types, and ports that would be affected by this project, along with vessel dependency upon this area and species catch within the project area relative to total regional landings and revenue. The information from these reports should also be incorporated into your NEPA document. Atlantic herring, Atlantic mackerel, Atlantic sea scallop, Atlantic surfclam, longfin squid, and summer flounder are the primary commercial fisheries affected in terms of landing amounts and fishing revenue. Although a majority of vessels derive a small portion of yearly fishing revenue from this area, several vessels depend upon this area for over 10 percent of yearly revenue, with one vessel dependent upon this area for 37 percent of yearly revenue.

Comment Number: BOEM-2021-0038-DRAFT-0030-67

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Because lobster vessels are only required to submit vessel trip reports (VTRs) if they are issued a Federal permit for another species (many are not), lobster and Jonah crab operations are not fully captured in

available VTR data and are underrepresented in our socioeconomic impact summary report. Information on highly migratory species catch are only partially captured in VTRs available from the Greater Atlantic Regional Fisheries Office and are instead found in VTRs available from our Southeast Regional Office and the large pelagics survey (available at <https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads>). Such sources should be consulted when preparing the EIS. Party/charter vessels most often encountered black sea bass, scup, and red hake. However, 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 this limitation, the project area is likely to affect important regional recreational fisheries and a discussion of private angler catch should be included in the EIS comparable to a similar discussion already included in the COP. Any requests for fishery data should be submitted to nmfs.gar.data.requests@noaa.gov.

Comment Number: BOEM-2021-0038-DRAFT-0030-68**Organization:** NOAA National Marine Fisheries Service**Commenter:** Michael Pentony**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 2 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, the COP and future 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 vessel monitoring system (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. 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-69**Organization:** NOAA National Marine Fisheries Service**Commenter:** Michael Pentony**Commenter Type:** Federal Agency**Comment Excerpt Text:**

Like many wind projects, it is important to recognize that fishing operations in any one area are not necessarily limited to vessels operating in adjacent ports. Our summary reports indicate that vessels from Massachusetts and New Jersey are primarily operating within the project area, but vessels from Virginia, Rhode Island, and New York also fish in this area in smaller amounts. Operations and associated landings in all ports and states should be considered in future evaluations of this project as part of the EIS.

Comment Number: BOEM-2021-0038-DRAFT-0030-70**Organization:** NOAA National Marine Fisheries Service**Commenter:** Michael Pentony**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, and the potential for poor recruitment resulting from construction activities should be assessed. This is a critical analysis, as even marginal changes in costs could be impactful for some fisheries. 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-2021-0038-DRAFT-0030-71

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

We recognize efforts in the draft COP to reduce impacts to fishing operations through the removal of some WTG locations and by orienting WTGs along benthic contours consistent with the majority of fishing and transit operations. As noted above, we recommend BOEM avoid/minimize impacts to existing and anticipated future fishing operations from this project, particularly in the squid, scallop, and herring/mackerel fisheries, to the maximum extent possible. Recent discussions by the Mid-Atlantic Fishery Management Council have and may continue to revise commercial allocations of several species to individual states. Such actions may result in increased fishing activity for species such as summer flounder and black sea bass in the project area compared to past operations if allocations are shifted to more northerly states like New York and New Jersey. Further, if species availability increases or the New England Fishery Management Council closes the nearby scallop access areas, scallop vessels may increase fishing activity compared to past years, particularly within the southeast portion of the project area. While difficult to predict, the potential for future increases in fishing effort should be considered and analyzed in the EIS to the extent possible.

Comment Number: BOEM-2021-0038-DRAFT-0030-72

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Federal Fisheries Surveys, Fisheries Dependent Data, & Stock Assessments

As noted for other wind development projects, the Empire 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-2021-0038-DRAFT-0030-75**Organization:** NOAA National Marine Fisheries Service**Commenter:** Michael Pentony**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.

Comment Number: BOEM-2021-0038-DRAFT-0030-8**Organization:** NOAA National Marine Fisheries Service**Commenter:** Michael Pentony**Commenter Type:** Federal Agency**Comment Excerpt Text:**

Fisheries Habitat Impact Minimization Alternative

The proposed Empire Wind project is located in the northwest portion of the New York Bight, with a portion of the proposed development in or directly adjacent to Cholera Bank, a well-known fishing ground with pronounced vertical relief and high rugosity (surface roughness). While a small portion of Cholera Bank was removed from the original wind energy area prior to leasing, the entire Cholera Bank complex, including associated crests, slopes, depressions, and flats were not completely removed from leasing and still overlap with portions of the lease area. Complex habitats and sand waves and ridges are

particularly sensitive and vulnerable to impacts as disturbances or alterations to these habitats can impact both the physical and biological components of these habitats. Impacts to physical (e.g. structure - three-dimensional structure, surface area, crevices) and biological (e.g. infauna and epifauna) components may be permanent or long-term, typically taking years to decades to recover. It is the benthic features of Cholera Bank that make it an important fishing ground, and any adverse impacts to fish habitat could reduce the survival and recruitment of fish species that support valuable commercial and recreational fisheries and their associated communities.

Comment Number: BOEM-2021-0038-DRAFT-0034-1

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In November 2015, we attended two meetings with BOEM officials on Long Island. The first was an informal meeting in Montauk, NY, during which we explained why trawlers cannot operate in a wind farm and the devastating impacts a wind facility in the NY Call Area would have on the squid fishery in the area. That evening, in the public meeting in Riverhead, NY, we explained again on the record why trawlers cannot operate in a wind facility, and the safety impacts siting a wind facility in the middle of shipping lanes would have on commercial fishing vessels, putting human lives in danger. We gave an informal presentation on these hazards, and the Coast Guard officials attending the meeting agreed with all our assertions. We also explained that BOEM's economic analysis with regards to the state of Rhode Island and the squid fishery were completely false, and submitted confidential business information from over 20 vessels detailing their activity in the area which was not captured whatsoever in BOEM's economic analysis. Although Rhode Island commercial fishing ports would be the most heavily economically impacted by a potential wind facility, BOEM's economic analysis did not list one Rhode Island port as being impacted. BOEM representative Isis Johnson, in charge of preparing the EA, was also present and witnessed the confidential vessel information.

Comment Number: BOEM-2021-0038-DRAFT-0034-17

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On September 21, 2016, Senator Reed and Senator Whitehouse sent a letter to BOEM stating "...we are concerned that the process for the NY WEA is ignoring the potential effects a lease sale will have on commercial fishing, particularly Rhode Island's fishing industry. The area now being considered for development is an important fishing ground for several stocks, including squid and scallops.

We understand that several vessel owners who fish in this area have submitted fishing and location data to BOEM to inform its decision-making. Yet, according to the Rhode Island Department of Environmental Management (RIDEM) and industry stakeholders, the data BOEM presented at a public meeting at the University of Rhode Island-Narragansett Bay Campus on June 23rd did not seem to incorporate any of this information....

We have also heard from Rhode islanders who are alarmed that the proximity of turbines in the NY WEA to major shipping lanes could significantly limit access and safe passage for commercial vessels that actively fish in the area and transit between New York and New Jersey.

As noted in comments submitted by NOAA fisheries, the fishing effort in this area is significant and important to a number of states, including Rhode Island. For that reason, in its comments on BOEM's

Environmental Assessment, Regional Administrator John Bullard writes: ‘We recommend you take all possible steps to minimize impacts of any actions on the fishing industry, including reevaluating the lease area [emphasis added by the Senators]. The fishing industry provided you with information on the area, including comments on the analysis of existing data as well as additional data to illustrate areas of greatest concern. We recommend you consider eliminating areas of the WEA that pose the greatest conflict with the fishing industry prior to issuing a lease. We maintain that by eliminating these areas upfront, conflicts with the fishing industry will be reduced.....We agree.’

Comment Number: BOEM-2021-0038-DRAFT-0034-18

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On January 11, 2017, they wrote again, after BOEM ignored their request the first time and leased the area despite all the feedback received from the fishing industry, NMFS, and the Senators themselves:

“We write regarding the Bureau of Ocean Energy Management’s (BOEM’s) recently completed action for the New York Wind Energy Area (NY WEA). After reviewing BOEM’s response to our earlier letter and the final lease sale notice, we remain concerned about the effect of this development on Rhode Island’s fishing industry.

We understand that the provisional selection of a winner of this auction on December 15, 2016, is just one step in a process that will require more intensive review before construction is permitted. However, our constituents remain concerned that the proposed development in the NY WEA will not be compatible with longstanding fishing interests. Although BOEM’s final sale notice requires that the lessee prepare a Fisheries Communication Plan and hire a fisheries liaison to engage with stakeholders after the lease is awarded, this requirement has not allayed the concerns of Rhode Island fishermen who currently rely on this area for their livelihood. The further NEPA review for any construction and operations plan is also insufficient for our constituents, who contend that BOEM’s initial analysis does not accurately capture the extent of commercial fishing and the potential economic losses.

In addition to limits on access to a productive fishing ground, fishermen are concerned about the safety of this area, including potential interactions with vessels in adjacent navigation lanes. Commercial and recreational fishermen, shippers, and the crews that will build and maintain the wind turbines will all be operating in a relatively confined area where two maritime traffic lanes converge on the approach to one of the world’s busiest harbors. Because of these concerns, the Coast Guard’s risk assessment recommends placing the turbines at least 2 nautical miles from the edge of the traffic lanes. However, BOEM’s lease offer specifies a one nautical mile offset. The result is that a majority of the lease area is identified by the Coast Guard as “medium to high” or “high risk” for a collision. Because commercial fishing vessels with gear in the water lack the maneuverability of other vessels, they will be at even greater risk of collision. Our constituents raised concerns that the addition of wind turbines to existing undersea obstacles and snags could make the area unfishable for some or all species, as fishing vessels would be unable to safely navigate around these obstacles. These concerns are not addressed within the lease offer, but are critical to safe and economic use of these waters for fishing.”

BOEM of course, continued to ignore this feedback regarding both fishing and safety. In fact, the most up to date version of the Equinor COP states on pages 1-9 and 3-1 that the project will have only a 1 nm buffer from the edge of the traffic lanes. It’s justification for this is a 2012 recommendation from the USCG, referenced on page 1-9 of the Equinor COP. However, this completely ignores the more recent USCG guidance to BOEM from September 28, 2015, in which “the USCG recommends placing permanent structures at least 2 NM from the outer edge of a TSS and 5 NM from the entry/exit of the

Hudson Canyon to Ambrose TSS and the Ambrose to Nantucket TSS”. [Footnote 3: See USCG NY Area page (boem.gov).] True to its course of developer pacification, BOEM ignored this when leasing the area, and Equinor continues to pretend it does not exist.

Comment Number: BOEM-2021-0038-DRAFT-0034-19

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On March 20, 2017, Rhode Island Senators Reed and Whitehouse and Congressmen Langevin and Cicilline- the entire Rhode Island Congressional delegation- wrote another letter to BOEM:

“The NY WEA’s location overlaps with areas that Rhode Island squid fishermen and scallopers frequent, and any structures built within the NY WEA will have a direct and consequential effect on their livelihoods.”

The way that BOEM has handled all of this feedback has been to ignore it.

Rhode Island DEM feedback: RI DEM has also engaged BOEM regarding the Equinor lease area, and for years received pushback from BOEM as a result.

Comment Number: BOEM-2021-0038-DRAFT-0034-2

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

At every opportunity for public comment, including BOEM fishing industry stakeholder comment periods, BOEM comment periods on the NY Call Area, BOEM comment periods on Offshore Wind, BOEM Information Collection periods, BOEM comment periods on NY Call Area Environmental Assessment, and BOEM comment periods on the NY Call Area Proposed Sale Notice, we submitted detailed information about the impacts to the squid fishery and the state of Rhode Island, which accounts for more squid landings than all other East Coast states combined. We provided additional confidential data and documentation to BOEM, including the economic impact to just one vessel fishing squid in the area, as detailed by regulatory reports, confidential vessel data, and dealer reports accounting for the value of squid harvested in the NY Call Area. We also provided data we requested and obtained from National Marine Fisheries Service, which detailed the pounds of squid sourced from the area, the number of vessels affected, and number of vessel trips taken in the area, to demonstrate that BOEM’s economic impact analysis was grossly negligent and incorrect. None of this data was ever incorporated into BOEM’s economic analysis, despite multiple emails sent to BOEM officials providing continued information.

Comment Number: BOEM-2021-0038-DRAFT-0034-20

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Due to the extreme consequences of buildout of the Equinor lease on Rhode Island fishermen, as well as the fact that BOEM perpetually refused to acknowledge Rhode Island as an affected state, hold stakeholder meetings in Rhode Island, or allow Rhode Island to have a seat on the NY Task Force (which it eventually allowed, however, only after the siting and leasing decisions had already been made by

BOEM Director), or use appropriate fisheries data, RIDEM Marine Fisheries held in state meetings and conducted in state analysis regarding the impacts of the NY WEA to Rhode Island fishermen and the fishing industry. We have attached the July 22, 2016 document compiled as a result of stakeholder interaction, document review, and analysis. From that document:

“The location of the NY WEA poses a major problem for Rhode Island squid and sea scallop fishermen, as many travel to federal waters offshore of New York to harvest squid and sea scallops, which are then landed in Rhode Island (Figure 2). In response to an abundance of complaints from commercial fishermen regarding the NY WEA, the Rhode Island Department of Environmental Management (RIDEM), Division of Fish and Wildlife, Marine Fisheries section held a meeting with the public, primarily fishing industry participants, on May 18th, 2016. Industry concerns included: 1) flaws in the BOEM siting process; 2) likely negative impacts to commercially important species; 3) the NY WEA’s location presenting a serious risk to navigational safety; and 4) NY WEA project decisions being made for political reasons with stakeholder input not being taken into account. Industry also requested that DEM conduct a literature review on potential biological impacts of possible NY WEA development to commercially important species.

Based on the in depth literature review, fisheries exclusion, safety problems, habitat loss, and negative impacts of anthropogenic noise and sediment dispersal are all possible outcomes of development in the NY WEA. Fishermen may be prohibited from fishing in the NY WEA due to safety zones/closures, or simply due to the wind farm structures making operating certain gear types impossible or unsafe. Wind turbines may also create navigational hazards due to possible radar interference or proximity to shipping lanes. Soft bottom substrate may be eliminated by construction activities; creation of turbine foundations may serve as artificial reefs, but reefs are a different habitat type that will not benefit squid or scallop. Anthropogenic noise produced by construction activities (geophysical surveys and pile driving) or wind farm operation may cause injury to or decrease recruitment of commercially important species including squid and scallops. Electromagnetic fields do not appear to pose a serious threat to commercially important species, though sediment dispersal caused by construction has the potential to smother squid eggs and benthic organisms.”

Much of what necessitated this involvement was BOEM’s continued refusal to consider or accommodate any Rhode Island squid fishing industry concerns.

Comment Number: BOEM-2021-0038-DRAFT-0034-21

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On March 2, 2017, the Director of RIDEM wrote to BOEM again to bring attention to this document, as well as RIDEM comments submitted to BOEM as part of the EA and PSN notices. This letter notes:

“While the highest annual value of squid coming from the NY Lease Area (\$0.9 million in 2012) is lower than that of scallops in 2014, a large volume of squid is consistently harvested from within the NY Lease Area, making it the most valuable species to the Rhode Island economy.

...RIDEM acknowledges that BOEM removed 5 lease sub-blocks from the NY WEA...Nevertheless, the removed Cholera Bank aliquots will not minimize negative impacts to the RI fishing industry. RI DEM conducted a second VMS/VTR analysis using the updated NY Lease area (instead of the original WEA) and determined that very little fishing by RI vessels actually occurs in the removed sub-blocks areas...and the economic exposure estimate did not change for any RI vessels as a result of the sub-block removal.

...The United States Coast Guard (USCG) has provided input regarding the safety of possible development between shipping lanes, but BOEM has not followed USCG recommendations. The USCG recommends a minimum of two nautical miles between shipping lanes and stationary structures, as well as a boundary between shipping lane entrances/exists and structures of at least five nautical miles. BOEM’s preferred alternative is to lease an area with a one-nautical-mile- buffer between the shipping lanes and the area where stationary structures may be installed. ”

Again, BOEM and the developer continue to ignore the 2015 USCG guidance, and Rhode Island fishing interests have still not been accommodated in any way, regardless of the fact that we went above and beyond to provide data, feedback, and that BOEM has heard from cooperating agencies, state agencies, and federal delegates all saying the same thing yet continues to ignore the needs or safety of anyone other than the developer.

Department of Homeland Security feedback: Early in the NY WEA process, on March 8, 2013, the USCG submitted a letter to BOEM stating that nearly the entire NY WEA is a Weapons Training Area for the USCG/DHS. An image from a chart contained in the letter is reproduced below.

[See the original document for a radar image of weapons training area and approximate wind farm area.]

Considering the fact that on July 20, 2021, during a NY Bight Mixed Trawl and BOEM Working Meeting, [Footnote 4: <https://cbuilding.zoom.us/j/91627328820?tk=RRQ5zNnfQZwj-HwJuMn00T2J9zi-ZzQbtjNz95NNU30.DQIAAAAVVW0VNBZoXzJOU3p1bFJVbUIFVGZuVVp5OHpBAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA>] BOEM representative Luke Feinberg, when asked about DOD training interference as a result of wind farm buildout in the NY Bight, answered that live fire wouldn’t be an activity compatible with a WEA, it is surprising that BOEM has ignored this pre-existing use as well. A weapons training area would seem to include live fire exercises.

NOAA NOS IOOS feedback: Another major issue that BOEM has been aware of for some time but chooses to completely ignore is the HF radar interference that would arise from approval of the Equinor, and in fact all, offshore wind projects. On July 14, 2014, NOAA’s National Ocean Service Integrated Ocean Observing System Director Willis sent BOEM a letter in response to BOEM’s Call for Information on the now Equinor Empire Wind lease area that stated:

“There are eleven (11) high frequency (HF) radars in New Jersey, New York and Rhode Island that will be negatively impacted to some degree or another by wind turbines situated offshore Long Island. This would result in a loss of coastal radar monitoring for 100 miles of the NY, NJ and RI coasts. HF radars are used operationally by the US Coast Guard for search and rescue and by NOAA for oil spill response. Both these applications require 24/7/365 operations unimpeded by external interference to the HF radar signal.”

Because of the impacts especially to USCG search and rescue, this is of grave concern to the commercial fishing industry, particularly to vessels such as Seafreeze vessels that regularly fish and transit offshore RI, NY and NJ. Fishing lives matter. But BOEM continues to allow its process to continue unimpeded, and in the case of Vineyard Wind, approve projects without resolving the issue beforehand. (See more below in the [**HF radar**] section of this comment.)

At no stage of the BOEM process have commercial fishing interests been accommodated. We asked to be accommodated before the EA, and before the Equinor lease sale, before there were other parties involved. We were told no- BOEM will consider fisheries interests at the end of its offshore wind “process”. Seafreeze Shoreside therefore joined with other commercial fishing interests, commercial fishing ports and municipalities and challenged this in court, knowing that neither BOEM nor the developer would want to consider our interests at the end of the process. In that case, Statoil/Equinor submitted an amicus brief admitting as much and asserting that vacating the lease even at that earlier stage would “squander the resources and the five years that BOEM has expended to date in the leasing process” [Footnote 5:

Fisheries Survival Fund et. al. vs Zinke, Defendant-Intervenor’s Cross Motion for Summary Judgment and Opposition to Plaintiffs’ Motion for Summary Judgment, 2017, page 24 .] -which is why BOEM should have done its due diligence to exclude fishing areas from the lease in the first place as requested and recommended by all the entities quoted above. However, in that case, the judge ruled that the fishing industry could only sue once a project had been approved. BOEM therefore cannot use spent resources of either the agency or developer as an excuse for not fully addressing commercial fishing needs from both a fishing and a safety perspective at this later stage; we have attempted to incorporate it through every possible public process, including the courts. Developers also cannot use the excuse with BOEM that they have invested time and money into site assessment as a reason for not now fully acknowledging that their project may not realize full buildout to accommodate the existing commercial fishing interests that we and other state/federal agencies have clearly done our best to bring to BOEM’s attention and of which Equinor is well aware.

Comment Number: BOEM-2021-0038-DRAFT-0034-22

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Conflicts and value: As previously mentioned, I submitted confidential business information to BOEM in 2015 of over 20 commercial squid fishing vessels detailing their activity in the Equinor 1 lease area. This activity was never captured by BOEM in their economic analysis. Although they had charts at that time that did demonstrate that activity, they did not use them in any public meetings.

BOEM consistently cherry picks data that it wants to show with regard to fishing conflicts with this WEA. It has done this for years. For example, in the recent NOI scoping process- and in many meetings regarding the NY WEA/Equinor 1 site- BOEM has used this chart for fisheries impacts:

[See original document for an OCS-A 0512: Fisheries Communication image]

This information has been used by BOEM for years and continues to be used even now, despite being found to be erroneous. These errors- highlighted by the commercial fishing industry but ignored by BOEM- actually caused BOEM to not consider Rhode Island, which lands more longfin squid than all other East Coast states combined, to not even be an impacted state regarding the Equinor 1 lease. In a 2016 R.I. DEM Marine Fisheries Division document, attached as a part of this comment and made available to BOEM years ago, the agency analysis – much more thorough than anything produced by BOEM or NOAA Fisheries- stated:

“RIDEM has confirmed that the numbers presented by BOEM from their socioeconomic model are very different from the value of landings actually coming from the NY WEA. The inaccuracies of economic exposure estimates produced by the BOEM/NOAA Fisheries model led BOEM to not consider Rhode Island as an impacted state with respect to fisheries. Considering the NY WEA provides up to \$2,171,562.82 of seafood annually to the state, Rhode Island will be impacted substantially. RIDEM’s analysis shows that the BOEM/NOAA Fisheries analysis underestimates landings amounts and values; this therefore shows that more refined analyses are needed to best characterize impacts to fisheries of wind development in offshore areas.

It should be noted that the direct ex-vessel value of seafood landings in Rhode Island is not the full value of the seafood to the local economy. RIDEM, Marine Fisheries has received information from fishing industry representatives regarding the support businesses that also rely on the steady inflow of seafood products, especially squid. Companies in addition to commercial fishermen and dealers that depend on fresh seafood include: trucking, freighting, packaging, insurance, mailing, cold storage, fuel, trawl/net gear manufacturing, and engine companies, to name a few. The aforementioned Cornell study aimed to

address some of these additional values, but determining the full economic utility of seafood landings is challenging. Thus, the true value to the Rhode Island economy of the seafood coming from the NY WEA and landed in Rhode Island cannot fully be encompassed through RIDEM's VMS analysis, even when Cornell's economic multiplier is applied." Even were these values to be debated, BOEM only relies on ex-vessel revenue when determining economic impacts. It does not account for the impacts to shoreside businesses whatsoever.

The charts below show squid fishing density, using VMS, from just one year in the Equinor lease area. BOEM possessed these charts at the time of the 2016 Equinor 1 lease sale, and we and others personally alerted BOEM officials both privately and publicly of the major conflict represented by these charts. However, BOEM chose to ignore them, and refused to use these charts in any public presentations to the NY Task Force or others.

[See original document for image of squid fishing density 2014]

The cumulative impacts of buildout of the Equinor 1 lease are obvious when considering the recent approval of Vineyard Wind 1, which also sits on top of valuable summer longfin squid fishing grounds. We discussed these cumulative impacts in our Vineyard Wind SEIS comments. [Footnote 6: See "Seafreeze Comments VW SEIS Final 7_27_20", pages 44-46, at <https://www.regulations.gov/comment/BOEM-2020-0005-13102>.] But BOEM has ignored them thus far- even going so far as including cumulative impacts analysis (which BOEM found to be major for commercial fisheries and navigation) in the Vineyard Wind SEIS but removing the cumulative impacts analysis and findings from the FEIS and the ROD.[Footnote 7: Compare the Vineyard Wind SEIS, page ES-2, section ES3 "Environmental and Cumulative Impacts" and page ES-3, section ES4.2 "Comparison of Impacts by Action Alternative" and "Major" cumulative effects on navigation and commercial fisheries, at Vineyard Wind 1 Offshore Wind Energy Supplement to the Draft Environmental Impact Statement (boem.gov) with Vineyard Wind FEIS page ES-2, section ES3 changed to simply "Environmental Impacts" and page ES-3 which completely removes the SEIS section ES4.2 cumulative impacts analysis at Vineyard Wind 1 Offshore Wind Energy Project Final EIS (boem.gov). The ROD also omits and reverses all the cumulative impacts analysis completed and deemed major and negative by the SEIS. See Record of Decision for Vineyard Wind 1 Signed (boem.gov).]

Comment Number: BOEM-2021-0038-DRAFT-0034-29

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM must also disapprove straightaway any part of the COP that contains wind farm structure within 2nm of a TSS or 5 nm of the entry/exit TSS

Comment Number: BOEM-2021-0038-DRAFT-0034-4

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

One of the issues we pressed Brian Hooker and BOEM officials about was who made the decision whether or not to allow a lease in the area. We were told that the information was collected from stakeholder input, submitted to the BOEM Director, and that the Director made the decision. We asked if that decision had to pass a board, a deliberative body, or any kind of scrutiny from anyone other than the Director. We were told that no, the Director made the sole decision. Later, after the EA was approved, we

obtained a memo from the Director that contained options to exclude areas of fishing interest from the lease prior to the lease issuance, but the Director ignored all of these options. See attached memo, dated March 14, 2016.

Comment Number: BOEM-2021-0038-DRAFT-0034-8

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

At the April 28, 2016 Task Force meeting, we gave public comment at every opportunity as to the importance of the area to the squid fishery and the state of Rhode Island yet the lack of representation from Rhode Island on the Task Force, the squid fishery's opposition to siting the NY WEA on squid grounds, BOEM's refusal to change the siting after fishing activity had been demonstrated by stakeholders (which had been BOEM's previous process in other offshore energy areas), and the lack of analysis of environmental impacts to squid (and therefore the fishery) caused by wind farm construction. We highlighted that although the two primary commercial fisheries occurring in the area are squid and scallops, none of BOEM's scientific fisheries work focused on either of these species. We also asked questions regarding BOEM's lack of consistency in decision making. James Bennet, BOEM Chief of Renewable Energy Programs, and Brian Hooker, BOEM Fishery Biologist, could not answer our question as to why BOEM had not followed prior BOEM procedure of removing stakeholder documented fishing areas from a WEA. Mr. Hooker stated that the stakeholder information was collected and presented to BOEM Director Hopper, and passed the question to her. Neither Bennet nor Hooker wanted to answer the question, and it did not appear that Director Hopper was happy about the question being passed to her. Director Hopper's response was that she thought it was premature to take areas out until they had a site plan from a lessee. This response made it clear to the fishing industry that our fishing rights would not be considered, because the decision had already been made to allow a lease and that construction would be occurring. Although this decision was already apparently made by Director Hopper, she and BOEM repeatedly refused to consider the economic impacts of such a decision on the fishing industry in any analysis at this stage.

Comment Number: BOEM-2021-0038-DRAFT-0034-9

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Following the NY Task Force meeting, we also met personally with BOEM Director Abigail Ross Hopper, Assistant Secretary of Land and Minerals Management for the Department of the Interior Janice Schneider, BOEM NEPA Coordinator Isis Johnson, BOEM biologist Brian Hooker, and other BOEM officials to discuss fisheries concerns in greater detail and emphasize the need for re-siting the project. When we relayed all the concerns we had repeatedly explained to BOEM previously, particularly the fact that squid trawl vessels would be unable to operate in a wind farm, Janice Schneider's facial expressions were openly surprised and concerned. It was clear that none of these issues had been relayed to her office. We also provided to this group what was new information to us and which we had recently obtained- a chart detailing squid fishing activity in the NY WEA using fishing vessel monitoring systems (shown below in the [Bold and Underline:"Conflicts and value"] section of this comment). It demonstrated what we had been claiming the entire process, i.e. that the squid fishing activity in the NY WEA was much higher than that claimed by BOEM and that was indicated on the charts BOEM used in presentations. We showed it to Director Hopper and the group. We were told by that BOEM already had this chart in one of its documents. But we had never seen BOEM present it at any meeting, even the fishing industry

stakeholder meetings. What that told us was that BOEM again was deliberately hiding information from the public. For example, despite apparently already having this detailed chart showing the fishing conflict, the chart of squid fishing activity that BOEM had on an easel and displayed in the Task Force meeting room that day was very different and showed much less fishing activity in the WEA. In fact, this chart showing much less effort in the lease area is the very one BOEM is still using in its NOI Scoping Meeting presentation.

Comment Number: BOEM-2021-0038-DRAFT-0037-1

Organization: Offshore Power LLC

Commenter: William O'Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS is a critical step to achieve this goal, and I support projects moving through a robust environmental review process that ensures responsible development is achieved every step of the way. As a recreational angler, I recognize the potential benefits of offshore wind power and believe it is possible for turbine development to peacefully coexist with, and even improve, fishing in the Atlantic, provided project developers and government agencies abide by three clear principles as articulated by Anglers for Offshore Wind Power, listed below.

- Access: Recreational anglers must be able to fish up to the base of the turbine foundations to take advantage of the new habitat that will be created by offshore wind power development. We understand that access may be limited during construction.

- Public Input: Recreational anglers must be engaged early in the planning process for offshore wind power development. Clearly communicated opportunities to provide input on siting, permitting, access, and other issues can avoid future conflicts.

- Science: Fisheries research before, during, and after wind turbine construction is essential for monitoring impacts to species of interest to recreational anglers. Study results should be publicly available and regularly communicated to our community.

Comment Number: BOEM-2021-0038-DRAFT-0037-2

Organization: Offshore Power LLC

Commenter: William O'Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Access:

By far, the number one issue of concern to the recreational fishing community is the potential loss of access to the very productive offshore fisheries that occupy this area at certain times of the year, mostly summer and fall. Besides the unique and irreplaceable social value of these fisheries, any loss of access in the Empire Wind project site would result in a significant impact to the local fishing and boating economy. This is a high-dollar fishery utilized by vessels accounting for hundreds of thousands of dollars of economic activity in electronics, gear, and tackle alone. For BOEM to gain a thorough understanding of potential impacts to recreational offshore fishing, we recommend consultation with the American Sportfishing Association and the NOAA Northeast Fishery Science Center.

Throughout this process, many individual anglers and recreational fishing organizations have requested formal confirmation that after construction, access in lease areas and around turbines and other structures would be treated in the same manner as oil rigs in the Gulf of Mexico. In the decommissioning phase, we suggest that turbine structures are cut down to a safe height off the seafloor and the foundation and the

reef that has been established as marine habitat remain intact. This precedent has already been set and accepted by BOEM under its “Rigs to Reefs” program in the Gulf. GPS positions of each of these reefs should be distributed to the fishing community as a “fishing hotspot reef chart.”

Comment Number: BOEM-2021-0038-DRAFT-0037-3

Organization: Offshore Power LLC

Commenter: William O’Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

I would also suggest that BOEM explore directing offshore wind developers to install concrete fish habitat structures at the base of substations and turbine foundations to encourage blackfish, cod and other valuable game fish to congregate there as they would on any other artificial reef.

Comment Number: BOEM-2021-0038-DRAFT-0037-8

Organization: Offshore Power LLC

Commenter: William O’Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Science:

Fisheries management needs are specific and often hard to understand. Some combination of staff from the NOAA Northeast Fisheries Science Center, The New England and Mid-Atlantic Fisheries Management Councils, and the Atlantic States Marine Fisheries Commission must be involved in determining what types of monitoring should be required of the Empire Wind proposal. In addition, we suggest a mechanism be created where these same fisheries management agencies have opportunities to review results and make further recommendations.

Comment Number: BOEM-2021-0038-DRAFT-0037-9

Organization: Offshore Power LLC

Commenter: William O’Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We further request that the Draft EIS reflect consideration of fisheries science data from the Virginia Institute of Marine Science’s Northeast Area Monitoring and Assessment Program and the National Oceanic and Atmospheric Administration’s Northeast Fisheries Science Center Bottom Trawl Survey.

Comment Number: BOEM-2021-0038-DRAFT-0040-10

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

We further request that the Draft EIS reflect consideration of fisheries science data from the Virginia Institute of Marine Science’s Northeast Area Monitoring and Assessment Program and the National Oceanic and Atmospheric Administration’s Northeast Fisheries Science Center Bottom Trawl Survey.

Comment Number: BOEM-2021-0038-DRAFT-0040-2

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

As a recreational angler, I recognize the potential benefits of offshore wind power and believe it is possible for turbine development to peacefully coexist with, and even improve, fishing in the Atlantic, provided project developers and government agencies abide by three clear principles as articulated by Anglers for Offshore Wind Power, listed below.

- Access: Recreational anglers must be able to fish up to the base of the turbine foundations to take advantage of the new habitat that will be created by offshore wind power development. We understand that access may be limited during construction.

- Public Input: Recreational anglers must be engaged early in the planning process for offshore wind power development. Clearly communicated opportunities to provide input on siting, permitting, access, and other issues can avoid future conflicts.

- Science: Fisheries research before, during, and after wind turbine construction is essential for monitoring impacts to species of interest to recreational anglers. Study results should be publicly available and regularly communicated to our community.

Comment Number: BOEM-2021-0038-DRAFT-0040-3

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

Access:

By far, the number one issue of concern to the recreational fishing community is the potential loss of access to the very productive offshore fisheries that occupy this area at certain times of the year, mostly summer and fall. Besides the unique and irreplaceable social value of these fisheries, any loss of access in the Empire Wind project site would result in significant impact to the local fishing and boating economy. This is a high-dollar fishery utilized by vessels accounting for hundreds of thousands of dollars of economic activity in electronics, gear, and tackle alone. For BOEM to gain a thorough understanding of potential impacts to recreational offshore fishing, we recommend consultation with the American Sportfishing Association and the NOAA Northeast Fishery Science Center.

Comment Number: BOEM-2021-0038-DRAFT-0040-4

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

Throughout this process many individual anglers and recreational fishing organizations have requested formal confirmation that after construction, access in lease areas and around turbines and other structures would be treated in the same manner as oil rigs in the Gulf of Mexico. In the decommissioning phase, we suggest that turbine structures be cut down to a clear height off the seafloor and the foundation and the reef that has been established as marine habitat remain intact. This precedence has already been set and accepted by BOEM under its “Rigs to Reefs” program in the Gulf. GPS positions of each of these reefs should be distributed to the fishing community as a “fishing hotspot reef chart.”

Comment Number: BOEM-2021-0038-DRAFT-0041-9

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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-2021-0038-DRAFT-0042-1

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

The EIS is a critical step to achieve this goal, and I support projects moving through a robust environmental review process that ensures responsible development is achieved every step of the way. As a recreational angler, I recognize the potential benefits of offshore wind power and believe it is possible for turbine development to peacefully coexist with, and even improve, fishing in the Atlantic, provided project developers and government agencies abide by three clear principles as articulated by Anglers for Offshore Wind Power, listed below.

Comment Number: BOEM-2021-0038-DRAFT-0042-2

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

- Access: Recreational anglers must be able to fish up to the base of the turbine foundations to take advantage of the new habitat that will be created by offshore wind power development. We understand that access may be limited during construction.

Comment Number: BOEM-2021-0038-DRAFT-0042-3

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

- Public Input: Recreational anglers must be engaged early in the planning process for offshore wind power development. Clearly communicated opportunities to provide input on siting, permitting, access, and other issues can avoid future conflicts.

Comment Number: BOEM-2021-0038-DRAFT-0042-4

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

- Science: Fisheries research before, during, and after wind turbine construction is essential for monitoring impacts to species of interest to recreational anglers. Study results should be publicly available and regularly communicated to our community.

Comment Number: BOEM-2021-0038-DRAFT-0042-5

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

[Bold: Access:]

By far, the number one issue of concern to the recreational fishing community is the potential loss of access to the very productive offshore fisheries that occupy this area at certain times of the year, mostly summer and fall. Besides the unique and irreplaceable social value of these fisheries, any loss of access in the Empire Wind project site would result in significant impact to the local fishing and boating economy. This is a high-dollar fishery utilized by vessels accounting for hundreds of thousands of dollars of economic activity in electronics, gear, and tackle alone. For BOEM to gain a thorough understanding of potential impacts to recreational offshore fishing, we recommend consultation with the American Sportfishing Association and the NOAA Northeast Fishery Science Center.

Throughout this process many individual anglers and recreational fishing organizations have requested formal confirmation that after construction, access in lease areas and around turbines and other structures would be treated in the same manner as oil rigs in the Gulf of Mexico. In the decommissioning phase, we suggest that turbine structures be cut down to a clear height off the seafloor and the foundation and the reef that has been established as marine habitat remain intact. This precedent has already been set and accepted by BOEM under its “Rigs to Reefs” program in the Gulf. GPS positions of each of these reefs should be distributed to the fishing community as a “fishing hotspot reef chart.”

We also request BOEM include firm language in the Draft EIS clarifying that the entire impact analysis is based on an expectation of total access to the wind farm area after construction. Our ideal approach to this issue would be for BOEM to make post-construction access a permit condition for all offshore wind-related structures. It is our understanding that offshore wind structures fall under the existing US Coast Guard regulations regarding “aids to navigation.” This is established language that is well understood by both mariners and enforcement.

Comment Number: BOEM-2021-0038-DRAFT-0042-6

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

[Bold: Public Input:]

We acknowledge and applaud the efforts of Equinor and other developers to build relationships and learn about potential impacts to both commercial and recreational fishing. While we encourage each developer to continue their individual outreach, we do feel that a more formal and enduring forum for gathering input from the recreational fishing community is needed.

We agree that developing offshore wind energy is essential to protecting our nation and planet from the impacts of climate change and ocean acidification, and feel that all parties need a clearly defined seat at the table to ensure that such potentially massive development is undertaken as responsibly as possible. The opportunity for fisheries experts and the general public to provide input must be hardwired into the system.

We suggest each region establish a fisheries advisory body made up of various stakeholder groups that must be consulted on a regular basis. We feel the Federal Advisory Committee Act lays out a potential model for the type of formal process we are proposing.

Comment Number: BOEM-2021-0038-DRAFT-0042-7

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

[Bold: Science:]

Fisheries management needs are specific and often hard to understand. Some combination of staff from the NOAA Northeast Fisheries Science Center, The New England and Mid-Atlantic Fisheries Management Councils, and the Atlantic States Marine Fisheries Commission must be involved in determining what types of monitoring should be required of the Empire Wind proposal. In addition, we suggest a mechanism be created where these same fisheries management agencies have opportunities to review results and make further recommendations.

We further request that the Draft EIS reflect consideration of fisheries science data from the Virginia Institute of Marine Science's Northeast Area Monitoring and Assessment Program and NOAA's Northeast Fisheries Science Center Bottom Trawl Survey.

Comment Number: BOEM-2021-0038-DRAFT-0044-10

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Information from stakeholders and local fisheries-specific knowledge are invaluable and necessary to complement available data. The COP describes stakeholder engagement and fisheries outreach well, with emphasis on incorporating input from fishermen, particularly in the Fishing Techniques section where gear types and their occurrence in the project area are thoroughly described along with concerns over continued access expressed by fishermen.

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 impacts across various fisheries. Focusing on ex-vessel value can mask other important considerations such as the number of impacted fishery participants, the use of a low-value species as bait for a high-value species, or a seasonally important fishery with lower year-round value or participation. A focus on ex-vessel value also understates the importance of the shoreside economic activity generated from landings – such as processing and distribution, and vessel support activities.

Comment Number: BOEM-2021-0038-DRAFT-0044-12

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Commercial, for-hire recreational, and private recreational fishing should be considered separately, but in the same or adjacent sections of the EIS. This is generally the approach taken in the COP, except that for-hire and private recreational fishing are combined. As the Councils have stated in comment letters on other wind projects, the grouping of private recreational fishing with recreation and tourism, rather than with commercial and for-hire fisheries, is not intuitive to us and makes it challenging for readers to understand the full picture of potential impacts on all fishery sectors, so we appreciate what appears to be an effort to combine them here. However, the for-hire and private recreational fishing sectors are distinct, and impacts on each should be evaluated separately. The Regional Economic Overview of Commercial Fishing on page 8-131 of the COP should only include commercial fishing and not incorporate recreational fishing when determining important fishing ports.

Comment Number: BOEM-2021-0038-DRAFT-0044-14

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should describe the commercial and recreational fisheries that operate within the project area as well as fisheries that occur in other areas but may be impacted by changing fishing effort distribution or changes in transit that may occur during and after project construction. The maps of fishing activity on page 8-117 of Volume 2e are good examples of regional characterization. The COP should be clear about when it is describing baseline information within a broader region, vs. when baseline data reflect project area estimates only.

Comment Number: BOEM-2021-0038-DRAFT-0044-15

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP (Volume 2e, Section 8.8.3) describes Empire Wind's assumptions related to the estimation of effects on fishing: (1) some displacement of fishing activity is expected during project operations, (2) transit through the project will continue, with the potential to seek alternate routes around the project in bad weather, and (3) inter-array and export cables are not expected to restrict access to traditional fishing grounds. These assumptions are fundamental to estimating the magnitude of impacts associated with the project and the extent to which they are likely to hold should be laid out clearly in the EIS.

Comment Number: BOEM-2021-0038-DRAFT-0044-16

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Turbine foundations and their associated fouling communities will create artificial reefs, which are expected to attract certain fishery species (e.g., black sea bass). The EIS should acknowledge that the benefits of this artificial reef effect will vary by target species. For example, any benefit to anglers targeting highly migratory species (e.g., tunas and sharks) could be offset by the inability to anchor or to drift throughout the area. If operators shift their effort outside the project area during construction or long-term operations, this will potentially put them in areas of higher vessel traffic and gear conflict. Also, depending on operating conditions at sea, commercial and recreational fishermen cannot always reap the benefits of any increased catchability of target species due to safety concerns of fishing in swells around the turbines. These safety considerations will be different than the existing artificial reefs in the Greater Atlantic region which, except for the Block Island Wind Farm turbine foundations, are all submerged structures.

Comment Number: BOEM-2021-0038-DRAFT-0044-21

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 impacts on 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 Record of Decision for the Vineyard Wind 1 project.

Comment Number: BOEM-2021-0038-DRAFT-0046-1

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As an initial matter, a fundamental disconnect exists between the fisheries analyses in the COP and real-world experience with mobile fishing gear in foreign wind farm arrays, where there is actual experience to draw from. In short, the COP pretends that commercial fishing will continue unabated within windfarms once the turbines are constructed. This premise is inconsistent with actual experience in the rest of the world. In Europe, fishermen using mobile bottom-tending fishing gear either are not permitted to fish within windfarms (which is generally the case for windfarms in the continental European countries) or do not elect to fish within windfarms in the one country (United Kingdom) that imposes fewer restrictions on fishing within windfarms. No amount of theoretical analyses change this essential fact. The DEIS needs to conduct a comparative analysis of the type of fishing that actually occurs in a windfarm area before and after construction. The DEIS should also consider potential impacts from windfarms on marine radar. It is not a matter of simply changing the gain.

Comment Number: BOEM-2021-0038-DRAFT-0046-13

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Moreover, and as alluded to above, BOEM does not need to hypothesize what reasonably foreseeable impacts to commercial fisheries will look like following the projected explosion of offshore wind activity. In 2016, BOEM's British counterpart, the Crown Estate, conducted a study titled "Changes to fishing practices around the UK as a result of the development of offshore windfarms." [Footnote 7: Available at <https://www.thecrownestate.co.uk/media/2600/final-published-ow-fishing-revised-aug-2016-clean.pdf> (last accessed July 26, 2021).] In that study, the Crown Estate acknowledges that, "fishing activity within [offshore windfarm] boundaries has changed, primarily because fishermen are fearful of fishing gear becoming entrapped by seabed obstacles such as cables, cable crossing points and rock armouring, and wary of vessel breakdown with the consequent risk of turbine collision." Windfarm maintenance work was also cited as an obstacle for commercial fishermen, as well as the increased transit times for vessels to reach historic fishing grounds. BOEM should closely examine the known impacts of offshore wind in the U.K. that resulted in significantly decreased fishing activity, and it should work with U.S. fishermen to avoid those consequences on Mid-Atlantic and New England fishing grounds. For instance, consolidating cables (including those from different projects), and using cable covers such as those deployed in the North Sea offshore oil and gas industry when cables cannot be buried appropriately, can mitigate cabling impacts to some degree. Burial under loose rock causes the potential for hangs to mobile fishing gear and the attendant risk to gear and crew.

Comment Number: BOEM-2021-0038-DRAFT-0046-14

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Other Sections: 2.1

Comment Excerpt Text:

Further, accommodating scallop fishing through turbine placement in the Empire Wind 2 area could mitigate turbine impacts on scallop fishing, just as Empire 1 turbine placement has sought to mitigate squid fishery impacts.

Comment Number: BOEM-2021-0038-DRAFT-0046-17

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP furnishes no instance of mobile bottom-tending fishing gear actually operating within windfarms, and certainly not vessels of the size of Full-Time Limited Access scallop fishing vessels, which are generally longer than 85 feet. However, the COP's schematics comparing the relative size of a fishing vessel within a wind turbine array grossly misrepresent the reality of fishing within these wind farms. See COP at 8-153, Figure 8.8-19. It is exceedingly rare that a scallop vessel will be operating in relatively near-shore waters such as the Empire Wind Area without any other vessels or fixed fishing gear nearby. Assuming, as the COP does, that activity will continue unabated in wind energy areas, a more reasonable depiction of what a scallop vessel might confront is set forth below:

Comment Number: BOEM-2021-0038-DRAFT-0046-2

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP fundamentally misunderstands the most basic element of scallop fishing – the dredge. It claims the scallop dredge “homogenizes” the ocean bottom and does not allow for regeneration of scallops or other benthic fauna or flora. To support this contention, the COP cites a study performed by Stewart and Howarth (2016), which researched the toothed scallop dredge used in the United Kingdom. See COP at 5-175. However, the Atlantic scallop fishery in the United States utilizes an alternative “flying” New Bedford-style dredge, which does not dig into the substrate but rather skims along the surface, using hydrodynamic forces to lift scallops into the dredge bag. Notably, the COP depicts this dredge at COP at 8-152, Figure 8.8-18, but fails to distinguish its characteristics from the dredges examined in the Stewart study (which actually dig into the bottom). Presumably, this is to exaggerate actual impacts of U.S. scallop fishing on the ocean bottom in an effort to comparatively diminish the known impacts of installing wind turbines in these same areas.

Based on this flawed premise, the COP misrepresents the ecological impacts of the pass of a scallop dredge. As the COP recognizes, scallops favor particular areas of ocean bottom comprised of relatively coarse substrate with active ocean currents that allow them to filter-feed. Scallops return over and over to the areas that are hospitable to scallop recruitment and growth. The following map shows scallop catch weight from NMFS' annual survey for 1966-2014:

Comment Number: BOEM-2021-0038-DRAFT-0047-53

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Commercial and Recreational Fishing Impacts:

- Evaluation of impacts to landing values.
 - Fishing area displacement. [*Italics:* Note: To achieve the goal of co-existence with commercial fishing, BOEM should analyze whether the proposed turbine spacing will accommodate existing commercial fishing practices for actively fished species (i.e., fluke, squid, scallop, black sea bass, etc.) in the lease area. Temporary and permanent impacts should be evaluated across all project phases. Empire's proposed “layout rules” identify a minimum spacing of 0.65 nm; however, it is unclear whether this is sufficient to
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allow for safe operation of towed gears within a turbine array. Recall that US Coast Guard specified a 1 nm wide area for commercial fishing vessels actively engaged in fishing in southern New England waters (see USCG. 2020. The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study, Final Report. Docket Number: USCG-2019-0131). A comparable analysis should be undertaken in the lease area to determine if minimum turbine spacing should be adjusted or if, through robust stakeholder consultation, adequate mitigation measures can be developed that continue to preserve fishing access.]

- Evaluation of potential gear loss.
- Evaluation of impacts from increased steam time (i.e., increased travel time/fuel costs to navigate around the project and access fishing grounds).
- Consideration of safety concerns.
- Assessment of conflicts with concrete mattresses.
- Uncovering of buried cables over time or following storm events.

Comment Number: BOEM-2021-0038-DRAFT-0047-71

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Comprehensive Mariner Communications and Notification Plan:

- Address all phases of development (Surveys, Construction, Operations, Decommissioning).

Comment Number: BOEM-2021-0038-DRAFT-0047-78

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

The Agencies urge BOEM to minimize interruptions to state and federal fisheries surveys to the maximum extent possible. These fishery resource surveys provide valuable long term data and are critical for effective fisheries management throughout the region. Accordingly, BOEM should continue to work with NOAA NMFS on the implementation of the NOAA Fisheries' Federal Survey Mitigation Program in order to ensure that fisheries resource surveys can co-exist with the development of this project. As outlined by BOEM and NOAA, this may include evaluation of new survey methodologies, calibration of new approaches to existing surveys, and ultimately maintaining a consistent, reliable, and unbiased fisheries survey approach throughout the development and operation of offshore wind projects ("Bureau of Ocean Energy Management and NOAA Demonstrate the Power of a Government-wide Approach to Sustainable Fisheries and Offshore Wind", May 28, 2021).

Comment Number: BOEM-2021-0038-DRAFT-0052-4

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Massachusetts fishing activity currently operating in the project area and as documented in the COP may be disrupted by the proposed project. Fishing activity may be precluded in portions of the project area during construction and decommissioning. The abundance or availability of fish may also be temporarily displaced during construction, fishing activities may be restricted during operations, and landings may be

adversely impacted. The EIS should include updated potential economic exposure values for commercial, for-hire, and charter fisheries by port. Potential impacts to fishing activity should be avoided and minimized where possible. When impacts may still be incurred, a mitigation plan should be developed in consultation with relevant agencies and industry representatives.

Comment Number: BOEM-2021-0038-DRAFT-0056-10

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The NY/NJ Bight is already home to numerous industries and activities that support significant economic and social values, including commercial fishing, commercial shell-fishing, recreational fishing, recreational boating, water recreation, whale-watching, and shore tourism. For example, the summers of 1987 and 1988 provide stark evidence of water quality's link to state and local economies. During this time, raw sewage, medical waste, and dead and dying dolphins washed ashore in the bi-state region. When all indirect effects of the 1988 event are included, losses were estimated at \$820.7 million to \$3.8 billion [in 1987\$]. [Footnote 23: Ofiara, Douglas D. and Bernard Brown, Marine Pollution Events of 1988 and Their Effect on Travel, Tourism, and Regional Activities in New Jersey, referenced as an Invited Paper presented at the Conference on Floatable Wastes in the Ocean: Social Economic and Public Health Implications. March 21-22, 1989, at SUNY- Stony Brook.]

Today, specific economic values of the marine resources of the NY/NJ Bight continue to sustain the region; indeed, they are the backbone of the region's economy.

- Commercial Fishing: In 2015, according to the National Marine Fisheries Service, NJ's commercial fishermen harvested over 148,504,000 pounds of fish which sold for nearly \$ 166,000,000. [Footnote 24: https://www.st.nmfs.noaa.gov/Assets/commercial/fus/fus15/documents/02_Commercial2015.pdf] Overall, NJ's commercial fishing industry generates \$6 billion. In New York, the commercial harvest was over 24,560,000 pounds and valued at \$11,140,000. [Footnote 25: Id.] NJDEP state that New Jersey is the nation's the leading suppliers of surf clams and ocean quahogs. Cape May, NJ has the second largest commercial fishing dock on the east coast, and the 5th largest in the nation.

- Recreational Fishing: NJ and NY's recreational fishermen took over 7.5 million trips and generated \$2.7 billion. In 2003, the American Sportfishing Association estimated that recreational fishing brought \$724,634,011 in retail sales with a total multiplier effect [Footnote 26: "Multiplier" is defined as "An effect in economics in which an increase in spending produces an increase in national income and consumption greater than the initial amount spent. For example, if a corporation builds a factory, it will employ construction workers and their suppliers as well as those who work in the factory. Indirectly, the new factory will stimulate employment in laundries, restaurants, and service industries in the factory's vicinity," The New Dictionary of Cultural Literacy, Third Edition, Houghton Mifflin Company, 2002. Available at Answers.com 26 Oct. 2005. <http://www.answers.com/topic/multiplier-effect>.] of \$1,363,259,834 to the state of New Jersey. [Footnote 27: American Sportfishing Association, Fishing Statistics, Economic Impacts of Fishing available at - http://www.asafishing.org/asa/statistics/economic_impact/state_allfish_2003.html (last visited July 14, 2005).] Recreational fishing accounts for 12,021 jobs in New Jersey, with salaries and wages totaling \$328,359,434. [Footnote 28: Id.] The sport generates \$7,750,295 in New Jersey income taxes and \$56,339,961 in federal income taxes. [Footnote 29: Id.] The same report indicates that recreational fishing in New York generated \$1,116,861,525 in retail sales with a total multiplier effect of \$2,011,716,251. [Footnote 30: American Sportfishing Association, Fishing Statistics, "Economic Impacts of Fishing" available at http://www.asafishing.org/asa/statistics/economic_impact/state_allfish_2003.html (last visited July 14, 2005).] The sport accounts for 17,083 jobs and \$503,486,172 in salaries and wages in New York. [Footnote 31: American Sportfishing Association,

Fishing Statistics, “Economic Impacts of Fishing” available at http://www.asafishing.org/asa/statistics/economic_impact/state_allfish_2003.html (last visited July 14, 2005).]

- In New Jersey aquaculture is a growing industry and is coastal dependent.

- Tourism: According to the New Jersey Department of Commerce, travel and tourism in New Jersey contributes \$44 billion in economic activities each year and generates over 517,000 jobs direct and indirect jobs (the third largest private sector employer) and keeps growing. [Footnote 32: The Economic Value of Tourism in New Jersey, Tourism Satellite Account, Calendar Year 2016, Tourism Economics, An Oxford Economics Company]

- New York’s coastal economy is valued at \$20 billion. [Footnote 33: National Ocean Economics Program]

- Surfing: A report conducted in 2011 by Surfrider entitled, “Socioeconomic and Recreational Profile of Surfers in the United States found that NJ and NY accounted for over \$3.8 million, and that NJ’s surfing economic impact is twice NY’s. [Footnote 34: http://public.surfrider.org/files/surfrider_report_v13.pdf]

- Natural Capital: [Footnote 35: “Natural Capital” is defined by the NJ Department of Environmental Protection as “the economic value of goods and services provided by various naturally-occurring assets over an extended period, a period that for some assets is essentially perpetual on any meaningful human time scale.”] According to the New Jersey Department of Environmental Protection, the ecological goods and services provided by the state’s marine ecosystems equate to \$5.3 billion/year for estuaries and tidal bays and \$389 million/year for other coastal waters [in 2004\$], including the coastal shelf out to the three-mile limit. New Jersey beaches provide the highest value per acre of any other habitat by far, with an ecoservices value of \$330 million/yr. [Footnote 36: Valuing New Jersey’s Natural Capital: An assessment of the economic value of the state’s natural resources. April 2007 State of New Jersey New Jersey Department of Environmental Protection - <http://www.state.nj.us/dep/dsr/naturalcap/>] New Jersey did not include the economic value of the fish and shellfish present in these ecosystems, nor the important and valuable resources of the OCS, such as the reef and canyon systems, in their analysis. Similar values can be expected for both the northern and southern shores of Long Island, but actual dollar values are not readily available as New York has not conducted a formal analysis of the ecosystem services of their natural resources.

However, all these revenues rely directly on a healthy marine environment and would appear to be highly incompatible with the industrialization of the NY/NJ Bight.

Comment Number: BOEM-2021-0038-DRAFT-0059-1

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM SHOULD RECOGNIZE THE COLLABORATIVE EFFORTS OF EQUINOR AND RODA

[Italics: RODA Collaborative Efforts Generally]

In pursuit of its mission to achieve the best possible outcomes for U.S. commercial fishermen (and a healthy marine environment on which they depend), RODA has made extensive efforts to communicate directly with OSW developers. In early 2019 we convened the Joint Industry Task Force (Task Force) with the intention of using this collaborative forum to explore compromise approaches that would reduce impacts to fishing while reducing risk to developers. This Task Force no longer exists after the developers declined to renew their agreements as of January 1, 2021. This is a huge loss for the fishing industry as there is no agency action or other forum to mediate issues between these two industries at a regional level. RODA’s Executive Committee recently suggested to Director Lefton that BOEM establish a committee

similar to the FLOWW in the UK. We urge BOEM to work closely with us to ensure a suitable opportunity exists to achieve these goals, as conflicts will continue to arise so long as BOEM continues to lease public ocean space without accounting for existing industries.

Comment Number: BOEM-2021-0038-DRAFT-0059-2

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

[Italics: RODA-Equinor Dialogue]

Equinor’s direct work with RODA and the fishing industry at large on the Empire Wind 1 layout speaks volumes about the utility of such collaboration. In January 2020, Equinor and RODA co- organized a workshop with active fishermen and industry leaders representing the diverse fisheries operating in the Empire Wind 1 lease area and Equinor’s team of project managers, fisheries liaisons, and technical experts including engineers. The Consensus Building Institute (CBI) provided expert facilitation and, within boundaries set by Equinor’s procurement agreement, the attendees shared information openly and created real-time recommendations for project layouts that would reduce (but not eliminate) fishing impacts.

Following the workshop, Equinor took the expertise and guidance provided by the fishing industry and modified its turbine layout in ways that benefited both industries to the extent possible through an iterative and communicative strategy. The experience of collaborating with Equinor on Empire Wind I highlighted the need for flexibility in layout designs. This allows both industries to bring forward their needs and accommodate for any unique geological or biological features contained within the lease area.

Earlier this year, RODA and Equinor followed up to consider alternative layouts for the Empire Wind 2 project area. Unfortunately, in this case there was far less flexibility and no clear preferred option that would maintain some fishing access. The second phase of this project in particular overlaps with scallop fishing activity and additional efforts are needed to address impacts, as described below.

To date, Equinor is the only offshore wind developer in the U.S. who has engaged the regional fishing industry outside of the regulatory process on layout specifics—which are the basis for any potential compatibility and coexistence between these two industries. Through an iterative process, Equinor continued to refine optional layouts that incorporated direct feedback from the fishing industry such as; relocating 3-5 turbines located on the resource-rich Cholera Bank, committing to utilizing the largest turbines available at the appropriate time which may lead to removing 3-5 additional said turbines, providing transparent technical reasoning when incorporating feedback was infeasible, and continuing an open dialogue on future phases of the lease build out.

Comment Number: BOEM-2021-0038-DRAFT-0059-3

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

[Italics: The Empire Wind Team Has Set a Model for Fisheries Collaboration on Project Layouts]

RODA noted in a letter to Equinor on August 18th, 2020, “[w]hile the exact layout of the Empire Wind project should not be expected to set precedent for any other site (as fishing resource and operational needs are entirely location-specific), the process for discussing layout possibilities— and limitations—is by far the best of any active project to date and its direct communication should set a model for future projects.” (see Appendix I for RODA’s prior communications to Equinor). To the extent that fishing and

OSW can truly “coexist” under the current federal and state approaches, it will require similar exercises with regional fishermen prior to finalization of project design.

Going forward, RODA and Equinor are actively considering collaborating on a “Common Ground” approach to explore alternatives for project elements beyond the turbine layout that may reduce impacts to fishing. This approach has had some success in the United Kingdom, but has no precedent in the U.S. leasing system; therefore it will be experimental. We appreciate Equinor’s willingness to incorporate novel approaches outside of the basic and inadequate BOEM requirements and urge BOEM to stay abreast of—and find opportunities to support—any effort in which the industries utilize creativity and their own resources to attempt to make the best of a very difficult situation.

Comment Number: BOEM-2021-0038-DRAFT-0059-4

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

THE EMPIRE WIND COP REQUIRES REVISIONS

RODA maintains that fisheries experts and community leaders should be consulted on the development of information in OSW project COPs, but neither BOEM nor developers communicate with fishermen regarding this topic. As such, our members have identified several instances of incorrect information regarding fisheries descriptions in the Empire Wind COP that should be reviewed and improved by independent fishery scientists and industry members before BOEM considers it for approval.

A particularly concerning set of information presented in the COP is Automatic Identification System (AIS) data, which is used to characterize fishing activity around the lease area. Many members of the fishing industry are opposed to AIS data being used for this purpose and have repeatedly expressed such to Equinor, BOEM, and other developers. AIS is not required on vessels less than 65 ft. and is infrequently used offshore by those larger than that length, resulting in fishing vessels being underrepresented in these datasets. The inclusion of individual vessel tracks in the COP, including VMS data, is even more concerning for the fishing industry and a vast departure from best practices in fishery management. NOAA Fisheries and controlling statutes have set a high standard for confidentiality for identifiable data. All fishing data is considered confidential and activity is only shown in an area if a minimum of three individual data sources is available. Since BOEM has publicly released this document on behalf of Equinor, the fishing industry would expect the same level of confidentiality to be applied by all federal agencies.

Most saliently, the inclusion of individual vessel tracks without an associated description by the captain of the vessel is misleading and can easily become misconstrued. BOEM, Equinor, their environmental and safety analysts, and the public have no way of knowing what the conditions on the described trips were. Many factors influence fishing behavior including weather, sea state, crew status, traffic conditions, gear type deployed, market conditions, season, regulatory measures, and more. It is impossible to determine whether an externally observed trip is “typical” and would be representative of the entire fleet or even that individual vessel’s behavior year-round. This further emphasizes the need for collaboration with the fishing industry in all aspects of project development and for fishermen to play an active role in the translation and interpretation of collected data.

Comment Number: BOEM-2021-0038-DRAFT-0059-8

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

EQUINOR’S FISHERIES COMMUNICATIONS PLAN MUST BE UPDATED

BOEM has not included Equinor’s Fisheries Communications Plan (FCP) as part of the docket for this NOI, although Equinor provided it to RODA and it is available on the Empire Wind webpage. The FCP is out of date (2018) and should be revised and republished as soon as possible. Similarly, the FCP references a “Co-existence Plan” that “will be finalized in consultation with the fishing industry at the time of COP submission and then updated where appropriate at COP approval” but this does not appear to have been completed. This is a serious problem; each of the FCPs BOEM has released with NOIs and COPs this year to date have been similarly outdated and BOEM has taken no action to require updates or improvements to them, despite the extensive shoreside and on-the-water OSW activity already occurring.

Favorably, unlike the latest three FCPs and COPs released for public comment (for the Ocean Wind, Vineyard Wind South, and Coastal Virginia Offshore Wind projects), there do not appear to be any outright factual errors or misrepresentations in Equinor’s description of its fisheries engagement. In our experience, Equinor has been more forthcoming with project details and timelines than other OSW developers, but it is important to have publicly available information for fishing industry members who are not in direct communication with Equinor or RODA, and for BOEM to ensure that comprehensive and up-to-date information is available should Equinor falter in its direct communications.

It is encouraging that the existing FCP contains useful project information and a detailed description of protocols for communication at-sea, particularly since this information is lacking in many other OSW project FCPs. Its descriptive nature is generally informative, though it provides little guidance as to how exactly fishermen’s input will be incorporated. In way, it is more realistic about the fact that it is fishermen who will be expected to adapt to OSW installations based on the technology and designs chosen by developers and not the other way around. [Footnote 4: E.g., “The identification of potential impacts on the fishing industry may change as the wind farm(s) design and installation methodology change or become more detailed during the various phases of development.” Equinor Wind US Northeast & Mid-Atlantic Region Fisheries Liaison & Outline Coexistence Plan, p. 13.] It is far preferable to set reasonable expectations of fishermen’s ability to “engage” in OSW discussions rather than the common practice among other developers and BOEM of counting meetings as though a large quantity of discussions is a goal in itself, in lieu of authentic collaboration and taking action to minimize impacts.

Comment Number: BOEM-2021-0038-DRAFT-0063 -1

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM must exclude areas of commercial fishing importance, both dollar value and high poundage values, from the wind energy lease areas.

Comment Number: BOEM-2021-0038-DRAFT-0063 -4

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Fishermen must be compensated fairly and in fair market values for all losses of catch due to surveys construction, operation and decommissioning, in addition to possible long term losses of catch as a result of construction of the wind energy lease.

Comment Number: BOEM-2021-0038-DRAFT-0063 -5

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Traditional historic commercial fishing grounds must be removed from Empire Wind 1, the same areas that existed as part of the 2016 NY Area Identification Decision Memo1 from the Boem NY call area decision memo in 2016 [Footnote 1: BOEM 2016 NY Call Area Decision Memo] that then Director Abigail Hopper ignored completely, beginning at page 24.

Comment Number: BOEM-2021-0038-DRAFT-0063 -6

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

A full economic analysis must then be done of Empire Two, funded by BOEM and completed by a third party contractor with approval by RODA through the MOU with BOEM and NOAA to determine the economic value of the Empire Two project to the region's fishermen, and appropriate removal of aliquots should then also be initiated so as to remove all economic conflicts between traditional and historic fishing grounds and fishermen and an offshore wind turbine lease area.

Comment Number: BOEM-2021-0038-DRAFT-0065-13

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The clam industry understand and agrees that the governors of New York and New Jersey, and the other wind development states want the wind developers and the fishing industry to coexist. Today, nothing that the wind developers have proposed will help the fishing industry in any way, but they have created such tight foot print of wind turbines that fishing within the array with a sizable vessel will be to dangerous.

Comment Number: BOEM-2021-0038-DRAFT-0065-23

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Fisheries

The fishing industry has on many occasions met with BOEN, the states and the wind developers with regard to layout of the array and the ability of the fishing industry, in particular, the bottom tending mobile fishing gear vessels to operating within the wind farm. The industry strongly advocated a turbine spacing of two by two nautical miles apart in straight lines in both directions and follow the bottom contours were possible. Without these changes the fishing industry with have loss access to area, possible loss of fishing gear or damage to said gear. The fishing industry has receives little to no consideration from the developers, which rejected the fishing industry proposals. The USCG suggested that one by one NM spacing would be all that would be necessary for transiting in southern New England but nowhere else. The USCG did not address the two by two NM spacing requested by the fishing industry, which would allow larger vessels to fish within the wind farm. A problem has been created for the NMFS's survey vessels not been able to make survey tows in the lease area and therefore not getting the survey information to maintain their databases that they have been accumulating for decades and use for quota

setting. It is also disappointing that the many developers misrepresents what the fishing industry says to them but when they talk to BOEM they do not state what the fisheries say just that they talked to X fishers on this date. BOEM and the states must know that the fishing industry has made it clear what they need. However, BOEM has done nothing about their unacceptable behavior.

Comment Number: BOEM-2021-0038-TRANS-063021-0006-1

Commenter: David Wallace

Commenter Type: Individual

Comment Excerpt Text:

I have in the past suggested that there should be a compensation fund set up by the developers with funds placed in an escrow account controlled by an arbitrator and a couple of experts in fisheries and fisheries gear for compensation for lost or damaged gear and for the loss of fishing grounds within the wind farm.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-1

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

While we must understand access, while we understand access may be limited during construction, recreational anglers must be able to fish up to the base of the turbine foundations to take advantage of the new habitat that will be created by offshore wind development.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-8

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

The recreational -- you don't have to be a pro angler to know that more structure in the water means more fish habitat and more fishing opportunity. Each one of these foundations will surely become a fish factory in addition to providing a holding feeding area for many migrating game fish. Having fished directly under the five towers up in Block Island, our nation's first wind farm site, I can tell you that it was not only a cool fishing experience but the number of fish down below was just incredible. A quick drop down with an eight ounce sinker and a piece of clam brought up black sea bass, fluke and more from the 95 foot depths. These towers up there have been only in the water since 2016 and divers note that it was barely a few months before muscles and underwater growth began to form on the bases and each of them became a vibrant ecosystem. Fisherman from the mainland, and Point Judith area as well as Block Island began catching fish on the foundations soon after the construction stopped. After the decades of bottom trawling that have virtually strip mind our near shore sea floor, we really need more fish attracting structures in the ocean and just like the oil rigs out in the Gulf of Mexico, they will grow into a significant artificial reef structure that will create vital habitat for everything from black sea bass to mahi mahi.

Comment Number: BOEM-2021-0038-TRANS-070821-0003-1

Commenter: David Wallace

Commenter Type: Individual

Comment Excerpt Text:

We have had a number of governors who have advocated that wind energy and ocean wind energy and the clam and the fishing industry can coexist without harming each other. The clam industry is unique in that it's directed fishery is in the types of substrates that can only exist with being able to drive piles deep into the substrates and soft bottom without a lot of heavy rocks, so -- so where we operate and where our

critters live is being negatively impacted by the -- will be negatively impacted by the wind energy development of thousands of wind turbines both in the mid Atlantic bite and New England.

Comment Number: BOEM-2021-0038-TRANS-070821-0003-4

Commenter: David Wallace

Commenter Type: Individual

Comment Excerpt Text:

We plan on making this very clear to both the states and to the public that we are not interested in being collateral damage to very high rates of electric -- on electric utilities and forcing us to fish in marginal areas and if there are no marginal areas to fish, then we essentially go out of business but our costs go up dramatically. We have proposed on numerous occasions to be financially provided -- considered by the developers and let BOEM and the federal governments and state governments to provide assistance for the fishing industry both in loss of fishing grounds and in gear lost or damage due to attempting to fish within the arrays and the cables which are extremely difficult for clam fish -- clam dredges or clam vessels because they enter the substrates and if the cables are not buried deep enough, they could come in contact with these cables of which we and the developers do not want to happen. So we have proposed that they -- the developers put up X numbers of dollars per megawatt per year to take care of loss of fishing grounds and the reimbursement to legitimate fisherman who have lost or damaged gear due to these wind farms

Comment Number: BOEM-2021-0038-TRANS-071321-0002-2

Organization: Clean Ocean Action

Commenter: Carrie Martin

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Clean Ocean Action is concerned with the proposed location of the Empire Wind project due to the busy port and vessel traffic in the region as well as being the prime area, a prime area for important fish species in the region. It is essential that BOEM include information from the U.S. Coast Guard to insure safety and the National Marine Fishery Service, relevant fisheries councils and the Atlantic States Marine Fisheries Commission to identify and protect the marine species in the New York New Jersey -- in the New York New Jersey Bite and the Empire Land EIS scoping process.

Comment Number: BOEM-2021-0038-TRANS-071321-0003-1

Organization: Surf, Land and Ocean Fishery

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

A number of us have attended numerous meetings with the Equinor and then Empire folks. We have expressed concern about their layout of the -- of their array spacing their turbines very close together which would prohibit us from being able to actually safely operate within the array without either damaging the structure of the wind turbines or our vessel or gear, so we are very very concerned about, you know, how we as an industry will be compensated for the loss of fishing ground and for possible gear loss both within the array and then on the export cables. There have been numerous problems with this on the Rhode Island, the first wind array and we know that this is going to be a problem for us in the future and we need to have a resolution of this before it goes forward.

Comment Number: BOEM-2021-0038-TRANS-071321-0008-1

Organization: Fishery Survival Fund

Commenter: Brett Sparks

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The scallop fishery is pound for pound the most profitable fishery in the United States, it's a highly lucrative fishery, however, the advent of offshore wind development continues to give members concerns. To be clear, FSF does not outright oppose the development of wind energy, however, we believe that every environmental review should be done in a way that adequately and comprehensively considers the potential impacts to this vital fishery. To that end, the COP submitted for Empire Wind, first off, misrepresents how scallop dredges operate within the fishery. The COP categorizes the scallop fishery as using tooth or hydraulic dredges which have detrimental impacts to the ocean bottoms, this is not the case. The fishery relies on a new Bedford style dredge that is different from these other dredges used in Europe and elsewhere. These dredges have little to no impacts on ocean bottom sitting above the ocean floor as fishermen collect scallops. This single point raises a larger concern that the wind developers and -- are -- have a fundamental misunderstanding of the fishery, how the fishery behaves and if there is no understanding of how the fishery behaves, then it is difficult to mitigate or understand what the potential impacts to this fishery are going to be, for instance, the COP represents that fisheries such as the scallop fishery can continue to operate within these turbine arrays and the Empire Wind lease unimpacted, however many of those estimates look at these boats fishing in isolation, that's just simply not the case, there are multiple boats fishing in this area at any time as well as additional vessel traffic in and out of these areas, so those are concerns that need to be addressed in the upcoming EIS for BOEM.

Comment Number: BOEM-2021-0038-TRANS-071321-0008-5

Organization: Fishery Survival Fund

Commenter: Brett Sparks

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

So that's something we request the EIS look at closely as well as fishery's mitigation, the COP does little to discuss compensation amounts and procedures. This is something that we would like to see considered either under the EIS or in further conversations with developers.

Comment Number: BOEM-2021-0038-TRANS-071321-0009-2

Organization: Long Island Commercial Fishery Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

That area has been historically used as fishing grounds for our squid fishery, for our fluke fishery, scallops in the area, it is an area of high productivity and when the director's memo came down from Advi Hopper and the question was is to remove the areas of fishing importance, nothing was done. I know because I met with Ms. Hopper the day before the lease area happened and I added the documents regarding the 2012 squid catch from that area which had not been included in BOEM's initial study which I believe was only showing 2006 through 2010 commercial fisheries data.

Comment Number: BOEM-2021-0038-TRANS-071321-0009-3

Organization: Long Island Commercial Fishery Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Also I believe the gentleman from Fishery Survival Fund spoke about the fisheries mitigation plan and the mitigation plan is nothing but basically schmoozing. There is no actual compensation plan, there is

nothing specific. I just read the document myself, on page 26, and without that being written basically in stone and taking into account as if they would if this were done in Europe, it really needs to be done because people who will be displaced and also with the transit, there are serious issues that have not been addressed and must be.

Comment Number: BOEM-2021-0038-TRANS-071321-0010-2

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The same is true for our fisheries, you know, what about the loss of the fisheries because of climate change. Such as lobstering in the Long Island Sound which is now at two percent of the productivity rate that it was merely 15 years ago. The reason, compelling reason for that, is the shift in the temperature of the Long Island Sound which is increased by two degrees Fahrenheit. Also winter flounder, which you really can barely find anymore in the estuary systems of Long Island, and what is the impact to our shellfish industry with the fact that this acidification, and that's adversely impacting our clams, oysters, and scallop industries.

A.3.9 Cultural, Historical, and Archaeological Resources

Comment Number: BOEM-2021-0038-DRAFT-0031 -1

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Fire Island National Seashore and Gateway National Recreation Area should be identified on all the project maps that show the study area. The boundary of each park unit and its various districts should be outlined and labeled, including boundaries as they extend into ocean and bayside waters. This should be done for both sea and land proposed actions. We also request that point locations are included for all National Historic Landmark (NHL) locations. Currently, these two park units and the NHLs are not identified on the project maps. We can assist in providing location data to fulfill this request.

Comment Number: BOEM-2021-0038-DRAFT-0031 -11

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Both Fire Island and Gateway have jurisdiction over activities occurring along the coastline and in their respective jurisdictional marine waters. NPS is responsible for the protection of resources in its jurisdictional waters, including but not limited to biologic, geologic, historic, and cultural. Of note, the coastal and marine areas of both parks have known and unknown submerged archaeological resources related to historic activities and events of importance to area Federal Indian Tribes with whom BOEM is consulting.

Comment Number: BOEM-2021-0038-DRAFT-0031 -2

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Overview of Fire Island National Seashore

Fire Island National Seashore (the Seashore) lies along the south shore of Long Island in Suffolk County, New York. The Seashore encompasses 19,580 acres of upland, tidal, and submerged lands along a 26-mile stretch of the 32-mile barrier island, part of a much larger system of barrier islands and bluffs stretching from New York City to the very eastern end of Long Island at Montauk Point. Easily accessed on Fire Island are nearly 1,400 acres of federally designated Wilderness (The Otis Pike Fire Island High Dune Wilderness) that include an extensive dune system, centuries-old maritime forests, and solitary beaches. On the western end of the Seashore is the Fire Island Lighthouse. Nearby on Long Island, adjacent to the Village of Mastic Beach, the 613-acre William Floyd Estate preserves more than 250 years of history. The park maintains the historic house, cultural landscape, and archival collection that includes items pertaining to both the estate and the Seashore.

Approximately 60 miles away from densely populated New York City lies the Fire Island Wilderness, a landscape of wind-swept dunes and dynamic waves. The Fire Island Wilderness has been afforded the highest level of protection by Congress under the Wilderness Act of 1964 (16 U.S.C. § 1131 et seq.) in order to preserve its unique and ever-changing ecosystems. In the Fire Island Wilderness, forces of nature are allowed to take their course, creating a refuge for wildlife and people alike.

Interspersed among the federal lands within the Seashore on Fire Island are 17 residential communities that predate the Seashore's authorization. Resort development on Fire Island began as early as 1855, and a number of the island's communities were established prior to the 1930s. The Seashore's enabling legislation includes provisions for private land to be retained and developed if zoning requirements are met. No hard-surfaced roads connect the communities, either to each other or to the mainland of Long Island. Communities are accessible mainly by passenger ferry or private boat. Vehicle use is restricted within the boundary of the Seashore. Without paved roads and with limited traffic, the communities have retained much of their original character. Some of the communities have hotels or facilities for overnight guests, while others are strictly residential. There are approximately 4,200 developed properties on Fire Island, with approximately 300 residents living on the island year-round. The number of year-round residents has slowly and steadily declined in recent years. Vehicle access is limited for year-round residents, contractors, and other service providers (telephone, fuel, garbage, etc.) because all vehicles crossing federal lands must have a National Park Service driving permit.

The population of Fire Island swells to approximately 30,000 during the summer season, with a total of two to three million visitors each year. In 2016, recreational visitation to sites and facilities owned or managed by the Seashore was 389,075. The primary visitor facilities on Fire Island are the Fire Island Lighthouse, Sailors Haven, Watch Hill, Talisman, and the Wilderness Visitor Center. Fire Island Lighthouse is maintained and operated by the Fire Island Lighthouse Preservation Society, an NPS cooperating association that offers tours and other visitor programming. Concessioners operate the marina at Sailors Haven, as well as the marina and campground at Watch Hill. The Seashore offers lifeguard-protected swimming areas at Sailors Haven, Talisman/Barrett Beach and Watch Hill. Also on Fire Island are ranger stations, visitor contact facilities, maintenance facilities, and several units of park housing. At either end of Fire Island are major state and county beaches that receive sizable visitation and are accessible by vehicle.

On Long Island, the Seashore's headquarters are in Patchogue and include administrative offices, a maintenance facility, and a ferry terminal. The William Floyd Estate in Mastic includes the Old Mastic House, several outbuildings and structures, a cemetery, curatorial storage facility, preservation and maintenance shop, and other natural and cultural resources.

Comment Number: BOEM-2021-0038-DRAFT-0031 -3

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Overview of Gateway National Recreation Area

Gateway National Recreation Area (Gateway) brings the National Park Service experience to more than nine million visitors each year. As the fourth most visited unit within the National Park System, Gateway preserves a mosaic of coastal ecosystems and natural areas interwoven with historic coastal defense and maritime sites in the New York Metropolitan area. Spanning three New York City boroughs and the northernmost portion of the New Jersey shore, Gateway's park lands stand in sharp contrast to the nearby metropolitan area and offer abundant opportunities for residents and visitors to recreate and experience nature and historic settings. The park covers more than 40 square miles in New York and New Jersey with 21.68 acres of land and waters under NPS management. Natural areas; water, beaches, and coastal views; historic coastal defense and maritime structures; diverse recreation opportunities; and educational and interpretive programming combine to create rich and varied visitor experiences at Gateway. Views of the New York Outer Harbor, the oldest continuously operating lighthouse in the United States, coastal defense resources at Fort Hancock, Fort Tilden and Fort Wadsworth, public access to bay and ocean shorelines, and, darkness and night sky are some of the resources that are fundamental to the park's purpose and significance [NPS Gateway National Recreation Area General Management Plan of 2014 (Gateway GMP 2014)]. Unimpeded views are integral to the visitor experience along the park's 31 miles of ocean beaches, dunes, and water (Gateway GMP 2014).

The Fort Hancock and Sandy Hook Proving Ground National Historic Landmark District comprises the entirety of the park's Sandy Hook Unit. Fort Hancock and Sandy Hook Proving Ground was designated a National Historic Landmark in November of 1996. The district includes the cantonment area of Fort Hancock, numerous batteries, and the Proving Ground. Sandy Hook is significant in American History as the site of the Federal Reservation that played dual roles in United States Military History. The Sandy Hook Defenses (Fort Hancock) were the key fortification guarding the approaches to New York Harbor through the Nike Era. While the entire District is a fundamental park resource, the Endicott/Taft-era batteries, Parade Ground (including Officers' Row, barracks, and cultural landscape) and Nike Missile Launch and Radar Sites are individually identified as fundamental park resources within the Historic District (Gateway GMP 2014). The majority of the coastal fortifications found in the district face the ocean and/or New York Harbor and this association is important. The Sandy Hook Light was individually listed a National Historic Landmark in 1982. Constructed in 1764, it is the oldest active lighthouse in the United States that is maintained today as an aid to navigation. The 1894 Spermaceti Cove Life Saving Station No. 2 is also located in the park's Sandy Hook Unit. The Life Saving Station was individually listed on the National Register in 1981. The station, which includes a watchtower and boat room, was constructed as one of the earliest federally sponsored efforts to save life and property from shipwrecks.

The Fort Tilden Historic District is a fundamental park resource located in the Jamaica Bay Unit on the Rockaway Peninsula. Fort Tilden was determined eligible for listing on the National Register of Historic Places by the Keeper in 2009. Battery Harris, Battery Kessler, Construction Battery 220 and the Nike Missile Launch Site are individually recognized fundamental park resource within the Historic District (Gateway GMP 2014).

The Fort Wadsworth Historic District is a fundamental park resource located on the west side of the entrance to NY Harbor in the Staten Island Unit. The Fort Wadsworth Historic District was determined eligible for the National Register in 1998. The former military reservation was established as part of the New York Harbor coastal defense system and contains 61 contributing resources, including 33 buildings,

17 structures, and 13 sites. Included are a variety of defensive fortifications, gun batteries, and support structures. Battery Weed, Fort Tompkins, the Endicott-era batteries and the Torpedo-storage Building are individually identified as fundamental resources in the park's General Management Plan (Gateway GMP 2014). The two most significant fortifications in the district are Battery Weed (formerly Fort Richmond, with a related sea wall) and Fort Tompkins, both associated with the development of the Third System of American coastal defenses between 1847 and 1876. Each are individually listed in the National Register.

The Jacob Riis Park Historic District is a significant example of a public park constructed between 1932 and 1937 under the Works Progress Administration federal relief program. Contributing resources include a bathing pavilion and two central mall buildings that were described in the original 1977 nomination and nine other buildings described in the 1985 boundary increase of the district. Millions of visitors each year enjoy ocean views from the mile-long boardwalk and beach.

The Far Rockaway Coast Guard Station Historic District, located just east of the Fort Tilden Historic District, is significant for its association with the history of lifesaving services and for its distinctive Colonial Revival institutional architecture.

The Breezy Point Surf Club Historic District and the Silver Gull Beach Club, ocean front cabana complexes, were determined eligible by New York State Historic Preservation Office (SHPO) in 2012. The Silver Gull Beach Club Historic District is located on the Atlantic Ocean shorefront, immediately west of Fort Tilden, on the Rockaway Peninsula. The district is an oceanfront cabana complex containing a total of 15 contributing (1 site, 7 buildings, 7 structures) and 10 non-contributing (5 buildings and 5 structures) resources. The Breezy Point Surf Club is an approximately 60-acre cabana complex containing 69 contributing buildings, 11 contributing structures, and 1 contributing site; most of these were constructed between 1937 and 1962. Both Historic Districts are located on the Rockaway Peninsula facing the Atlantic Ocean and each retains a high degree of integrity in terms of setting, design, materials, workmanship, feeling, and association.

The Miller Army Airfield Historic District totals about 3 acres on Staten Island and includes the double seaplane hangar, apron and ramp and the Elm Tree Light. Miller Field was established in 1919–1921 as a 180-acre army airfield. Hangar No. 38, constructed in 1920, is important because of its association with early aviation history and the history of air coast defenses of New York. The Elm Tree Light, an octagonal concrete beacon tower which stands near Hangar No. 38, was constructed by the Coast Guard in 1939 to replace an earlier tower. The significance of the Elm Tree Light lies in its direct association with the early lighthouse service.

The beach experience, including access to ocean surf, public access to bay and ocean shorelines, and water-based activities such as surfing, boating, fishing, and swimming, are fundamental park resources (Gateway GMP 2014). In 2018, Gateway had more than nine million visitors. Each year, more than two million visitors go to the Sandy Hook Unit. Most of these visitors come to the Unit to enjoy the beaches and water-based recreation. Riis Beach is a heavily visited recreational area in the park. The beaches of Breezy Point, Fort Tilden, Plumb Beach, and Great Kills are also import areas for park visitors.

Comment Number: BOEM-2021-0038-DRAFT-0031 -32**Organization:** Department of the Interior, National Park Service**Commenter:** Mary Krueger**Commenter Type:** Federal Agency**Comment Excerpt Text:**

Impacts to Historic Properties Under Section 106 and 110(f)

We note that Appendix Z - Analysis of Visual Effects to Historic Properties is not yet available. NPS looks forward to review and comment on this document when it is complete. As detailed above, there are

a number of National Historic Landmarks (NHL's) within the project area, both within and outside national park units. It is our understanding that the VIA is being redone due to changes in the size, number and configuration of wind turbine generators in the two project areas (Empire Wind I and II). In addition to the three NHLs noted above, there may be additional historic properties identified with an expansion of the Area of Potential Effect. In addition to these NHL properties and the National Register properties we have identified, we again encourage you to consult with the New York and New Jersey SHPOs (per 36 CFR 800.4(a)(2)) to identify any National Register properties or NHLs within the APE that may be effected by the undertaking.

For management purposes, the NPS recognizes five categories of cultural resources: archeological resources, historic structures, cultural landscapes, ethnographic resources, and museum collections. The cultural resources of the park represent tangible manifestations of humans interacting with their environment and with each other throughout time, up to the present day.

In discussions with the developers, it was clear that NPS should provide more detailed information on the historic properties within park boundaries in order to provide a more complete picture. We provide more information for Fire Island and Gateway in turn below. NPS asks that applicable information be included in the COP and DEIS analysis of impacts to historic properties. NPS staff can provide more information as needed to aid in this analysis.

Comment Number: BOEM-2021-0038-DRAFT-0031 -33**Organization:** Department of the Interior, National Park Service**Commenter:** Mary Krueger**Commenter Type:** Federal Agency**Comment Excerpt Text:**

Historic Properties at Fire Island National Seashore

Cultural landscapes that may be impacted at Fire Island include the most prominent of the Seashore's historic structures are the Fire Island Lighthouse and the Keepers Quarters, which were completed in 1858 and 1859, respectively. These structures are built on a 15-foot-tall bluestone terrace whose materials were salvaged from the original 1825-1826 lighthouse and keeper's house, which was demolished to build the current structures on the site. The extant Lighthouse is a 164-foot conical tower constructed of brick with a hyperbolic curved profile and a cylindrical shape near its top. The upper portion features a granite cornice and an iron-railed projecting gallery. Since 1891, the tower has been painted with four alternating black and white bands, which were kept in the same configuration when the tower was coated in reinforced concrete in 1912. The Keepers Quarters is a two-story rough-coursed granite building whose roof is a combination of a gable and a hip roof. There are 13 historic buildings or structures within two clusters (the Light Station and the Radio Compass Station) on the Light Station tract. Core buildings and structures for the Light Station cluster include the historic Lighthouse, Keepers Quarters, Terrace, and Boat House (1939). Missing from the Light Station cluster are the coal/oil house, wharf, storehouse, and power generation plant. The Radio Compass Station cluster is primarily comprised of the historic Lighthouse Annex Building (1906). This two-story structure with a hip roof (which has been enlarged twice) was originally built as a one-story dwelling. In addition to the Lighthouse Annex Building, there are several contributing buildings and structures including the Lighthouse Annex Garage, Tool House, Oil House, Store House, the remains of the wireless station's Engine House and Battery House Foundation, and several historic buildings and structures within the Radio Officer's residence. Visible concrete foundations and guy wire remnants mark the site of two large radio towers that were demolished in 1937.

Another cultural landscape within the boundary of the Seashore is the Carrington Estate, located off the Burma Road on federal lands to the west of the residential community of Fire Island Pines. The estate was the property of Broadway producer Frank Carrington who hosted a number of stage, screen, and literary

celebrities during his period of residence and consists of two structures. The main house was constructed in 1909 by Mr. Carrington's father and was sold to the National Park Service by Mr. Carrington in 1969. The adjoining cottage was originally part of a lifesaving station and was moved near the main house in 1947 for use as a guest house. The property was listed on the National Register of Historic Places in 2014. The boardwalk to the beach at the estate provides views of the sea.

Comment Number: BOEM-2021-0038-DRAFT-0031 -34

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Historic Properties at Gateway National Recreation Area

Gateway possesses more than 800 historic buildings, structures, landscapes, and archeological sites with hundreds of additional individual features that contribute to the character of these special places.

Structures dedicated to ship navigation and lifesaving are well represented in the maritime cultural record of the area. The Sandy Hook Lighthouse, a National Historic Landmark, was first illuminated on June 11, 1764, generated by 48 oil-fueled lamps. Today it is the oldest continuously operating lighthouse in the United States and the only surviving one of the eleven lighthouse buildings dating to the Colonial period. The Elm Tree Light, a contributing structure at Miller Army Airfield Historic District, has undergone several transformations. The current Elm Tree Light was constructed by the U.S. Coast Guard in 1939 to replace an earlier tower that had served as a mark for sailing vessels in the late 18th century (Wren 1974; NPS 1979a). The first Fort Tompkins lighthouse was replaced in 1893 with a new light constructed on the top of Battery Weed to provide better protection of the shipping lane through the Narrows. The light was visible for 14 nautical miles. The light was decommissioned in 1965 (Olmsted Center for Landscape Preservation 2008).

By the 19th century, lifesaving stations were being constructed in the harbor area that would prove crucial for saving shipwreck victims. The extant Spermaceti Cove Life Saving Station (1894) was identified as Station No. 2. The station was decommissioned in 1949 as an active U.S. Coast Guard Station and has served as a visitors' center for the park since 1974. Additional lifesaving stations built in 1848, 1855, 1872, and 1891 on Sandy Hook no longer exist.

Seacoast fortifications along the New York Harbor area date to the early days of discovery and colonization of the New Jersey and New York coastlines. Since the Colonial period, the defense of New York Harbor was considered critical for commerce and the defense of the United States. The fortifications included a variety of forts and batteries dating back to the late 18th century and continuing through the Cold War era. Technological advances in weaponry and construction techniques through time resulted in greatly improved fortifications, some of which were built over earlier, outdated structures.

Both commercial and military aviation were quickly evolving after World War I. The early history of aviation in the United States is well represented in several Gateway facilities dating back to the early 20th century, including Floyd Bennett Field, Miller Army Airfield, and the Rockaway Naval Air Station (now the site of Jacob Riis Park).

Comment Number: BOEM-2021-0038-DRAFT-0031 -35

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

National Historic Landmarks

We recommend additional analysis to determine whether the projects may have adverse impacts to the Green-Wood Cemetery NHL, in Brooklyn, New York, The Empire State Building NHL, in Manhattan, New York, and Twin Lights Historic Site (aka Navesink Light Station), in Highlands, New Jersey. It is possible the proposed projects are too distant, or surrounding area too developed, to alter the setting and other characteristics of these properties, but given their overall proximity and/or elevation in relation to the projects we would advise including them in the baseline analysis, particularly with regards to viewshed and night skies.

Comment Number: BOEM-2021-0038-DRAFT-0031 -4

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Overview of Area National Historic Landmarks

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 [Hyperlink: <https://achp.gov/protecting-historic-properties>] and Section 110(f) [Hyperlink: <https://www.nps.gov/fpi/Section110.html>] of the NHPA. Other federal effects are listed in 36 CFR § 65.2. [Hyperlink: https://www.ecfr.gov/cgi-bin/text-idx?SID=1a520557c8aad5823ac4196aff16ed91&mc=true&node=pt36.1.65&rgn=div5&se36.1.65_12] 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 [Hyperlink: <https://www.achp.gov/>](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 SHPO [http://www.ncshpo.org/shpodirectory.shtml] and the ACHP leading, in most instances, to agreement on how the undertaking will proceed. 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 addition to the NHLs within the boundaries of Fire Island National Seashore and Gateway National Recreation Area as described in the sections above, there are numerous additional NHLs in the vicinity of the Empire Wind Projects including, but not limited to, Green-Wood Cemetery NHL, in Brooklyn, New York, The Empire State Building NHL, in Manhattan, New York, and Twin Lights Historic Site (aka Navesink Light Station), in Highlands, New Jersey.

Comment Number: BOEM-2021-0038-DRAFT-0031 -9

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Visual Impacts to NHLs

NPS recommends the following locations be added as KOPs for this new analysis. There are numerous NHLs in the New York and New Jersey area that could be visually impacted by the wind turbine generators and/or by offshore substations or by onshore infrastructure. We look forward to reviewing Appendix Z Analysis of Visual Effects to Historic Properties when it is available. In addition to the National Register properties we have identified, we encourage you to consult with the New York and New Jersey SHPOs (per 36 CFR 800.4(a)(2) to identify any National Register properties or NHLs within the APE that may be effected by the undertaking. In the meantime, we recommend the following NHLs be included in the revised visual impact assessment.

- Empire State Building, NHL: View from iconic Observation Deck on 86th floor with sweeping 360-degree views on Manhattan including NY Harbor.

- Green-Wood Cemetery, NHL: Located on the highest elevation in Brooklyn

- Twin Lights Historic Site, NHL: Highlands, NJ, 246 above sea level on the headlands of Navesink Highlands and directly overlooking Sandy Hook Bay, the entrance to New York Harbor

Comment Number: BOEM-2021-0038-DRAFT-0039-11

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Section 106 of the NHPA (16USC470) requires federal agencies to consider potential adverse impacts on historic resources of any activities, projects, or programs they assist, fund, permit, license, or approve. Prior to issuance of a decision federal agencies are required under Sec. 106, to establish Area of Potential Effect, identify historic properties in this area, assess project effects on such properties and review a broad range of alternatives during the project planning process to avoid, minimize, or mitigate such impacts. [Footnote 29: BOEM. (2021, May 4). National Environmental Policy Act (NEPA) Substitution for Section 106 Consulting Party Guide.] Section 106 also requires consultation with State Historic Preservation Officers (SHPO), Tribal Historic Preservation Officers (THPO), Indian Tribes, Native American organizations, and private interests and other stakeholders involved in historic preservation within the development areas. [Footnote 30: <https://www.achp.gov/protecting-historic-properties/section-106-process/introduction-section-106>]

Preparation of the EIS must include robust consultation with states and tribes under Section 106 to ensure the appropriate consideration of EW1&2 impacts on historic state and tribal resources as required under the recent DOI SO. [Footnote 31: Secretarial Order No. 3399, at §5(c).

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.] If any additional or previously unidentified cultural resource is located during EW1&2 activities, all operations in the vicinity of the find must be suspended, the find protected from operations and reported immediately to the SHPO or the THPO, and activities resumed only after SHPO/THPO visit the site and make appropriate evaluation and recordation.

NEPA and NHPA Section 106 have separate requirements of federal agencies with different considerations for review: Section 106 review relates only to historic properties e.g. prehistoric or historic

district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource. [Footnote 32: NHPA [54 U.S.C. § 300308]: A historic property (or historic resource) is any “prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource.”] NEPA involves the consideration of impacts to a broad range of resources including historic and cultural resources among many other elements. Both statutes require continued inter-governmental and inter-agency consultation and collaboration in agency action. The EIS must take an integrated coordinated approach [Footnote 33: Advisory Council on Historic Preservation: INTEGRATING NEPA AND SECTION 106 reviews improves efficiency and informed decision making. https://www.achp.gov/integrating_nepa_106] in information gathering under the combined statutory requirements to facilitate informed decision-making to enable BOEM to develop and implement comprehensive best management practices to avoid, minimize, and mitigate any adverse impacts to coastal and submerged/marine historic, cultural, and natural resources within the EW area.

Comment Number: BOEM-2021-0038-DRAFT-0047-40

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Cultural Resources Impacts:

- Indian Nations Consultation. [Italics: Note: New York shares geographic borders with the Shinnecock Indian Nation and the Unkechaug Nation as well as mutual environmental concerns and urges BOEM to engage in consultation with the nations through all stages of the National OCS Program. Statutory reference: 43 USC §1344 (a)(1), (a)(2)(B), (F)]

- Evaluation of impacts to archeological and cultural resources.

Comment Number: BOEM-2021-0038-DRAFT-0049-2

Organization: Point O’Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Second, the Point O’Woods Association is concerned about the proposed project’s potential adverse effects on historic properties and has a demonstrated interest in the project’s outcome.

Comment Number: BOEM-2021-0038-DRAFT-0049-3

Organization: Point O’Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Point O’Woods Association’s mission is, among other things, to protect the historic character and context of Point O’Woods and to preserve for current and future generations the community’s unique and pristine maritime setting of which the Association is privileged to be a steward.

For the reasons stated herein, the Point O’Woods Association requests recognition by BOEM as a consulting party in the Section 106 review process for Empire Offshore Wind, LLC’s Proposed Wind Energy Facilities Offshore New York, pursuant to the National Historic Preservation Act and 36 C.F.R. § 800.2(c)(5). 36 C.F.R. § 800.2(c)(5) provides that “[c]ertain individuals and organizations with a

demonstrated interest in the undertaking may participate as consulting parties due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties.”

Comment Number: BOEM-2021-0038-DRAFT-0049-4

Organization: Point O'Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Therefore, participating as a consulting party would allow the Point O'Woods Association to assist BOEM and other consulting parties—in addition to identifying historic resources and helping to evaluate the potential for adverse effects—in finding ways to avoid, minimize, or mitigate adverse effects to historic properties, including Point O'Woods.

Comment Number: BOEM-2021-0038-DRAFT-0053-1

Organization: Point O'Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

During this phase of the Project, in addition to assessing all impacts to the natural environment, it is critically important that BOEM fully assess and consider impacts upon all cultural and historic resources that may be impacted, whether directly or indirectly. The COP, as drafted, is incomplete and falls short of the NHPA's mandates that require consideration of all adverse effects.

The Association concurs in the COP's assessment that the Point O'Woods Historic District, which is eligible for listing in the National Register of Historic Places, should be considered as a historic property for purposes of NEPA and NHPA review and that the historic district's maritime setting will be adversely affected. However, the Association requests that the DEIS include a full assessment of effects on all contributing properties within Point O'Woods that are likely to experience adverse visual effects so that the Association's members can understand the nature and extent of those effects. At present, it is impossible for the Association to comment fully on adverse effects to Point O'Woods without access to this information. Therefore, we ask that BOEM require revisions to the COP on all aspects of visual impacts to historic properties so that meaningful consultation with BOEM can occur as required by federal law.

Comment Number: BOEM-2021-0038-DRAFT-0053-2

Organization: Point O'Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP's Visual Impact Assessment is too limited in scope and does not provide enough information for consulting parties to adequately assess potential impacts. Empire Wind's expected 174 wind turbines, supporting tower structures, and two offshore substations, as well as associated support and access structures, are expected to cause significant adverse effects to historic properties within the Project Area and Area of Potential Effect. The Visual Impact Assessment is provided in Empire Wind COP at Appendix AA. Although the Jones Beach 18MW Visual Simulation is helpful, we are unable to understand what the visual impacts to Point O'Woods will be. Visual assessments that are this limited in nature are not only unreasonable, but also arbitrary, capricious, and contrary to federal law.

Comment Number: BOEM-2021-0038-DRAFT-0053-3

Organization: Point O’Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The current visual assessment is inadequate to show the actual impact of the wind turbines and associated infrastructure and must be amended 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, including Point O’Woods, and should also include multiple assessments for the National Register-eligible Robert Moses State Park and National Register-listed Fire Island Lighthouse and Historic District. In addition, vantage points should include the Fire Island National Seashore, which has provided countless people with a place for solitude, access to nature, and an uninterrupted seascape for centuries. Empire Wind will irreparably alter this setting.

Comment Number: BOEM-2021-0038-DRAFT-0053-5

Organization: Point O’Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is uncontroverted that Equinor’s 174 wind turbine generators will have a significant impact on the viewshed and, consequently, Point O’Woods’s historic maritime setting. Under NEPA, BOEM must consider a wide range of effects, specifically including impacts that are “historic, cultural, [and] economic.” [Footnote 18: 40 C.F.R. § 1508.1(g)(1).] BOEM must carefully consider the impacts on the Point O’Woods Historic District’s unique character, which qualifies as a “resource” under NEPA’s definition. Spoliation of Fire Island’s historic landscape may even lower property values. Negative impacts on the Association—as well as other Fire Island communities—may be quite significant and these potential adverse effects must be carefully considered.

Due to the high potential for the Project to adversely impact cultural sites, historic properties, the viewshed, property values, and Fire Island tourism, BOEM should conduct additional visual assessments, and provide consulting parties and the public with adequate and easily accessible information that informs all parties of potential impacts.

Comment Number: BOEM-2021-0038-DRAFT-0053-6

Organization: Point O’Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Several wind farms are in development off the coasts of New York and New Jersey. These offshore wind projects planned for the region 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.

In specifically requiring cumulative impacts analyses, NEPA and NHPA recognizes the significant effect that projects can have on the surrounding landscape beyond the scope of a single development. 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 sites. Due to the historic integrity of the Point O’Woods Historic District and other historic properties situated on barrier islands within the Project Area, BOEM must establish and

implement best practices. Based on the omissions described above, 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 Point O’Woods and all affected historic properties.

Comment Number: BOEM-2021-0038-DRAFT-0057-18

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 53: 36 C.F.R. § 800.1.] It also gives the Advisory Council on Historic Preservation an opportunity to comment. [Footnote 54: Id.] The Section 106 process balances historic preservation concerns with the needs of federal agencies while involving interested parties. [Footnote 55: 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 56: 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 57: 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-19

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 58: 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/.](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 59: 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 60: 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 61: *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 62: *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-2021-0038-DRAFT-0062-13

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

ANALYSIS OF VISUAL EFFECTS TO HISTORIC PROPERTIES

Appendices Z and AA, Analysis of Visual Effects to Historic Properties document, and Visual Impact document, respectively are missing from the COP. For this reason, the public comment period should be extended for 30 days post-publication.

COP Volume 2c “Cultural Resources” fails to identify Jones Beach State Park Sea Scapes as a rural historic landscape and cultural resource. Jones Beach State Park is eligible for inclusion on the National Register of Historic Places as historic district and a rural historic landscape.

396. According to NPS guidance for identifying and documenting rural historic landscapes, rural historic landscapes are “a geographical area that historically has been used by people or shaped or modified by human activity,...that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation,...buildings, roads and waterways, and natural features.” [National Register Bulletin of the National Parks Service, “Guidelines for Evaluating and Documenting Rural Historic Landscapes” by L.F.McClelland, J. Keller, G. Keller, and R. Melnick, 1999]. The New York State Offshore Wind Master Plan, Cultural Resources Study Final Report (NYSERDA Report # 17-25h), states: “While not expressly referenced [by McClellan et al.], ... such [protected] landscapes could include seascapes, and the term “historically” would be applied to landscapes [including seascapes] associated with, or recognized by, any group of people...” [New York State Offshore Wind Master Plan, Cultural Resources Study NYSERDA Report # 17-25h, Issued December 2017, Section 2.2.2.2]. Rural historic landscapes are listed in the National Register as “sites” or “historic districts” [L.F.McClelland, J. Keller, G. Keller, and R. Melnick 1999]

It is wholly insufficient and off-track to say that it’s the American beaux arts architectural style combined with the massive undertaking of its construction unprecedented in its time that has made Jones Beach State Park historical. Jones Beach State Park is a park whose symmetry, balance, and elegance of detail, highly usable layout, intelligent design, aesthetic form, and integration of walkways, parking fields, and buildings with natural elements of water, sky, distant landscape and seascape views, facilitate land use and enjoyment and form an accessible but grand destination in which the outdoors was experienced in a new large way by the multitudes. It is the immensity an high value of the experiences of nature and feelings it imparts on park-goers sweeping integration and juxtaposition of elements of nature with elegant functional elements that increase the capacity to enjoy and appreciate the outdoors including the landscape, water, and sky, at a grand recreational destination that has become a part of the collective experiences of the people using the park over the decades. This is what makes it so special and so iconic. The historic seascape is an integral part of the Jones Beach historic site.

Released simulations of the power plant show tremendous damaging impact to the cherished view of the ocean from Jones Beach state park, a historic seascape type landscape integral to the Jones Beach historic site. At minimum, the Entire Empire Wind Area 1 which is, of the two plants EW1 and EW2 within the lease area, the one closest to shore, should be disapproved. I have reviewed the visual simulations. It is my opinion that this cherished resource of Jones Beach ocean view - which for millions is the source of respite and renewal - should not be squandered by the build-out of EW1, especially given all the new lease areas that are expected to be provisioned and built out in the next ten years which will accomplish the same objective without causing any such loss of resource.

The height of turbines so gargantuan (952 feet for the 18 MW) looks from the coast to be a projection from the horizon comparable in height to a significant proportion of the entire height of the visible ocean in the field of view of someone seated in a beach chair or beach blanket behind the high tide line, according to the simulation. The spinning rotors of multiple turbine machines attract visual attention to the turbine machines, according to a viewing of the simulation published as part of the COP.

Additionally, the aircraft warning lights over such a large area will, at sunrise and dusk, make the impossible the calming and restorative effect of looking out over the open ocean as bright lights will blink in unison over a large area. The view will more resemble an oil refinery and will have industrial appearance. [Footnote 1: The power plant developer has not committed to automatic detection systems and even if they are implemented they will offer little amelioration of the blinking as frequent triggering will result from the proximity of the bight to two new york city airports.]

The “Mitigation” measures will do virtually nothing to mitigate the severe adverse affects of the EW1 area – these effects which degrade the characteristics for which the property was originally listed in the historic register, is unmititgatable. EW1 should not be built out.

Comment Number: BOEM-2021-0038-TRANS-063021-0001-1

Organization: Long Island Traditions

Commenter: Nancy Solomon

Commenter Type: Individual

Comment Excerpt Text:

My first question is will you be considering impacts to the fishing industry as part of the cultural resource surveys required under NEPA. These are usually considered intangible cultural resources so I wanted to make that clear.

Comment Number: BOEM-2021-0038-TRANS-063021-0007-4

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

And this is a place where I last left my mother's ashes on the Atlantic Ocean. And it is very disturbing to me to see that something like this is going to be built in the very place where I and many other people leave their remains because Long Beach has a section of the boardwalk where about 725 people have been memorialized and many others laid their remains behind. It really does disturb me in my soul to see this in many ways to come to the point where I would be seeing a wind farm on this place where I can commemorate my mother, bless her soul.

Comment Number: BOEM-2021-0038-TRANS-070821-0006-4

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

This memorial bench in Long Beach is like no other place in America, there are 722 memorial benches, people come here to cremate and spread the ashes of their loved ones which I really don't support at all, but the thing is this is the last thing I have to look at of my mother, and I want this view that she had when she was a little girl looking at Long Beach, my grandfather, her father, my grandfather had when he was tailing the merchant marine tanks in Long Beach, and my great grandmother, her grandmother looking out there in the nursing home in Long Beach and I look at out at this same view and my children will look out at the same view, and my grandchildren and great grandchildren and so forth and so on.

A.3.10 Demographics, Employment, and Economics

Comments associated with this issue appear in the sub-issues below.

A.3.10.1. Recreation and Tourism

Comment Number: BOEM-2021-0038-DRAFT-0023-1

Commenter: Laura St Germain

Commenter Type: Individual

Comment Excerpt Text:

Jones Beach is one of the most beautiful and unspoiled assets that the State of New York and the counties of Nassau and Suffolk has. Nassau and Suffolk Counties along with the State of New York have just invested millions in the Jones Beach area to try to improve tourism with a fantastic bike trail and fun & challenging zip line park. Who will want to come to Jones Beach now? To see windmills? If this passes, it seems the investment of our tax dollars was a poor one.

Comment Number: BOEM-2021-0038-DRAFT-0023-4

Commenter: Laura St Germain

Commenter Type: Individual

Comment Excerpt Text:

veral years ago, Nassau County put up a single wind mill without input or comment from the community. It is an eyesore and I rarely see it in motion. Putting a windfarm within view of the communities on the shoreline will add salt to the wound and cause fiscal harm to my investment in my home and community.

Comment Number: BOEM-2021-0038-DRAFT-0044-13

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Data on private angling are very limited; therefore, it will be important to clearly articulate the limitations of the available data and work with local fishermen to understand how the project area is used by recreational fisheries. More specificity on where recreational fishing is occurring is needed to estimate impacts more accurately. For example, COP Volume 2 (page 8-127) states “there were a total of 13.4 million recreational saltwater angler trips in New York, and 13.3 million recreational saltwater trips in New Jersey,” however there is no way of determining how many of those recreational trips (including shore-based, private vessels/rentals, and party/charter trips) occurred in or near the project area; presumably, many of these trips occurred elsewhere. It should be made clear that this information is intended to provide context about the importance of recreational fishing to New York and New Jersey, rather than as a measure of project-level impacts.

Comment Number: BOEM-2021-0038-DRAFT-0047-3

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Potential limitations on public access or use of state or municipal facilities and tourism dependent businesses during construction and operation. BOEM should identify opportunities to maintain public access and avoid interference with public use and enjoyment.

Comment Number: BOEM-2021-0038-DRAFT-0047-43

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Other Sections: 2.5

Comment Excerpt Text:

Socioeconomics Impacts:

- Tourism and Recreational Activities:
 - Avoidance of construction during peak summer tourism season from Memorial Day through Labor Day, especially summer holiday weekends.
 - Evaluation of impacts from temporary beach closures.
-

- Characterize potential use of nearshore coastal and beach areas for pipestring staging during construction. Evaluate alternative locations to minimize disturbance.

Comment Number: BOEM-2021-0038-DRAFT-0047-46

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Fishing Fleets and Land-based Fishing Communities:

- Economic impact analysis identifying both positive and negative impacts to commercial and recreational for-hire fishermen, including direct and indirect exposure and downstream economic effects to seafood processing, ship repair, and other shore-based industries.

- Recreational Diving Sites. [Italics: Note: New York State Department of State (DOS) developed two datasets for offshore diving areas important to NY that are available on the NYS Geographic Information Gateway:]

- [Italics: Artificial reef diving: <http://opdgig.dos.ny.gov/geoportal/catalog/search/resource/detailsnoheader.page?uuid={A4A2BFE8-1198-4624-91B5-796F558E77B4}.>]

- [Italics: Wreck diving: <http://opdgig.dos.ny.gov/geoportal/catalog/search/resource/detailsnoheader.page?uuid={4990846B-A419-486B-AA9F-A7D770382832}.>]

- Surfing Areas. [Italics: Note: DOS developed surfing areas along the Atlantic beaches of NYS that are available on the NYS Geographic Information Gateway: <http://opdgig.dos.ny.gov/geoportal/catalogsearch/resource/detailsnoheader.page?uuid={A4A2BFE8-1198-4624-91B5-796F558E77B4}.>]

- Assessment of impacts to public services.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-6

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

Decreasing our dependence on fossil fuels leads to cleaner healthier waters which benefits everyone. This leads to more efficient opportunities, tourism trips for people interested in viewing the turbines, and more folks feeling confident enough with the fishing to buy more tackle and boats.

A.3.10.2. Employment and job creation

Comment Number: BOEM-2021-0038-DRAFT-0004-2

Commenter: Jake Monahan

Commenter Type: Individual

Comment Excerpt Text:

Many jobs will be created that will benefit the environment

Comment Number: BOEM-2021-0038-DRAFT-0009-3

Commenter: David Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

We must also think about the economic boom these green jobs will bring to our communities. Unions across the city are thrilled with the prospect of off shore wind. They believe the transition to clean energy will benefit their members and produce high paying jobs at many levels.

Comment Number: BOEM-2021-0038-DRAFT-0010-2

Commenter: Abigail Meola

Commenter Type: Individual

Comment Excerpt Text:

From an economic perspective, I am excited by the job prospects that this project will bring. The construction and maintenance will bring high-paying, skilled labor work to our local people. Then, when this project is up and running, we will have a fleet of trained employees who can use their expertise to aid in additional renewable projects that will surely be cropping up around the country. With COVID causing large-scale unemployment, I welcome the idea of any good paying jobs, especially green jobs.

Comment Number: BOEM-2021-0038-DRAFT-0020-3

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Economic: Account all of the direct and indirect job creation and workforce development resources from the offshore wind projects

Comment Number: BOEM-2021-0038-DRAFT-0020-4

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Capture the benefits of:

- Quality and accessibility of green jobs created
 - Commitments to local hiring
 - Direct community investments
 - Local supply chain & economic development opportunities
-

Comment Number: BOEM-2021-0038-DRAFT-0029-14

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5. Job Growth

Empire Wind will spur an offshore wind economy in New York and will bring nearly 1000 good paying jobs to our region. CCE was thrilled to hear that Empire Wind will be serviced by an operations and maintenance hub in south Brooklyn and the towers and gravity-based foundations will be manufactured in the Capitol region, at Port of Albany and Port of Coeymans respectively, for both Empire Wind 1 and 2. A job analysis should be included in the EIS

Comment Number: BOEM-2021-0038-DRAFT-0047-45

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Commercial Shipping Industry:

- Economic impact analysis identifying both positive and negative impacts, including direct and indirect exposure and downstream economic effects to shore based industries.

- Impacts due to restricted port access from increased project vessels and construction activities. [Italics: Note: Homeport Pier is essential to citywide disaster recovery and relief operations. In 2012 during Superstorm Sandy, the pier served as a logistics base of operations for Federal Emergency Management Agency (FEMA) recovery staff that were housed on Maritime Administration ships. The use of the Homeport Pier (also known as Pier 6) as a deep-water berth for disaster recovery operations in the New York Harbor has been an important asset during numerous emergency scenarios and provided the incentive for improving the site's resiliency during storms.]

- Effects of actual and perceived navigation risks on desirability to approach and operate within the NY/NJ Harbor.

- Effects on the Sunset Park Significant Maritime and Industrial Area and Priority Marine Activity Zones (NYC Waterfront Revitalization Program, 2016).

- Effects on the Kill Van Kull Significant Maritime and Industrial Area (NYC Waterfront Revitalization Program, 2016).

Comment Number: BOEM-2021-0038-DRAFT-0048-1

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Empire project is expected to have a significant economic impact on New York. The Empire project, together with other planned offshore wind developments off the coast of New York State has the potential to generate billions of dollars worth of economic activity, including investment in port and assembly facilities in New York State. If done right, these projects are also expected to create thousands of jobs in construction as well as operations and maintenance.

We thank you in advance for your review of this project's socioeconomic and environmental impacts, and early consideration of stakeholder input. A thorough federal analysis is necessary for projects to move nimbly through the permitting process in compliance with state and federal laws, and for all offshore wind projects to rise to this industry's potential as a transformational solution to the intersecting environmental, public health, and economic crises of our time. As the White House wrote in its recent offshore wind Fact Sheet: [Footnote 1: White House, 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/>]

Comment Number: BOEM-2021-0038-DRAFT-0048-5

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 3: 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/AAC2milGD44MlwXo1Sk7EAgsa?dl=0&preview=Working_Paper_High_Road_Labor_and_Renewable_Energy-PUBLIC_RELEASE-4-13-21.pdf] 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.

Comment Number: BOEM-2021-0038-DRAFT-0065-4

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is ironic that the developers and states talk about the jobs that these wind farms will create. The fact is that almost of the jobs will go to European workers and companies. In the foreseeable future American fishermen may lose their jobs in favor of European's build, install turbines, and cable systems on our fishing grounds. The loss of the fishing grounds may put U.S. fishing vessels out of business with no consideration or compensation.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-3

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

On the top of my mind is insuring the tens of thousands of jobs forecasted to be created from this industry are supporting American workers. From installation to manufacturing to mariner surveyors, true economic development in our communities means having those that live in those communities and fish in these waters working on these projects. We must work with these Equinor and vice versa to connect local workers with these emerging job opportunities.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-7

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

Combine this with the creation of thousands of local prevailing wage American jobs, offshore wind projects can help sustain our coastal ecology, economy and build a stronger recreational fishing industry.

Comment Number: BOEM-2021-0038-TRANS-063021-0010-1

Commenter: Ben Orloff

Commenter Type: Individual

Comment Excerpt Text:

I'd like to mention, first of all, the importance of jobs and training, the people who learn how to build these wind farms to operate them, all the onshore sites, these are skills that will carry them forward in good careers.

Comment Number: BOEM-2021-0038-TRANS-063021-0014-3

Organization: Sierra Club

Commenter: Shay O'Reilly

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

I am actually going to direct my comments specifically towards the really excellent work that New York State has done, this whole process along with many of our partners in the labor movement and other community groups, we work to demand that the State include extremely stringent responsible contracting standards for the offshore wind solicitation that they put out that this project is part of. These projects we know are going to pay prevailing wage, they are going to adhere to recommendations of an environmental technical working group which is very exciting, and they are also going to work to negotiate community benefits with host communities. This is an example of these new projects being done right and ideally being done in ways that get us beyond some of the injustices of the fossil fuel era. So we are excited about this, we really want to see those standards that New York has set incorporated into BOEM's analysis, we think they are a model for the nation, and they came out of hard work by a lot of people who recognize this early on as a critical clean energy technology for our communities and to get off of fossil fuels that are causing climate change.

Comment Number: BOEM-2021-0038-TRANS-070821-0001-2

Organization: Climate Jobs New York

Commenter: Maria Dignan

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We have a once in a generation opportunity to put ourselves in the path to a low carbon future, while creating new quality careers that provide family sustaining wages and benefits for communities across the nation. We can help launch that potential with Empire Wind 1 & 2. To maximize the economic development and job opportunities in offshore wind, the industry and its future workforce needs competence that demand in the US offshore wind market is real. This means we need to move forward promptly in the permitting process to set the stage for this nation's industry. By kick starting this now, the potential for a additional jobs multiplies exponentially for hundreds of thousands of good paying jobs across the United States. For the New York region, the New York Energy Research Development Authority forecasts that New York's five awarded offshore wind projects will create 6,800 family sustaining jobs, power 2.4 million homes and have over \$12 billions in economic impact across the state. Empire Wind 1 & 2 will power over 1 million homes and provide nearly two gigawatts of clean renewable energy into New York's grid. To achieve the goals of New York's nation leading climate law, the Climate Leadership and Community Protection Act, we need to further projects like Empire Wind. As we are creating this industry, we must ensure the jobs created are good family sustaining Union jobs, not only in the construction and installation of projects but across the supply chain in operations and maintenance of offshore wind farms. Climate Jobs New York supports Empire Wind's prioritization of port development in New York.

Comment Number: BOEM-2021-0038-TRANS-070821-0001-3

Organization: Climate Jobs New York

Commenter: Maria Dignan

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The South Brooklyn Marine Terminal located in Sunset Park, Brooklyn is where the operations and maintenance base for Empire Wind will be located. It also serves as New York's first offshore wind marshalling and assembly port, a game changer for the industrial waterfront in Sunset Park. A total of \$286 million is being invested in SBMT towards port improvements representing \$126 million from the state and \$160 million in private funds and New York City economic development corporation support. Empire Wind expects to see 200 long term O&M jobs from the SBMT facility but we must prioritize good jobs with family sustaining wages and benefits for community members in order to put us on the path to address environmental justice.

Comment Number: BOEM-2021-0038-TRANS-070821-0002-5

Organization: New York League of Conservation Voters

Commenter: Caroline Hahn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We support Empire Wind's commitment to creating new job opportunities and economic development in some of these communities like Sunset Park, Brooklyn. Offshore wind has the potential to drive post pandemic economic recovery and stimulate economies up and down the east coast. Specifically the Empire Wind projects will result in approximately \$2.7 billion in investments in New York State throughout the lifetime of the projects. Additionally there is deep and diverse stakeholder support for sustainable offshore wind for both local and environmental labor organizations in New York and NYLCV is proud to be included in these groups.

Comment Number: BOEM-2021-0038-TRANS-070821-0005-2

Commenter: Tom Barracca

Commenter Type: Individual

Comment Excerpt Text:

In addition, I have been involved in energy related research and development and innovations and I would note that Equinor has done a tremendous job looking at the best technology to be deployed in this area and significant economic benefits would accompany these projects, clearly there is a great economic impact for downstate New York region and several billion dollars worth of impact to the stakeholders and in addition to creating many many job years of employment and many many good paying jobs

Comment Number: BOEM-2021-0038-TRANS-070821-0007-2

Commenter: David Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

I think a speaker earlier said a nation industry that needs our support that has a huge future that is going to have great jobs for people and good Union jobs will also be good for the environment and something we can be proud out of and point to point our children.

Comment Number: BOEM-2021-0038-TRANS-071321-0006-4

Organization: 350 Brooklyn

Commenter: Sara Reed

Commenter Type: Individual

Comment Excerpt Text:

The Federal Government should look the entire effect of the project, including positive impacts on air quality, investments in local communities, economic well-being, jobs that could be paid at prevailing wage under New York law and environmental justice. I want to also echo the very valid concerns put forward particularly by our colleagues from NYLPI but I just emphasize that the EIA needs to look at what a solution that is imperfect but far far better than any of the other solutions that we have on the table.

A.3.10.3. Other

Comment Number: BOEM-2021-0038-DRAFT-0010-3

Commenter: Abigail Meola

Commenter Type: Individual

Comment Excerpt Text:

Additionally, this project could be a net money-maker because of the potential to sell Renewable Energy Credits to offset traditional fossil-generated energy elsewhere in the country. This can make usually a few cents per kilowatt hour of energy.

Comment Number: BOEM-2021-0038-DRAFT-0014-2

Commenter: Jennifer Dowling

Commenter Type: Individual

Comment Excerpt Text:

The impact on local property values will be evident almost immediately.

Comment Number: BOEM-2021-0038-DRAFT-0014-3

Commenter: Jennifer Dowling

Commenter Type: Individual

Comment Excerpt Text:

Purported energy source will be leased but doesn't explain to whom the generated energy benefits on the New York State grid.

Comment Number: BOEM-2021-0038-DRAFT-0017-4

Commenter: Margaret Weiss

Commenter Type: Individual

Comment Excerpt Text:

What is the ultimate positive result they are hoping to achieve other than spending taxpayer dollars uselessly and without careful consideration up front? Who stands to benefit from this? What will the benefits be? Have the overall effects on the environment, on tourism and on ongoing costs and upkeep been carefully considered? It does not seem so.

Comment Number: BOEM-2021-0038-DRAFT-0019-4

Commenter: Alice Platt

Commenter Type: Individual

Comment Excerpt Text:

What is the ultimate positive result they are hoping to achieve other than spending taxpayer dollars uselessly and without careful consideration up front? Who stands to benefit from this? What will the benefits be? Have the overall effects on the environment, on tourism and on ongoing costs and upkeep been carefully considered? It does not seem so.

Comment Number: BOEM-2021-0038-DRAFT-0021-5

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

we are concerned about the cost associated with maintaining the wind turbines in a marine environment.

Comment Number: BOEM-2021-0038-DRAFT-0023-3

Commenter: Laura St Germain

Commenter Type: Individual

Comment Excerpt Text:

Finally, as a resident of Point Lookout I am absolutely opposed to this wind farm because it will bring down the value of my home and spoil my town's biggest asset - our town beach and park. As a Point Lookout resident, I am charged much more in property taxes to support the maintenance of our special resource - our beach and parks.

Comment Number: BOEM-2021-0038-DRAFT-0030-25

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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.).

Comment Number: BOEM-2021-0038-DRAFT-0039-58

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Require individual OSW project developers/applicants to contribute funding for these studies

Comment Number: BOEM-2021-0038-DRAFT-0043-11

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to the criteria already listed, the project developer should demonstrate its financial capacity to decommission the project in an environmentally sound manner. The project developer should be required to post a decommissioning bond, in an amount to be determined by the permitting authority, to ensure responsible decommissioning of the offshore wind project in the event that the project owner becomes insolvent or otherwise unable to meet its obligations under the project proposal. The amount of the bond should be based upon the expected decommissioning cost. [Footnote 10: Kaiser & Snyder (2010), 64-66, 178-179, 215-216.]

Comment Number: BOEM-2021-0038-DRAFT-0044-11

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 and the associated costs will be challenging to accurately quantify.

Comment Number: BOEM-2021-0038-DRAFT-0046-8

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

There is no doubt that scallops settle within the deeper portions of the Empire Wind 2 area. That is demonstrated by the level of scallop fishing activity, as shown by VMS data, that occurs in the southeastern half of the wind energy area. See COP Appendix DD at Figure 7.25 (with the heaviest density of scallop fishing occurring in proposed Empire Wind 2 project area). [Footnote 5: VMS data is far more indicative of both fishing intensity and resource density in a given area than other data, such as AIS. For instance, compare COP Appendix DD Figure 7.25 with Figure 7.18, which is an informal developer survey.] In fact, scallops are the most valuable fishery resource harvested from Empire Wind Area, and the average landings value from this area ranges between \$1.5M and \$3M annually, which does not include the indirect multiplied benefits to local communities. The entirety of these potential economic impacts must be fully considered in the DEIS, especially in light of the reasonably foreseeable cumulative effects of building out what is projected to be nearly 30 GW of offshore wind energy in the Mid-Atlantic and New England scallop resource area over the next decade.

Comment Number: BOEM-2021-0038-DRAFT-0047-8

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Assessment of impacts to housing and property values.

Comment Number: BOEM-2021-0038-DRAFT-0048-4

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In particular, BOEM's analysis of socioeconomic impacts should include consideration of Empire's commitments around use of domestic content; Project Labor Agreements (PLAs), 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. 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, specific 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>]

Comment Number: BOEM-2021-0038-DRAFT-0056-12

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Another area of consideration is the onshore infrastructure necessary to manage this new coastal-dependent industry. Each offshore wind energy project will need operation and maintenance facilities. Further, there is the need for larger manufacturing centers and marshalling ports. As such, COP EIS must include the following for operation and maintenance:

- a. Type of maintenance approach (ship-based, air support);
- b. Land use requirements;
- c. Proximity to the offshore wind farm;
- d. Storage capabilities for spare components;
- e. Wharf area required Bearing capacity;
- f. Ship depth requirements; and
- g. Secondary impacts from influx of workers and support services.

Specifically, COA advocates that the COP-EIS include land-based facilities that:

1. reduce the overall footprint;
2. are climate resilient;
3. are as energy efficient as possible; and
4. sited in environmentally friendly locations.

The COP appendices focusing on port, conditions, operations, and maintenance activities are largely redacted. The COP EIS must be more transparent and require disclosure while understandably protecting sensitive legal and financial information.

Comment Number: BOEM-2021-0038-DRAFT-0057-90

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 373: 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-2021-0038-DRAFT-0064 -2

Organization: U.S. Coast Guard

Commenter: Michael Emerson

Commenter Type: Federal Agency

Comment Excerpt Text:

Negative economic impacts to the Marine Transportation System during construction and operation are included in the analyses, given the high probability that vessels transiting near the wind farm will need to adjust their operations (slow down, have additional lookouts) to avoid the wind farm.

Comment Number: BOEM-2021-0038-DRAFT-0065-10

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To make things worse, land and sea transportation including, car, truck, trains and in some cases ships are all going to become electric powered, replacing the internal combustion engines, which is just going to exacerbate the power generation system problem.

Comment Number: BOEM-2021-0038-DRAFT-0065-21

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Eventually the rate payers are going to understand that they have been sold a myth and they are the ones who will pay the price.

Comment Number: BOEM-2021-0038-DRAFT-0065-7

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is disappointing that the states are accepting developer's misrepresentations of what they are doing. Government's are unwilling to accept the fact that turbines are very inefficient, at best produce in a year less than half what the name plate states. It will be too late to fix the problem when the ratepayers get their greatly increased electric bill. What is worst the current grid system is laid out backwards for delivering the energy where it is needed.

Therefore, the ratepayers are going to pay for rewiring the electrical grid. Most elected official will be out of office when the ratepayer wake up to what happen. The ratepayers will face high energy rates and poor reliability because the backup system will be necessary when the wind farms are not available.

Comment Number: BOEM-2021-0038-TRANS-063021-0003-2

Commenter: Charles

Commenter Type: Individual

Comment Excerpt Text:

Three, the installation of the aforementioned cables in Long Beach and/or the town of Hempstead is certainly a physical invasion of real estate and compensation should be made available to these municipalities notwithstanding any other community benefits fund that I mentioned earlier.

Comment Number: BOEM-2021-0038-TRANS-063021-0003-3

Commenter: Charles

Commenter Type: Individual

Comment Excerpt Text:

And finally for local homeowners who are also rate payers by the way, there should be a reduction in property taxes perhaps in the form of an annual payment in lieu of taxes or pilot program from the lessee of this project not unlike in other localities on Long Island where power generation stations are cited where those who live in the immediate community benefit from those facilities paying property taxes.

Comment Number: BOEM-2021-0038-TRANS-070821-0001-4

Organization: Climate Jobs New York

Commenter: Maria Dignan

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Empire Wind is also partnering with New York to be the first to build the towers to support offshore wind turbines. Equinor is combining forces with two other industry companies in the Port of Albany to help become America's first offshore wind tower and transition piece manufacturing facility where it will produce components for Equinor's projects including Empire Wind. The port of Albany stands to become a go to destination for future projects to source offshore wind towers, transition pieces and other manufacturing components for years to come as the projects grow along the east coast. This is a significant manufacturing opportunity for New Yorkers.

Comment Number: BOEM-2021-0038-TRANS-071321-0002-4

Organization: Clean Ocean Action

Commenter: Carrie Martin

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We are also concerned with the socioeconomic impacts of those communities particularly fisheries' impacts in those communities and the economies that depend on the clean ocean.

A.3.11 Environmental Justice

Comment Number: BOEM-2021-0038-DRAFT-0020-11

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Capture benefits of how OSW projects support environmental justice leadership in replacing existing fossil fuel facilities, stop repowerings and continued investments in fossil fuel infrastructure

Comment Number: BOEM-2021-0038-DRAFT-0020-13

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We urge BOEM to use a comprehensive environmental justice lens to meaningfully evaluate the broad economic, environmental, and health benefits of offshore wind projects.

Comment Number: BOEM-2021-0038-DRAFT-0020-2

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM must create comprehensive criteria to meaningfully capture the diverse benefits and potential impacts of offshore wind. As these projects are developed, environmental impact statements must be grounded in environmental justice:

Comment Number: BOEM-2021-0038-DRAFT-0029-15

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

6. Environmental Justice

Empire Wind 1 and 2 will alleviate the need for fossil fuel power plants and especially peaker plants. This will lead to cleaner air in existing host communities of peaker plants, which are frequently communities of color. The replacement of these fossil fuel power plants will assist a just transition from fossil fuels to renewable energy and provide investments in frontline and environmental justice communities. [Bold: This social justice impact should be included in the EIS.]

In the US, air pollution from burning fossil fuels leads to annual losses of \$600 billion and the loss of 230,000 lives. Suffolk County and NYC regularly receive an “F” for air quality by the American Lung Association and experience disproportionately high rates of asthma, heart disease, and other chronic health issues in disadvantaged communities. Transitioning to offshore wind will significantly curb air pollution and provide quantifiable health benefits for New Yorkers. Air pollution reductions from the first 2,400 MW of offshore wind in New York would be valued at roughly \$1 billion and would avoid an estimated 100 premature deaths each year.

Comment Number: BOEM-2021-0038-DRAFT-0030-26

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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-2021-0038-DRAFT-0032-1

Organization: Business Network for Offshore Wind

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As it moves forward in assessing the impacts under the EIS, BOEM should ensure that it includes the full scope 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. If clean energy projects such as Empire Wind are not built, the result will be a higher capacity factor for existing fossil fuel plants, or perhaps construction of new traditional generation facilities. Individuals who live near power plants have historically had incomes lower than the national average and have faced lower home values. Living in the vicinity of fossil fuel power generating facilities has a direct correlation to negative health outcomes for the communities. A policy brief [Hyperlink: <https://www.nature.com/articles/s41560-020-0622-9>] in the journal of Nature Energy demonstrated a coal plant's closure reduces the use of emergency inhalers and other signs of poor lung-health in nearby communities.

According to a report [Hyperlink: <https://naacp.org/resources/coal-blooded-putting-profits-people>] by the National Association for the Advancement of Colored People (NAACP), "68 percent of African Americans live near a coal-fired power plant." Latinos are also disproportionately exposed to toxic chemicals emanating from fossil fuel plants. A 2016 report from the Clean Air Task Force states that "the air in many Latino communities violates air quality standards intended to protect human health" and Latino children are more likely to die from an asthma attack than white children. Numerous studies support the findings of racial and socio-economic disparities in impacts [Hyperlink: <https://energynews.us/2019/12/11/midwest/study-black-low-income-americans-face-highest-risk-from-power-plant-pollution/>] from fossil burning power plants. The final EIS for Empire Wind must incorporate these reports and data as part of its analysis in assessing the impacts of the Proposed Action and the No Action Alternatives.

Comment Number: BOEM-2021-0038-DRAFT-0047-41

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Environmental Justice:

- Consideration of Environmental Justice related concerns.

Comment Number: BOEM-2021-0038-DRAFT-0054-6

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #1 - Section 2(e) of the COP on Environmental Justice (EJ) under Social Resources refers to New York State's guidance. However, we also recommend that it should consider EPA's EJSCREEN tool to be complete and more up to date. EPA's Environmental Justice Screening and Mapping Tool

[Link: <https://ejscreen.epa.gov/mapper/>] utilizes GIS to assess impacts on communities with Environmental Concerns. In addition, the COP references the 1994 EJ Executive Order (EO) but it should also reference the 2021 EJ EOs from President Biden. These include EO 13985 on Advancing Racial Equality, and EO 14008 on Climate Change.

Comment Number: BOEM-2021-0038-DRAFT-0054-7

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #2 – We encourage BOEM to organize an Environmental Justice Outreach Plan to engage members of the communities where onshore substations will be located in order to ensure transparency and knowledge of the forthcoming project that may have impact on neighborhood resources, particularly during the construction phase of the proposed action.

Comment Number: BOEM-2021-0038-DRAFT-0054-8

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #3 – Please consider narrowing the Study Area for the Environmental Justice impacts to the areas where the proposed onshore siting is expected to take place. Currently, the entire Kings County, Brooklyn (pop. 2.5 million) is being considered in the EW1 analysis which will greatly minimize impacts to communities with EJ concerns within the county. The comment that there are no low-income communities should be revisited when the Study Area is more refined. The same should be applied to EW2: while the entire Nassau County is not included in the map, the impacts onshore will impact Long Beach and part of Hempstead, and these should be the areas that are focused upon in the EJ analysis.

Comment Number: BOEM-2021-0038-DRAFT-0057-89

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM MUST ADDRESS ENVIRONMENTAL JUSTICE ISSUES ASSOCIATED WITH THE CABLE LANDING ROUTES

The areas proposed to be impacted by the cable landing routes are not only areas of ecological importance, but also densely developed areas and the environmental justice impacts of the cable landing must be addressed. BOEM should require Empire Wind to communicate with members of impacted communities on project planning. Encouraging local input from community members, stakeholders, and other potentially impacted groups will help to ensure the impacts on these communities are considered and mitigated.

To provide for greater engagement, BOEM should foster an open exchange with impacted communities and relevant federal and state officials beyond formal public meetings, including meetings where specific topics, data, and information can be discussed in greater detail. Meetings should occur at times and places that are convenient for affected parties, and next steps and opportunities to provide input should be clearly communicated. Translation needs should be assessed and provided as necessary.

BOEM should continue to urge early participation and data sharing from all relevant and state agencies to improve coordination during all phases of planning, leasing, and development, including pre-planning discussions, to resolve potential conflicts upfront. We further recommend that BOEM consider providing

a source of funds for local communities, as needed, to allow groups that may be stretched thin in terms of time and capacity to engage more deeply.

Comment Number: BOEM-2021-0038-TRANS-063021-0011-2

Commenter: Richard Shurin

Commenter Type: Individual

Comment Excerpt Text:

I want to express my concern about the selection of the site for the onsource substation in Oceanside which is really Island Park. For the last 50 plus years, Island Park has been the host community for Long Island's most polluting power plant. The Barrett plant is over 50 years old and my community has dealt with this polluting dangerous eyesore for a very long time. Most recently the owner of the Barrett plant and its contractor, National Grid and LIPA have been litigating with our small school district in Nassau County in an effort to breach its social contract with us and reduce it's taxes that they pay by 90 percent. If successful, this would devastate our community and our school district. This panel has been widely reported in the news. One option for us if LIPA is successful in this suit would be to return the site to a beneficial and friendly public use as opposed to a power plant. I fear that the selection of this site for a new substation will prolong and continue our community's suffering, with a greatly reduced tax benefit. It simply isn't fair. Other communities ought to share this burden. The burden on Island Park is excessive and it seems as if it's a dumping ground for every industrial project under consideration. I support a wind farm but once again it is simply not fair to burden our small community and subject us to decades more of abuse without adequate tax compensation.

Comment Number: BOEM-2021-0038-TRANS-063021-0012-1

Organization: Olar Energy

Commenter: George Poval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We want to also make clear that we are firmly in favor of community benefits, environmental justice and we are also in favor of a very robust discussion on properly compensating any groups who may be adversely effected.

Comment Number: BOEM-2021-0038-TRANS-070821-0002-4

Organization: New York League of Conservation Voters

Commenter: Caroline Hahn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Offshore wind will help reduce our reliance on polluting power plants which are often located in or approximate to disadvantage communities who have born the brunt of air pollution and other negative impacts caused by living near these power plants. By generating clean renewable energy, offshore wind farms like Empire Wind will help alleviate the burden placed on these communities by their polluting neighbors.

Comment Number: BOEM-2021-0038-TRANS-071321-0004-1

Organization: New York Lawyers for the Public Interest

Commenter: Zachary Hirschfeld

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Empire's Offshore Wind proposed development has the opportunity to play a vital role in reversing these injustices but simply installing more wind power will not be enough. The development must be carefully designed to help every community it interacts with to be more healthy, vibrant and resilient. With this goal in mind, I would like to highlight three key areas that the Bureau of Ocean Energy Management must include in its Environmental Impact Statement. First the Environmental Impact Statement must account for the project's local economic effects by aligning with the contracting standards of New York State's Climate Leadership and Community Protection Act also known as the CLCPA. This project must prioritize the creation of quality prevailing wage jobs for local workers as well as a procurement strategy that centers direct community investment and a locally sourced supply chain. Done properly, this project will satisfy President Biden's Justice 40 initiative to deliver 40 percent of the benefits of climate investments to disadvantage communities. It will also comply with Executive 12898 which directs federal agency's to develop a strategy for implementing environmental justice. Second, the EIS must ensure that the project in all of its phases from construction to isolation to operation will not expose New York's environmental justice communities to additional toxic pollution. For example, Sunset Park, a neighborhood where one of the projects onshore substations is proposed to be located in an environmental justice community that reluctantly hosts three peak power plants which burn fuel, oil and natural gas. As a result, families in Sunset Park have been stuck with poor air quality and health outcomes for far too long. Any new project must not exacerbate or contribute to legacy policy or pollution in anyway.

Comment Number: BOEM-2021-0038-TRANS-071321-0006-2

Organization: 350 Brooklyn

Commenter: Sara Reed

Commenter Type: Individual

Comment Excerpt Text:

This should include the history of environmental racism in Sunset Park where residents continue to suffer disproportionate pollution and health disparities including during the Covid 19 pandemic, with preexisting respiratory gravely reduced patient's chance of recovery. It's a disgrace that our state would even consider allowing further fossil fuel infrastructure to be placed in these communities but it is. This project will would help us reject these projects once and for all.

Comment Number: BOEM-2021-0038-TRANS-071321-0007-1

Organization: 350 Brooklyn

Commenter: Georgianna Page

Commenter Type: Individual

Comment Excerpt Text:

350 Brooklyn is not an environmental justice or climate justice organization, we have increasingly looked to marginalize low income and front line communities to guide our priorities. These are the people whose health and well-being should be guiding BOEM's assessment as well. When air quality is poor, some of us can buy an air purifier and hunker down at home as we work remotely, we might even be able to escape the city for a few days. Our brothers and sisters in the Red Hook or Gowanus houses cannot. They are stuck with an environment that is designed and designated for them by our governments. So their basic health and survival needs must be first priority and any solutions that impacts them must be designed brilliantly to address and redress the historical harm they are still suffering from.

Comment Number: BOEM-2021-0038-TRANS-071321-0007-3

Organization: 350 Brooklyn

Commenter: Georgianna Page

Commenter Type: Individual

Comment Excerpt Text:

In addition there is a long history and legacy of fossil fuel pollution in host communities like Sunset Park and Red Hook, Brooklyn, with new sources of emissions being added daily. Red Hook recently became the location of last mile warehousing adding diesel trucks to their burden of historical lead toxicity, a pecker plant across the water, emissions from the Brooklyn Queens Expressway and a cruise ship terminal with its diesel emissions. Red Hook has the added burden of flooding when there are storm surges and receiving that sewage overflow from wealthier communities up the slope. So there are social and societal costs as well. What kind of price can we put on the lives of multiple generations of families living in the Red Hook houses. In this Red Hook community as a case study and example, we have met individuals with eight of out of ten family members suffering from asthma, and asthma, the most common reason that children are hospitalized has become a leading cause of absenteeism from schools in New York City. The societal cost of this asthma related absenteeism totals billions of dollars in the U.S. and this does not account for untreated cases, non medical costs, diminished productivity in school or parent absenteeism. As I can't breathe has become a rallying cry across the country in communities of color, we must consider that the day to day reality of many low income children of color living in marginalized neighborhoods is one of being literally unable to breathe on any even given day at any given moment due to our inaction. There is a public health cost to continuing the fossil fuel status quo and there is a hard economic cost.

A.3.12 Finfish, Invertebrates, and Essential Fish Habitat

Comment Number: BOEM-2021-0038-DRAFT-0015-1**Commenter: Rhea Bozic****Commenter Type: Individual****Comment Excerpt Text:**

First, regarding the effects of the project in relation to the Endangered Species Act, it appears that inadequate assessment has been performed to determine the effects of the project on the Atlantic Sturgeon. Clearly there is a high presence of Atlantic Sturgeon in the Empire 1 lease area, particularly in the "narrow point of the pizza slice" i.e. the area closest to shore. Based upon data gathered for and presented in the BOEM Department of Interior requested study, "Monitoring Endangered Atlantic Sturgeon and Commercial Finfish Habitat Use in the New York Lease Area" June 2019, Frisk, et al., it is clear that "Atlantic Sturgeon occurred throughout the study site" (p.15). "The occurrence of the Atlantic Sturgeon was highest on transceivers in shallow habitat with a decreasing trend with increased distance and depth from shore" (p.16). Figure 9 clearly shows that this section of the lease has a high presence of the Atlantic Sturgeon (p. 17). The section of the lease closest to shore should be eliminated from the project area due to the high potential to disrupt the sturgeon's habitat, and utilizing "seasonal adjustments" to the work schedule will not eliminate this disruption.

Further, the study itself in no way examined the project's effects on the ecological function and habitat of the sturgeon, but only confirmed the strong presence of this endangered species within the specific work area of entrance transit and within the lease itself, with the highest number of lease area transceiver confirmations coming at the area closest to shore (Figure 9, p.17).

Also, this study was limited to the lease area. My concerns regarding the effects of this project on the sturgeon extend to the increased transit on the Hudson River itself from Coeyman's to the exit of the river into open water. Table A1.1 of the above referenced Frisk et. al. study shows the "genetic river of origin designation" to be overwhelmingly from the Hudson River. The effects of the increased transit on the Hudson, with the transport of concrete turbine support related structures, will certainly have the potential to cause harm to the Atlantic sturgeon in their breeding area, whether through direct strikes, habitat disruption, marine noise pollution, or changes to food source development and availability. The juvenile

fish remain in the river for some time, and their habitat should be protected to foster recovery of the species.

Comment Number: BOEM-2021-0038-DRAFT-0030-50

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Magnuson-Stevens Fishery Conservation and Management Act

As currently described in the NOI, these facilities (inclusive of the wind farm areas, offshore and inshore export cables and corridors, and shore-side landing points) will be constructed, operated, and maintained in areas designated 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*), ocean pout (*Zoarces americanus*), summer flounder, silver hake (*Merluccius bilinearis*), winter flounder (*Pseudopleuronectes americanus*), Northern longfin squid, 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, ocean quahog (*Arctica islandica*) and Atlantic surfclam (*Spisula solidissima*). The proposed project area is also designated EFH for several Atlantic highly migratory species (tuna, swordfish, billfish, small and large coastal sharks, and pelagic sharks) including, but not limited to sandbar shark (*Carcharhinus plumbeus*) and sand tiger shark (*Carcharias taurus*). The sand tiger shark has been listed as a Species of Concern by NOAA.

Comment Number: BOEM-2021-0038-DRAFT-0030-51

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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/>. The mapper is a useful tool for viewing the spatial distribution of designated EFH and HAPCs, however the mapper should be used for reference purposes only and does not include Atlantic salmon EFH, blueline tilefish, chub mackerel, or the summer flounder HAPC for the Greater Atlantic Region. The full designations for each species may be viewed as PDF links provided for each species within the Mapper, or via our website [Hyperlink: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-consultations-greater-atlantic-region>] links to the New England Fishery Management Council's Omnibus Habitat Amendment 2 [Hyperlink: <https://www.nefmc.org/library/omnibus-habitat-amendment-2>], the Mid-Atlantic Fishery Management Council's [Hyperlink: <https://www.mafmc.org/habitat>] FMPs. 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-2021-0038-DRAFT-0030-52

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Considerations for the EIS

The Empire Wind project is proposed to be constructed on or directly adjacent to Cholera Bank, which is important habitat for numerous species and is a known spawning location for longfin squid. Additionally, the export cable corridors likely overlap sensitive offshore and nearshore- estuarine habitats such as subtidal and intertidal flats, SAV, and others. The NEPA document, and the EFH, benthic resources, finfish and invertebrates sections, in particular, should accurately describe the project area and the resources that rely on Cholera Bank and other important habitat areas that are susceptible to project impacts. 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, as well as habitats important for eggs, larvae, and juveniles. 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 Cholera Bank and 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 and biological 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-2021-0038-DRAFT-0030-53

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Additionally, habitats that support particularly sensitive life stages of species, such as winter flounder and longfin squid egg habitat, should be identified and described. Both species have demersal eggs that adhere to bottom substrates, making them particularly sensitive to actions such as dredging and trenching. Winter flounder typically spawn in the winter and early spring, although the exact timing is temperature dependent and thus varies with latitude; spawning occurs from January to May throughout the northeast U.S. Winter flounder have demersal, adhesive eggs that are deposited in clusters on the soft bottom or on near-bottom macrophytes, where they remain until they hatch. Their larvae are also negatively buoyant and are typically more abundant near the bottom. Longfin squid also spawn in the project area by depositing eggs in large clusters on open sandy bottom habitats. The eggs are especially vulnerable to bottom disturbance. Construction activities that occur between April and August of any given year are likely to adversely impact spawning behaviors, increase egg mortality, and reduce recruitment to the exploitable population of longfin squid. This species is especially susceptible to local depletion effects since the adults only live for approximately one year. The loss of a significant number of recruits in a single spawning season would have a more severe impact on the population than for a population of a species with multiple age-class groups. It will be important for the document to fully describe and analyze impacts of the project on vulnerable life stages and evaluate ways to avoid and minimize project impacts.

Comment Number: BOEM-2021-0038-DRAFT-0030-55

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony
Commenter Type: Federal Agency

Comment Excerpt Text:

The analysis should include 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 unconsolidated soft bottom and smaller-grained hard habitats that support distinct assemblages of fish and invertebrates to artificial structures (WTGs and concrete mattresses) and masonry stone that may attract larger predatory species and lead to shifts in the invertebrate communities. While the WTGs may create a reef effect, the document should clearly distinguish the difference between man-made structures and the natural complex habitat - such as boulders and cobbles - 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 ecological functions and values of natural and man-made structures should be incorporated into the analysis.

Additionally, the document should analyze and discuss how the introduction of these artificial hard structures and thick layers of masonry stone for scour protection will permanently eliminate soft bottom habitats for numerous species such as ocean quahog, sea scallop, and Atlantic surfclam, alter predator-prey interactions by introducing extensive structure and the associated structure-oriented species (e.g., large predators), and lead to changes in distributions and abundances of federally managed species. Ocean quahogs and Atlantic surfclams burrow into the bottom and are directly susceptible to habitat loss and mortality from the construction of turbine foundations, placing of scour protection, and trenching of cables in the offshore lease area and export cable corridor. Sea scallop presence in the area is well documented, particularly in the southeast portions of the project area. Because they reside on the seafloor in sandy substrates and are somewhat mobile, sea scallops may become buried or crushed during cable laying and the placement of stone around turbine foundations for scour protection while sandy substrates will be eliminated through conversion to artificial hard substrate by the project.

Comment Number: BOEM-2021-0038-DRAFT-0030-56

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

EFH Consultation

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. 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-57

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

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 be 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-58

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

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.

Comment Number: BOEM-2021-0038-DRAFT-0030-59

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

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-2021-0038-DRAFT-0030-60

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Considerations for the EFH Assessment

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. 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-61

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

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 SAV, natural hard bottom substrates, particularly substrates with attached macroalgae and epifauna (including corals), and shellfish habitat and reefs. The habitat mapping data should also be shared directly with us in usable GIS format (or cloud-based GIS data viewer) 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 11: 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-62

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

As stated in our habitat mapping recommendations, EFH checklist, and through regular communication with you, early coordination in the consultation process is essential. We appreciate Empire Wind's early coordination and communication efforts and are hopeful that the collected data 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.

Accurate characterization of the project areas will be critical to ensure our recommendations are appropriate and able to reflect any heterogeneity that may exist across the sites. Although we have been presented with figures and representations of data during meetings with Empire Wind, we have yet to review any comprehensive habitat data, including maps or mapping documents or the draft EFH assessment.

Comment Number: BOEM-2021-0038-DRAFT-0030-65

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

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*), 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.asmfc.org>.

We anticipate all of these species will be included in your impact assessments, both in the EFH Assessment and NEPA document. We also expect the assessment to include impacts to the recreational and commercial fishing communities that rely on these species. 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-2021-0038-DRAFT-0036-4

Commenter: Anne Lazarus

Commenter Type: Individual

Comment Excerpt Text:

We have no deep environmental impact statements in reference to the various fish and invertebrate effects of these wind structures.

Comment Number: BOEM-2021-0038-DRAFT-0039-15

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4.6 Magnuson-Stevens Fishery Conservation and Management Act (FCMA)

The FCMA (16 U.S.C. 1801 et seq.) requires federal agencies to consult with the NMFS on regulated activities that could adversely affect Essential Fish Habitat (EFH) which is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” [Footnote 42: 50 CFR § 660.75 - Essential Fish Habitat (EFH)] To protect marine fishing resources, the FCMA established:

- “A fishery conservation zone between the territorial seas of the United States and 200 nautical miles offshore;
- An exclusive U.S. fishery management authority over fish within the fishery conservation zone (excluding highly migratory species);
- Regulations for foreign fishing within the fishery conservation zone through international fishery agreements, permits, and import prohibitions; and
- National standards for fishery conservation and management and eight regional fishery management councils to apply those national standards in fishery management plans.” [Footnote 43: Magnuson-Stevens Fishery Conservation And Management Act (FCMA)] Bureau of Ocean Energy Management (BOEM)]

The EW area encompasses important EFH and hosts multiple listed fish species, invertebrates, and benthic resources (see Section 5.1). Robust strategies must be developed and required in the EIS to mitigate temporary acoustic disturbances and water quality issues as well as permanent alterations to the seafloor and transformation of benthic ecosystems that will inevitably result from EW project development.

Comment Number: BOEM-2021-0038-DRAFT-0039-17

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5.1 Essential Fish Habitat and Benthic Resources

The marine environment of OSW projects contain both complex heterogeneous habitats with coarse sediments (e.g. boulders, cobbles, and pebbles) whose geological features provide a “heterogeneous variety of hard surfaces and fine material that provide habitat for many different species” [Footnote 44: BOEM. (2021, Jun). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources] and non-complex habitats with sand, mud, and muddy sand making up a softbottom. This environment supports pelagic and benthic organisms including commercially managed fish, macroinvertebrates (arthropods, annelids, mollusks), plankton, benthic infauna buried in sediments,

benthic epifauna living on seabed surface or attached to substrates. These organisms which may be resident, transient, migratory, or incidentally occur, will be impacted directly or indirectly by the siting, construction, operations, and decommissioning activities of the OSW project. Installation of foundations for WTGs and offshore substation will permanently alter the seafloor and the pelagic and coastal environments which may be beneficial to some organisms (via the artificial reef effect) and detrimental to others. In the EIS, all these impacts in cumulation with other foreseeable activities must be thoroughly assessed, and robust minimization/mitigation protocols developed.

Comment Number: BOEM-2021-0038-DRAFT-0039-18

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5.1.1 Essential Fish Habitat and Benthic Resources in EW area

Within the EW marine area are Essential Fish Habitat (EFH) for managed and exploited species, ecologically important unmanaged forage species, ESA listed species including the overfished Atlantic cod, tuna and flounder, fish caught as bycatch (e.g. Atlantic herring), over-harvested invertebrates such as Atlantic sea scallop, Atlantic surfclam. Among these are 4 ESA-listed fish:

- Atlantic sturgeon (*Acipenser oxyrinchus*) – Endangered
- Oceanic whitetip shark (*Carcharhinus longimanus*) – Threatened
- Shortnose sturgeon (*A. brevirostrum*) – Endangered
- Giant manta ray (*Mobula birostris*) - Threatened

All 4 of the highly migratory tuna species found in the EW area have decreasing populations on the Atlantic coast and 3 are red-listed by the International Union for Conservation of Nature (IUCN) [Footnote 45: IUCN Red List <https://www.iucnredlist.org/>]:

Atlantic Bluefin tuna (*Thunnus thynnus*) - Endangered

Albacore tuna (*T. alalunga*) - Near Threatened

Yellowfin tuna (*T. albacares*) - Near Threatened

Of the 10 shark species found in the EW area, 8 are listed in IUCN's red list:

- shortfin mako (*Isurus paucus*) – Endangered
- basking shark (*Cetorhinus maximus*) – Endangered
- dusky shark (*Carcharhinus obscurus*) – Endangered
- sand tiger shark (*Carcharias taurus*) – Vulnerable
- white shark (*Carcharodon carcharias*) – Vulnerable
- common thresher (*Alopias vulpinus*) – Vulnerable
- spiny dogfish (*Squalus acanthias*)- Vulnerable

The complex EFH in the EW area is essential for several species, including juvenile and adult Atlantic cod as well as for cod reproduction, [Footnote 46: New England Fishery Management Council (NEFMC) & NMFS. (2017, Oct 25). EFH and HAPC Designation Alternatives and Environmental Impacts. Omnibus Essential Fish Habitat Amendment 2. Volume 2 ,10-14. <https://www.habitat.noaa.gov/>

application/efhmapper/oa2_efh_hapc.pdf#page=18], [Footnote 47: Inspire Environmental. (2020, Jun 16). South Fork Wind Benthic Habitat Mapping to Support Essential Fish Habitat Consultation. South Fork Wind Farm Construction and Operations Plan, Volume II, Appendix N2, p36.] juvenile and adult black sea bass, invertebrates that attach to hard surfaces including mussels, oysters, starfish, sea urchin, etc. [Footnote 48: South Fork Wind Farm and South Fork Export Cable Project DEIS, 3-8.]

Comment Number: BOEM-2021-0038-DRAFT-0039-20

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS must provide a data-driven comprehensive assessment based on science of the impacts to EFH and benthic resources from the development, operation, and decommissioning of EW. Without a comprehensive evaluation of the types of habitat present and the cumulative impacts to those habitats, the EW impacts assessment in the COP is incomplete and potentially inaccurate. The EIS must include a cumulative impacts analysis that accurately assesses the impacts to EFH and benthic habitats. The EIS must also consider the Block Island study in its evaluation of the accuracy of the estimates of impacts to complex habitats in the EW COP.

Comment Number: BOEM-2021-0038-DRAFT-0041-20

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Essential Fish Habitat, Habitat Area of Particular Concern and Deep-Sea Coral Areas

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 a subset of EFH, Habitat Areas of Particular Concern (HAPC), that are EFH areas which are important, sensitive to human-induced environmental degradation, threatened by development, or are rare. Further, some areas have been identified as deep-sea coral areas under the deep-sea coral Research and Technology Program that support slow-growing corals in temperate and deep habitats.[Footnote 9: 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.

Comment Number: BOEM-2021-0038-DRAFT-0041-7

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Magnuson-Stevens Act

Conservation of Essential Fish Habitat (EFH) is a critical element to sustainable modern fisheries management and 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.

Comment Number: BOEM-2021-0038-DRAFT-0041-8

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Because the project is sited in federal waters and may have adverse effects on EFH, BOEM should consult with the Mid-Atlantic 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.

Comment Number: BOEM-2021-0038-DRAFT-0044-22

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should also consider how the Empire Wind project and the other offshore wind projects planned for the east coast may impact the Mid-Atlantic Cold Pool. Impacts to this unique oceanographic feature have implications for stratification and mixing of the water column, primary productivity, and recruitment and migration of many species, including those targeted by commercial and recreational fisheries, as well as protected species.

Comment Number: BOEM-2021-0038-DRAFT-0044-9

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should coordinate early and often with NOAA Fisheries on the most appropriate data for analyzing 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. Summary information on Council-managed commercial fisheries is 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-2021-0038-DRAFT-0047-16

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Ocean Habitats:

- Discuss phytoplankton photosynthetic output (carbon cycling).
 - Discuss areas of importance for deep water corals.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-19

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Fish (Pelagic, Elasmobranchs) and Invertebrates:

- Discuss current stock status for different species; migration routes; life history stages; egg and larval seasonality and abundance; forage species not just species with high economic value; seasonal distribution and abundance for the area in the vicinity of the Project.
- Discuss Essential Fish Habitat, including spawning areas; recruitment and nursery areas; and food web interactions.

Comment Number: BOEM-2021-0038-DRAFT-0047-33

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Fish (Pelagic & Elasmobranchs) and Invertebrates:

- Impacts from construction, pile driving and vessel traffic.
- Aggregation of fish around turbine bases.
- Behavior and physiological impacts from noise, foundation lighting and EMF.

Comment Number: BOEM-2021-0038-DRAFT-0057-22

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 74: 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(E)6(d), 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 New York Bight's "Cold Pool."

BOEM should follow the monitoring guidance set forth in the New York State Energy and Research Development Authority (NYSERDA) Environmental Stratification Workgroup Report [Footnote 75: Available at: <https://drive.google.com/file/d/15i0sGK9FyQDgS5pipnfeFrH7tA5FBHMq/view>.] and undertake research similar to that conducted in Europe for monopile foundations [Footnote 76: 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 gravity-based foundations, as well as the cumulative effects of large-scale build out, on mixing and stratification in the New York 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 77: At least 2 NOAA documents that speak about the impact of offshore wind on copepods and prey availability: https://apps-nerfsc.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-2021-0038-DRAFT-0057-48

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 188: 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 189: 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 190: Id.] A single monopile was found to be responsible for 7-10% additional mixing to that of the bottom mixed layer, whereby approximately 10% of the turbulent kinetic energy generated by the structure is used in mixing. [Footnote 191: 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 192: 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 193: NOAA Fisheries, “State of the Ecosystem New England,” Presentation to the New England Fishery Management Council, 15 April 2021.]

The “Cold Pool” is a highly variable 20-60 m thick band of trapped cold, near-bottom water that exists during the spring, summer, and fall in the mid- and outer-shelf of the Mid-Atlantic Bight and Southern flank of Georges Bank. The Cold Pool has been shown to be one of a number of factors affecting phytoplankton productivity and the behavior and recruitment of pelagic and demersal fish. [Footnote 194: Malone TC, Hopkins TS, Falkowski PG, Whitley TE. 1983. Production and transport of phytoplankton biomass over the continental shelf of the New York Bight. *Continental Shelf Research* 1: 305-337; Sullivan MC, Cowen RK, Steves BP. 2005. Evidence for atmosphere-ocean forcing of yellowtail flounder (*Limanda ferruginea*) recruitment in the Middle Atlantic Bight. *Fisheries Oceanography* 14: 386-399.] Due to the Cold Pool’s effects on fish, an important prey base for marine mammals in the New York Bight, it is important to understand the oceanographic processes that influence it and whether offshore wind energy may alter its presence.

BOEM should explicitly consider the cumulative effects of offshore wind on oceanographic conditions, including stratification, and the resulting effects on fish habitat, as part of the New York Bight EIS. NYSERDA is funding research to model the effects of offshore wind development on Cold Pool stratification. [Footnote 195: See, <https://portal.nyserdera.ny.gov/servlet/servlet.FileDownload?file=00Pt000000DS6ouEAD>.] BOEM should incorporate the results of this study and findings from Europe [Footnote 196: 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 Empire Wind’s EIS. In addition, BOEM, in collaboration with

NOAA and the states of New York and New Jersey, should establish baseline stratification conditions for the New York Bight 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 197: See, e.g., chultze, 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 New York Bight.

Comment Number: BOEM-2021-0038-DRAFT-0062-15

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

FISHERIES

Atlantic sturgeon, a New York State-designated critically imperiled species, is located within the New York Harbor and have the potential to occur along the submarine high-voltage cable route for EW1. Sturgeon are magneto-sensitive. Related sturgeon species juveniles elsewhere in the U.S. have been demonstrated to display magneto-reactive locomotion anomalies indicative of distress when exposed to variable magnetic fields, including pectoral fin flare, body spasm (entire body shakes/quivers), freezes and glides, tail shake/spasm, thrashing movements, sudden stop over magnet, forming the body into a C-shape, and rapid escape maneuvers [Laboratory Studies of the Effects of Static and Variable Magnetic Feilds on Freshwater Fish by Cada, Bevelhimer, Fortner, Riemer, and Schweizer April 2012 vol 119 Oak Ridge National Laboratory].

In conclusion, the while the size of some environmental effects were difficult to assess because Equinor chose not to consider them or selected a study tools and designs that do not have much ability to detect the effects relative to others that are available.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-9

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

So structure aside, fisherman up and down the coast have been witnessing the first-hand impacts of warming waters as game fish species move further north. Offshore wind power could help stem the tied of rising water temperatures and help hold our game fish species along our shores and slow many species northward progression. For these reasons and more, offshore wind power is a great opportunity for recreational anglers but development must be done responsibly.

Comment Number: BOEM-2021-0038-TRANS-063021-0013-1

Organization: Ocean Conservation Research

Commenter: Michael Stocker

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

one of the things that I would like to kind of enter into this is that fast gate studies are becoming actually more robust ways of looking at both interactions between anthropogenic noise sources and wildlife as well as wildlife density in the area over time. So I hope that there is broad band sound scape recordings being taken as we speak right now in that area so we can actually do some analysis as we start changing the habitat, because these, you know, 8,000 acres of wind farms is a real significant shift in terms of viable habitat for critters, and as the captain mentioned before, some may be good and some we're not exactly sure. There was an interesting study up in the North Sea that usually fluff up the substrate but

because of the chronic noise at the bases of these wind farms, they were not as active and so we are starting to get a sediment settling there that could be a disaster because that's really where all the substrates really or invertebrates kinds of hang out and that's a foundation of the food chain there.

Comment Number: BOEM-2021-0038-TRANS-071321-0008-4

Organization: Fishery Survival Fund

Commenter: Brett Sparks

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Another consideration that we would request the EIS seriously look at are impacts to scallop settlement and growth. The COP seems to categorize that there will be little to no impacts on larval movement of scallops. We have scientific studies that we will cite to in our written comments that demonstrate otherwise, these turbine arrays alter sedimentation flows, they alter ocean currents, this is has a significant impact on the ability of scallop larva to move through the ocean calm and settle in these areas that are favorable to growth.

A.3.13 Land Use and Coastal Infrastructure

Comment Number: BOEM-2021-0038-DRAFT-0047-38

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Terrestrial Habitats:

- Evaluation of impacts to wetlands and waterways.
- Evaluation of impacts to vegetation, including invasive species.

Comment Number: BOEM-2021-0038-DRAFT-0047-42

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Parkland and Public Access Impacts:

- Maintaining public access and avoiding interference with coastal uses. [*Italics: Note: limitations or prohibitions on public access would be incompatible with New York State's efforts.*]

Comment Number: BOEM-2021-0038-DRAFT-0055-1

Organization: Transcontinental Gas Pipe Line Company, LLC

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The COP and its accompanying diagrams indicate that Empires proposed export cable route and route alternative would cross Transcontinental Gas Pipe Line Company, LLCs (Transco) existing Lower New York Bay Lateral, a large-diameter natural gas pipeline that constitutes critical energy infrastructure through which Transco transports up to 712,000 dekatherms of natural gas per day for delivery to National Grids local distribution companies located in the New York City metropolitan area. Transco is submitting these comments to emphasize the importance of Empire constructing and operating its proposed facilities, and coordinating its activities, in such a manner that does not impact the Lower New

York Bay Lateral or disrupt Transcos pipeline operations or transportation services. In that regard, the COP states that it is Empires intention to negotiate the crossing methodology and separation distance with Transco to ensure protection of both assets. Transco appreciates such intention and looks forward to working with Empire to ensure that the Lower New York Bay Lateral is not adversely impacted by Empire’s project and that Transco is able to continue to provide safe, reliable, and critically important natural gas service to its customers.

A.3.14 Marine Mammals

Comment Number: BOEM-2021-0038-DRAFT-0017-3

Commenter: Margaret Weiss

Commenter Type: Individual

Comment Excerpt Text:

Most importantly, the harm to marine mammals and sea turtles should be given the utmost consideration before proceeding with any type of project like this.

Comment Number: BOEM-2021-0038-DRAFT-0019-3

Commenter: Alice Platt

Commenter Type: Individual

Comment Excerpt Text:

Most importantly, the harm to marine mammals and sea turtles should be given the utmost consideration before proceeding with any type of project like this.

Comment Number: BOEM-2021-0038-DRAFT-0030-18

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 1: <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 2: 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.] 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) 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-2021-0038-DRAFT-0030-33

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

We recognize there is uncertainty regarding the scope and scale of impacts that may result from the introduction of new structures into the offshore environment and related energy extraction from the wind turbines; however, it is critical that this issue is thoroughly addressed and that the EIS considers the best available scientific information to support any conclusions regarding these impacts, including ongoing studies on this topic. In particular, the EIS should contain a robust assessment of the potential effects of both the Empire 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. 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-37

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Endangered Species Act

The following listed species may be found in the Empire 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. Certain areas off the coast of Long Island are high use areas for endangered Atlantic sturgeon (see references in Attachment B). Additionally, 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 3: <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 4: <https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html>]. Please note, a tech memo [Footnote 5: 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 the new

population estimate (368 individuals) for North Atlantic right whales, which was significantly lower than the previous estimate. Additionally, we would like to alert you that the 2020 draft marine mammal Stock Assessment Reports [Footnote 6: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports>] are available, and we aim to publish the final drafts in the summer of 2021. 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-40

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 Empire 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 of benthic habitats during construction and conversion of habitat types that may affect the use of the area, alter prey assemblages or result in the displacement of individuals;
 - 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-2021-0038-DRAFT-0030-44

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

We encourage you to work with Empire Wind 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. 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 7: National Research Council (NRC). 2003. Ocean noise and marine mammals. National Academy Press; Washington, D.C.]. While BOEM and Empire 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 Empire Wind project is critical.

Comment Number: BOEM-2021-0038-DRAFT-0030-46

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Marine Mammal Protection Act

Section 101(a) of the MMPA (16 U.S.C. 1361) prohibits persons or vessels subject to the jurisdiction of the United States from taking any marine mammal in waters or on lands under the jurisdiction of the United States or on the high seas (16 U.S.C. 1372(a)(1), (a)(2)). Sections 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 (LOA) or (2) an Incidental Harassment Authorization (IHA). 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-incidental-take-authorization>.

Because activities associated with the construction of Empire Wind have the potential to result in the harassment [Footnote 8: 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 9: 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 Empire Wind LLC'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, after independent review and evaluation, determines the document (or portion) satisfies 40 CFR 1506.3.

Comment Number: BOEM-2021-0038-DRAFT-0030-49

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 1506.3. 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.

For specific marine mammal 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-2021-0038-DRAFT-0031 -17

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Similarly, the turbines may disrupt the marine acoustic environment for acoustic sensitive species, such as whales, which in turn may inhibit communication or change patterns of behavior; little is known about the potential impacts of other potential disruptions to the marine environment, such as vibrations and electromagnetic fields, associated with wind turbines and cables. These animals are already experiencing changes in migratory patterns related to climate change (e.g., changes in water temperatures and food source availability), which have potentially led to stranding and cold stunning events occurring more regularly in the Atlantic and an expansion of turtle nesting north of previously recognized nesting sites.

Comment Number: BOEM-2021-0038-DRAFT-0031 -20

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Nineteen species of marine mammals have been recorded within the boundaries of the Seashore. Identified species include whales, porpoises, dolphins, and seals. The harbor seal (*Phoca vitulina*) is a regular winter visitor at both the Fire Island and Moriches Inlets. Three species of endangered whales have been reported in the waters offshore of Fire Island: fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), and northern right whale (*Eubalaena glacialis*) (Trocki 2008).

Comment Number: BOEM-2021-0038-DRAFT-0031 -24

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Dolphins, whales, and seals sometimes travel in park-managed waters. Harbor seals are winter visitors to Sandy Hook, Great Kills Harbor, Hoffman and Swinburne Islands, Jamaica Bay, and the Rockaway Inlet area and use local docks, the jetty at Breezy Point Tip, and other locations as haul-out areas. Several marine mammals that use park-managed waters are listed species. These include sei (*Balaenoptera borealis*), blue (*Balaenoptera musculus*), fin (*Balaenoptera physalus*), humpback (*Megaptera novaeangliae*), and northern right whales (*Eubalaena glacialis*), as well as the state-listed harbor porpoise (*Phocoena phocoena*). All of the whale species are both state- and federally listed as endangered.

Humpback whales occasionally feed in New York Bay adjacent to the Rockaway Inlet (USFWS 1997c) and sei, humpback, and sperm whales (*Physeter macrocephalus*) have been noted swimming in Raritan Bay. The endangered humpback whale occasionally feeds in New York Bay adjacent to the inlet, and bottlenose dolphins and endangered sperm whales (*Physeter macrocephalus*) have been noted as strandings in the area.

Comment Number: BOEM-2021-0038-DRAFT-0039-13

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The MMPA (16 U.S.C. 1361 et seq.) mandates the prevention of decline of marine mammal species and populations. MMPA is implemented jointly by NMFS and USFWS with “NMFS managing whales, dolphins, porpoise, seals and sea lions and the USFWS responsible for the manatee, dugong, sea otter, walrus and polar bear.” The MMPA specifically prohibits the “taking” and “harassment” of marine mammals in US waters and by US citizens on high seas. [Footnote 39: Marine Mammal Protection Act (MMPA) | Bureau of Ocean Energy Management (boem.gov)] NMFS has set threshold criteria for two levels of harassment under the MMPA:

Level A: any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal or marine mammal stock in the wild

Level B: 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

“For activities related to offshore energy and minerals exploration, development and production”, MMPA includes exemptions for the taking of marine mammals and “under specified conditions this exemption is the form of an Incidental Take Authorization (ITA)” which “authorizes the unintentional taking of small numbers of marine mammals, provided the activity would have a negligible impact to marine mammals

and would have no unmitigable adverse impact on subsistence use of marine mammals.” The ITA may be issued as an Incidental Harassment Authorization (1-year, site-specific authorization for activities with no potential for serious injury or mortality). “BOEM encourages offshore operators and lessees to apply for an ITA for activities with a potential for taking marine mammals. Further, BOEM coordinates with NMFS and USFWS to ensure compliance with the MMPA and to also develop effective mitigation and monitoring requirements for ITA’s as well as BOEM authorizations.” [Footnote 40: Marine Mammal Protection Act (MMPA) | Bureau of Ocean Energy Management (boem.gov)]

The EIS must address the listed marine mammals to be found in the EW1&2 area, the adequacy of current policies in protecting them, and provide a comprehensive programmatic approach to ensure that the EW and other Atlantic OSW projects avoid/minimize adverse impacts on these species all along their spatiotemporal migratory movements.

Comment Number: BOEM-2021-0038-DRAFT-0039-39

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Marine mammals have important roles in marine ecosystems both as predators and as prey sources for larger marine mammals and sharks. Members of three of the four taxonomic groups of marine mammals are found in the northeast and mid-Atlantic marine environments: cetaceans (whales, dolphins, and porpoises), pinnipeds (seals), sirenians (manatees). These species “exhibit a wide range of behaviors, varying social structures, and differences in social information use. Human impacts on marine mammals and their environments are ubiquitous; from chemical and noise pollution, to marine debris, prey depletion, and ocean acidification.” [Footnote 176: Brakes, P. & Dall, S. R. X. (2016). Marine Mammal Behavior: A Review of Conservation Implications. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2016.00087>] Now they face yet another new threat in the form of massive offshore wind energy projects being installed within their migratory routes and which also impact nearshore, coastal and surrounding terrestrial environments. “As a result, no marine mammal populations remain entirely unaffected by human activities. Conservation may be hindered by an inadequate understanding of the behavioral ecology of some of these species.” [Footnote 177: Brakes, P. & Dall, S. R. X. (2016).] The EIS must consider the full range of potential impacts of EW project activities, cumulatively with those of all Atlantic OSW projects, and climate crisis impacts on marine mammals all which are protected by the MMPA. Particular emphasis must be given to the conservation of ESA-listed species in developing and implementing the most robust strategies to avoid, minimize, and mitigate all potential adverse impacts, and also monitor the efficacy of these strategies throughout the life of the projects. An integrated comprehensive ecosystem approach is needed and must be required to protect all resident and migratory species whose spatiotemporal presence in the EW area do not overlap with each other.

Comment Number: BOEM-2021-0038-DRAFT-0039-40

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Numerous marine mammal species with documented ranges extending to the New York Bight are known to be present in the EW area at variable frequencies with differing spatiotemporal profiles. Among the 38 species, all protected by MMPA, are 31 cetaceans (27 odontocetes: toothed whales, dolphins, porpoises and 6 mysticetes: baleen whales), 4 phocids (harbor seals, gray seals, harp seals, and hooded seals), and 1 sirenian (West Indian manatee). [Footnote 178: BOEM. (2021). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources] Of these, five are listed species under the ESA:

North Atlantic right whale (*Eubalaena glacialis*) - Critically Endangered

fin whale (*Balaenoptera physalus*) - Endangered

sei whale (*B. borealis*) - Endangered

sperm whale (*Physeter microcephalus*) - Endangered

blue whale (*B. musculus*) - Endangered

West Indian manatee (*Trichechus manatus latirostris*) – Threatened

The ESA listed whale species are also listed as depleted and strategic stocks under the MMPA. The humpback whale (*Megaptera novaeangliae*) is a NY SGCN and is part of the Gulf of Maine stock which is considered strategic under the MMPA. [Footnote 179: NMFS. (2020). Draft U.S. Atlantic and Gulf of Mexico marine mammal stock assessments -- 2020.]

[See original comment for images of the seasonal presence of marine mammals in the EW area]

The EW area currently does not include any designated Critical Habitat for any marine mammal. The COP focuses only on 4 of the above federally listed species since the manatee is presumed to be only an infrequent visitor to the area. However, given the current limitations of accurate identification, lack of any real-time monitoring of these mammals, changing weather conditions from year to year, and climate crisis impacts, their occurrences may already be or become more common than being assumed.

The North Atlantic right whales (NARW) have been listed as endangered under the ESA since 1970 [Footnote 180: <https://www.fisheries.noaa.gov/species/north-atlantic-right-whale>] and their population has never recovered. Over these past 50 years, they have been facing ever increasing threats from anthropogenic activities and sliding towards extinction. The current trend of a precipitous population decline started in 2011 in an ongoing Unusual Mortality Event (UME) [Footnote 181: Email from Colleen Coogan to the Atlantic Large Whale Take Reduction Team, Re: To ALWTRT: Preliminary January 2019 North Atlantic right whale population estimate, Oct. 26, 2020.] and NMFS reported in 10/2020 that 218 right whales had died from fishing gear entanglements and vessel strikes since 2011, at “a rate of roughly 24 whale deaths per year.” [Footnote 182: Email from Colleen Coogan to the Atlantic Large Whale Take Reduction Team, Oct. 26, 2020.] At the end of 2019 the New England Aquarium released a NARW population estimate of just 356 individuals. [Footnote 183: Pettis, H. M., Pace III, R. M., & Hamilton, P. K. (2020). North Atlantic Right Whale Consortium 2020 Annual Report Card. Report to the North Atlantic Right Whale Consortium] Scientists warn that low birth rates coupled with whale deaths “means that there could be no females left in the next 10 to 20 years”. [Footnote 184: Davie, E. (2020, Oct. 29). New population estimate suggests only 356 North Atlantic right whales left. CBC News.] NMFS reports that currently fewer than 94 breeding females of NARW left on the planet. [Footnote 185: Email from Colleen Coogan to the Atlantic Large Whale Take Reduction Team, Oct. 26, 2020.]

Atlantic populations of minke whales and humpback whales are also experiencing ongoing UMEs, caused primarily by vessel strikes, with strandings of 105 minke whales seen between Maine and South Carolina from 1/2017 through 4/2021, [Footnote 186: NOAA-NMFS. 2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast, NOAA-NMFS, 2017-2021 North Atlantic right whale Unusual Mortality Event.] and large numbers of humpback whales strandings in every state along the Atlantic Coast [Footnote 187: NOAA-NMFS. 2016-2021 Humpback whale Unusual Mortality Event along the Atlantic Coast; 2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast; 2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast] since January 2016 with 149 mortalities recorded from 1/2016 through 4/2021. These events led to the recent designation of the Gulf of Maine humpback whale population as an MMPA strategic stock. [Footnote 188: NMFS. (2020). Draft U.S. Atlantic and Gulf of Mexico marine mammal stock assessments - 2020.]

Current policies and strategies to protect listed species of whales, particularly the NARW, having been proven to be ineffective, BOEM must use its regulatory authority in OSW development to avoid any/all impacts to NARW and other listed species from EW activities before they permanently disappear from the planet.

Comment Number: BOEM-2021-0038-DRAFT-0039-41**Organization:** Defenders of Wildlife**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

Vessel strikes

- Vessel strikes and fishing gear entanglements are the drivers of ongoing UMEs of some whale species and forcing NARW closer to extinction. “Endangered North Atlantic right whales are especially vulnerable to vessel strikes because their habitat and migration routes are close to major ports and often overlap with shipping lanes.” [Footnote 189: NOAA Species Directory: North Atlantic Right Whale <https://www.fisheries.noaa.gov/species/north-atlantic-right-whale>] Severe injury or mortality to marine mammals can occur from a vessel traveling >10 knots irrespective of its length, [Footnote 190: NOAA-NMFS. Reducing ship strikes to North Atlantic right whales.] and speeds below this still pose a serious risk. [Footnote 191: Kelley, D. E., Vlastic, J. P., & Brilliant, S. W. (2020). Assessing the lethality of ship strikes on whales using simple biophysical models. *Marine Mammal Science*, 37, 251-267.] The number of recorded vessel-whale collisions each year is likely to be grossly underestimated since not all struck animals are recovered, or examined [Footnote 192: Reeves, R. R., Read, A.J., Lowry, L., Katona, S. K., & Boness, D. J. (2007). Report of the North Atlantic Right Whale Program Review. 13–17 March 2006, Woods Hole, Massachusetts (prepared for the Marine Mammal Commission); Parks, S.E., Warren, J. D., Stamieszkin, K., Mayo, C. A., & Wiley, D. (2011). Dangerous dining: surface foraging of North Atlantic right whales increases risk of vessel collisions. *Biology Letters*, 8, 57-60.] (e.g. observed NARW carcasses from all causes of death may have only accounted for 36% of all estimated deaths during 1990-2017). [Footnote 193: Pace III, R. M., Williams, R., Kraus, S. D., Knowlton, A. R. & Pettis, H. M. (2021). Cryptic mortality of North Atlantic right whales. *Conservation Science and Practice*, 3(2), e346.]

- The most severe injuries/death to NARW (and other marine mammals) occur from collisions with large ocean-going vessels [Footnote 194: Laist, D. W., Knowlton, A. R., Mead, J. G., Collet, A. S. & Podesta, M. (2001). Collisions between ships and whales. *Marine Mammal Science*, 17(1), 35-75.] which have led to the current (ineffective) mitigation policies and management actions. Current science clearly shows that smaller vessels traveling at lower speeds (i.e. <10 knots) can also cause lethal injury [Footnote 195: Kelley, D. E., Vlastic, J. P. & Brilliant, S. W. (2021). Assessing the lethality of ship strikes on whales using simple biophysical models. *Marine Mammal Science*, 37(1), 251-267.] because every vessel strike causes either “blunt force trauma” from contact with the non-rotating features of the vessel resulting in non-lethal superficial abrasions and contusions to severe lethal impact wounds, or “propeller-induced sharp force trauma” resulting in incising wounds from contact with the sharp, rotating, propeller of the vessel. [Footnote 196: Van der Hoop, J., Barco, S.G., Costidis, A.M., Gulland, F.M., Jepson, P.D., Moore, K. T., Raverty, S. & McLellan, W.A. (2013). Criteria and case definitions for serious injury and death of pinnipeds and cetaceans caused by anthropogenic trauma. *Diseases of Aquatic Organisms*, 103(3), 229-264; Sharp, S. M., et al. (2020). Gross and histopathologic diagnoses from North Atlantic right whale *Eubalaena glacialis* mortalities between 2003 and 2018. *Diseases of Aquatic Organisms*, 135(1), 1-31.] The magnitude of this threat is underestimated as small vessel collisions with whales are often underreported. [Footnote 197: Hill, A. N., et al. (2017). Vessel collision injuries on live humpback whales, *Megaptera novaeangliae*, in the southern Gulf of Maine. *Marine Mammal Science*, 33, 558–573.] [Footnote 198: Jensen, A.S. & Silber, G.K. (2004, Jan). Large Whale Ship Strike Database. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-OPR-25, at 12–37.] The NMFS Large Whale Ship Strike Database revealed that blood was seen in the water (indicative of serious injury) in at

least half of the cases where a vessel known to be <65 feet long had struck a whale. [Footnote 199: Jensen, A.S. & Silber, G.K. (2004, Jan). Large Whale Ship Strike Database.] NARW [Italics/Underline: cannot] withstand even a single vessel strike if the species is to avoid extinction.

Comment Number: BOEM-2021-0038-DRAFT-0039-44

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Knowledge of population densities and spatiotemporal profiles of marine mammals is essential in developing effective avoidance and mitigation strategies. The EIS must incorporate all available data including aerial survey records [Footnote 206: Tetra Tech & LGL Ecological Research Associates. (2020). Final comprehensive report for New York Bight Whale Monitoring Aerial Surveys, March 2017 – February 2020. Technical report prepared for NYS-DEC.] available through sightings databases (e.g. NMFS Right Whale Sighting Advisory System; [Footnote 207: NOAA Fisheries - NOAA Right Whale Sighting Advisory System.] Northeast Fisheries Science Center Monthly DMA analysis [Footnote 208: Northeast Fisheries Science Center - Interactive Monthly DMA Analysis.]) and passive acoustic monitoring data (e.g. Robots4Whales detections, [Footnote 209: Woods Hole Oceanographic Institution - Robots4Whales. <http://dcs.whoi.edu/>] Acoustic Right Whale Occurrence, [Footnote 210: Northeast Fisheries Science Center - Acoustic Indicators of Right Whale Occurrence.] large whale acoustics [Footnote 211: Estabrook, B. J. et al. (2020). Year-2 annual survey report for New York Bight whale monitoring passive acoustic surveys October 2018- October 2019. Contract C009925.] for accurate estimation of population densities and seasonal presence.

Comment Number: BOEM-2021-0038-DRAFT-0039-48

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The EIS must evaluate the potential risk of habitat displacement all along the East Coast in terms of extinction risk of listed migratory mammals like NARW. The cumulative analysis must also examine the large-scale habitat displacement and the additional energy expenditure by NARW if it were to avoid all lease areas expected to be developed during their migration. This is particularly important in light of new data indicating the need for NARW to undertake efficient and uninterrupted foraging to maintain their energy budget. [Footnote 217: Van der Hoop, J., Nousek-McGregor, A. E., Nowacek, D. P., Parks, S. E., Tyack, P., & Madsen, P. (2019). Foraging rates of ram- filtering North Atlantic right whales. *Functional Ecology*, 33(7), 1290-1306.] The energetic implications of displacement of pregnant females during their southern migration (e.g. offshore into the Gulf Stream) must also be taken into consideration. Since 2010, North Atlantic right whale distribution and habitat use has shifted in response to climate change-driven shifts in prey availability. [Footnote 218: Record, N., Runge, J., Pendleton, D., Balch, W., Davies, K., Pershing, A., Johnson, C., Stamieszkin, K., Ji, R., Feng, Z. & Kraus, S. (2019). Rapid Climate-Driven Circulation Changes Threaten Conservation of Endangered North Atlantic Right Whales. *Oceanography*, 32, 162-169] Best available scientific information, including regional shipboard and aerial surveys, [Footnote 219: Whitt, A.D., Dudzinski, K. & J. R. Laliberté. (2013). North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implications for management. *Endangered Species Research*, 20, 50-69.] [Footnote 220: Redfern, J., Pendleton, D., O'Brien, O., Ganley, L., Hodge, B. & McKenna, K. (2020). Tools to identify and minimize risk to marine mammals. Presentation to the Massachusetts Habitat Working Group (Dec. 11, 2020); Kraus, S.D., et al. (2016). Northeast large pelagic survey collaborative aerial and acoustic surveys for large whales and sea turtles. Final Report. OCS Study, BOEM 2016-054, pp. 118; Leiter, S. M., et al. (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; Quintana, E. (2017). Monthly report No. 3 prepared for the Massachusetts Clean Energy Center by the New England Aquarium, pp. 26.] acoustic detections, [Footnote 221: Davis, G.E. et al. (2017). Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014. *Nature Scientific Reports*, 7, 13460.] [Footnote 222: Woods Hole Oceanographic Institution. Autonomous Real Team Marine Mammal Detections: Cox Ledge, Winter 2019-2020] [Footnote 223: Davis, G. E., et al. (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.] photo-identification data, [Footnote 224: Hamilton, P. (2020). 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 225: Asaro, M. J. (2017). Update on US Right Whale Mortalities in 2017. NOAA Fisheries] a series of DMAs declared by NMFS pursuant to ship strike rule, [Footnote 226: NOAA Fisheries Interactive DMA Analyses: <https://www.nefsc.noaa.gov/rcb/interactive-monthly-dma-analyses/>] and prey data, [Footnote 227: Pendleton, D. E., Pershing, A., Brown, M. W., Mayo, C. A., Kenney, R. D., Record, N. R., & Cole, T. V. N. (2009). Regional-scale mean copepod concentration indicates relative abundance of North Atlantic right whales. *Marine Ecology Progress Series*, 378, 211-225; NOAA Northeast Fisheries Science Center - Ecology of the Northeast US Continental Shelf – Zooplankton] indicate that NARW now rely heavily on the waters of the EW area nearly all year-round. Foraging areas with suitable prey density are limited relative to the overall distribution of the 356 North Atlantic right whales, and an ever decreasing amount of habitat is available for resting, pregnant, and lactating females. [Footnote 228: Van der Hoop, J., et al. (2019). Foraging rates of ram-filtering North Atlantic right whales; Plourde, S., Lehoux, C., Johnson, C. L., Perrin, G., & Lesage, V. (2019). 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*, 41(5), 667-685; Lehoux, C., Plourde, S., & Lesage, V. (2020). 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; Gavrilchuk, K., Lesage, V., Fortune, S., Trites, A. W., & Plourde, S. (2020). 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.] Scientific data on NARW functional ecology also shows that the species employs a “high- drag” but energetically expensive foraging strategy that enables them to selectively target high-density prey patches. [Footnote 229: Van der Hoop, J., et al., (2019). Foraging rates of ram-filtering North Atlantic right whales.] If access to prey is limited in any way, the ability of the whale to offset its energy expenditure during foraging is jeopardized. “Right 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 230: Van der Hoop, J., et al., (2019). Foraging rates of ram-filtering North Atlantic right whales.] NARW is already experiencing significant food-stress with juveniles, adults, and lactating females having 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 231: Christiansen, F. (2020). Population comparison of right whale body condition reveals poor state of the North Atlantic right whale. *Marine Ecology Progress Series*, 640, 1-16] Unrestricted access to suitable areas, wherever they exist, and minimization of disturbance are thus essential for the species to maintain their energy budget, [Footnote 232: Van der Hoop, J., et al., (2019). Foraging rates of ram-filtering North Atlantic right whales.] especially during their energetically expensive migration This analysis must inform avoidance and mitigation strategies in a programmatic ecosystem- wide approach to protect NARW and all other species using the same habitats from the common threats of OSW projects which will be installed along the east coast which overlaps the NARW/marine mammal migratory corridors and foraging/calving habitats. BOEM has significantly and consistently downplayed the risk of vessel strike to endangered whales in previous OSW permitting documents without adequate analyses. [Footnote 233:

BOEM. Draft Environmental Impact Statement for the South Fork Wind Farm and South Fork Export Cable Project.]

Comment Number: BOEM-2021-0038-DRAFT-0039-54

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Prohibitions, restrictions of activities, Shutdown requirements

- extend seasonal restrictions to those times of the year when at-risk species other than NARW are present and schedule construction activities around the presence of these species. The best available scientific information validates the use of seasonal restrictions to temporally suspend OSW activity when NARW are likely present, but it is becoming increasingly clear that there may not be a time of “low risk” for this species. Climate-driven changes in oceanographic conditions and resulting shifts in prey distribution are rapidly changing the spatial and temporal patterns of habitat use of NARW and other large whale species. [Footnote 241: Davis, G.E., et al., (2020); Davis, G.E., et al. (2017); Record, N., et al. (2019).] BOEM/NMF’s seasonal restrictions in NARW foraging areas (e.g. off southern New England including EW area) might afford them some protection but as discussed in Section 5.2 and shown in Figures 1 and 2, there are other endangered species (other mammals and sea turtles) that are present in EW area when NARW are not.

- prohibit pile driving:

— during periods of highest risk (to NARW and other listed marine mammals) defined as times of highest relative density of individuals during their migration, and times when mother-calf pairs, pregnant females, surface active groups (indicative of breeding or social behavior), or aggregations of three or more individuals (indicative of feeding or social behavior) are, or are expected to be present as supported by review of the best available science at the time of the activity.

— from being initiated within 1.5 hours of civil sunset or in times of low visibility when visual clearance and exclusion zones cannot be visually monitored by PSOs,

— if there is acoustic detection within the acoustic clearance zone or visual detection within the visual clearance zone of NARW

- require shut down of pile driving activities if there is visual detection of NARW within the visual exclusion zone or acoustic detection within the acoustic exclusion zone, or sighting by PSOs at any distance from the pile

- allow paused pile driving to resume only after the lead PSO confirms no NARW have been detected within the acoustic and visual clearance zones or to continue after dark only if the activity commenced during daylight hours and must proceed for human safety or installation feasibility reasons.

Comment Number: BOEM-2021-0038-DRAFT-0041-19

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Areas to be Avoided in Siting

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 North Atlantic right whales. When SMAs or persistent DMAs cannot be avoided, the most stringent mitigation measures will be required.

Right Whale Important Areas

The North Atlantic right whales travel from Canada to Florida on a regular basis. The NARW calves are born in southern waters and they travel north to feed and grow. In recent years, NARWs have shifted some of their aggregation areas. NOAA designates SMAs that are aligned to where whales are expected at certain times of the year and then creates DMAs when NARWs are present. As mentioned above, projects should not be sited in Seasonal Management Areas or in areas where persistent or long-duration DMAs are established and extended for more than 3 months in one year of the most recent five. The Empire Wind EIS should analyze North Atlantic right whale abundance patterns to confirm that there is no overlap SMAs or persistent DMAs.

Comment Number: BOEM-2021-0038-DRAFT-0043-9

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, Save the Sound appreciates that special attention has been paid to develop recommendations to protect the North Atlantic right whale, one of the world's most endangered species, from the risk of excessive underwater sound and collision with vessels. It appears, however, that much work is yet to be done with respect to the impact of underwater sound on this species [Footnote 3: See generally, National Marine Fisheries Service, NOAA Technical Memorandum NMFS-OPR-59, Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts (April 2018 Revision). Retrieved from <https://www.fisheries.noaa.gov/resource/document/technical-guidance-assessing-effects-anthropogenic-sound-marine-mammal-hearing>. See also, Swedish Environmental Protection Agency, Vindval Technical Report 6775, A Framework for Regulating Underwater Noise During Pile Driving (August 2017). Retrieved from <https://tethys.pnnl.gov/sites/default/files/publications/Andersson-et-al-2017-Report6775.pdf>.], and we recommend ongoing research into these impacts to inform this and other projects.

Comment Number: BOEM-2021-0038-DRAFT-0047-20

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Discuss seasonal distribution, abundance, and migration routes.

Comment Number: BOEM-2021-0038-DRAFT-0047-34

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Marine Mammals:

- Impacts from construction, pile driving and vessel traffic (i.e., vessel strikes and alteration of migratory patterns).

- Behavior and physiological impacts from noise and EMF.

Comment Number: BOEM-2021-0038-DRAFT-0056-5

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The NY/NJ Bight is habitat for numerous marine mammals, some of which are threatened or endangered. Whales, dolphins, porpoises and seals can be found in the Bight, including the endangered North Atlantic Right Whale, the Blue Whale and the Sperm Whale. [Footnote 18: NYDEC, Marine Mammals of New York (<https://www.dec.ny.gov/animals/108573.html>)] COA is concerned about the impacts that this project will have upon these animals.

1. Noise Pollution from Construction

a. Studies have shown that construction noise related to offshore wind farms (especially pile driving) may cause behavioral changes and negative impacts in seals, porpoises, dolphins, and whales.

b. Disruption effects have been measured up to 20 miles from the construction site.

2. Noise from Operation

a. This includes both the noise from the turbines themselves, which emit a constant low-frequency noise, and also the increased vessel traffic from operations and maintenance (O&M) activities.

b. The operational noise stems from vibrations in the tower caused by the gearbox mesh in addition to the generator, causing underwater noise.

3. Vessel Strikes

a. Increased vessel activities may result in increased strikes with marine mammals, such as the critically endangered Northern Atlantic right whale. This includes from construction and O&M.

b. There is also concern that the wind farms will displace other marine commerce and transit funneling those vessels into narrower lanes which may increase strikes.

c. The COP EIS must account for competing uses and navigation impacts of offshore wind facilities. With increased or altered traffic patterns, the risk of collisions and spills of gas, oil, and chemicals may increase, with negative effects to water quality and marine life. Exposure to oil and other hydrocarbons from oil spills can drastically affect marine mammals and ecosystems. Further, vessel strike mitigation is vital to reducing collision between both commercial and noncommercial vessels and North Atlantic right whales.¹⁰ The COP EIS should also consider spacing between offshore wind turbines and high-traffic areas through either increased spacing or based on consultation with the National Marine Fisheries Service and the United States Coast Guard.

4. More Protective Consideration of the North Atlantic Right Whale

a. This highly endangered species is exceptionally vulnerable to additional barriers in its migratory patterns and prime foraging habitat. While BOEM requires mandatory minimization procedures and marine mammal observers for construction and operation of offshore wind farm, it is not enough. Current minimization measures, including passive acoustic monitoring (PAM) via glider [Footnote 19: Moscrop et al., Vocalization rates of the North Atlantic right whale, J. CETACEAN RES. MANAGE. 3(3):271–282, 2001, available at https://www.researchgate.net/publication/268273193_Vocalisation_rates_of_the_North_Atlantic_right_whale do not account for when marine mammals are not vocalizing. Right whales vocalize frequently. But these vocalizations tend to be “irregular and non-repetitive” and based on

activity level. [Footnote 20: Id.] Further, it is likely that most known marine mammal mortalities occur via ship-strike. [Footnote 21: Ship Strikes and Right Whales, Marine Mammal Commission (last accessed 4/28/2012), available at <https://www.mmc.gov/priority-topics/species-of-concern/north-atlantic-right-whale/ship-strikes/While> PAM, marine mammal observers, shut-down procedures, and other mitigation measures can be useful during construction and building spatio-temporal baseline data, there is uncertainty regarding right whale behavior and offshore wind foundations and vessel activity. The COP EIS needs to address this problem.

Comment Number: BOEM-2021-0038-DRAFT-0057-35

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The survival of the North Atlantic right whale rests on a knife-edge. The best population estimate for the beginning of 2019 is just 368 individuals [Footnote 100: Pace, R.M., “Revisions and further evaluations of the right whale abundance model: Improvements for hypothesis testing.” NOAA Technical Memorandum NMFS-NE-269. April 2021. Available at: https://apps-nefsc.fisheries.noaa.gov/rcb/publications/tm269.pdf?utm_medium=email&utm_source=govdelivery.] and 14 animals have since been reported to have died. [Footnote 101: NMFS, “2017-2021 North Atlantic right whale Unusual Mortality Event,” supra.] Moreover, the best population estimate for the beginning of 2018 has been revised down from 412 individuals [Footnote 102: Pettis, H.M., Pace III, R. M., and Hamilton, P.K., “North Atlantic Right Whale Consortium 2019 Annual Report Card,” Report to the North Atlantic Right Whale Consortium (2019). Available at: <https://www.narwc.org/uploads/1/1/6/6/116623219/2019reportfinal.pdf>.] to 383 individuals. [Footnote 103: Pettis, H.M., Pace III, R. M., and Hamilton, P.K., “North Atlantic Right Whale Consortium 2020 Annual Report Card.” Report to the North Atlantic Right Whale Consortium (2020). Available at: https://www.narwc.org/uploads/1/1/6/6/116623219/2020narwcreport_cardfinal.pdf.] The new 2019 and revised 2018 estimate a significant decrease in survival during the last three years as a result of the ongoing Unusual Mortality Event (UME). [Footnote 104: NMFS, “2017-2021 North Atlantic right whale Unusual Mortality Event,” supra.]

Additionally, scientists from the New England Aquarium now believe that “low birth rates coupled with whale deaths means there could be no females left in the next 10 to 20 years.” [Footnote 105: 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>.] The decline of the species over the past decade is also deeply disturbing. Based on the best population estimate for the species as well as recently documented deaths, approximately 127 animals have been killed since 2011. [Footnote 106: 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.]

The Project Area is part of the NMFS-designated migratory corridor Biologically Important Area (BIA) for the North Atlantic right whale. [Footnote 107: 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.] Since 2010, North Atlantic right whale distribution and habitat use has shifted in response to climate change-driven shifts in prey availability. [Footnote 108: 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).] Best available scientific information, including regional shipboard and aerial surveys, [Footnote 109: Whitt, A.D., K. Dudzinski, and J.R. Laliberté. 2013. North Atlantic right whale distribution and seasonal occurrence in nearshore

waters off New Jersey, USA, and implications for management. *Endangered Species Research* 20:50-69; 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; 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.] acoustic detections, [Footnote 110: Kraus, S.D., et al., id; 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. Nieu Kirk, 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. Nieu Kirk, 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.] photo- identification data, [Footnote 111: Hamilton, P., “North Atlantic Right Whale Catalog Update, Recent Genetic Findings and Whale Naming Results,”] stranding data, [Footnote 112: Asaro, M.J., “Update on US Right Whale Mortalities in 2017,” NOAA Fisheries, November 30, 2017. Available at: https://www.greateratlantic.fisheries.noaa.gov/protected/whaletrp/trt/meetings/2017%20Nov/asaro_usstranding_nov2017.pdf; 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 113: 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 114: 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>.] indicate that North Atlantic right whales now rely heavily on the waters within the New York Bight year-round. During the New York State Department of Environmental Conservation (NYSDEC) aerial surveys conducted in the New York Bight monthly from March 2017 through February 2020, right whales were sighted during every season except summer. [Footnote 115: Tetra Tech and LGL. 2020. Final comprehensive report for New York Bight Whale Monitoring Aerial Surveys, March 2017 – February 2020. Technical report prepared by Tetra Tech, Inc. and LGL Ecological Research Associates, Inc. Prepared for New York State Department of Environmental Conservation, Division of Marine Resources, East Setauket, NY.]

Right whales have been acoustically detected in near-real time and/or in archived acoustic recordings conducted by the Wildlife Conservation Society and Woods Hole Oceanographic Institution from November to April every year since 2016, and have also been detected in October, May, June or July depending on the year. [Footnote 116: Murray, A., Wildlife Conservation Society. Pers. comm., 7 Jul 2021.] However, 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 [Footnote 117: 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.]and based on the acoustics study by Davis et al. (2017) that included additional data sources for the New York Bight. [Footnote 118: 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. Nieu Kirk, 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.] Therefore, this species should be expected to be present in the Project Area year-round.

Protection of North Atlantic right whale migration and foraging habitat is essential, and further research to determine whether right whales are engaging in these activities in the New York Bight should be undertaken. 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 119: 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).] 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 120: Id.] Scientific information on North Atlantic right whale functional ecology also 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 121: Van der Hoop, J., et al., 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 122: 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 123: 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 124: 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-2021-0038-DRAFT-0057-36

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to North Atlantic right whales, humpback and fin whales may occur year-round in the New York Bight and use this region as more than just migratory habitat. [Footnote 125: Whitt, A.D., J.A. Powell, A.G. Richardson, and J.R. Bosyk. 2015. Abundance and distribution of marine mammals in nearshore waters off New Jersey, USA. *Journal of Cetacean Research and Management* 15:45-59.] The occurrence of humpback whales, particularly feeding whales, in these waters has been increasing in recent years. [Footnote 126: Id.; Pierre-Louis, K. 2017. “Why Whales are Back in New York City.” *Popular Science*. June 7. Available at: <https://www.popsoci.com/new-york-city-whales#page-4>.] Fin whales are also known to feed in the New York Bight, particularly during spring and summer. [Footnote 127: Whitt et al. (2015), id.] In fact, NMFS has identified a biologically important feeding area for fin whales east of Montauk Point from March to October.⁸ 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 128: “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).] We encourage BOEM to incorporate findings from the updated BIA process that NMFS is currently undertaking.

Ongoing UMEs exist for humpback and minke whales. There have been UMEs for the Atlantic population of minke whales since January 2017 and humpback whales since January 2016. Alarming, 107 minke whales have stranded between Maine and South Carolina from January 2017 to July 2021. [Footnote 129: NOAA-NMFS, “2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast,” supra; NOAA-NMFS, “2017-2021 North Atlantic right whale Unusual Mortality Event.” 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, 150 humpback whale mortalities have been recorded (data through 6 July 2021), with strandings occurring in every state along the East Coast. [Footnote 130: 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>; 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>, “2016-2021 Humpback whale Unusual Mortality Event along the Atlantic

Coast,” supra.] 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 designated the Gulf of Maine humpback whale stock, which occurs in the New York Bight, 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 131: National Marine Fisheries Service (NMFS). 2020. Draft U.S. Atlantic and Gulf of Mexico marine mammal stock assessments -- 2020.]

Comment Number: BOEM-2021-0038-DRAFT-0057-37

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Harbor porpoise also require special attention during offshore wind energy development because of their extreme sensitivity to noise. Harbor porpoise 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 132: 132 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 133: 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.] 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 134: 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 135: 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.]

Harbor porpoise have been acoustically detected in and around the New York-New Jersey Harbor Estuary during most months of the year, with peaks in detection occurring in the spring and winter. [Footnote 136: Rekdahl, M. Wildlife Conservation Society. Pers. comm., 7 Jul 2021.] Impacts to harbor porpoises must therefore also be minimized and mitigated to the full extent practicable during offshore wind siting and development in the New York Bight, including in nearshore areas being considered for cable landings.

Comment Number: BOEM-2021-0038-DRAFT-0057-38

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Given concerns regarding the health of the region’s whale species, and the critically endangered status of the North Atlantic right whale in particular, BOEM is obligated to protect these species from additional harmful impacts of human activities. The agency is also obligated by NEPA to consider the full range of potential impacts on all marine mammal species. 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 site assessment activities on affected species and stocks are avoided, minimized, mitigated, and monitored to the full extent possible. [Footnote 137: 16 U.S.C. § 1371(a)(5)(D)(ii)(I)(2020).]

Comment Number: BOEM-2021-0038-DRAFT-0057-39

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM MUST USE BEST AVAILABLE SCIENTIFIC INFORMATION TO ANALYZE IMPACTS TO MARINE MAMMALS

As stated in Section IV(E)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, endangered fin whales, and humpback whales now heavily rely on the waters of the New York Bight year-round and that the New York Bight is an important seasonal foraging habitat for fin whales and humpback whales. [Footnote 138: Chou, E., Rekdahl, M., Kopelman, A.H., Brown, D.M., Sieswerda, P.L., DiGiovanni Jr., R., Good, C.P., and Rosenbaum, H.C. Occurrence of baleen whales in the New York Bight, 1998-2027: Insights from opportunistic data. Marine Biodiversity Records. Submitted.]

To adequately assess the occurrence of and potential impacts to marine mammals in the New York Bight, it is extremely important that BOEM consider a variety of local and regional data sources. For example, the NYSDEC aerial surveys and passive acoustic monitoring data must be combined to provide a comprehensive look at the recent occurrence of large whales in the New York Bight. Additional data sources that should be assessed include Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys, [Footnote 139: 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.] NYSERDA digital aerial surveys, [Footnote 140: J. Robinson Willmott, J.C., M.

Vukovich, A. Pembroke. 2021. Digital aerial baseline survey of marine wildlife in support of offshore wind energy. Overview and summary, Report Number 21-07. Prepared for New York State Energy Research and Development Authority by Normandeau Associates Inc. with APEM Ltd.] and the New Jersey Ecological Baseline Study. [Footnote 141: GMI (Geo-Marine Inc.). 2010. Ocean/Wind power ecological baseline studies January 2008 - December 2009. Final report. New Jersey Department of Environmental Protection, Trenton, New Jersey; Whitt, A.D., K. Dudzinski, and J.R. Laliberté. 2013. North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implications for management. *Endangered Species Research* 20:50-69.] Where possible, density estimate modeling for the Project Area should include these multiple data sources.

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 142: 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).] While this model has been updated to incorporate additional data sources, [Footnote 143: Id.] the current density estimates rely entirely on shipboard and aerial line-transect surveys, meaning the models exclude data obtained through passive acoustic monitoring and other long-term sightings data, including for the New York Bight and other regions of the East Coast. Recent aerial surveys [Footnote 144: Tetra Tech and LGL. 2020. Final comprehensive report for New York Bight Whale Monitoring Aerial Surveys, March 2017 – February 2020. Technical report prepared by Tetra Tech, Inc. and LGL Ecological Research Associates, Inc. Prepared for New York State Department of Environmental Conservation, Division of Marine Resources, East Setauket, NY.] and records available through additional sightings databases (e.g., NMFS Right Whale Sighting Advisory System; [Footnote 145: NOAA Fisheries, “NOAA Right Whale Sighting Advisory System.” Available at: <https://fish.nefsc.noaa.gov/psb/surveys/MapperiframeWithText.html>.] Northeast Fisheries Science Center (NEFSC) Monthly DMA analysis [Footnote 146: Northeast Fisheries Science Center, “Interactive Monthly DMA Analysis.” Available at: <https://apps- nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/>) and passive acoustic monitoring (e.g., Robots4Whales detections, [Footnote 147: Woods Hole Oceanographic Institution, “Robots4Whales.” Available at: <http://des.whoi.edu/>.] Acoustic Right Whale Occurrence, [Footnote 148: Northeast Fisheries Science Center, “Acoustic Indicators of Right Whale Occurrence.” Available at: <https://apps- nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/>.] large whale acoustics [Footnote 149: 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. Nieu Kirk, 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. Nieu Kirk, 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; Estabrook, B.J., K. B. Hodge, D. P. Salisbury, D. Ponirakis, D. V. Harris, J. M. Zeh, S. E. Parks, and A.N. Rice. 2020. 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.) are not incorporated. As such, the estimated densities may significantly underrepresent the density and seasonal presence of large whales in the New York Bight. The North Atlantic right whale model has been updated with additional regional data; this latest Version 11 was released in February 2021. [Footnote 150: https://seamap.env.duke.edu/models/Duke/EC/EC_North_Atlantic_right_whale_history.html] The Roberts et al. model for the U.S. Atlantic will be updated again during Spring 2022. [Footnote 151: <https://seamap.env.duke.edu/models/Duke/EC/>]

In addition to these new models, BOEM should utilize Project Area-specific and regional survey data and passive acoustic data to provide a comprehensive assessment of occurrence and density in order to evaluate potential impacts to marine mammal species. BOEM must require that all data are used to ensure that any potential shifts in habitat usage by North Atlantic right whales and other large whale species and stocks are reflected in sound exposure modeling associated with offshore wind development. We suggest one approach to achieving this would be to convene all data holders (e.g., NYSDEC, NYSERDA, Wildlife Conservation Society, Northeast Fisheries Science Center, Woods Hole Oceanographic Institution) with the acoustic modeling team (e.g., JASCO) to collate an updated data set of best available scientific information in a format compatible with undertaking an updated acoustic impact analysis.

As a general matter, integration of local data sources, including opportunistic sightings data, that collect fine-scale information on factors driving marine mammal distribution, with those gathered through systematic broad-scale surveys better reflecting current marine mammal presence, abundance, and density, will provide a more accurate impact assessment. BOEM must take steps now, in coordination with the National Oceanic and Atmospheric Administration (NOAA), to develop a dataset that more accurately reflects marine mammal presence; this is crucial to guide development of the project-level EIS.

Comment Number: BOEM-2021-0038-DRAFT-0057-41

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM Must Adopt Strong Measures to Protect the North Atlantic Right Whale and Other Large Whales during Construction and Operation

The imperiled status of the North Atlantic right whale demands the implementation of strong protective measures to safeguard this species during the construction and operations of Empire Wind. BOEM must also require strong protections for other endangered and threatened marine mammal species, including those currently experiencing a UME. 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 157: 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.

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 foundations, as proposed by Empire Wind, do not require pile driving and thus avoid the noise impacts stemming from this activity. By entirely avoiding the impact of pile driving noise, the installation of gravity-based foundations unequivocally represents ‘best practice’ in the context of the mitigation hierarchy for this impact producing factor.

Due to the different level of impact posed to marine mammals from gravity-based relative to pile-driven foundations, we present two sets of mitigation recommendations for North Atlantic right whales and other large whale species below, one for gravity-based foundations, and the other for pile-driven foundations.

While gravity-based 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(E)6(b)). As gravity-based foundations are a new technology in the U.S., 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 foundations are used.

Comment Number: BOEM-2021-0038-DRAFT-0057-42

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The mitigation measures below reflect our current (July 2021) set of recommendations for all large whale species during construction and operations of gravity-based foundations in the New York Bight and Mid-Atlantic. Please note that these recommendations may be subject to change as new information becomes available, additional or updated mitigation measures are incorporated, and the near real-time monitoring and mitigation system for large whales is advanced (Section IV(E)3).

i. Clearance zone and exclusion zone distances:

1. BOEM, in consultation with NMFS, should design clearance and exclusion zone distances for North Atlantic right whales and other large whale species in a manner that eliminates Level A take and minimizes behavioral harassment to the full extent practicable during the installation of gravity-based foundations, considering noise levels expected to be generated during installation.

ii. Shutdown requirements:

1. When the application of monitoring methods defined in subsection (iii) 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 (i)), installation of gravity-based foundations should not be initiated.

2. When the application of monitoring methods defined in subsection (iii) 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 (i)), installation of gravity-based foundations should be halted unless continued installation activities are necessary for reasons of human safety or installation feasibility.

3. Once halted, installation may resume after use of the methods set forth in subsection (iii) and the lead Protected Species Observer (PSO) confirms no North Atlantic right whales or other large species have been detected within the relevant clearance zones.

iii. Real-time monitoring requirements and protocols during clearance and installation:

1. Monitoring of the clearance and exclusion zones will be undertaken using near real-time passive acoustic monitoring (PAM), 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.

2. Monitoring of the clearance and exclusion zone will 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 gravity-based foundation installation location.

3. Acoustic and visual 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.

4. The deployment of additional observers and monitoring technologies (e.g., infrared, drones, hydrophones) should be undertaken, as needed, to ensure the ability to monitor the established clearance and exclusion zones, including at night and during periods of poor visibility.

iv. Vessel speed restrictions:

1. 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 use the area.

2. Projects may develop, in consultation with NOAA, 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 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.

v. Other vessel-related measures:

1. All personnel working offshore should receive training on observing and identifying North Atlantic right whales and other large whale species.

2. Vessels must maintain a separation distances of at least 500 m for North Atlantic right whales and 100 m for other large whale species, and 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.

3. 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).

vi. Reporting:

1. BOEM should require Empire Wind to 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.

2. Empire Wind 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-43

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mitigation recommendations for pile driving

The mitigation measures below reflect our current (July 2021) set of recommendations for North Atlantic right whales during construction and operations of pile-driven turbines in the New York Bight and Mid-Atlantic. While these mitigation measures were designed specifically for North Atlantic right whales, some offer co-benefits to other large whale species (as identified in parentheses below). Please note that these recommendations may be subject to change as new information becomes available, additional or updated mitigation measures are incorporated, and the near real-time monitoring and mitigation system for large whales is advanced (Section IV(E)3).

i. Prohibition on pile driving during times of highest risk (North Atlantic right whales only):

1. 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 their 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 supported by review of the best available science at the time of the activity.

2. 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 (see Section IV(E)3), 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 in the New York Bight where foraging aggregations of other large whale species are regularly observed in the summer and fall, coincident with the times that pile driving would most likely be undertaken based on times lower relative risk to North Atlantic right whales.

ii. Diel restrictions on pile driving (all large whale species):

1. 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.

2. 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 158: 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.] and if required night time monitoring protocols are followed (see subsection v).

iii. Clearance zone and exclusion zone distances (for a minimum of 10-12 dB noise reduction (see subsection viii); North Atlantic right whales only):

1. A visual clearance zone and exclusion zone shall extend at minimum 5,000 m in all directions from the location of the driven pile for North Atlantic right whales.
2. An acoustic clearance zone shall extend at minimum 5,000 m in all directions from the location of the driven pile for North Atlantic right whales.
3. An acoustic exclusion zone shall extend at minimum 2,000 m in all directions from the location of the driven pile for North Atlantic right whales.
4. BOEM, in consultation with NMFS, must design clearance and exclusion zone distances for other large whale species in a manner that eliminates Level A take and minimizes behavioral harassment to the full extent practicable.

iv. Shutdown requirements (for a minimum of 10-12 dB noise reduction (see subsection viii); North Atlantic right whales only):

1. When the application of monitoring methods defined in subsection (v), below, results 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, pile driving should not be initiated.
2. When the application of monitoring methods defined in subsection (v) results 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, piling 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.
3. In the event that a North Atlantic right whale is visually detected by PSOs at any distance from the pile, piling activities shall be shut down unless continued pile driving activities are necessary for reasons of human safety or installation feasibility.
4. Once halted, pile driving may resume after use of the methods set forth in subsection (v) and the lead PSO confirms no North Atlantic right whales or other large species have been detected within the relevant acoustic and visual clearance zones.

v. Real-time monitoring requirements and protocols during pre-clearance and when pile driving activity is underway (all large whale species):

1. 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.
2. Monitoring of the visual clearance and exclusion zones 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.

3. 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 monitoring should continue until 30 minutes after pile driving.

4. Passive acoustic monitoring and infrared technology must be used during any pile driving activities that extend into periods of darkness.

5. The deployment of additional observers and monitoring technologies (e.g., infrared, drones, hydrophones) should be undertaken, as needed, to ensure the ability to monitor the established clearance and exclusion zones.

vi. Vessel speed restrictions (all large whale species):

1. 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 use the area.

2. Projects may develop, in consultation with NOAA, 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 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.

vii. Other vessel-related measures (all large whale species):

1. All personnel working offshore should receive training on observing and identifying North Atlantic right whales and other large whale species.

2. Vessels must maintain a separation distance 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.

3. 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).

viii. Underwater noise reduction (all large whale species):

1. BOEM should require a combination of near field (e.g., reduced blow resonant panel noise abatement system, [Footnote 159: 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> hydrosound damper) 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. A minimum of 10 dB (SEL) must be attained in the field during construction in combined noise reduction and attenuation. [Footnote 160: According to the Empire Wind COP, “where pile-driven foundations are selected, Empire will consider the potential use of commercially available and technically feasible noise reducing technologies, in accordance with associated authorizations;” EOW COP at 5-266. However, attenuation factors of 8 dB and 12 dB were applied to all impact pile driving scenarios to evaluate potential mitigated underwater noise impacts, indicating Empire Wind is considering noise reduction levels within that range. EOW COP at M-24.]

2. 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, however, support field testing using unmitigated piles.

3. Sound source validation reports of field measurements must be evaluated by both BOEM and NMFS prior to additional piles being installed.

ix. Reporting (all large whale species):

1. BOEM should require Empire Wind to 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.

2. Projects 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-45

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 161: 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 162: 162 *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-2021-0038-DRAFT-0057-46

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 analyses must include the following considerations concerning vessel speed restriction 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 163: NOAA-NMFS, “Reducing ship strikes to North Atlantic right whales.” Available at: [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](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 meters) in the Cape Cod Bay SMA.] and vessels of any length travelling below this speed still pose a serious risk. [Footnote 164: 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).] The number of recorded vessel collisions on large whales each year is likely to grossly underestimate the actual number of animals struck, as animals struck but not recovered, or not thoroughly examined, cannot be accounted for. [Footnote 165: 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% of all estimated death during 1990- 2017. [Footnote 166: 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).]

Vessel strikes are one of the two main factors driving the North Atlantic right whale to extinction. North Atlantic right whales are particularly prone to vessel strike given their slow speeds, their occupation of waters near shipping lanes, and the extended time they spend at or near the water’s surface. [Footnote 167: NOAA-NMFS, “Recovery plan for the North Atlantic right whale” (August 2004).] Some types of anthropogenic noise have been shown to induce sub-surface positioning in North Atlantic right whales, increasing the risk of vessel strike at relatively moderate levels of exposure. [Footnote 168: 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).] Scientists have deemed it “likely” that noise from pile driving during offshore wind development could lead to displacement of large whales and that this potential impact should be treated as “high importance.” [Footnote 169: Kraus, S.D., Kenney, R. D. and Thomas, L., “A Framework for Studying the Effects of Offshore Wind Development on Marine Mammals and Turtles,” Report prepared for the Massachusetts Clean Energy Center, Boston, MA 02110, and the Bureau of Ocean Energy Management (May 2019). 170 SFWF DEIS.] It is possible that noise from large-scale site assessment and characterization activities will have the same effect. BOEM should therefore act conservatively and implement mitigation measures to prevent any further vessel collisions for North Atlantic right whales or other species of large whale currently experiencing an UME (i.e., humpback whales and minke whales), as well as species such as fin whales, which, in light of the broad distributional shifts observed for multiple species, may be at potential future risk of experiencing an UME.

BOEM has significantly downplayed the risk of vessel strike to endangered whales in previous offshore wind permitting documents. [Footnote 170: SFWF DEIS.] For example, in the recent South Fork Draft EIS, the agency notes that up to an additional 207 construction vessels associated with offshore wind development may be operating within the geographic analysis area at the peak of projected offshore wind farm development in 2025. [Footnote 171: SFWF DEIS at 3-50.] Without further quantitative analysis of relative risk, BOEM states that “the overall increase in vessel activity is small relative to the baseline level and year to year variability of vessel traffic in the analysis area. In addition, the risk of marine mammal collisions is negligible for most wind farm construction activities.” [Footnote 172: Id.] BOEM then cites supposed mitigation as a means to minimize the potential for vessel collisions: “Timing restrictions, use of PSOs, and other mitigation measures required by BOEM and NMFS would further minimize the potential for fatal vessel interactions. These measures would effectively minimize but not completely avoid collision risk. Any incremental increase risk must be considered relative to the baseline level of risk associated with existing vessel traffic. Project O&M would involve fewer vessels that are smaller in size, and the level of vessel activity would be far lower than during construction. Smaller vessels (i.e., less than 260 feet in length) pose a lower risk of fatal collisions than larger vessels (Laist et al. 2001).” [Footnote 173: Id.] These arguments are flawed and do not represent current understanding of the vessel collision risk to large whales.

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 pose an unacceptable risk. Thus, when analyzing impacts from vessel traffic, BOEM should concern itself less with “relative risk” and instead focus on the actual 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 a single vessel strike if the species is to survive. Reasonably foreseeable wind development activities will primarily occur off New Jersey, New York, 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 (see Section E(1) above), New York and New Jersey waters 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 174: 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 175: 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 176: 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 177: 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 178: 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 179: 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. Beyond mandatory vessel speed restrictions within Seasonal Management Areas (SMAs), there are currently no federal requirements to reduce the speed of vessels associated with offshore wind development to 10 knots or less. Voluntary 10 knot speed reduction zones (i.e. NOAA DMAs and North Atlantic right whale “Slow Zones”) offer an additional layer of protection, but a recent analysis undertaken by NMFS shows that compliance with voluntary speed reductions is woefully low. [Footnote 180: National Marine Fisheries Service, “North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment,” *supra*.] 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.

In addition, data are readily available (e.g., on the Mid-Atlantic Data Portal [Footnote 181: See <https://portal.midatlanticocean.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.

Finally, BOEM should consider the level and potential impacts of vessel-related noise during construction, particularly noise emitted by dynamic positioning systems. Reported sources levels of noise from dynamical positioning system (DPS) vary among 177, 162–180, and 121–197 dB re 1 μ Pa (SPL) at 1 meter. [Footnote 182: 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 183: 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 184: 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 offshore wind energy development in the New York Bight, both for individual projects as well as cumulatively for the existing and reasonably foreseeable projects (a similar analysis should be undertaken for lease areas south of New England).

Comment Number: BOEM-2021-0038-DRAFT-0057-47

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM Should Analyze Large-scale Habitat Displacement for the North Atlantic Right Whale

We recommend that BOEM take a precautionary approach and acknowledge that it is not possible to assess all of the potential hazards of physical structures in water column at the current time and commit to an explicit monitoring plan that will allow for future assessment (i.e., pre-, during-, and post-construction monitoring). The report, “A framework for studying the effects of offshore wind development on marine mammals and turtles,” [Footnote 185: 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. 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 establish and fund a robust, long-term scientific plan to monitor for effects of offshore wind development on marine mammals before the first large-scale commercial projects are constructed. Without this in place, we risk losing the ability to detect and understand potential impacts and set an under-protective precedent for future offshore wind development.

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 analysis proposed below is also relevant for other species of large whale found within the New York Bight. 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 186: 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_Wing_Goodale_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 187: 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 resulting from wind development itself 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.

Comment Number: BOEM-2021-0038-DRAFT-0057-49

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:**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 198: 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 NMFS to revise its guidelines. [Footnote 199: 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). Blackwell, S. B., Nations, C. S.,

McDonald, T. L., Thode, A. M., Mathias, D., Kim, K. H., . . . Macrander, A. M. (2015). Effects of Airgun Sounds on Bowhead Whale Calling Rates: Evidence for Two Behavioral Thresholds. PLOS ONE, 10(6). doi: 10.1371/journal.pone.0125720] 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-2021-0038-TRANS-063021-0014-4

Organization: Sierra Club

Commenter: Shay O'Reilly

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We also always want to bring up the concerns about the right whale species which we know are critically endangered. There is a great heat map submitted in the documents of when right whales are spotted in the area and we would like to make sure that that informs that the construction plans for the project. Many developers have signed onto a right whale agreement negotiated by some of our partners within the environmental community, and it would be great to adhere to that and move that process forward so that we can ensure that as we are building out these absolutely required projects, they are done for respect for our endangered creatures that have already dealt with so much.

Comment Number: BOEM-2021-0038-TRANS-070821-0002-3

Organization: New York League of Conservation Voters

Commenter: Caroline Hahn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Equinor is undertaking numerous in depth scientific studies on ocean health, marine mammals, maritime safety and new technology. Importantly Equinor is working with well regarded science based partners such as the Wildlife Conservation Society and the Woods Hole Oceanographic Institute to insure the project has minimal impact on whale habitat migration.

A.3.15 Mitigation and Monitoring

Comment Number: BOEM-2021-0038-DRAFT-0020-7

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Funding must be provided by the developer to support community-led mitigation strategies if there is any identified risk of exposure to pollution correlated with project construction

Comment Number: BOEM-2021-0038-DRAFT-0024-14

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Much remains unknown regarding the realization of impacts of offshore wind energy development on avian species in the United States, and therefore we recommend that BOEM require and participate in pre- and post-construction monitoring, with standardized protocols and timely dissemination of results. As new information is learned it should be utilized in an adaptive management approach that allows for

modification of conditions and/or mitigation requirements for latter phases of this project, as well as for projects further behind in the project pipeline.

Comment Number: BOEM-2021-0038-DRAFT-0024-17

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Presumably, projects that do not require pile driving will not be required to adhere to permit conditions aimed at minimizing and mitigating pile driving noise, such as seasonal or diel construction windows 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 pending eight new New York Bight lease areas where geophysical and geotechnical conditions are similar to those found in Equinor's Empire Wind lease area.

Comment Number: BOEM-2021-0038-DRAFT-0024-19

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Nature-Based Design as a Mitigation and Habitat Enhancement Opportunity

In reference to any potential project impacts to fish and invertebrates, or to existing complex fish habitat, we encourage BOEM to consider the application of Nature-Based Design of foundation scour protection and cable mattresses as a means of mitigating impacts through intentional habitat enhancement at or adjacent to the potentially impacted sites. We direct BOEM and Equinor to a soon to-be-released report and vendor catalog that The Conservancy is developing with INSPIRE Environmental featuring a description, rationale, and list of U.S. vendors that can provide resources for incorporating Nature-Based Design into scour protection and cable mattresses. This approach intentionally creates habitat for particular assemblages of fish and invertebrates by incorporating their habitat preferences into upfront plans for scour protection design and scour protection materials.

Comment Number: BOEM-2021-0038-DRAFT-0024-23

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

New York State, Nassau County, and federal agencies are all working together now to address nutrient loading to the western bays through large scale sewage treatment plant upgrades, The Bay Park Conveyance Project, and Long Beach Conversion Project. One of the goals of these projects is to increase the integrity and resilience of the salt marshes in the western bays which have been impacted by decades of ambient water nutrient enrichment and other historic construction activities such but not limited to mosquito ditching. Upon receiving additional local input, should the plans for the preferred cable landing for Empire Wind 2 be modified from the current preferred route through Island Park to instead occur adjacent to or through any of Nassau County's saltmarshes, we encourage BOEM and the developer to consult with experts familiar with modern saltmarsh mitigation techniques and consider disturbance mitigation options that would be complimentary to the ongoing nutrient abatement work, and which have the potential to leave the forementioned saltmarsh islands in better structural and ecological condition at the end of the project than they currently are.

Comment Number: BOEM-2021-0038-DRAFT-0024-24

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Project Framing in the Context of Climate Change Impacts and Decarbonization Goals Development of the Biden Administration's offshore wind energy goal is an essential part of achieving the east-coast state's collective regional greenhouse gas reduction goals, and an important step towards reducing the rate and severity of climate change. While the steps needed to implement these goals warrant expediency, it is also our legal and moral responsibility to carefully take steps to avoid, minimize, and where necessary, mitigate impacts that this and other offshore wind energy projects may have on marine and avian life.

Comment Number: BOEM-2021-0038-DRAFT-0024-5

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should require applicants to provide detailed plans and commitment to pre- and post-construction monitoring of vulnerable marine and avian life. Such plans should include consideration of the merits and efficacy of establishing an applicant sourced mitigation fund as a measure to provide appropriate compensation for potential adverse environment impacts.

Comment Number: BOEM-2021-0038-DRAFT-0029-13

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

4. Environmental Monitoring

[***Bold Italics:*** CCE urges that in addition to the thorough monitoring of birds, fisheries, and marine mammals that is anticipated to be included in the EIS, that BOEM also ensures that this environmental monitoring is made public and provided to the community and stakeholder meetings and on websites.]

CCE requests wildlife monitoring data be available to the public and that BOEM holds public meetings during both the 3 year period before construction and the 3 year period after construction to update residents and stakeholders on the ongoing efforts to mitigate wildlife impacts. Any environmental monitoring performed for and during this process will provide important data for stakeholder groups dedicated to the protection of marine and avian species. It will also provide a transparent monitoring process.

Comment Number: BOEM-2021-0038-DRAFT-0030-27

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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-2021-0038-DRAFT-0030-28

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

The EIS must clearly identify what 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 levels (e.g. negligible, minor, moderate, major), and how mitigation would offset those levels of effect. An analysis of the effectiveness of any proposed mitigation should also be evaluated in the NEPA document. 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. The EIS should analyze temporary effects and anticipated recovery times for marine resources within the impacts analysis.

Comment Number: BOEM-2021-0038-DRAFT-0030-29

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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, including any loss of fisheries revenue resulting from the construction and operation of the project and conservative quotas set in response to reduced scientific survey access and associated increasing 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 negative 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-2021-0038-DRAFT-0030-36

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Project-specific Monitoring Programs and Regional Surveys

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-2021-0038-DRAFT-0030-43

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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.

Comment Number: BOEM-2021-0038-DRAFT-0030-45

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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. 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. Any surveys or monitoring that are carried out related to the project (e.g., gillnet or trap 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-2021-0038-DRAFT-0030-73

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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.

Comment Number: BOEM-2021-0038-DRAFT-0030-74

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Information from project-specific mitigation plans could be critical inputs to the development and implementation of any future regional survey mitigation program. Project-level impacts on scientific surveys should require project-level mitigation measures for each of the seven scientific surveys disrupted by Empire Wind. As project monitoring plans are further considered and developed, these approaches should be standardized, meet existing scientific survey protocols and develop new methods using independent-peer review processes, calibrate methods to and integrate them with federal regional scientific surveys, and implement annual data collections 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. 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-2021-0038-DRAFT-0031 -18

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

The NPS defers to USFWS, NOAA and its NMFS for their expert opinions regarding permitting under the Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.), Marine Mammal Protection Act of 1972 (16 U.S.C. § 1361 et seq.), Migratory Bird Treaty Act of 1918 (16 U.S.C. § 703 et seq.), and related laws and regulations. The NPS nonetheless has jurisdiction over those animals that occur within its boundaries, and to the degree possible protects those individuals and populations. As such, the parks have a strong interest in potential disruptions to those individuals and populations that frequent the parks, and recommends that the relevant agencies develop monitoring plans so that subsequent projects can benefit from scientific data in this emerging area of study.

Comment Number: BOEM-2021-0038-DRAFT-0039-21

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We appreciate the measures proposed in the COP to minimize adverse impacts from project activities to complex seafloor habitats and EFH species including, to the extent practicable:

-avoiding siting structures (WTGs, offshore substations, export and interarray cables) in areas of sensitive habitat

- limiting the use of use of anchors and jack-up features

- minimizing sediment resuspension and dispersal in areas of known historically contaminated sediments

- committing to sufficiently bury electrical cables (or use rock armor shielding where deep burial is not feasible), minimizing seabed habitat loss and reducing the effects of EMF

- Installation of scour protection

minimizing construction and operational lighting

- complying with regulations to develop waste management plans and personnel training to prevent spills of hazardous substances, and water pollution control

- using ramp-up or soft-start [Footnote 56: Discovery of Sound in the Sea (DOSITS): Moderate or eliminate the effects of human activities] (i.e. gradual increase of sound level) protocols during impact pile driving and/or vibratory pile driving to allow mobile species to vacate the area prior to the commencement of pile-driving activities. But this strategy will be effective only if the identity of the specific species in the EW area, their precise spatiotemporal presence, and their physiology and behavior are known.

While these measures are a starting point, they are not sufficient nor are they comprehensive. The EIS must include the following measures to avoid and mitigate adverse impacts to species and habitats affected by the EW activities:

- BOEM, in consultation with NY and NJ fishery managers and NMFS, must conduct comprehensive long-term science-based monitoring before, during, and after construction to document impacts to benthic habitat and EFH and recovery, compared to pre-construction survey baseline. The monitoring strategies should incorporate relevant stakeholder recommendations where practicable. [Footnote 57: South Fork Wind Farm and South Fork Export Cable Project DEIS,, G-7.] Monitoring reports must be made publicly available in real time. Adaptive management strategies must be included in the EIS to address and mitigate, in near real time, any adverse impacts identified.

- BOEM must require EW consultation and collaboration with NY and NJ fishery managers and NMFS to develop and implement appropriate measures to avoid, minimize, and mitigate potential adverse impacts to fish and benthic resources particularly during vulnerable times of spawning, larval settlement, and juvenile development.

- BOEM must invest in research in the short-term to better understand the potential cumulative effects of OSW- related acoustic and barometric disturbances on, and behavioral responses of fishes and aquatic invertebrates. This study should focus on a carefully selected representative group of species with the broadest “range of hearing capabilities and mechanisms of the fishes present in the OSW areas.” [Footnote 58: NYS-ETWG: Sound and Vibration Effects on Fishes and Aquatic Invertebrates Workgroup Report. NYSERDA]

- EW must commit to science-based fisheries monitoring studies to assess project impacts on economically and ecologically important fisheries resources, in collaboration with stakeholders, scientists, technical experts, and non-governmental conservation organizations to better understand the interactions between marine species and habitats and their interaction with OSW development. [Footnote 59: South Fork Wind Farm and South Fork Export Cable Project DEIS, G-3.]

Comment Number: BOEM-2021-0038-DRAFT-0039-25

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Collision of marine vehicles with wildlife is among the top three causes of mortality of all large marine fauna including large fish, sea turtles, as well as marine mammals. “All species of sea turtles are vulnerable to vessel strikes as they surface to breathe, bask near the surface, or forage in shallow areas or on prey near the sea surface. Adult sea turtles appear to be at increased risk during breeding and nesting season.” [Footnote 71: Marine life in distress: Understanding vessel strikes:

<https://www.fisheries.noaa.gov/insight/understanding-vessel-strikes>] The risk of collision with sea turtles and other marine life is greatest when vessels are traveling at speeds greater than ten knots [Footnote 72: Hazel, J., Lawler, I. R., Marsh, H., & Robson, S. (2007). Vessel speed increases collision risk for the green turtle *Chelonia mydas*. *Endangered Species Research*, 3, 105–113.] because “even if the operator sees the animal clearly, there may be no time for either of them to avoid a collision”. [Footnote 73:

Marine life in distress: Understanding vessel strikes: <https://www.fisheries.noaa.gov/insight/understanding-vessel-strikes>] While vessels are required to slow down to four knots if a sea turtle is sighted within 100 m of the vessel’s path, this is not a foolproof solution because detecting sea turtles from a distance is difficult even for trained observers unless the turtles surface close to the vessel, at which point it may be difficult to course-correct in time to avoid collision.

NOAA’s current spatiotemporal vessel speed rule was designed explicitly to protect the critically endangered right whales: “All vessels 65 feet (19.8 meters) or longer must travel at 10 knots or less in certain locations (called Seasonal Management Areas or SMAs) along the U.S. east coast at certain times of the year to reduce the threat of vessel collisions with endangered North Atlantic right whales.” [Footnote 74: NOAA: Marine Life in Distress - Understanding Vessel Strikes] The EW lease area is

within the designated NARW Mid-Atlantic SMA, [Footnote 75: NOAA: Endangered Species Conservation - Reducing Vessel Strikes to North Atlantic Right Whales] being part of the NARW Migratory Route and Calving Grounds, and thus subject to vessel speed restrictions. NOAA's NARW mitigation plan for this SMA requires vessels of all sizes to operate port to port at =10 knots from late fall through early spring between November 1 and April 30. But the habitat needs, behaviors, migratory routes, and migratory times of NARW do not coincide with those of the endangered sea turtles. As shown in Figure 1, most sea turtles are present in the EW area during the times when NARW are not.

[see original attachment for maps illustrating sea turtle patterns]

[Bold: Figure 1. Seasonal presence of marine fauna in EW area.]

Sightings of sea turtles (top panel) and NARW (bottom panel) during winter, spring, summer, and fall (L to R) in the EW area. [Footnote 76: BOEM. (2021). EW COP Scoping Posters on Sea Turtle Sightings and Marine Mammals Sightings]

As such, NOAA's seasonal vessel speed restrictions are entirely ineffective in protecting the already endangered sea turtles from vessel collisions in the EW area. As discussed in Section 5.5, this rule has proven to be ineffective even for NARW whose numbers continue to plummet from ship strikes and entanglements.

Comment Number: BOEM-2021-0038-DRAFT-0039-28

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To protect the endangered sea turtles as well as other impacted marine species, avoidance and mitigation measures must include vessel speed restriction and noise reduction in the EW area. BOEM must also support scientific research to fill in the substantial spatial and temporal gaps in knowledge of sea turtle ecology and behavior and the threats posed by OSW development activities. To protect these long-imperiled reptiles of very ancient lineage from potential adverse OSW impacts, the EIS must include the following measures to avoid and mitigate adverse impacts to species and habitats affected by the EW activities:

- restrict vessel speed to =10 knots for all vessels all year-round in the EW area regardless of whether vessels are transiting or on site. Slowing to 4 knots from June 1 through November 30 while transiting through areas of visible jellyfish aggregations or floating vegetation lines or mats will improve protection for sea turtles. [Footnote 83: South Fork Wind Farm and South Fork Export Cable Project DEIS, G-13] Slowing down to well below 10 knots improves the ability of vessels to maneuver and adjust speeds [Footnote 84: Kelley, D. E., Vlastic, J. P., & Brilliant, S. W. (2020). Assessing the lethality if ship strikes on whales using simple biophysical models. *Marine Mammal Science*, 37, 251-267.] to avoid collision with not only sea turtles but also other marine wildlife. This is the same concept that is applied to automobile speed limits on roads to allow for reaction time to avoid crashes and accidents.

- require a minimum of four NOAA-certified Protected Species Observers (PSOs) solely focused on monitoring for protected species to monitor all exclusion zones for sea turtles during impact pile-driving, High Resolution Geophysical (HRG) and Geotechnical surveys, and during vibratory driving. [Footnote 85: Verfuss, U. K., Gillespie, D. Gordon, J. Marques, T., Miller, B., Plunkett, R., Theriault, J., Tollit, D., Zitterbart, D. P., Hubert, P., & Thomas, L. (2017). Low visibility real-time monitoring techniques review. Report SMRUM-OGP2015-002 provided to IOGP.] To effectively monitor the full exclusion zone, multiple PSOs must be stationed at several vantage points to allow for continuous scanning of each section of the exclusion zone. Monitoring reports must be made publicly available in real time. Training vessel crew members to watch along with the PSOs is beneficial but they must not be substituted for

PSOs. Prior to the commencement of construction activities, PSOs must scan and monitor the area for the presence of sea turtles. If turtles are detected prior to or during construction activities, activities must be paused and recommence only after the observers confirm that the turtles have cleared the area. These strategies are similar to those employed to protect marine mammals (see Section 5.5).

- 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.

- invest in and support:

? satellite tagging and tracking, [Footnote 86: Dodge, K. L., et al. (2014); Dodge, K. L., Galuardi, B., & Lutcavage, M. E. (2015). Orientation behaviour of leatherback sea turtles within the North Atlantic subtropical gyre. *Proceedings of the Royal Society B*, 282, art. 20143129; Winton, M. V. et al. (2018). Estimating the distribution and relative density of satellite-tagged loggerhead sea turtles using geostatistical mixed effects models. *Marine Ecology Progress Series*, 586, 217-232.] and real-time monitoring studies to complement aerial survey data and provide a precise and accurate spatiotemporal estimates of sea turtle populations, their movements, dive patterns, surface times, and habitat use in the EW region. Most satellite tagging of sea turtles in the Northeast US, except for leatherback sea turtles, has been initiated in the Mid-Atlantic and does not capture New England habitat use or surface behaviors. These baseline data are essential in accurately estimating sea turtle takes in EW project activities and in developing avoidance, minimization, and mitigation strategies.

? acoustic telemetry arrays (which are already in use in wind energy areas to track highly migratory fish species) and take advantage of the opportunity for cost-effective data collection on sea turtles. 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. Limited satellite telemetry data available from rehabilitated and released Ridley, and green turtles [Footnote 87: Robinson, N. J., Deguzman, K., Bonacci-Sullivan, L., DiGiovanni Jr., R. A., & Pinou, T. (2020). 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*, 43, 133-143; New England Aquarium, unpublished data.] suggests that rehabilitated turtles are a good proxy for wild-caught turtles. Acoustic telemetry of rehabilitated turtles would be an effective means of gathering useful data given the high cost and limited success of in-water tagging of the turtles.

? research to cover the fundamental gaps in our knowledge of the sensory (hearing and navigation) ecology of sea turtles. [Footnote 88: South Fork Wind Farm and South Fork Export Cable Project DEIS] Current BOEM standard for operating conditions of activities such as pile driving is based on a 180 dB (RMS) re 1 uPa exclusion zone, [Footnote 89: 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] which is the original generic acoustic threshold for assessing permanent threshold shift onset for cetaceans [Footnote 90: 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.] and not sea turtles. Research is needed to determine the temporary and permanent acoustic threshold shifts so that accurate limits for cumulative anthropogenic sound sources can be identified. Experiments are also needed to: a. spatially separate acoustic pressure and intensity to determine which of these sound component sea turtles detect and whether hearing sensitivity changes under pressure, [Footnote 91: Piniak, W. E. D. (2012). Acoustic ecology of sea turtles: Implications for conservation. PhD dissertation, Duke University.] and b. conduct underwater audiograms of sea turtle species of all age classes since hearing sensitivity is known to change with age. [Footnote 92: Popper, A. N. et al. (2014). Sound exposure guidelines for fishes and sea turtles. A technical report prepared by ANSI- Accredited Standards Committee S3/SC1 and registered with ANSI. ASA S3/SC1.4 TR-2014.]

- USFWS and NMFS have joint federal jurisdiction of sea turtles, with the former having lead responsibility in protecting their nesting beaches and the latter for their marine environment. [Footnote 93: US Fish and Wildlife Service: General Sea Turtle Information] The preparation of the EIS must include consultation with both agencies to develop a comprehensive mitigation plan that addresses cumulative impacts to sea turtles, including entanglements with ghost fishing gear. This last threat could be ameliorated by requiring “the endowment of fishing equipment with RFID micro-chips” as is being done by Adriatic countries to protect marine wildlife. [Footnote 94: ADRINET: Adriatic Network for Marine Ecosystem. <https://adrinet.italy-albania-montenegro.eu/>]

Comment Number: BOEM-2021-0038-DRAFT-0039-3

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To avoid, minimize, and mitigate the adverse impacts to wildlife, the Environmental Impact Statement, must:

- establish baseline data, using best available science, on current ecological conditions, accurately identifying all resident and migratory species, and precisely determining their population sizes within the offshore, coastal, and onshore ecosystems of the EW projects area
 - identify all potential species-specific and ecosystem-wide impacts from the EW projects
 - conduct a cumulative impacts analysis that evaluates the adverse long-term and short-term impacts of EW projects along with the impacts from other offshore wind energy projects being planned off the Atlantic coast (which will be sited directly within the migratory corridor of mammals, reptiles, and birds and could result in large-scale habitat fragmentation/displacement of these species), from climate change-induced physical oceanographic processes (e.g. changes in acidity, salinity, oxygen content, and thermal expansion that could result in shifts in prey distribution, and of migration routes and times), and from non-OSW activities along Atlantic coast and in the maritime region
 - in the cumulative impacts analysis, account for gaps in currently available scientific data on species’ population densities, species’ physiology, behavior, and habitat uses, interactions of species assemblages, and the functioning of complex marine and coastal ecosystems, and lack of adequate avoidance/minimization/mitigation/monitoring technologies to adopt a precautionary approach
 - evaluate a broad range of feasible alternatives to every impact producing component of EW COP (including infrastructure design technologies) and choose the least impactful ones
 - develop robust science-based avoidance, minimization, and mitigation measures employing emerging and established technologies, in continued early consultations with scientists, technology experts, federal agencies (NMFS, FWS, DOD, and DOE), tribal leaders, and all stakeholders to protect the natural and cultural resources in the EW area
 - develop a plan to implement and report on the efficacy of the avoidance/minimization/mitigation measures which must include:
 - ? both species-specific and holistic ecosystem-wide approaches that factor in spatiotemporal presence in the project area of various resident and migrating fauna
 - ? adaptive management strategies to reduce adverse impacts to all species, with particular emphasis on those already at risk of extinction
 - ? use of deterrent technologies to reduce collision risks to bats and birds
-

? restriction of vessel speeds of all sizes to less than 10 knots all the time to avoid collisions with marine megafauna

? deployment of a combination of noise abatement technologies, seasonal and diel restrictions of construction activities to minimize impacts, curtailment of site assessment and characterization activities during times of highest risk

? strategies to minimize potential entanglement of marine mammals and other megafauna on export cables, weather buoys, and ghost fishing gear

? visual and acoustic clearance and exclusion zones and monitoring methods

- note that nothing but the most stringent protective measures will be adequate to prevent the critically endangered North Atlantic right whale from certain extinction. Such measures will also protect the endangered sea turtles and other listed species.

- develop and implement a continued monitoring program to ensure that there is no significant deterioration of the environmental conditions or the existing natural resources from construction through the decommissioning phases

Comment Number: BOEM-2021-0038-DRAFT-0039-38

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NYSERDA's Birds and Bats Study [Footnote 160: Ecology and Environment Engineering, P.C. (2017). New York State Offshore Wind Master Plan Birds and Bats Study: Final Report. NYSERDA Report 17-25d. NYSERDA Report 17-25d.] describes several mitigation measures which could be used singly or combined and used in tandem to effectively avoid or minimize potential OSW impacts to the only flying mammals remaining on the planet. The following recommendations must be included in the EIS to avoid, minimize, and mitigation adverse impacts to bats at all steps of EW1 & EW2 projects including pre-, during, and post-construction operations, maintenance, and decommissioning phases:

- employ real-time detection, supplementary field surveys, continued monitoring using best available scientific methods such as Motus Wildlife Tracking System [Footnote 161: Bird Studies Canada. 2018. Motus Wildlife Tracking System. <https://motus.org/>] to collect pre- construction baseline data on the presence and activity levels of specific bat species in the EW lease area, to fill in data gaps, and to assess impacts to bats during EW construction, operations, maintenance, and decommissioning phases. Monitoring reports must be made publicly available in real time.

- evaluate bat deterrent technologies being developed for land-based turbines for deployment or modified for use in the offshore environment to minimize bat impacts:

- turbine coatings to counteract any attraction to smooth surfaces which might be perceived as water [Footnote 162: Victoria J. Bennett, V. J. & Hale, A. M. (2017?). Texturizing Wind Turbine Towers to Reduce Bat Mortality. DE-EE0007033,]

- ultraviolet lighting which many bat species can see [Footnote 163: NREL Wind Research. Technology Development and Innovation Research Projects.]

- ultrasonic noise emitters to effectively "jam" bats' radars and make WTGs unappealing to bats [Footnote 164: <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*, 24, 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.](https://doi.org/10.1371/journal.pone.0065794)]

- acoustic monitoring at the height of turbine nacelles [Footnote 165: Peterson et al. 2016; Hatch, S. K., Connelly, E. E., Divoll, T. J., Stenhouse, I. J., & Williams, K. A. (2013). Offshore Observations of Eastern Red Bats (*Lasiurus borealis*) in the Mid-Atlantic United States Using Multiple Survey Methods. PLoS ONE, 8(12).]

- targeted tagging

- thermal imaging technology to detect collisions

- explore targeted or smart operational curtailment (e.g. via feathering of turbine blades, which at high risk periods, has been shown to reduce bat fatalities by >90% at land-based WTGs [Footnote 166: Arnett, E. B., Huso, M. M., Schirmacher, M. R., & Hayes, J. P. (2011). Altering turbine speed reduces bat mortality at wind- energy facilities. *Frontiers in Ecology and the Environment*, 9(4), 209–214. <https://doi.org/10.1890/100103>] [Footnote 167: Borssele Wind Farm in the Netherlands is the first proposed offshore wind farm in Europe with a bat mitigation requirement for migratory bats. One proposed mitigation measure is targeted operational curtailment.]) to minimize bat collisions with offshore WTGs.

- evaluate seasonal increase of turbine cut-in speed (shown to reduce overall bat fatalities by 36% including those of eastern red bats but not of hoary or silver-haired bats [Footnote 168: Good, R. E, Merrill, A., Simon, S., Murray, K., & Bay, K. (2012). Bat Monitoring Studies at the Fowler Ridge Wind Farm, Benton County, Indiana. Final Report: April 1 – October 31, 2011. Prepared for Fowler Ridge Wind Farm, Fowler, Indiana. https://tethys.pnnl.gov/sites/default/files/publications/Good%20et%20al.%202012_Fowler%20Report.pdf] at land- based WTGs during warm, slow wind speed nights during seasonal migration when bat activity is highest [Footnote 169: Peterson et al. (2016).] to reduce fatal collisions [Footnote 170: Arnett, E. B., Johnson, G. D., Erickson, W. P., and Hein, C. D. (2013). A Synthesis of Operational Mitigation Studies to Reduce Bat Fatalities at Wind Energy Facilities in North America. A report submitted to the National Renewable Energy Laboratory. Bat Conservation International. Austin, Texas, 2013; Arnett, E. B., Huso, M. M., Schirmacher, M. R., & Hayes, J. P. (2010). Altering turbine speed reduces bat mortality at wind-energy facilities. *Frontiers in Ecology and the Environment*, 9(4), 209–214; Tidhar, D., Sonnenberg, M., & Young, D. (2012). Post-construction Carcass Monitoring Study for the Beech Ridge Wind Farm Greenbrier County, West Virginia. FINAL REPORT. Prepared by Western EcoSystems Technology, Inc.; Ostridge, C. & Framer, C. (2018). Understanding the costs of bat curtailment. Presentation at AWEA Siting Conference. 20 Mar. 2018.] as shown in the case of the *Nathusius pipistrelle* (*Pipistrellus nathusii*) during its summer/autumn migration along North Sea. [Footnote 171: South Fork Wind Farm and South Fork Export Cable Project Draft Environmental Impact Statement, Table H-36, 86 Fed. Reg. 1520 (Posted January 4, 2021).] Bat activity levels offshore could be used as a proxy for their risk from OSW. [Footnote 172: NYSERDA - NYS-ETWG. (2021, July). State of the Science Workshop 2020 – Bats Workgroup Report]

- consult with the USFWS on EW project impacts to listed/potentially listed bat species in developing and implementing protocols to avoid, minimize, and mitigate such impacts.

- support and invest in scientific and technological research to:

- develop methods and technologies for monitoring, risk assessment, direct detection of collisions specifically in the offshore environment [Footnote 173: NYSERDA - NYS-ETWG. (2021, July). State of the Science Workshop 2020 – Bats Workgroup Report] so that OSW-related bat mortalities could be accurately quantified since traditional fatality assessment (i.e. relying on carcasses around WTGs) is not feasible at offshore sites.

- continually evaluate mitigation strategies being developed for land-based wind energy projects for their potential application to OSWs. Bat mortality has been shown to increase with the tower height of land-based WTGs, [Footnote 174: Barclay, R. M. R., Baerwald, E. F., & Gruver, J. C. (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, J., Bach, L., Dubourg-Savage, M-J., Green, M., Rodrigues, L., & Hedenström, A. (2010). Bat Mortality at Wind Turbines in Northwestern Europe. *Acta Chiropterologica*, 12(2), 261–74. <https://doi.org/10.3161/150811010X537846>] suggesting that fewer, larger turbines deployed in OSWs may be detrimental to bats.

- improve acoustic monitoring to distinguish between calls of different species. [Footnote 175: Peterson et al. (2016).]

Comment Number: BOEM-2021-0038-DRAFT-0039-45

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The EIS must incorporate the use of all emerging and established monitoring technologies (e.g. unmanned acoustic gliders [Footnote 212: CBC News. (Aug. 30, 2020). Underwater glider helps save North Atlantic Right Whales from Ship Strikes], Robots4Whales [Footnote 213: Woods Hole Oceanographic Institution - Robots4Whales. <http://dcs.whoi.edu/>]) that allow near real-time detection of protected species and share the data with experts (e.g. “Mysticetus” [Footnote 214: <https://www.mysticetus.com/>]) to inform adaptive management and near real-time mitigation action.

Comment Number: BOEM-2021-0038-DRAFT-0039-50

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Vessel speed restrictions

- focus on the actual risk to the animals and not on “relative risk” when analyzing impacts to marine mammals from vessel strikes

- require EW and all OSW developers as part of the permitting process to reduce speed of all project-associated vessels of all sizes to =10 knots at all times except in those circumstances where the best available scientific information indicates that NARW and other marine mammals do not use the area. Vessel stationed PSOs could provide additional benefit in reliably detecting whales but only if the vessel is traveling at slow speeds (i.e. <10 knots) and only during daylight hours on clear days. A whale must be detected with adequate time for the vessel to undertake evasive action but in doing so it may inadvertently strike yet another undetected whale.

Beyond the mandatory vessel speed restrictions within Seasonal Management Areas (SMAs), there are currently no federal requirements to reduce the speed of OSW vessels to =10 knots. Voluntary 10 knot speed reduction zones (i.e. NOAA Dynamic Management Areas and NARW “Slow Zones”) HAVE NOT worked. [Footnote 235: NMFS. (2020, June). North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment.] Therefore, BOEM cannot rely on NFMS guidance to develop effective mitigation measures and in defining exclusion zones.

- require training of all personnel working offshore on observing and identifying NARW and other large marine mammals.

- require vessels to maintain a separation distances of 500 meters (m) for NARW, maintain a vigilant watch for NARW and other large marine mammals, and slow down or maneuver their vessels as appropriate to avoid potential collision with any large marine wildlife
- require all service operating vessels to carry automated thermal detection systems.

Comment Number: BOEM-2021-0038-DRAFT-0039-52

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Monitoring requirements

- partner with NMFS, other relevant agencies, and science and technology experts to develop a robust and effective a long-term scientific plan: a. to understand baseline environmental conditions prior to utility-scale OSW development off any US coast, b. for continued monitoring of environmental conditions in project area, c. for continued real-time monitoring of NARW and other marine mammals, d. to formulate avoidance/mitigation strategies based on scientific recommendations. [Footnote 240: Kraus et al. (2019). A Framework for Studying the Effects of Offshore Wind Development on Marine Mammals and Turtles] These strategies are essential to adaptive management of NARW and other protected species while affording operational flexibility to OSW developers. The EW projects could set a precedent for the most protective mitigation measures to be used for future OSW development.
- use scientifically valid real-time monitoring system and mitigation protocol for NARW and other large marine mammals to dynamically manage the timing of pile driving and other construction activities to ensure those activities are undertaken during times of lowest risk

Comment Number: BOEM-2021-0038-DRAFT-0039-53

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Visual and acoustic clearance and exclusion zones

- set a visual clearance zone and an exclusion zone extending at least 5,000 m in all directions from the location of the driven pile.
- require monitoring of the visual clearance and exclusion zone by vessel-based PSOs stationed at the pile driving site and on additional vessels, as appropriate, during pre- clearance monitoring period and during pile driving activity
- require the presence of at least 4 vessel-based NOAA-certified 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. Consider deployment of additional observers and monitoring technologies (e.g. infrared, drones, hydrophones) to ensure comprehensive monitoring of clearance zones.
- set an acoustic clearance zone extending at least 5,000 m in all directions from the driven pile; set an acoustic exclusion zone extending at least 2,000 m in all directions from the driven pile.
- require monitoring of acoustic clearance and exclusion zones using near real-time passive acoustic monitoring (PAM), assuming a detection range of at least 10,000 m, 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.

- visual and acoustic monitoring must begin at least 60 minutes prior to the commencement or re-initiation of pile driving and must be conducted throughout the duration of pile driving activity. Visual observation of the minimum 5,000 m visual clearance zone must continue until 30 minutes after pile driving.

Comment Number: BOEM-2021-0038-DRAFT-0039-55

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Reporting

- require EW to report all visual observations and acoustic detections of NARW to NMFS or the Coast Guard as soon as possible and no later than the end of the PSO shift.

- require use of near real-time autonomous buoy systems for automatic report of NARW detections on preset cycles

- require EW to immediately report the sighting of any entangled or dead NARW to NMFS, Marine Animal Response Team (1-800-900-3622) or the USCG via phone, app, or 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.

Comment Number: BOEM-2021-0038-DRAFT-0039-56

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Invest in scientific research and development of monitoring technologies to inform proactive adaptive management of impacted species of all taxa and their habitats.

Comment Number: BOEM-2021-0038-DRAFT-0041-10

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Vessel traffic plan, restrictions, and transparency

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 service vessels on marine wildlife. These alternatives should include requirements for all vessels associated with the project, regardless of function, ownership or operator including:

Comment Number: BOEM-2021-0038-DRAFT-0041-11

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Observers

Vessels should be required to carry and use protected species observers at all times when underway. Additionally, because visual sighting of whales, including North Atlantic right whales 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 when under way. Recent research has suggested that a complementary approach combining human and technological tools is most effective in capturing the most detections.[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 this in the range of wildlife observing alternatives.

Comment Number: BOEM-2021-0038-DRAFT-0041-12

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Speed

Research suggests that reducing vessel speed will reduce risk of vessel collision mortality up to 86 percent for large whales like the North Atlantic right whale. [Footnote 8: Conn and Silber. 2013. Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales. Ecosphere (4)4. Ail, 2013. 1-16.] Due to the risk of ship strikes to North Atlantic right whales 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 during seasonal migration periods. The EIS should explore a range of alternatives for these identified migration periods in the project area informed by the best available science, sightings data and recent surveys.

If and when a North Atlantic right whale is sighted, regardless of season, speeds should be reduced for all project vessels for at least 48 hours. Additionally, if a large whale is sighted and cannot be identified, it should be assumed to be a NARW and speeds reduced for at least 48 hours. If and when a Dynamic Management Area is created by NMFS, all vessels associated with offshore wind must comply, regardless of vessel size.

Separation Distance

Consistent with NOAA regulations under the Endangered Species Act for all vessels, aircraft, the EIS should include requirements for all vessels must maintain a separation distance of at least 500m from North Atlantic right whales at all times.

Comment Number: BOEM-2021-0038-DRAFT-0041-13

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Vessel Transparency

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 an Automatic Identification System(AIS) devices 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-2021-0038-DRAFT-0041-14

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Applicability and Liability

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, ownership, function, contract 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-2021-0038-DRAFT-0041-15

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Monitoring

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.

Types of monitoring

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 marine wildlife presence and abundance.

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-2021-0038-DRAFT-0041-16

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Transparency and Reporting

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 North Atlantic right whales 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-2021-0038-DRAFT-0041-2

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Because the immediate proposals for offshore wind development are along the Atlantic seaboard in the areas that the critically endangered North Atlantic right whale (NARW) may frequent, offshore wind needs to consider, avoid, and mitigate effects to protected species, particularly the critically endangered North Atlantic right whale (NARW) to ensure that wind development will not come at the expense of the species. NARWs spend the majority of the year in the waters of New England and Eastern Canada with mothers migrating south to have calves in the U.S. SE region. Wind development in persistent aggregation habitats and calving grounds pose particular issues with wind development but those where NARWs migrate are likely more appropriate because of the reduced frequency, intensity and duration of interactions with these areas. This project is not sited in a NARW aggregation or calving area and is therefore a better choice than other locations frequented more often and at higher densities by NARWs. Still, strong mitigation and monitoring measures are needed to protect this critically endangered species as offshore wind is developed along the eastern seaboard.

Comment Number: BOEM-2021-0038-DRAFT-0041-26

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Acoustic monitoring

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-2021-0038-DRAFT-0041-27

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Visual monitoring

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.

Each vessel should have a minimum of 4 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-2021-0038-DRAFT-0041-28

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Timing and Prohibitions on Pile Driving

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

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 and when 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-2021-0038-DRAFT-0041-29

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Shutdown Requirements

Despite the best information informing seasonal restriction on construction, it is likely interactions with North Atlantic right whales 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 North Atlantic right whale 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.
- Condition for resumption of pile driving after the lead Protected Species Observer confirms that no North Atlantic right whale or other protected species have been detected within the acoustical and visual clearance zones.

Comment Number: BOEM-2021-0038-DRAFT-0041-30

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Noise Reduction

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.

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.

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-2021-0038-DRAFT-0041-5

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 these statutes. Oceana also suggests that BOEM require new biological and ecological surveys of all proposed lease areas where the data is over 5 years old due to changing ocean conditions and presence of ocean wildlife.

Comment Number: BOEM-2021-0038-DRAFT-0043-3

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Given the relative novelty of offshore wind installations along the northeast coast of the United States, there is likely much we don't know about the potential long-term impacts of these projects. Accordingly, a sustained monitoring and research effort that informs necessary course-corrections to the operation of the project and environmental mitigation efforts is essential. We also support the need for stakeholder engagement and input throughout each stage of the project.

Any and all mitigation plans developed must be transparent and subject to independent review. Any proposed changes to established mitigation plans should be made publicly available and subject to stakeholder input prior to adoption. Likewise, all research and results of ongoing monitoring efforts should be published to ensure adequate transparency and to inform the development and operation of other offshore wind installations.

Comment Number: BOEM-2021-0038-DRAFT-0043-4

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The establishment of an ecological mitigation fund to guarantee the ability to successfully mitigate environmental harm and economic impact to commercial fisheries.

Comment Number: BOEM-2021-0038-DRAFT-0043-6

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- A commitment to habitat restoration, and a requirement for funding such restoration through an environmental mitigation and restoration fund, if needed to return the area to pre-built ecological function.

Comment Number: BOEM-2021-0038-DRAFT-0044-6

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

For all alternatives, the EIS should also be clear on which mitigation measures will be required as opposed to discretionary, and if the same mitigation measures will be applied to both phases of the project. For example, Volume 2e does not include a statement on avoiding, minimizing, or mitigating impacts for all gear types that occur in the project area; does that assume these types of measures apply to only a subset of gear types? Only required mitigation measures should influence the impacts conclusions in the EIS.

Comment Number: BOEM-2021-0038-DRAFT-0046-15

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As explained above, we appreciate that Equinor worked with squid fishermen on the Empire Wind 1 project to mitigate potential impacts on Cholera Bank. However, FSF's concerns over impacts of the Empire Wind 2 project on vital scallop grounds continue to go unaddressed in the recent COP.

Moreover, to-date there has been little to no discussion over how mitigation will be handled in an integrated way. For instance, the portion of the COP that is supposed to contain a fisheries mitigation plan (Appendix V), contains nothing of the sort. Rather, it merely provides a series of cross-references to outdated and generalized mitigation plans, none of which provide for any form of financial compensation or proposed alternative locations or turbine arrangements. Simply put, the analyses in these references do not provide a holistic picture of what should be done from a mitigation perspective.

Conversely, the Crown Estate developed a comprehensive mitigation plan to accommodate potential impacts to fishermen from offshore wind installations—at a time when “reasonably foreseeable impacts” were more difficult to ascertain. [Footnote 8: Available at <https://tethys.pnnl.gov/sites/default/files/publications/Blyth-Skyrme-2010.pdf> (last accessed July 26, 2021). Also see Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds (August 2015), available at <https://www.thecrownestate.co.uk/media/1776/floww-best-practice-guidance-disruption-settlements-and-community-funds.pdf> (last accessed July 26, 2021).] Part of that mitigation plan includes financial compensation for loss of fishing. Likewise, the NYSERDA contracts for the Empire Wind 1 and 2 areas require consideration of fisheries impacts and the development of fisheries mitigation measures. Why was this larger package of fisheries mitigation considerations not included, or even mentioned, in the COP? Moreover, the scallop fishery is regional, as are other fisheries in the Empire wind project area. These fisheries are not confined to New York and New Jersey vessels. Accordingly, before approving the Empire Wind COP, BOEM needs to work with Equinor and fishermen to ensure a holistic mitigation plan is developed that contains specific details and provides adequate financial compensation for unavoidable impacts.

Comment Number: BOEM-2021-0038-DRAFT-0047-6

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Additionally, the effect of turbine and cable installation and operation and their potential to alter existing or create new habitats should be evaluated. BOEM should identify measures that minimize individual and population-level impacts to biological resources, such as seasonal construction windows (e.g., time-of-year and time-of-day) and operational restrictions (e.g., cut-in wind speeds).

Comment Number: BOEM-2021-0038-DRAFT-0047-61

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Seasonal Construction Windows:

- Consideration of time of year and time of day restrictions for protected species.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-62

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Short Term Construction Related Measures:

- Discussion of measures taken to avoid, minimize and mitigate environmental impacts from short term construction related activities, including but not limited to noise, traffic, etc.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-63

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Operational and Maintenance Measures:

- Discussion of measures taken to avoid, minimize and mitigate environmental impacts from operational and maintenance activities, including but not limited to noise, traffic, etc.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-64

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Discussion of measures taken to avoid, minimize and mitigate environmental impacts from site restoration and decommissioning activities, including but not limited to noise, traffic, etc.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-66

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Mariner notifications of shallow-buried and exposed cables.
- Expeditiously repair/rebury cable(s).
- Adaptive management if repeated cable exposures occur.

Submarine Cable System Burial Plan and Risk Assessment:

- Include draft assessment as a COP update prior to Final EIS and BOEM's decision.
 - Evaluate existing and emerging cable installation techniques to achieve target burial depth for the maximum possible distance.
 - Demonstrate that use of secondary cable protection measures has been minimized to the greatest extent possible.
 - Evaluate cutting/removing decommissioned NYC water lines to avoid unnecessary asset crossings, achieve target burial depth, minimize use of cable protection measures.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-68

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Coordination with Shipping Industry:

- Routine check-ins with the NY/NJ Harbor Safety, Navigation, and Operations Committee, Hudson River Safety Navigation and Operations Committee, and appropriate Subcommittees.
 - US Coast Guard Training and Exercises.
 - Identify opportunities to address liability to vessel operators in the case of accidental incidents (e.g., anchor strike, allision).
-

Comment Number: BOEM-2021-0038-DRAFT-0047-7

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Implementing an adaptive management plan and on-going citizen participation throughout construction, operation, and decommissioning, including a comprehensive mariner communication plan.

Comment Number: BOEM-2021-0038-DRAFT-0047-70

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Air and Climate Impacts:

- Mitigation measures to reduce or eliminate identified air and climate impacts.
-

Comment Number: BOEM-2021-0038-DRAFT-0047-77

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

BOEM should consider requiring an adaptive management plan, whereby if environmental impacts are substantially different than anticipated, operational modifications can be evaluated and executed. BOEM

should consider whether this should include stakeholder (non-fishing) or community liaison board or individual who would relay information between the Project developer and the affected public.

- A comprehensive mariner communication plan that is routinely re-visited and refined based upon feedback and evolving needs of the maritime and fishing industries as they adapt to economic drivers, regulatory environments, and climate change, among others.

Comment Number: BOEM-2021-0038-DRAFT-0050-10

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It is likely that a significant number of birds protected by federal laws will be killed in collisions with turbines at Empire Wind. Compensatory mitigation should be provided for this loss, and particularly for species of conservation concern and those impacted in greater numbers.

Quantifying compensatory mitigation for birds should initially be based in a conservative estimate of the number of birds that will be killed in collisions with turbines. Evaluating mitigation necessary to effectively compensate for these losses should use 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). Quantities and supporting analyses should be re-evaluated as collision monitoring data become available, and additional mitigation provided as necessary.

In our view, mitigation more effectively compensates for impacts when conducted on a project-, species- and population-specific basis. However, if a project-by-project approach proves difficult to implement, 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 developers, with funding levels based on the impacts of the operation of their facilities. We note that a recently-announced partnership [Footnote 6: <https://www.nfwf.org/media-center/press-releases/apex-clean-energy-and-national-fish-and-wildlife-foundation-partner-first-its-kind-conservation>] between the National Fish and Wildlife Foundation and Apex Clean Energy could serve as a model for such a fund.

Comment Number: BOEM-2021-0038-DRAFT-0050-6

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Monitoring measures being considered for other offshore wind energy facilities in the Atlantic include acoustic monitoring, deployment of nanotags and installation of Motus receivers on wind turbines, and avian behavior point count surveys at individual turbines. We support this, and recommend that these and additional technologies be used to gather post-construction impact monitoring data at the Empire Wind facility. This comes with the understanding that upgrades in technology such as the integrated WT Bird system may be substituted as part of an adaptive management strategy.

Comment Number: BOEM-2021-0038-DRAFT-0050-7

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Utilize the best available technology to monitor bird collisions once facilities are constructed; currently, this should include digital video, acoustic monitoring, and monitoring via Motus;

Comment Number: BOEM-2021-0038-DRAFT-0050-8

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Commit to upgrading collision monitoring technology, as available, as part of an adaptive management strategy; in particular, we urge that WT Bird and/or collision sensor technology be installed for testing if not yet verified, and/or deployed when verification is complete;

- Make all data publicly available, providing transparency and an opportunity for learning and informed discussion about minimizing impacts as this industry grows.

Comment Number: BOEM-2021-0038-DRAFT-0050-9

Organization: American Bird Conservancy

Commenter Type: Non-Governmental Organization

Other Sections: 5

Comment Excerpt Text:

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.] found that the abundance of Red-throated Loons decreased as far as 16km from the nearest facility. Displacement effects will be longer-term and become more important as more facilities are constructed. Displacement effects would emerge over the longer term, becoming more pronounced as more turbines are installed.

Monitoring must also be conducted to evaluate displacement impacts. This would need to occur over an area likely to encompass multiple lease areas, and over an appropriately long time frame. This requires a broad-scale approach more appropriate for a collaborative industry, federal, and state effort.

Comment Number: BOEM-2021-0038-DRAFT-0056-13

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Working to avoid and minimize impacts on the ocean and coastal environment is essential and must be a main goal of offshore wind energy development, as it is with any offshore or onshore activity. Therefore, the COP EIS must identify measurable, meaningful, and actionable effective mitigation measures for when impacts cannot be avoided or minimized.

For example, the COP also indicates that impacts to onshore and coastal ecosystems is likely. Specific mitigation of impacts to wetlands, seagrass beds, and other habitats should be specifically analyzed in the EIS. Particular attention should be paid to the seasonality of seagrass beds. Further, analysis of the impacts to seagrass beds should be analyzed beyond turbidity. The spatio-temporal variability in the distribution of vulnerable species should also be considered.

Empire Wind's COP states that they will be applying for authorizations under the Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Marine Mammal Protection Act, Rivers and Harbors Act, Clean Water Act, Coastal Zone Management Act, and more. COA will provide feedback on these permitting decisions to the relevant authority as they become available.

Comment Number: BOEM-2021-0038-DRAFT-0057-30

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

THE EMPIRE WIND DRAFT EIS SHOULD ACCOUNT FOR ECOSYSTEM UNCERTAINTY

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 nocturnal migrants 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 Empire 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-2021-0038-DRAFT-0057-32

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 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-2021-0038-DRAFT-0057-40

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Advancing Monitoring and Mitigation During Offshore Wind Energy Development

While the best available scientific information justifies the use of seasonal restrictions to temporally separate survey 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. 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 152: 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., 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).] 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.

The ability to reliably detect North Atlantic right whales and other species on a near real-time basis and adjust survey (and future 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 foraging areas (e.g., off southern New England), or potentially year-round in the Mid-Atlantic region 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., humpback whale and fin whale foraging aggregations that occur in the summer months in the New York Bight 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 153: Woods Hole Oceanographic Institution WHOI and WHOI/WCS, “Robots4Whales,” supra note 39.] and convey that information to decision makers (e.g., “Mysticetus” [Footnote 154: 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 155: 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. [Footnote 156: See, e.g., Johnson, H.D., Baumgartner, M.F., and Taggart, C.T., “Estimating North Atlantic right whale (*Eubalaena glacialis*) location uncertainty following visual or acoustic detection to inform dynamic management,” *Conservation Science and Practice*, vol. 2, art. e267 (2020).] 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.

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 the U.S. offshore wind energy at its start, 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 United States. To this end, BOEM must coordinate with NMFS to establish and 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-2021-0038-DRAFT-0059-7

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

AN IMPROVED LAYOUT ALONE IS NOT SUFFICIENT TO MEET MITIGATION REQUIREMENTS

Given the level of disruption OSW development will cause to the local environment and the existing industries that rely on it, comprehensive mitigation strategies are essential. Collaborative layout planning, while critical to reducing some impacts, cannot fully mitigate all avoidable conflicts. Full-scale mitigation must be required as part of this process. This would include environmental mitigation, particularly full decommissioning (not conceptual, as BOEM has referred to decommissioning in prior EISs) where the environment is restored to its original state at the end of the lease period including removal of all cables, gravity bases, turbine components, and protection methods.

Mitigation refers to siting and project design principles specifically adopted to reduce impacts to fishing. It is not satisfied through compliance with standard mandatory health and safety regulations, although these are important. Mitigation is also not synonymous with compensation. Financial reparations for fishing business losses are termed impact fees, not “mitigation.”

The following list includes some of the actions required to fulfill BOEM’s mandate of avoiding, minimizing, and mitigating environmental, economic, and social impacts. We reiterate our commitment to work directly with Equinor on these topics, if Equinor chooses to do so authentically, and others that may be identified, but remind BOEM that it is ultimately the agency’s duty to ensure these elements are included in any project design:

- Additional layout modifications in the Empire Wind 2 project area to preserve fishing access;
- Immediate strategies to address impacts to protected resources during the length of the lease so they are ready to be implemented immediately once impacts are detected;
- Direct and transparent collaboration with the fishing industry on shoreside considerations including port infrastructure, dock usage, and economic impacts or opportunities;
- Safe transit areas through the Empire Wind and any future NY Bight lease areas under consideration, analyzed and implemented using a cumulative effects approach;
- Adequate, independent processes for gear loss claims;
- Improved federal environmental review analysis and clear identification of scientific unknowns;
- Address radar interference from turbines to marine radar;
- Require deicing technology and practices;
- Perform “micrositing” of turbines and cables with fishermen who know the ecosystem;

- Prohibit turbines, foundations, and cables in sensitive habitat including spawning areas and important fishing grounds;
- Monitor fisheries impacts for the life of projects and utilize adaptive management;
- Resolve impacts to National Marine Fisheries Service (NMFS) fishery-independent surveys;
- Ensure that any economic benefits of offshore wind accrue to the U.S.—not at some undetermined point in the future, but now.

RODA has also called for the development of a uniform gear loss compensation program without any response or action from BOEM or the states. Equinor’s plan is similar to those of other Northeast region developers in that it requires fishermen who have experienced gear loss to submit an incident report to the developer, who unilaterally determines whether the claim has merit. 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 tasked with developing, arbitrating, and paying gear loss claims without any external, independent oversight or standardization.

Once impacts are avoided, minimized, and mitigated through project design, impact fees to compensate for residual damage to regional seafood production must be required as a condition of any future permit. RODA’s requests and positions regarding impact fees are well documented and our members still await any response on resolving this critical issue.

BOEM lacks a federally required or established framework for fisheries impact fee requirements to date. Developers’ state-by-state approaches to compensatory mitigation with varying analyses and structures, where fishermen from each state are treated differently, cannot satisfy a federal agency obligation of fair and equitable treatment. Fishermen and fisheries scientists must drive the development of such a framework, not states or developers.

Currently, the process for considering impact fees is nothing short of chaotic, with a handful of states requesting such fees directly from developers through divergent, universally ineffective processes. BOEM and developers have maintained complete silence to the fishing community on this critical topic. Moreover, states may have strong conflicts of interest to serve in a stewardship role to the fishing industry given their status as parties to procurement contracts with developers. Ideally, approaches to impact fees should be developed by an independent party that is not easily influenced by OSW advocates. Absent such a requirement, RODA encourages Equinor to work directly with the impacted communities to create a framework for impact fees and hereby reminds BOEM of its statutory oversight duties.

Comment Number: BOEM-2021-0038-DRAFT-0065-24

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Compensation for loss of fishing grounds and gear damage and loss because of interaction with the wind farm.

It seems to be incomprehensible that the wind farm operators can take fishing grounds, plus placing all types of structures in the ocean and then not take responsibility for their actions. There has been requests from the fishing industry for a compensation agreement with the developers all proposals have been rejected or gone with no response. The developers solutions were to complete their permitting process without addressing the fishing industry concerns. The industry has suggested to NYSIRDA to require the developers set up a fund to compensate the fishing industry for loss of fishing ground and gear loss or damage because of their wind farm. The fund would be a fee per MW per year for as long as the wind

farm is in place. Once all of the retired wind farm parts are removed, the developer will have no additional financial responsibility to the fishing industry.

Comment Number: BOEM-2021-0038-DRAFT-0065-25

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

One industry proposed compensation plan is as follows: Annual funds from the developer will be deposited to a third part escrow account and be overseen by a committee made up of two fisheries experts and an arbiter which will have complete control over the dispensing of the funds. The developers will have no say in the committee or the policies that the compensation fund develops. The developers only role will be to fund the compensation fund at a fixed rate. The two fishery committee member are selected by a cross section of the fishing associations and are part time workers and paid a small reasonable fee for their time. Their arbitrator will be a member of a professional arbitration association. The arbitrator will be selected by the association and will have no knowledge or interest in fisheries but will be the final decision maker. The two fishery members will review the claim and then advise the arbitrator as to whether the claim is reasonable and if the funding request is fair or should be some other amount. Once the decision is made to fund the claim, the arbitrator instructs the escrow agent to make the payment. Once the funds are depleted, the claim (s), if any are carries forward to the next year. Any extra funds remain in the escrow account are carries forward for later potential claims.

This fund will last from the start of construction of the wind farm until the farm is dismantled, and the cables and other materials are completely removed. The advantage to the wind farm operator is that they know how much it will cost every year and they have minimal responsibility. This is much like the payments to the local governments for allowing the export cable crossing their territory.

Comment Number: BOEM-2021-0038-DRAFT-0065-5

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While these leases will generate more income than originally planned, the developers are unwilling to funded compensation to the fishing industry or even any real funds to address the impacts on fisheries or the environment, which they will disrupt.

Comment Number: BOEM-2021-0038-TRANS-063021-0003-1

Commenter: Charles

Commenter Type: Individual

Comment Excerpt Text:

One is the community benefits, certainly the proposal is clear, as it anticipates transmission lines landing in the city of Long Beach and the town of Hempstead, on or under public park land and other public lands including streets. Municipalities as a condition of consenting to such siting of these cables should coordinate demands for community benefits.

Comment Number: BOEM-2021-0038-TRANS-063021-0004-4

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

So and also, the last request, is that we are requesting that BOEM, we urge you to have all of the monitoring, whether it's for birds, fisheries, marine mammals to be an open and transparent process. What I mean by that is the before monitoring, to be that open on a website somewhere so it can be reviewed not only by agencies but also by stakeholder groups and also that the data is available in public hearings, I am sorry, public meetings I meant to say, you know, during the three year period before construction and the three year period after construction.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-4

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

We also must rely on and trust the science. Fisheries research before during and after -- sorry, lost my place here, fisheries research before during and after wind turbine construction is essential for monitoring impacts through species of interest through recreational anglers. Study results should be publicly available and regularly communicated to our community.

Comment Number: BOEM-2021-0038-TRANS-071321-0001-3

Organization: National Audubon Society

Commenter: Shilo Felton

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We commend New York State for their successful stakeholder process inviting Audubon as a voice for bird conservation to inform responsible offshore wind development in the New York Bite and ask that BOEM support this for similar regional stakeholder processes to inform their monitoring and adaptive management plans. We urge BOEM to coordinate and financially support regional monitoring beginning as soon as possible to obtain adequate baseline information prior to construction. Baseline data should not only perform a risk assessment, it should be paired with post construction monitoring and be adequate to inform impact assessments. Required monitoring should include but is not limited to surveying the area surrounding the cable route and the project area at least a 20 kilometers beyond the project footprint as well as the project footprint itself and incorporate turbine collision detection technology. Monitoring efforts should address a broad range of aging species which may be impacted by offshore wind including marine birds with high collision and displacement vulnerability, nocturnal migrants and species listed under the Endangered Species Act and in New Jersey's and New York's wildlife action plans, all of which are protected by the Migratory Bird Treaty Act.

A.3.16 Navigation and Vessel Traffic

Comment Number: BOEM-2021-0038-DRAFT-0014-1

Commenter: Jennifer Dowling

Commenter Type: Individual

Comment Excerpt Text:

There has been relatively little local news coverage of the project and its impact on Jones Beach and Western Barrier Island of Nassau County. The shipping lane is directly in front of the shore and this project (according to the Coast Guard) will impede safe navigation.

Comment Number: BOEM-2021-0038-DRAFT-0015-9

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

The one (1) nautical mile navigation zone is insufficient clearance for vessel transit. The U.S. Coast Guard prefers a wider fairway, and I concur. Clearly, one mile of clearance, particularly in inclement weather, does not afford a sufficient margin of error. Why possibly would we want to foster conditions creating an “accident waiting to happen”, particularly in the area in question, nearest to shore, at the point of the pizza slice?

Comment Number: BOEM-2021-0038-DRAFT-0021-2

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

It has been clearly documented how dangerous offshore wind turbines are to navigate around in good and bad weather. This should be a National Security concern.

Comment Number: BOEM-2021-0038-DRAFT-0030-41

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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. Additionally, the EIS should consider effects of any surveys that may occur following potential COP approval that may affect listed species (e.g., gillnet or 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-2021-0038-DRAFT-0031 -16

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Due to U.S. Coast Guard regulations, the bases of the turbines will be lit and could become an attractant that alters current navigation patterns.

Comment Number: BOEM-2021-0038-DRAFT-0034-23

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Navigation: Scoping presentations for the Empire Wind NOI available on BOEM’s website and used in scoping meetings held in June/July 2021 continue to use misleading data- slide 54 of 68, shows for the “navigational safety” demonstration a chart of vessel AIS data from all vessel types from 2011 and claims based on this information that a “low number of vessels traverse the area”.

[See original document for OCS-A 0512: Navigational Safety]

Problem is- as we have been saying to BOEM for over 5 years now on this project- that [Bold/Italics: AIS was only required for commercial fishing vessels as of 2016, and only on commercial fishing vessels over 65 ft LOA, and only within 12 nm from shore.] No AIS data prior to 2016 is useful for commercial fishing vessel data. It is not useful for any of the commercial fishing vessels under 65 ft LOA. And these lease areas are not within 12 nm of shore. Therefore, this above data from 2011 does not include commercial fishing vessel activity [Bold/Italics: at all]. Therefore, it cannot be used in a navigational analysis. However, BOEM has continued to use this AIS data, over commercial fishing protests, in every presentation or discussion about navigation impacts of these areas. We have continually requested that all BOEM presentations, analysis, and discussion utilize VMS data for commercial fishing vessels. However, for some reason BOEM chooses to ignore these requests. Perhaps because VMS data shows a very different picture.

[See original document for radar map]

According to the picture above, taken from the Mid Atlantic Ocean Data Portal website, just one year of commercial squid fishing VMS overlaid with the Equinor lease area poses a very different scenario. This is why the R.I. Congressional delegation got involved. This is why the R.I. DEM got involved. This is why the Town of Narragansett and Narragansett Chamber of Commerce, where the port of Point Judith is located, joined a lawsuit with various squid fishing interests- including Seafreeze Shoreside- to oppose the lease and buildout of this area. [Footnote 8: Fisheries Survival Fund et al vs Zinke 2017.] This is why NMFS, after its comments regarding squid in particular, suggested “re-evaluating the lease area” and stated “We recommend you consider eliminating areas of the WEA that pose the greatest conflict with the fishing industry prior to issuing a lease”. [Footnote 9: National Marine Fisheries Service, “RE: New York Wind Energy Area Environmental Assessment (EA)/Essential Fish Habitat (EFH) Assessment”, July 11, 2016, attached.] BOEM did not take this recommendation. Despite the fact that prior to the issuance of the lease, it possessed the above data, although BOEM refused to use this data at meetings and deliberately used non-VMS data on all posterboards and “informational” material at NY Task Force and other BOEM meetings related to the NY WEA.

Comment Number: BOEM-2021-0038-DRAFT-0034-24

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

HF radar: Due to the fact that offshore wind farms create marine radar interference for many types of radar, the Department of Energy held a series of webinars in 2020 detailing the issues with this interaction with, among others, HF radar. BOEM was a part of these webinars, even making presentations, and so cannot claim ignorance or ignore the implications of these facts. On July 27, 2020, an entire webinar detailing the implications of issues raised in NOAA’s IOOS letter from July 14, 2014 was held. [Footnote 10: For presentation slides see: <https://www.energy.gov/sites/prod/files/2020/07/f77/offshore-wind-turbine-radar-interference-mitigation-webinar-7-27-2020.pdf>.] The presentation gave explanation of how the USCG uses surface current monitoring from HF radars to implement effective search and rescue, which is necessary for the safety of mariners, including commercial fishermen. Below are the self-explanatory slides of what the current coverage is for these radars and what the coverage will be should BOEM approve the Equinor and other projects.

[See original document for image of interference from multiple wind farms]

[See original document for image of total corresponding vector map]

As is obvious from these slides, if the Equinor COP is approved, there will be virtually no HF radar coverage for the entirety of the convergence of three sets of traffic separation schemes at the approach to

one of the world's busiest port areas. Considering the navigational hazards posed by wind turbines themselves, in addition to the marine radar interference and existing traffic congestion in this area, lack of effective search and rescue and therefore maritime safety becomes a major issue.

A June 2019 "High Frequency Radar Wind Turbine Interference Community Working Group Report" states the following:

"High Frequency (HF) radar is a critical component of our nation's efforts to observe and monitor the coastal ocean. These land-based, remote sensing systems are the only instruments capable of making both high spatial resolution and high temporal resolution observations of the movement of waters at the ocean's surface over the outer continental shelf. In the U.S., a distributed network of research scientists, in partnership with the U.S. Integrated Observing System (IOOS), have been operating HF radar systems for more than two decades. Data from the HF Radar Network is used by the U.S. Coast Guard and NOAA for search and rescue operations and spill response as well as by individual scientists on a daily basis.

However, the rapidly emerging offshore wind energy industry in the U.S. has the potential to degrade the performance of HF radar systems operating in the vicinity of wind turbines. A recently completed study (Trockel et al.2018) has documented the wind turbine interference (or "WTF") on HF radars and shown that the location and the magnitude of the interference can directly interfere with accurate measurements over broad areas of the radar's coverage. For small numbers of turbines, pathways to mitigate the interference exist. Yet, the offshore wind industry will soon outpace these simplified solutions as plans for large farms of turbines are moving towards installation. This near-future scenario greatly exceeds the scope of initial efforts and at present no operational solutions exist to mitigate the future interference."

[Footnote 11: See "High Frequency Radar Wind Turbine Interference Community Working Group Report" June 2019 at https://darchive.mblwhoilib.org/bitstream/handle/1912/25127/HFRadar_2019_WindTurbineInterference_WorkingGroupReport_Final2.pdf?sequence=1&isAllowed=y, p. 2]

Having no operational solutions is a problem for the safety of the lives of professional mariners, including commercial fishermen, whom BOEM expects to "coexist" with offshore wind. The High Frequency Radar Wind Turbine Interference Community Working Group Report gives a 3-6 year timeline for fully testing and documenting the efficacy of proposed mitigation approaches with validation datasets.

[Footnote 12: See slide 51 of 83 at <https://www.energy.gov/sites/prod/files/2020/07/f77/offshore-wind-turbine-radar-interference-mitigation-webinar-7-27-2020.pdf>.]

BOEM's approach in the Vineyard Wind ROD OSCLA Compliance Memo Attachment B - i.e. "to address concerns related to the potential for the Lessee's project to interfere with the radar sites identified as within LOS in the BOEM study the Lessee must coordinate with these radar operators to determine is the facility causes radar interference to the degree that radar performance is no longer within the specific radar systems' operational parameters, or mission objectives" and "In coordination with the radar operators, the Lessee must perform an analysis of radar impacts and provide the results to DOI within six months of commercial operation" [Footnote 12: See <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Proposed-VW1-OCSLA-Compliance-Memo-Attachment%20B.pdf>, p. 15.] is mind boggling, particularly since BOEM is no stranger to the problem.

Approving a COP knowing that safety issues are at stake and before solutions exist is simply unacceptable. It violates OSCLA. This is especially true for the Equinor lease area, where the lease is sited between two traffic separation schemes in an area of heavy vessel traffic and fishing activity. Until a solution is found, BOEM does not even know if there is a solution. Approving a COP with the "promise" or "intent" to find a solution after a project is constructed is not an option.

Comment Number: BOEM-2021-0038-DRAFT-0034-30
Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should also prohibit any and all COP approval in the entire region until HF radar interference can be fully mitigated. Vessels operating in and near some of the busiest shipping lanes in the country and the world cannot afford to risk loss of life due to interference with effective search and rescue due to a political push for renewable energy projects. To take any other course is irresponsible and puts fishing lives at risk. This must be included as an alternative, as it is the only alternative that provides for safety.

Comment Number: BOEM-2021-0038-DRAFT-0037-4

Organization: Offshore Power LLC

Commenter: William O’Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We also request BOEM include firm language in the Draft EIS clarifying that the entire impact analysis is based on an expectation of total access to the wind farm area after construction. Our ideal approach to this issue would be for BOEM to make post-construction access a permit condition for all offshore wind-related structures. It is our understanding that offshore wind structures fall under the existing US Coast Guard regulations regarding “aids to navigation.” This is established language that is well understood by both mariners and enforcement.

Comment Number: BOEM-2021-0038-DRAFT-0039-46

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The EIS must include a quantitative analysis of vessel strike risk posed by OSW vessels (i.e. total number of vessels, proportion of vessels associated with reasonably foreseeable OSW activities, locations of the primary route between ports and OSW project areas, and marine mammal occurrence and density) using all available data (e.g. on the Mid-Atlantic Data Portal [Footnote 215: <https://portal.midatlanticocean.org/>]).

Comment Number: BOEM-2021-0038-DRAFT-0040-5

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

We also request BOEM include firm language in the Draft EIS clarifying that the entire impact analysis is based on an expectation of total access to the wind farm area after construction. Our ideal approach to this issue would be for BOEM to make post-construction access a permit condition for all offshore wind-related structures. It is our understanding that offshore wind structures fall under the existing US Coast Guard regulations regarding “aids to navigation.” This is established language that is well understood by both mariners and enforcement.

Comment Number: BOEM-2021-0038-DRAFT-0047-56

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Navigation Impacts:

- Evaluation of impacts to radar.
- Evaluation of risk from vessel allisions, collisions and groundings.
- Assessment of impacts from potential displacement of vessel traffic and alteration of the movement of vessels in and around New York, including:
 - Commercial vessels using the navigation traffic lanes established by the International Maritime Organization and appearing on official nautical charts. [Italics: Note: analysis should incorporate US Coast Guard Port Access Route Studies and proposed rulemakings.]
 - Commercial vessels using established but not officially designated trade routes.
 - Commercial vessels using designated and undesignated anchorages.
 - Commercial and recreational fishing vessels, and general recreational vessels departing from or arriving at ports or marinas along the Hudson River, New York City, Long Island's south shore and Long Island Sound. [Italics: Note: the Northeast Recreational Boating Survey is a good source for recreational information, and data can be accessed on the Mid-Atlantic and Northeast Data Portals. DOS developed offshore recreational fishing areas that are available on the NYS Geographic Information Gateway: <http://opdgig.dos.ny.gov/geoportal/catalogsearch/resource/detailsnoheader.pag e?uuid={3B5083DA-2060-4F5D-8416-201A0A2B962B }>.]
- Analysis of risk to smaller vessels during construction and evaluation of how the USCG mandated construction safety zone mitigates this risk.
- Assessment of conflicts with concrete mattresses.
- Uncovering of buried cables over time or following storm events.

Comment Number: BOEM-2021-0038-DRAFT-0052-5

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Data from Vessel Monitoring Systems (VMS) and Automatic Identification Systems (AIS) indicate that significant marine vessel navigational activity occurs across the offshore wind lease areas. Empire Wind's COP describes a proposed turbine array that has turbine spacing at no less than 0.65 nautical miles (nm) between individual turbines, with no transit corridors for the safe passage of fishing and other marine vessels. As the lead authority on navigation safety and security, the U.S. Coast Guard will review the Navigation Safety Risk Assessment submitted with the COP and make recommendations for modifications as appropriate. The June 2021 Draft Port Access Route Study:

Northern New York Bight recommended that multiple shipping safety fairways be established in order to preserve the current and predicted future navigational practices. The EIS should depict these shipping safety fairways with recent VMS and AIS data in relation to the proposed project and should provide detailed information on navigational risks associated with the construction and operation of the project and measures proposed to mitigate these risks. Impacts to the vessels, including commercial fishing activity transiting the project area and any restrictions that would be required of these vessels should also be presented.

Comment Number: BOEM-2021-0038-DRAFT-0056-11

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In addition to the many potential impacts to wildlife and marine and coastal resources, Empire Wind's COP EIS should consider the top-down impacts of the increased vessel activity, increased onshore activity, shifts in recreational and commercial ocean uses, and the foundation, cabling, and interconnection infrastructure associated with the project. In sum, the Empire Wind COP EIS must consider changing traffic patterns, navigational safety, and port access conflicts. Specifically:

- a. The siting of the Empire Wind project is squeezed in between busy shipping lanes.
- b. One danger is that vessel density – ships operating within the same sea space – would be increased by the funneling effect of constricting traffic between turbine arrays.
- c. There is also concern that the development of these wind projects in close proximity will displace transit corridors and create narrow lanes where vessels are expected to travel. This could lead to increase accidents and spills.
- d. The Port of New York and New Jersey is a massive economic enterprise that is a hub for vessel traffic. There are four container terminals in the port, whose combined volume makes it the largest on the East Coast, the third busiest in the United States.
- e. Consider these port statistics: 577,649 vehicles • 6.3 million TEUs of containerized cargo • 730,617 cruise ship passengers • 8,596 deep-sea vessel transits • Over 4,000,000 smaller vessel harbor transits.
- f. Another consideration is the speed and agility of large ships maneuvering a small, competitive space. For example, it can take an ultra large 2.5 miles of full astern to brake to a halt.
- g. A large area of the Outer Continental Shelf (OCS) has been leased for offshore wind development without any comprehensive analysis of the fishing industry's need for safe transit or how the installation of large numbers of offshore structures will impact the operations of fishing vessels.
- h. The port imports petroleum, plastics, chemicals, oils and perfumes, pharmaceuticals, and other materials that if spilled into the ocean would be devastating. The port of NY/NJ is the largest U.S. petroleum product port.
- i. Another consideration is the radar shadow effect of rotating turbine blades that can affect navigation radars.
- j. During operations and maintenance, Empire Wind has committed to "Periodic inspections of offshore Project components, including foundations, scour protection, and submarine export and interarray cables, to verify integrity of the Project components and to confirm adequate burial." The EIS must require a time frame commitment for inspections, such as every 6 months. This is necessary because sediments and sands shift and can expose cables or other infrastructure related to the Empire Wind projects, causing safety hazards.

Comment Number: BOEM-2021-0038-DRAFT-0059-6

Organization: Responsible Offshore Development Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

TRANSIT IN THE NORTHERN BIGHT HAS NOT BEEN ADDRESSED

The lack of a cohesive plan for all lease areas could have far-reaching, long-term impacts on multiple industries. The NY Bight is extremely busy with high levels of vessel traffic. BOEM has not fully considered the need for vessels of all sizes to access the area in its leasing plans. Consequences of this include increased transit time, increased costs for shipping companies and consumers, and increased emissions from the additional fuel, which is counterproductive for the goal of using renewable energy to reduce carbon production.

As described above, the phased approach to the EW 1 and 2 projects, in conjunction with the announcement of new WEAs in the NY Bight during the design and environmental review processes for these projects, effectively removed any opportunity to designate a transit lane in the area even though the data show significant transit patterns there.

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

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

VESSEL-TO-VESSEL COLLISIONS

The COP is inadequate because: (a) draft fairways proposed for navigation were not given more than qualitative discussion and are smaller than is recommended by experts for safety (b) collision risk within the precautionary area of the bight has been unreasonably excluded from predictive modelling and from any prediction, even though risk increases along the vessel traffic lanes as they converge in the precautionary area and is expected to worsen with increased traffic resulting from the project, (c) not enough information about the COLLRISK risk of collision model is provided for the public to provide feedback or comment on its adequacy or suitability. Therefore the low consequential estimates of increases in collision risk do not necessarily reflect increased risk of collision caused by the project if it were to move forward.

Comment Number: BOEM-2021-0038-DRAFT-0063 -2

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Navigation must be amended to be made safe for commercial fishing transit between wind turbines for fishermen transiting the area to land fish in other states, as many commercial fishermen do from New York, and must allow for at least two nautical miles between turbines and at least a four mile wide transit corridor between Long Island and New Jersey ports.

Comment Number: BOEM-2021-0038-DRAFT-0065-15

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

At some point, a vessel will encounter one or more turbines. It is obvious that the closer spacing of .6 NM is going to increase the chances that there will be a collision between a vessel and the turbine (s). If there is contact from a small vessel, there will be little damage to the turbine foundation however there could be major damage or a sinking of the small vessel with the potential personal injury or loss of life. However, if a large cargo ship or a tug towing a loaded oil barge make contact with a turbine the situation could

be much worse. An accident with the tug on one side of the turbine and the barrage on the other would be a very bad situation.

Comment Number: BOEM-2021-0038-DRAFT-0065-26

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Transportation

Building wind farms in or near shipping lanes is very dangerous and will at some point lead to a collision. Another issue is transiting from one point to another through a wind farm. There are a number of turbine layouts where the opening between the turbines is as little as .6 NM. When comparing the layout of a wind farm, it is clear that two NM is a minimum distance for transit under good weather conditions. It is understood that transiting through a wind farm with the layout of less than two miles is difficult because of wind, tide, seas conditions and the lack of operational radar while in the array. However, the developers only do what is the cheapest so that they can reward their shareholders without concern for the other users of the ocean.

Comment Number: BOEM-2021-0038-TRANS-063021-0006-2

Commenter: David Wallace

Commenter Type: Individual

Comment Excerpt Text:

I have been to many of the public hearings by the developer, have suggested that they very much must provide a larger spacing of the -- of their turbines so that fishing can take us -- place within the array safely.

Comment Number: BOEM-2021-0038-TRANS-071321-0008-2

Organization: Fishery Survival Fund

Commenter: Brett Sparks

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Further impacts to marine radar are another thing that the COP categorizes as having little to no impact. This is not the case, we have seen in the United Kingdom and other fisheries in Europe where these turbines arrays have significant impacts on marine radar. This is something that absolutely has to be addressed in the future Environmental Impact Statement before these turbines can be installed.

Comment Number: BOEM-2021-0038-TRANS-071321-0009-1

Organization: Long Island Commercial Fishery Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

However, our association has been submitting comments since I believe 2014, if not before then, regarding this project which has been ill-planned from the start. If you look at one of the slides that was shown in today's document which I guess has also been shown twice, when the traffic studies were looked at they used 2011 data when for commercial fishing boats, AIS was not even required until 2016, and in the case of New York, more than 90 percent of the boats don't qualify under the 64.5 foot length, so they would not have the AIS.

A.3.17 NEPA/Public Involvement Process

Comment Number: BOEM-2021-0038-DRAFT-0013-1

Commenter: Georgianna Page

Commenter Type: Individual

Comment Excerpt Text:

See original attachment for NYSERDA Offshore Wind Timeline titled Building a Clean Energy Future.

Comment Number: BOEM-2021-0038-DRAFT-0015-6

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

As stated by Equinor on July 13, 2021 in its presentation, Appendix AA “Visual Impact Assessment” is not part of the available information available for review during the current public comment period, and is noted to be available in September 2021, after the comment period closes on July 26, 2021. Without a visual impact assessment, how can the public be offered a reasonable opportunity to assess and make comment on the project’s visual impact? Also, the time lapse video prepared by Equinor and available on BOEM’s website omits the night time view with either FAA compliant or ADS lighting not shown, which is a view they could have easily included in the video but chose not to.

Comment Number: BOEM-2021-0038-DRAFT-0017-1

Commenter: Margaret Weiss

Commenter Type: Individual

Comment Excerpt Text:

My first comment is that this is a very short window (deadline: 7/26/21) for comments to have any effect over the planning process. Not enough people know about this and the window should be extended and communication should be clear and much broader so more people could be made aware. It is unfair and unreasonable. I feel it is being rushed through covertly.

Comment Number: BOEM-2021-0038-DRAFT-0019-1

Commenter: Alice Platt

Commenter Type: Individual

Comment Excerpt Text:

My first comment is that this is a very short window (deadline: 7/26/21) for comments to have any effect over the planning process. Not enough people know about this and the window should be extended and communication should be clear and much broader so more people could be made aware. It is unfair and unreasonable. I feel it is being rushed through covertly.

Comment Number: BOEM-2021-0038-DRAFT-0022-2

Commenter: M Gill

Commenter Type: Individual

Comment Excerpt Text:

There has not been adequate public debate

or opportunity for New Yorkers/New Jersey to voice their opinion.

Comment Number: BOEM-2021-0038-DRAFT-0030-1

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony
Commenter Type: Federal Agency

Comment Excerpt Text:

The high number of projects moving through the NEPA process between now and 2024 makes it very difficult for us to provide the detailed level of review and interagency cooperation we have provided in the past. Most recently, you have issued three NOIs within nine calendar days, making it difficult for agencies and the public to offer detailed and meaningful feedback on each project during this scoping period. The extensive interagency cooperation we have invested with you to improve the NEPA documents for previous wind energy projects is no longer feasible, and we will be required to take a more limited Cooperating Agency role in the process.

Comment Number: BOEM-2021-0038-DRAFT-0030-19
Organization: NOAA National Marine Fisheries Service
Commenter: Michael Pentony
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 negative) of impacts and, where applicable, duration. 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 Empire 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-2021-0038-DRAFT-0030-2
Organization: NOAA National Marine Fisheries Service
Commenter: Michael Pentony
Commenter Type: Federal Agency

Comment Excerpt Text:

We rely on the information in the Empire Wind COP to help inform the comments and technical assistance provided during the scoping process. While we received an April 2021 COP on May 12, 2021, the BOEM project website has a COP dated July 2021. It is unclear exactly what has changed from the April 2021 to July 2021 version, as we have not received a summary of the changes or any information related to how the two versions vary. We request that you clearly explain how the COP has been modified from previous drafts you have provided to us to better inform our scoping comments and any technical assistance we provide on this project going forward.

Comment Number: BOEM-2021-0038-DRAFT-0030-21
Organization: NOAA National Marine Fisheries Service
Commenter: Michael Pentony
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 level 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 level 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). You should 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 on NOAA trust resources (i.e. marine mammals, 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 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 Empire Wind, we strongly recommend you review and incorporate similar comments we have made on previous BOEM documents to ensure a robust and sufficient analysis of NOAA trust resources, as we continue to have concerns regarding the content of recent EISs.

Comment Number: BOEM-2021-0038-DRAFT-0030-23

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Temporary, long-term, and permanent direct and indirect impacts to water quality, protected species, habitats, and fisheries (ecological and economic) throughout construction, operation, and decommissioning should be addressed in the EIS. The temporal classification (e.g., short-term or long-term) 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-3

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

We understand that during the NEPA process, you allow applicants to make modifications and updates to their COPs. Specifically, Empire Wind will be submitting supplements to the COP this fall, which include information relevant to our trust resources and necessary to inform our consultations and technical advice related to our trust resources. We request that should the COP be updated or changed at any time during the regulatory process, you notify us immediately and make the most updated COP available to the cooperating agencies and the public. In addition, a description of what sections and information in the COP have been updated is critical to an efficient review and should be provided. This description should specifically outline any changes to the proposed action and other information that may affect consultation with our agency. Updates to the COP that occur after initiation of consultation with our agency may affect our consultation timelines. We may need to provide additional comments and technical assistance upon review of any updated information, including potential alternatives to minimize and mitigate impacts of the project on marine and estuarine resources. To reduce the potential need for multiple reviews, supplemental consultation and comment, and project delays, it is essential that you ensure that project information is complete before initiating consultation on 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, consultation initiation and conclusion.

Comment Number: BOEM-2021-0038-DRAFT-0030-47

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 by the lead agency 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 10: 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.

Comment Number: BOEM-2021-0038-DRAFT-0030-48

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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's 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-2021-0038-DRAFT-0030-63

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

In the absence of fine-scale and accurate fish habitat characterization and delineation, we will take a conservative approach to our assessment of project impacts and development of conservation recommendations for the project. All data related to habitat mapping (acoustic survey results, seafloor sampling data, GIS data, figures/maps, etc.) should be shared with us as soon as practicable (once it is processed), so we can begin reviewing and providing comments, which will allow for more streamlined project review and consultation. Upon review of this information, a habitat mapping-specific meeting for the Empire Wind Project should be scheduled.

Comment Number: BOEM-2021-0038-DRAFT-0034-10

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On June 2, 2016, BOEM released a press release announcing that it would be releasing an EA and PSN for the NY WEA. BOEM later sent an email at 1:45 pm to notify “valued” stakeholders that another stakeholder conference call had been scheduled with Director Hopper to answer questions we might have about the new development. The call was scheduled for 3 p.m. that same day, giving us just an hour and fifteen minutes notice. There was virtually no forewarning, and indicated to myself as a stakeholder that BOEM was intending to solicit as little stakeholder input as possible. We just happened to see the email, and frantically called as many colleagues as we could to tell them about the last minute call. When a caller wished to ask a question, we were required to press certain buttons, give the facilitator our name, and were placed on a waiting list until our turn arrived to ask a question. Therefore, the facilitator knew who and how many people were on the call waiting to ask questions. We were the first in line to ask a question, and as soon as we finished speaking, the line said “you have been muted”, so that we was unable to ask a follow up. After the call was over, we found that this had not been done to other stakeholders on the call. We got on the caller line again to ask the follow up question, and while we and others, including some Rhode Island DEM officials, were waiting and known to the facilitator, the call was abruptly ended. The BOEM facilitator essentially just said “this call is now over” and hung up. There was no forewarning. While the call was being ended, a commercial fisherman who had just found out about the call was also trying to call in but was denied the opportunity.

Comment Number: BOEM-2021-0038-DRAFT-0034-11

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We participated in the June 23, 2016 EA public meeting held in Narragansett, RI, to voice the cumulative economic impacts a lease of the NY WEA would have on our fishing business and other local businesses. BOEM continued to ignore our concerns, and also ignored our state Department of Environmental Management officials who were present. These officials had requested a place on the NY Task Force to represent our interests during the project deliberations, and such a request was in compliance with applicable regulation. But they were denied and BOEM provided no satisfactory reasons why they had been excluded. While this situation has since been rectified, BOEM has continued to ignore all the requests to resite this lease area or address concerns of the RI squid fishery, as detailed below.

Comment Number: BOEM-2021-0038-DRAFT-0034-12

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

During this entire “stakeholder” process, it was very apparent that BOEM did not care about our input and that BOEM leadership had made the decision to allow the NY WEA lease well before the end of public comment periods, and regardless if any information we produced. Stakeholder meetings and calls were charades designed to tick the box of stakeholder engagement, but not intended to truly investigate or obtain input to be used in the decision-making process.

Comment Number: BOEM-2021-0038-DRAFT-0034-14

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

When we attempted to meet with Equinor regarding Equinor 2 design on Monday April 12 of 2021, a meeting organized by RODA and mediated by CBI, when we asked for certain modifications Equinor staff told us that they would be unable to accommodate any requests for change because they were submitting the COP the next day. This came as a complete shock to the fishing industry, as up to that point we had been led to believe that the Equinor 2 project would be down the road and a completely separate COP. However, in fact, BOEM’s website states that an updated COP- including Equinor 2- was submitted April 14, 2021.

Much of this interaction happened before the lease sale. Much of it happened before the developer obtained an RFP award from the state of NY. BOEM has done nothing except approve and encourage developer advancements at the expense of the commercial fishing industry.

Comment Number: BOEM-2021-0038-DRAFT-0034-27

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM cannot continue with a process that invites “stakeholder engagement” at the start, receives an incredible amount of input prior even to a lease sale requesting re-siting of a lease due to conflicts with existing stakeholders, continues to receive such input even from federal and state officials throughout the EA, PSN, BOEM public meeting timeline, all while telling these existing stakeholders not to worry

because “your interests will be considered at the end of the BOEM process during the EIS stage” and then refuse to disapprove a project because later in the BOEM process the developer/lessee secured an RFP/PPA with a state or state utility. It is at this current stage that BOEM must hold itself accountable for all the input it has received. BOEM cannot continue to put developer interests above all other interests. BOEM cannot continue to refuse to amend its process or lease areas, or disapprove proposed COPS/parts of COPS because doing so would “preclude [the developer’s] ability to meet current contractual obligations with [state] distribution companies and, therefore....not meet the project purpose and need”. [Footnote 16: See Vineyard Wind Record of Decision, p. 25, at Record of Decision for Vineyard Wind 1 Signed (boem.gov).] Or because the proposed COP must “meet [regional] demand for renewable energy” or “contribute to [state] renewable energy requirements”. [Footnote 17: See Vineyard Wind Record of Decision, p.10-11, at Record of Decision for Vineyard Wind 1 Signed (boem.gov)] This is a sham process if it is indeed the process. It is no process at all. This is particularly the case with the Equinor 1 area. BOEM has already received all the information it needs to exclude Equinor 1 from building permit approval.

Comment Number: BOEM-2021-0038-DRAFT-0034-3

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

When we and others requested that BOEM hold a fishery stakeholder meeting in Rhode Island, we were denied.

Comment Number: BOEM-2021-0038-DRAFT-0034-6

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On March 16, 2016, the day that BOEM announced the identification of the NY WEA, BOEM sent out an email notice that a stakeholder conference call would be held with Director Hopper the next day, on March 17. This is much too short a notice for most fishing industry stakeholders who may be at sea and do not have access to email for days at a time. Due to conflicts with fishing industry meetings, the call was rescheduled for March 18 instead. On this call, none of our questions were answered. Director Hopper kept repeating that they would continue working with the industry “to identify conflicts”. We stated that we had already identified the conflicts, as detailed in the vessel information I had provided BOEM, and asked what BOEM was going to do about it. We received the same answer repeated- that BOEM would continue to work with industry to identify conflicts. The Director continued to stonewall. On that call, one commercial fisherman asked if he would be compensated for the loss of squid if the turbines were built. That question was not answered either.

Comment Number: BOEM-2021-0038-DRAFT-0034-7

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We attended the 2016 NY Task Force meeting in Garden City, NY, on April 28. Despite the fact that we had already provided substantial economic and environmental concerns and information, including on conference calls with BOEM Director Abigail Ross Hopper, Director Hopper opened the meeting with the statement, “I’m not a marine biologist, but I’m a history maker”, and proceeded to discuss how she

and the Task Force were going to make history with the NY wind farm. The Director made no attempt to hide that her decision had already been made. This meeting was purposed partially for discussing the release of the comment period for the EA and PSN, and Director Hopper's comments revealed that BOEM's decision about allowing the lease to go forward was made before the EA and PSN were even released. It also clearly demonstrated that the decision was being made without regard to any stakeholder input.

Comment Number: BOEM-2021-0038-DRAFT-0035-3

Organization: NJDEP

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Since 2018, the NJDEP has engaged regularly with Empire Wind regarding this proposed wind energy project and will continue to do so as design details are further refined. NJDEP has been actively engaged with stakeholders through its Offshore Wind Environmental Resources Working Group (Working Group). This stakeholding is a necessary component of our process, and we are committed to being transparent and accessible as offshore wind development proceeds off the coast of New Jersey. The NJDEP was encouraged that Empire Wind incorporated specific feedback from the commercial fishing industry into their turbine layout. It is critical that BOEM and Empire Wind continue stakeholder engagement with the commercial and recreational fishing groups, as well as other ocean users.

Comment Number: BOEM-2021-0038-DRAFT-0035-5

Organization: NJDEP

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, on June 24, 2021, Empire Wind submitted to the NJDEP a federal consistency certification and a copy of the Construction and Operations Plan for the proposed wind energy project. The Department and Empire Wind have mutually agreed to stay the NJDEP six-month consistency review period consistent with 15 CFR§ 930.60(b) to provide sufficient time for discussions, meetings, and exchange of materials between Empire Wind and the Department. The Department will issue its consistency decision on or before January 27, 2023, unless the Department and Empire Wind mutually agree in writing to an alternate date.

Comment Number: BOEM-2021-0038-DRAFT-0037-5

Organization: Offshore Power LLC

Commenter: William O'Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Public Input:

We acknowledge and applaud the efforts of Equinor and other developers to build relationships and learn about potential impacts to both commercial and recreational fishing. While we encourage each developer to continue their individual outreach, we do feel that a more formal and enduring forum for gathering input from the recreational fishing community is needed.

Comment Number: BOEM-2021-0038-DRAFT-0037-6

Organization: Offshore Power LLC

Commenter: William O'Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We agree that developing offshore wind energy is essential to protecting our nation and planet from the impacts of climate change and ocean acidification, and feel that all parties need a clearly defined seat at the table to ensure that such potentially massive development is undertaken as responsibly as possible. The opportunity for fisheries experts and the general public to provide input must be hardwired into the system.

Comment Number: BOEM-2021-0038-DRAFT-0037-7

Organization: Offshore Power LLC

Commenter: William O'Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We suggest each region establish a fisheries advisory body made up of various stakeholder groups that must be consulted on a regular basis. We feel the Federal Advisory Committee Act lays out a potential model for the type of formal process we are proposing.

Comment Number: BOEM-2021-0038-DRAFT-0039-5

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The five core principles of responsible OSW development are:

- avoid, minimize, mitigate, and monitor adverse impacts on marine and coastal wildlife and their habitats,
 - reduce negative impacts on other ocean uses,
 - include robust continued consultation with Native American tribes and communities,
 - meaningfully engage state and local governments and stakeholders from the outset, and
 - use best available scientific and technological data to ensure science-based and stakeholder-informed decision making. [Footnote 15: U.S. Offshore Wind Power Economic Impact Assessment, Issued March 2020, https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf]
-

Comment Number: BOEM-2021-0038-DRAFT-0039-60

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Create a publicly available centralized data portal to serve as a clearinghouse of real-time data collection and dissemination for all OSW-related scientific and technological data. Make all decision-making data transparent and available for public review.
-

Comment Number: BOEM-2021-0038-DRAFT-0039-8

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NEPA (42 U.S.C. § 4321 et seq.) [Footnote 17: NEPA <https://www.energy.gov/nepa/downloads/national-environmental-policy-act-1969>] ensures all major federal actions occur in an environmentally responsible and beneficial manner. NEPA requires “efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man” [Footnote 18: Cornell Law School, Legal Information Institute. NEPA. 42 U.S. Code § 4331] and mandates that “to the fullest extent possible” the “policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with [NEPA].” [Footnote 19: Cornell Law School, Legal Information Institute. NEPA. 42 U.S. Code § 4332] To comply with NEPA an EIS must thoroughly assess all the environmental impacts of the proposed action and alternatives, and involve the public, state, tribal, and local governments, relevant agencies, and any applicants, to the extent practicable. [Footnote 20: Cornell Law School, Legal Information Institute. 40 C.F.R. § 1501.5(c)(2) and (e).]

Decision-making on environmentally impacting federal actions requires NEPA-mandated:

- thorough analyses of impacts on wildlife, natural resources, cultural resources, and communities
- analysis of cumulative impacts
- consideration of broad range of reasonable alternatives
- identification of the most environmentally preferable alternative
- public engagement and input in all decisions

[Underlined: Thorough analyses of impacts]

Under NEPA, BOEM is required to make every attempt to obtain and disclose data necessary for its analysis of environmental impacts unless doing so is cost-prohibitive. [Footnote 21: Cornell Law School, Legal Information Institute. 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.”] NEPA does not permit agencies to ignore available information that undermines their environmental impact conclusions. [Footnote 22: Hoosier Environmental Council v. U.S. Department of Transportation, 2007 WL 4302642 *13 (S.D. Ind. Dec. 10, 2007).] NEPA also requires agencies 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 23: 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 for offshore wind energy development, where the science is still emerging on the short-term and long-term impacts of a relatively new activity.

Comment Number: BOEM-2021-0038-DRAFT-0039-9

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

[Underlined: Tribal/stakeholder engagement]

Tribal, state, county, and local planning officials, as well as all stakeholders must be engaged in continued consultation from the outset to identify all actions that should be considered in the impact analysis. Improving outreach and providing educational and informative resources and fact-sheets (via in-person

townhall meetings, online webinars, using print and digital media) at the outset of the pre-planning process will ensure better participation and robust engagement of local communities that would be impacted by the OSW development.

Comment Number: BOEM-2021-0038-DRAFT-0040-6

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

Public Input:

We acknowledge and applaud the efforts of Equinor and other developers to build relationships and learn about potential impacts to both commercial and recreational fishing. While we encourage each developer to continue their individual outreach, we do feel that a more formal and enduring forum for gathering input from the recreational fishing community is needed.

Comment Number: BOEM-2021-0038-DRAFT-0040-7

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

We agree that developing offshore wind energy is essential to protecting our nation and planet from the impacts of climate change and ocean acidification and feel that all parties need a clearly defined seat at the table to ensure that such potentially massive development is undertaken as responsibly as possible. The opportunity for fisheries experts and the public to provide input must be hardwired into the system.

Comment Number: BOEM-2021-0038-DRAFT-0040-8

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

We suggest each region establish a fisheries advisory body made up of various stakeholder groups that must be consulted on a regular basis. We feel the Federal Advisory Committee Act lays out a potential model for the type of formal process we are proposing.

Comment Number: BOEM-2021-0038-DRAFT-0040-9

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

Science:

Fisheries management needs are specific and often hard to understand. Some combination of staff from the NOAA Northeast Fisheries Science Center, The New England and Mid-Atlantic Fisheries Management Councils, and the Atlantic States Marine Fisheries Commission must be involved in determining what types of monitoring should be required of the Empire Wind proposal. In addition, we suggest a mechanism be created where these same fisheries management agencies have opportunities to review results and make further recommendations.

Comment Number: BOEM-2021-0038-DRAFT-0041-17

Organization: Oceana

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 accessible on a publicly available website.

Comment Number: BOEM-2021-0038-DRAFT-0041-4

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To ensure that the Empire Wind LLC project is developed in a responsible manner BOEM must ensure that the project complies with existing laws, including the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), and the Magnuson Stevens 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. 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-2021-0038-DRAFT-0044-1

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The concept of adaptive management is raised frequently in relation to U.S. offshore wind development. While the construction times for Empire Wind 2 immediately follow those for Empire 1, there will likely be lessons learned during construction of Empire Wind 1 that might inform and mitigate negative effects during construction of Empire Wind 2. Will permit issuance, terms and conditions, and mitigation measures identified via the federal consistency process be adaptive such that lessons learned during Empire Wind 1 can be adopted and applied to Empire Wind 2?

Comment Number: BOEM-2021-0038-DRAFT-0044-3

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Five projects, including this one, entered the DEIS development phase through issuance of NOIs between March and the beginning of July, and additional NOIs are expected later this year. Consulting and coordinating on these projects is already taxing available resources in the fishing, fishery management, and fishery science communities, and we expect at BOEM as well. Consistency in approaches and adopting lessons learned from one project to the next will benefit stakeholders who engage in the review process for these complex projects.

Comment Number: BOEM-2021-0038-DRAFT-0047-5

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Potential behavioral and physiological impacts from noise, vibrations, altered water quality, altered sediment chemistries, foundation lighting, wind-swept area, electromagnetic/magnetic fields, and thermal impacts on biological resources.

Comment Number: BOEM-2021-0038-DRAFT-0047-73

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Discuss Coordination Process with State Agencies, Local Governments, Stakeholders, and Technical Working Groups (TWGs).

Comment Number: BOEM-2021-0038-DRAFT-0047-76

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Citizen Participation:

- To ensure meaningful involvement, the Agencies urge BOEM to consult with local communities and organizations on inclusive methods to share information and receive community feedback, including language access.

- The EIS should address increasing public participation in agency activities and subsequent activities.

Comment Number: BOEM-2021-0038-DRAFT-0054-1

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Empire Wind is one of several offshore wind power development projects managed by BOEM, and we encourage collaboration across projects to ensure cumulative impacts are mitigated appropriately. We also encourage coordination with affected states and Indian Nations as well as particularly the fishing industry as well as recreational boating industry throughout the NEPA process and permitting stages of the project.

As a means to improve communications on NEPA-related matters with EPA Region 2, please direct all inquiries to me through email at austin.mark@epa.gov or (212) 637-3954. For questions related to this scope of work, please contact Arielle Benjamin at (212) 637-3650 or benjamin.arielle@epa.gov.

Comment Number: BOEM-2021-0038-DRAFT-0057-6

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally, 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 18: 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 19: 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 20: 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 21: *Hoosier Environmental Council v. U.S. Department of Transportation*, 2007 WL 4302642 *13 (S.D. Ind. Dec. 10, 2007).]32

Comment Number: BOEM-2021-0038-DRAFT-0064 -6

Organization: U.S. Coast Guard

Commenter: Michael Emerson

Commenter Type: Federal Agency

Comment Excerpt Text:

Finally, we request BOEM consider the results of the ACPARS and supplemental PARS in any NEPA analysis for the Empire Wind project.

Comment Number: BOEM-2021-0038-DRAFT-0065-1

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The surfclam and ocean quahog fishery has been involved with the wind farm developers since the first leases were issued. Collectively representatives of the clam fishery have attend countless meeting that lasted from hours to multiple days. The industry has worked tirelessly to find common ground, clam representatives have also attended every BOEM meeting having to do with wind energy in the northeast region. The disappointing results are that the ocean wind developers are unwilling to make any meaningful concessions. BOEM and the states have stated that their intent is to have the two industries coexist, however few if any positive results have come out of their effort.

Comment Number: BOEM-2021-0038-TRANS-063021-0001-2

Organization: Long Island Traditions

Commenter: Nancy Solomon

Commenter Type: Individual

Comment Excerpt Text:

My second question is will there be more meetings with the commercial fishing community. I have attended all of those meetings over the last ten years and they have always been fairly poorly attended in New York mostly because there this time of year when people are out fishing.

Comment Number: BOEM-2021-0038-TRANS-063021-0001-4

Organization: Long Island Traditions

Commenter: Nancy Solomon

Commenter Type: Individual

Comment Excerpt Text:

And lastly, I know you have several appendices that are still being prepared, how can we comment on this in terms of the scoping meeting that you are having today when they're not going to be ready until the end of the summer.

Comment Number: BOEM-2021-0038-TRANS-063021-0005-3

Commenter: Sophie House

Commenter Type: Individual

Comment Excerpt Text:

BOEM should ensure that the broad spectrum benefits of Empire Wind are contained in the Environmental Impact Statement.

Comment Number: BOEM-2021-0038-TRANS-063021-0008-2

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

Meaningful public input to me means engaging with recreational anglers early and often in the planning process for offshore wind projects, clearly communicating opportunities to provide input on siting, permitting and access and other issues can avoid future conflicts.

A.3.18 Other Resources and Uses

Comments associated with this issue appear in the sub-issues below.

A.3.18.1. Aviation

Comment Number: BOEM-2021-0038-TRANS-063021-0003-4

Commenter: Charles

Commenter Type: Individual

Comment Excerpt Text:

One other thing I'd mention, having listened to the presentation is any sort of analysis of impact to not preclude in the future any changes to FAA flight patterns into JFK that might allow for less over land flights as they approach JFK Airport. Certainly this project has the potential to impact any changes that the FAA might be considering to have more over water flight approaches to JFK.

A.3.18.2. Marine Minerals

Comment Number: BOEM-2021-0038-DRAFT-0047-44

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Existing and Future Sand and Gravel Mining Activities. [Italics: Note: mining occurs offshore as well as within navigation channels, such as Ambrose Channel]

A.3.18.3. Research Activities

Comment Number: BOEM-2021-0038-DRAFT-0046-12

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

By contrast, the COP does not recognize, for instance, that NOAA will not commit to continuing its time series of fishery surveys within windfarm arrays. Yet this survey information is integral to fisheries management. The loss of information from areas around a single windfarm may not be individually significant, but the loss of information from a series of 16 (or more) windfarms located all along the Mid-Atlantic and Southern New England coasts is another matter altogether. The DEIS will need to explain how accurate resource information will be gathered from within the wind areas. Timely, complete, and accurate surveys are critical to scallop rotational management. The same is true of the biological losses suffered due to ecosystem changes discussed above, supra 2, as well as the associated economic impacts from these losses and the additional complications to navigation explained below, infra 6.

Comment Number: BOEM-2021-0038-TRANS-070821-0001-6

Organization: Climate Jobs New York

Commenter: Maria Dignan

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additionally Empire Wind and the previous leaseholder Equinor Wind have continued to conduct numerous geo technical surveys and samplings to inform project design and engineering. This allows for flexibility to advance the most environmentally sound summary of export cable routes. We look forward to learning more about the proposed interconnection points under the Gowanus and Barrett substations and the related environmental and local impacts.

A.3.18.4. Other

Comment Number: BOEM-2021-0038-DRAFT-0044-18

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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-2021-0038-DRAFT-0047-51

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Construction Related Impacts:

- Traffic (from Vessels, Vehicles and Aircraft):

- Traffic impacts from construction vessels, such as those transporting turbine parts.
- Traffic impacts from construction of export cable, especially during peak summer tourist seasons.
- Traffic impacts from use of Ports and O&M facilities.
- Assessment of impacts from inadvertent releases and spills.
- Management of debris and waste.
- Applicant's emergency preparedness for severe storm events.

Comment Number: BOEM-2021-0038-DRAFT-0047-52

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Operational and Maintenance (O&M) Impacts:

- Details on O&M facilities and overview of environmental impacts and appropriate state review processes. [Italics: Note: Assess environmental impacts to sensitive visual and noise receptors, proximity to sensitive natural resources (shellfish beds, fish nursery habitat, submerged aquatic vegetation, wetlands, beach, dune), potential excavation and fill below spring high water, potential temporary and permanent structures below mean high water, traffic related impacts, etc.]
- Details on all contemplated port facilities and overview of environmental impacts and appropriate state review processes. [Italics: Note: Assess environmental impacts to sensitive visual and noise receptors, proximity to sensitive natural resources (shellfish beds, fish nursery habitat, submerged aquatic vegetation, wetlands, beach, dune), potential excavation and fill below spring high water, potential temporary and permanent structures below mean high water, traffic related impacts, etc.]
- Consideration of long-term habitat impacts.
- Consideration of vibration related impacts.
- Consideration of impacts from cable heat transfer.
- Applicant's emergency preparedness for severe storm events.

A.3.19 Other Topics Not Listed

Comments associated with this issue appear in the sub-issues below.

A.3.19.1. Coastal Zone Consistency

Comment Number: BOEM-2021-0038-DRAFT-0052-6

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

The proposed Empire Wind project has not filed for Federal Consistency with CZM. A voluntary filing would initiate review by CZM for consistency with Massachusetts enforceable program policies and provide opportunity for discussion regarding potential impacts to the fishing industry of Massachusetts. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at robert.boeri@mass.gov or visit the CZM web site at <https://www.mass.gov/federal-consistency-review-program>.

A.3.19.2. Noise

Comment Number: BOEM-2021-0038-DRAFT-0034-15

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NMFS identified the fact that squid in particular are injured by sound, and did not concur that impacts to squid would be negligible, even from the G&G surveys alone- never mind construction and operation.

“The EA also discusses alternatives that were considered but not analyzed in detail. These include measures to protect longfin squid from potential injurious sound. In response to comments from the squid industry, you evaluated noise impacts on squid from potential site activities. Based on available information (Andre et al. 2011, Mooney et al, 2010), you determined that sound sources from SAP activities within the hearing range of squid include active sub-bottom profilers and pile driving noise from construction of a meteorological tower. These activities would likely occur during the summer months, which overlap with the height of squid season within the WEA. Within the EA, you determined there is no evidence to suggest injury to squid would occur due to the baseline activities at this site, including high vessel activity and associated noise, as well as the ability of squid to swim away, and therefore, you do not intend to prohibit any noise producing activities in the summer months. We expect any potential impacts to the squid fishery would depend on the timing, location and extent of site assessment activities within the WEA. Given the fact you are not proposing to limit the time of year for site assessment activities, it is important we have the opportunity to review individual plans for the SAP, as well as plans for any high resolution geophysical (HRG) surveys where active sub-bottom profilers would be used. Absent review of the specific survey plans and the individual SAP, we cannot concur at this time that impacts would be negligible.

As you acknowledge in the EA, information is limited on sound detection by invertebrates and thus noise exposure guidelines for any invertebrate species have not been established (Howkins and Popper, 2014). Specifically, impacts of noise on cephalopods remain relatively unknown (Mooney et al. 2012). Though this EA is only evaluating impacts of site assessment activities, limited data exist to fully evaluate potential impacts of larger scale construction on marine invertebrates. As planning for potential development moves forward, it is important that more data be collected on the potential impacts to invertebrates from noise related to wind development. We encourage you to conduct environmental studies to improve our understanding of acoustic impacts to invertebrates. This is particularly important for the WEA, as the squid fishing industry has the potential to be one of the most affected fisheries by future development within the EA.”

BOEM did nothing except allow the developer to plow ahead. In fact, Equinor conducted its G&G surveys right in the middle of summer, during squid season in the area. Since this activity has been ongoing, lower catches of squid have occurred in the area. Because BOEM refused to put any time of year or other restrictions on the developer’s G&G surveys, making a direct correlation is technically impossible. However, this is BOEM’s fault since the agency refuses to be responsive to any sort of feedback that would restrict a developer in any way, regardless of impacts to existing reasonable uses of the ocean.

Comment Number: BOEM-2021-0038-DRAFT-0036-3

Commenter: Anne Lazarus

Commenter Type: Individual

Comment Excerpt Text:

There are no true studies showing the impact these noisy structures will have on marine life. Whales and dolphins depend on sound communication, and these loud structures will interfere with their communication.

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

Commenter: Andrew Berko

Commenter Type: Individual

Comment Excerpt Text:

3. What independent studies, if any, have been conducted by specialists to calculate the decibal noise levels generated (both in the air AND in the water) in the operation of hundreds of offshore wind turbines? No study has been conducted that calculates the decibal levels to be expected. Different noise (decibal) levels are harmful, indeed deadly to different types of marine life and migratory species (whales, seals, fish, etc.). Where's the stewardship without a proper study and evaluation? Who speaks for the marine life and endangered species?

Comment Number: BOEM-2021-0038-DRAFT-0039-19

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Among the adverse impacts on EFH species expected during construction, O&M, and decommissioning of the EW projects is underwater noise pollution. The COP proposes to use gravity-based foundations for WTG installations but monopiles for the two offshore substations. While no impulsive sound is emitted during the construction of gravity base foundations, data on other GBS-associated sound measurements are not available. The noise generated from impact pile driving and/or vibratory pile driving of the two monopile foundations severely impact all marine species in EW area. Regardless of the foundation types used, continuous noise from vessel traffic, dynamic positioning systems (DPS) of working ships, dredgers used for soil preparation, and other noises are expected. [Footnote 49: Koschinski, S. & Lüdemann, K. (2020, Mar). 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.] These sounds differ in their frequency and intensity causing different sound pressure level (SPL) and sound exposure level (SEL).

Further impacts can be caused by the combined simultaneous effects of acoustic disturbance, pressure and particle motion sensitivity in fish [Footnote 50: NYSERDA. (2021). State of the Science - Sound and Vibration Effects of Fishes and Aquatic Invertebrates Workgroup Report] masking communication and potentially elicit behavioral changes, temporary or permanent auditory injury, or even mortality. [Footnote 51: BOEM. (2021, Jun). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources] Studies have shown that not only fish but also invertebrates appear to be able to detect both sound pressure and particle motion and are most sensitive to low frequency (LF) noises. [Footnote 52: BOEM. (2021, Jun). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources]

Temporary seafloor disturbance and sediment suspension/deposition, and permanent conversion of existing soft-bottom habitat to hard substrate habitat will result associated with foundation installations, scour protection, and protection of cables. The COP cites studies on the recovery of affected benthic communities in the disturbed area to reestablish within 1 to 3 years as native assemblages recolonize the area or a new community develops as a result of immigration of organisms from nearby areas or from larval settlement. Complex habitats appear to take longer to recover from offshore wind energy project construction, in contrast to non- complex habitats. [Footnote 53: BOEM. (2021, Jun). Empire Wind

Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources] A study of the Block Island Wind Farm showed zero percent of complex habitat areas had completely recovered from baseline conditions after the wind farm had been in operation for nearly two years. [Footnote 54: Khan, A. A. & Smith, K. (2020, Mar). Seafloor Disturbance and Recovery Monitoring at the Block Island Wind Farm, Rhode Island – Summary Report. OCS Study BOEM 2020-019. https://espis.boem.gov/final%20reports/BOEM_2020-019.pdf]

Comment Number: BOEM-2021-0038-DRAFT-0039-26

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

ii. Acoustic Impacts

Underwater noise from different EW activities (see Section 5.1.2) have different SPL and SEL with varying adverse impacts on sea turtles, marine mammals including: i. temporary threshold shift (TTS) in hearing, a reversible hearing impairment caused by exposure to high intensity noises for short durations or lower intensity noises for longer durations. TTS can last for minutes or days depending on the noise frequency and intensity, energy distribution, and duration of the noise exposure, among other considerations, [Footnote 77: BOEM. (2021, Jun). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources] ii. permanent threshold shift (PTS), a permanent loss of hearing resulting in an increase in the hearing threshold caused by exposure to very high peak sound pressure levels and rapid increases in intensity, or very prolonged or repeated exposures to noise strong enough to elicit TTS, [Footnote 78: BOEM. (2021, Jun). Empire Wind Project (EW1 and EW2) Construction and Operations Plan. Volume 2b: Biological Resources] and iii. auditory masking, a reduction in the detectability of a sound signal of interest due to the presence of another sound in the environment with similar frequency ranges. Auditory masking can reduce an individual’s ability to effectively transmit and receive acoustic signals which are important for detecting predator and prey, conspecific signals, communication calls, and echolocation (environmental features associated with spatial orientation). However, as yet “No information exists on the impacts of masking important biological cues or deterioration of acoustic habitat for sea turtles.” [Footnote 79: NOAA. The Status of Science for Assessing Noise Impacts on NOAA-Managed Species. Draft Ocean Noise Strategy Roadmap, Appendix A. https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Draft_Roadmap_AppendixA_June1.pdf] “The biological significance of hearing in sea turtles remains largely unstudied, but it seems likely that they use sound for navigation, to locate prey, to avoid predators, and for general environmental awareness.” [Footnote 80: Status of Science for Assessing Noise Impacts on NOAA-Managed Species. Draft Ocean Noise Strategy Roadmap, Appendix A.] Sea turtle hearing sensitivity has been shown to overlap with the frequencies and source levels produced by many anthropogenic sources, but more research is needed to determine the potential physiological and behavioral impacts of these noise sources on sea turtles. [Footnote 81: Ridgway, S. H., Wever, E. G., McCormick, J. G., Palin, J. & Anderson, J. H. (1969). Hearing in the giant sea turtle, *Chelonia mydas*. Proceedings of the National Academy of Sciences of the United States of America, 64(3), 884-890; Bartol, S. M., Musick, J. A., & Lenhardt, M. L. (1999). Auditory evoked potentials of the loggerhead sea turtle (*Caretta caretta*). *Copeia*, 3, 836-840; Piniak, W.E.D., Eckert, S. A., Harms, C. A., & Stringer, E. M. (2012). Underwater hearing sensitivity of the leatherback sea turtle (*Dermochelys coriacea*): Assessing the potential effect of anthropogenic noise. OCS Study BOEM 2012- 01156; Martin, K. J., Alessi, S. C., Gaspard, J. C., Tucker, A. D., Bauer, G. B., & Mann, D. A. (2012). Underwater hearing in the loggerhead turtle (*Caretta caretta*): A comparison of behavioral and auditory evoked potential audiograms. *Journal of Experimental Biology*, 215(17), 3001- 3009; Piniak, W. E. D., Mann, D. A., Harms, C. A., Jones, T. T., & Eckert, S. A. (2016). Hearing in the juvenile green sea turtle (*Chelonia mydas*): A comparison of underwater and aerial hearing using auditory evoked potentials. *PLoS ONE*, 11(10).

Comment Number: BOEM-2021-0038-DRAFT-0039-42

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Acoustic Disturbances

- Marine mammals vary in their hearing sensitivities so that different noise source types affect them differently. Repeated exposure to noise is potentially more damaging as cumulative acoustic impact elicits TTS or PTS. The COP uses NMFS 2018 technical guidance which sets acoustic threshold criteria for the two harassment levels under the MMPA with Level A resulting in PTS and Level B causing behavioral changes. Multiple marine species have been observed to exhibit strong, even lethal, behavioral reactions to sound levels well below the current 160 dB threshold for Level B take.

- LF noise from DPS vessels has an intensity range of 121–197 dB re 1 μ Pa at 1 meter which is within the hearing frequency range (50–3,200 Hz) of large whales and fish impacting them seriously, with the mesopelagic fish migrating deeper in the water column upon exposure to DPS noise.

- Exposure to even moderate levels of noise within NARW hearing range could cause loss of their communication abilities, and displacement from/avoidance of their foraging habitat, but in a triple hit it could induce their sub-surface positioning increasing their risk of vessel strike. [Footnote 200: Nowacek, D. P., Johnson, M. P., & Tyack, P.L. (2004). Right whales ignore ships but respond to alarm stimuli. *Proceedings of the Royal Society of London B*, 271(1536):227-231.]

- Harbor porpoise (*Phocoena* sp.), a NY SGCN, requires special attention because of their extreme sensitivity to noise, being substantially more susceptible to temporary threshold shift (i.e. hearing loss) from LF pulsed sound well below 120 dB (re 1 μ Pa (RMS)) [Footnote 201: Bain, D.E., & Williams, R. (2006). 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); Kastelein, R. A., Verboom, W.C., Jennings, N., & de Haan, D. (2008). Behavioral avoidance threshold level of a harbor porpoise (*Phocoena phocoena*) for a continuous 50 kHz pure tone. *Journal of the Acoustical Society of America*, 123(4), 1858-1861; Kastelein, R. A., Verboom, W. C., Muijsers, M., Jennings, N. V., & van der Heul, S. (2005). The influence of acoustic emissions for underwater data transmission on the behavior of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research*, 59(4), 287-307; Olesiuk, P. F., Nichol, L. M., Sowden, M. J., & Ford, J. K. B. (2002). 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*, 18(4), 843-862.] (even 20 km from the acoustic source) compared to other cetacean species that have been tested. [Footnote 202: Lucke, K., Siebert, U., Lepper, P. A., & Blanchet, M. A. (2009). 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*, 125, 4060- 4070.]

Comment Number: BOEM-2021-0038-DRAFT-0039-43

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Habitat avoidance

- Sound and other disturbances cause marine mammals to be displaced from their foraging, feeding, nesting, or calving habitats which might become a permanent abandonment of the area with serious consequences. Studies on captive and wild harbor porpoises have shown them to abandon their habitat for months and years after OSW construction noises cease. [Footnote 203: Carstensen, J., Henriksen, O. D.,

& Teilmann, J. (2006). Impacts of offshore wind farm construction on harbour porpoises: acoustic monitoring of echolocation activity using porpoise detectors (T-PODs). *Mar. Ecol. Prog. Ser.*, 321, 295-308; Evans, P.G.H. (ed.) (2008). Proceedings of the ECS/ASCOBANS Workshop: Offshore wind farms and marine mammals: impacts and methodologies for assessing impacts. ESC Special Publication Series, 49, 50-59, 64-65; Tougaard, J., Carstensen, J., Teilmann, J., Skov, H., & Rasmussen, P. (2009). Pile driving zone of responsiveness extends beyond 20 km for harbor porpoises (*Phocoena phocoena*, (L.)). *Journal of the Acoustical Society of America*, 126(1), 11-14; Brandt, M. J., Diederichs, A., Betke, K., & Nehls, G. (2011). Responses of harbor porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea. *Marine Ecology Progress Series*, 421, 205-216; Dähne, M., Gilles, A., Lucke, K., Peschko, V., Adler, S., Krügel, K., Sunderleyer, J., & Siebert, U. (2013). Effects of pile-driving on harbor porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. *Environmental Research Letters*, 8(2).] [Footnote 204: Bain, D.E., & Williams, R. (2006); Kastelein, R. A., Verboom, W.C., Jennings, N., & de Haan, D. (2008). Kastelein, R. A., et al. (2005). Olesiuk, P. F., Nichol, L. M., Sowden, M. J., & Ford, J. K. B. (2002).]

- Noise may also result in NARW being displaced from their habitat and inadvertently entering shipping lanes thereby increasing their risk of vessel collision. Scientists have deemed it “likely” that noise from pile driving during OSW development could lead to displacement of large whales and that this potential impact should be treated as “high importance.” [Footnote 205: Kraus, S.D., Kenney, R. D. & Thomas, L., (2019). A Framework for Studying the Effects of Offshore Wind Development on Marine Mammals and Turtles. Report prepared for the Massachusetts Clean Energy Center, Boston, MA 02110, and the Bureau of Ocean Energy Management by Anderson Cabot Center for Ocean Life.]

Comment Number: BOEM-2021-0038-DRAFT-0039-51**Organization:** Defenders of Wildlife**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

Underwater noise reduction

- require a minimum of 10 dB (SEL) reduction in radiated sound level to be attained during construction using a combination of emergent and proven current technologies such as shields, screens, and barriers around the sound source, e.g. air bubble curtains, [Footnote 236: Smyth, L. (11/08/2018). Wind farm noise reduced by air bubble curtain. <https://www.engineerlive.com/content/wind-farm-noise-reduced-air-bubble-curtain>] Hydro Sound Damper Systems, [Footnote 237: Hydro-Sound-Damper-System (HSD-System) from the German company OffNoise-Solutions <https://www.offnoise-solutions.com/the-hydro-sound-damper-system-hsd-system/>; Bruns, B., Stein, P., Kuhn, C., & Sychla, H. (2014). Hydro sound measurements during the installation of large diameter offshore piles using combinations of independent noise mitigation systems] isolation casings (Noise Mitigation Screen (NMS)), dewatered cofferdams, reduced blow energy, and prolonging pulse duration by modifying the hydraulic hammers. [Footnote 238: 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.] relative to a reference baseline of prior noise measurements of unmitigated piles.

- petition NFMS to revise its guidance on harassment thresholds for acoustic exposure criteria for behavioral response [Footnote 239: Tougaard, J., Wright, A. J., & Madsen, P. T. (2015). Cetacean noise criteria revisited in the light of proposed exposure limits for harbour porpoises. *Marine Pollution Bulletin*, 90, 196-208.] to be consistent with the best available current science and be truly protective of marine mammals from the noise generated by EW activities. BOEM must be conservative in its assessment of potential loss of communication and listening range to NARW and other listed species and assume that any substantial increase in noise 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.

- partner with acoustic data scientists (from NYDEC, NYSERDA, Wildlife Conservation Society, NEFSC, NEAQ, Woods Hole Oceanographic Institution, etc.) and acoustic modeling scientists (e.g. from JASCO) to obtain and collate best available current scientific data to inform a comprehensive acoustic impacts and cumulative impacts analyses.

- take all necessary actions to reduce the number of Level A takes and to ensure Level B takes for large whales are as close to zero as possible.

Comment Number: BOEM-2021-0038-DRAFT-0046-9

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Another important element of windfarm construction that must be considered is noise impacts from pile-driving activity. While the COP identifies this activity as having potential impacts on marine mammals, the COP fails to consider how these activities may impact scallop populations. Recent studies have demonstrated that similar noise-producing activities, such as seismic surveys, can have significant impacts on scallop growth and morphology, especially in juvenile populations. [Footnote 6: See Day et al., Exposure to seismic air gun signals causes physiological harm and alters behavior in the scallop *Pecten fumatus*, PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, October 3, 2017, available at <https://www.pnas.org/content/114/40/E8537> (last accessed on July 26, 2021).] The DEIS should consider these studies and accommodate for potential biological and economic impacts to scallops and the scallop fishery, respectively.

Comment Number: BOEM-2021-0038-DRAFT-0047-15

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Provide ambient noise levels.

Comment Number: BOEM-2021-0038-DRAFT-0047-28

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Evaluation of application of sound penalties for tonal noise; and assess adequacy of proposed mitigation measures.

Comment Number: BOEM-2021-0038-DRAFT-0057-23

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, while gravity-based 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 use Empire Wind as an opportunity to

characterize source noise levels during the installation of gravity-based foundations, as well as potential exposure levels for in-water species (see, also, section IV(E) on impacts to marine mammals). This information should be used to ensure that mitigation and monitoring protocols required during the installation of gravity-based foundations are as protective as possible.

Comment Number: BOEM-2021-0038-DRAFT-0057-33

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Offshore wind projects structurally modify large areas of benthic habitat. For Empire Wind, the PDE indicates that gravity-based foundations would have around a nine acre seabed footprint and monopile foundations would have just under a 0.8 acre seabed footprint, including scour protection. [Footnote 82: EOW COP 3-8, Table 3.3-3.] This will necessarily impact benthic invertebrates, which provide a foundation for the marine trophic pyramid, but also impact demersal fishes, and bottom-foraging pelagic animals.

1. For Pile-Driven Foundations

While pile-driven foundations occupy less benthic habitat than gravity bases, they are the greatest source of noise of all base configurations. Much of what is known about pile driving noise is what is propagated into the water column from the pile as it is struck. Impulsive noise from pile driving can damage fish, [Footnote 83: Robert Abbott, Ph.D. James A. Reyff “San Francisco – Oakland Bay Bridge East Span seismic safety project: Fisheries and hydroacoustic monitoring program compliance report.” 2004 See: <http://www.biomitigation.org/reports> Available as “Revised Fisheries Compliance Report”] marine mammals, [Footnote 84: Michael Dähne, Anita Gilles, Klaus Lucke, Verena Peschko, Sven Adler, Kathrin Krügel, Janne Sundermeyer, and Ursula Siebert (2013) Effects of pile-driving on harbour porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. *Environmental Research Letters* V. 8:17] sea turtles, and zooplankton, [Footnote 85: Robert D. McCauley, Ryan D. Day, Kerrie M. Swadling, Quinn P. Fitzgibbon, Reg A. Watson & Jayson M. Semmens “Widely used marine seismic survey air gun operations negatively impact zooplankton.” *Nature Ecology & Evolution* 1, Article number: 0195 (2017) doi:10.1038/s41559-017-0195] and degrade the acoustic habitat upon which the majority of marine species rely.

What has not been evaluated in pile driving operations is the noise propagated through the substrate by Rayleigh waves [Footnote 86: https://en.wikipedia.org/wiki/Rayleigh_wave The Rayleigh wave is a surface wave that propagates along the surface of a semi infinite elastic solid.] and their direct impact on benthic invertebrates and demersal fish. The benthic sediment and substrate serve as habitat for many invertebrates, polychaete annelids, mollusks, crustaceans (including amphipods, crabs, lobster, snapping and mantis shrimp), and echinoderms, as well as lower trophic level fishes such as the sand lance and gobies. These critical organisms serve as the foundation of the trophic pyramid. These animals have adapted to the subtle dynamics of their habitat to find food, avoid predation, and otherwise communicate with conspecifics and co-inhabitants of their environment, and the delicate sensory systems that they use to survive could be damaged by the excessive impulse noise of pile driving.

There is nominal data on how these benthic organisms respond to substrate-borne noise and vibration, although it is known that chronic noise is a stress factor for bivalves [Footnote 87: Charifi M, Sow M, Ciret P, Benomar S, Massabuau J-C (2017) The sense of hearing in the Pacific oyster, *Magallana gigas*. *PLoS ONE* 12(10): e0185353. <https://doi.org/10.1371/journal.pone.0185353>] and arthropods. [Footnote 88: Pine MK, Jeffs AG, Radford CA (2012) Turbine Sound May Influence the Metamorphosis Behavior of Estuarine Crab Megalopae. *PLoS ONE* 7(12):] In a study by Solan et. al (2016), [Footnote 89: 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). <https://doi.org/10.1038/srep20540>] it was found that chronic shipping and construction noise disrupted the burrowing and bioirrigation [Footnote 90: Bioirrigation is how much the organism moves water in and out of the sediment by its actions.] activities of the North Sea Langoustine. [Footnote 91: University of Southampton News, (5 February 2016) Man -made underwater sound may have wider ecosystem effects than previously thought. <https://www.southampton.ac.uk/news/2016/01/underwater-sound-biodiversity-study.page>] Langoustine “fluff up” the sediment of the North Sea, providing habitat for burrowing worms, amphipods, crabs, and other marine invertebrates – the foundation of the area’s trophic pyramid. If pile driving noise significantly interrupts burrowing and bioirrigation activities such that the substrate is allowed to settle, it may become less like mud and more like concrete. Compromising the habitability of this benthic habitat will affect all marine life dependent upon it. Decreases in bioirrigation could also decrease carbon sequestration and nutrient recycling, with the potential consequence of the sediment becoming anoxic. [Footnote 92: 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). <https://doi.org/10.1038/srep20540>]

While these studies were not all focused on installation and operation of monopile-mounted turbines, it is possible that the effects of noise from these structures—from the pile driving installation, to the chronic turbine noise propagated down the monopile into the benthic substrate—would impact benthic-inhabiting taxa in unpredictable ways. [Footnote 93: Roberts L, Elliott M. Good or bad vibrations? Impacts of anthropogenic vibration on the marine epibenthos. *Sci Total Environ*. 2017 Oct 1;595:255-268. doi: 10.1016/j.scitotenv.2017.03.117. Epub 2017 Apr 4. PMID: 28384581.] Additionally, as mentioned earlier, particle motion caused by pile driving may also result in impacts to species in the seabed. [Footnote 94: Nedelec et al. (2016).]

Pile-driven bases also confer acoustical energy from the turbine masts into the substrate, which becomes a chronic noise problem as the turbines operate. While these noises may seem subtle, benthic-inhabiting creatures use substrate vibrations to sense their surroundings and these vibrations may elevate vigilance, or mask biologically important acoustical cues, causing stress and compromising the organisms’ natural history. [Footnote 95: Pine MK, Jeffs AG, Radford CA (2012) Turbine Sound May Influence the Metamorphosis Behavior of Estuarine Crab Megalopae. *PLoS ONE* 7(12):] Mitigating this impact would require acoustically decoupling the mast from the pile-driven base, or if the mast is below the waterline, acoustically decoupling the turbine from the mast. But noise profiles of the equipment should be fully measured prior to developing the field.

BOEM must take these impacts into consideration in assessing pile driving as the turbine deployment option.

Comment Number: BOEM-2021-0038-DRAFT-0057-34

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

For Gravity Based Foundations

This term refers particularly to sub-surface structures that utilize mass – typically concrete, to serve as a mounting platform for a turbine mast. Gravity bases are suitable for greater depths than monopiles – the tallest being the “Troll A” platform in the North Sea at 370m (1200ft.). [Footnote 96: Knudsen, A.; Skjæveland, H.; Lindseth, S.; and Hoklie, M., “Record-Breaking Water Depth for Fixed Concrete Platforms,” *Proceedings of the Offshore Technology Conference*, Houston, TX, 1994, pp. 453-462.]

Installation is typically done by assembling prefabricated components and deploying them at sea, [Footnote 97: <http://www.oceanresource.co.uk/Sea-Breeze.html>] and slip-forming for poured-in- place components. [Footnote 98: <https://www.slipform.us/slipforming-hebron-offshore-gbs/>] The bases disturb the largest area of seafloor of all base technologies, but due to the mass of the bases, they transmit the least amount of turbine operating noise into the surrounding marine habitat. As noted in Section III, the noise impacts of these bases should be analyzed, as well as the how the bases and scour protection change the benthic habitat and community composition.

Comment Number: BOEM-2021-0038-DRAFT-0057-44

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM SHOULD DEVELOP REGIONAL CONSTRUCTION CALENDARS TO REDUCE CUMULATIVE NOISE IMPACTS

Building out offshore wind energy in the New York Bight will likely lead to multiple leaseholders developing individual projects on parallel timelines (as currently being demonstrated in the RI/MA and MA WEAs). 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-2021-0038-DRAFT-0062-1

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

ENVIRONMENTAL INJURY TO SEA MAMMALS FROM SOUND

In the Underwater Acoustic Mitigation Assessment, at Appendix M, on page M24, the information from Nedwel et al 2004 on which the COP relies is completely outdated and inapplicable to the proposed power plant's expected operational noise. This reference in the COP assessment to the frequency and associated decibel levels of underwater turbine-produced sound is invalid. In the year 2004, a large commercial wind turbine had a rotor diameter of 114 m or so. The rotor sweep of each of the turbines proposed in Equinor's Empire has diameter 260 m. The much larger turbines planned in EW1 and EW2 are expected to have a sound signature with a comparatively higher peak pressure in the lower frequencies, among other differences, than turbines installed circa 2004.

The underwater sound signature of the specific turbines planned to be installed should be directly and actually measured from existing GE Haliade X 18 MW turbines intended to be used. If this is not possible or if this measure has little utility because of a difference in the installed environment (such as water depth) renders it not meaningful to the planned turbine installation, then the underwater sound signature of turbines of like size located in the most comparable installation environment should be directly and actually empirically measured. That is, the underwater sound pressure levels at varying distances from the sound source should be measured at various frequencies. If this is still not possible, it should at minimum be modelled.

There's appears no earnest effort in the COP to understand, study, or report on - nor even is there mention in the COP - of the effects of operational noise on sea mammals. There is also lacking any review of the scientific literature on this. See Section M.5.5 on page M.23 of Appendix M.

The notion expressed in the COP that operational noise can be expected to be significantly masked by background noise is unsubstantiated. Large Wind Turbine noise is characterized by sharp spectral peaks at the blade passing frequency and its integer harmonics. Only after the recorded sound of a turbine is passed through a traditional smoothing (mathematical) algorithm can the output be deemed to be something that can be ‘masked’ by background noise. Though this transformation need be performed to compare the noise to background noise, there is the valid question of whether it should be, questionable because this is not likely how the sound is actually perceived. Therefore the conclusion that the sound can be “masked” by background sounds such as the sound of ocean itself –which sounds do not have such properties – is highly questionable.

The use of sound for communication and acquisition of information about the environment has evolved across the years and constitutes an important aspect of marine mammal behavior, including that of endangered baleen whales. Given the increasing level of anthropogenic noise in the ocean, it is of concern that high-intensity anthropogenic noise (both in construction and operations) may impact communication and foraging behaviors involving marine mammal sound production. For example, Blue whales were less likely to produce calls in the presence of mid-frequency active sonar. Reduction was more pronounced when the sound source was closer to the animal, and when the anthropogenic sound level was higher. Anthropogenic noise, even at frequencies well above the blue whales’ sound production range, has been demonstrated to have a strong probability of eliciting changes in vocal behavior [PLOS February 29, 2012 Blue Whales Respond to Anthropogenic Noise by Melcón , Cummins, Kerosky, Roche, Wiggins, and Hildebrand]. This debunks the assumption that anthropogenic noise is only reasonably likely to be considered harassment when the frequency matches those frequencies range to which the species communicates or is most attuned. The implications for marine mammals of anthropogenic noise likely to be emitted from the Equinor Empire wind Turbine power plants have not been studied and could result changes that result in a decrease in fitness of these and other marine mammals in areas within auditory reach of the project. Disruption of the making of calls for foraging or mating or to maintain group cohesion may reduce fitness and thus can be injurious to stock and a Level-A harm.

Habitat modification can constitute “harm” within the meaning of a take in the Endangered Species Act. Our U.S. Supreme Court has concluded habitat modification is a take if it actually injures wildlife, with injury including “perturbations that cause them not to use ... otherwise suitable habitat,”

Assessments need to estimate reasonable effects to each species of endangered marine mammal, how far a distance from the turbine the effects are expected to attenuate below harassment level, and whether – within that distance –overlapping areas of harassment would result from adjacent turbine to create a larger enjoined harassment area.

Comment Number: BOEM-2021-0038-DRAFT-0062-9

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

WIND TURBINES EFFECT ON SUICIDE RATES / EFFECTS OF LOW-FREQUENCY AND INFRASOUND EMISSIONS FROM TURBINES

The COP failed to address possible risk of increase in suicide from a wind turbine power plant located fourteen miles from shore. The effect of commercial wind turbines on suicide, though not large, was demonstrated highly significant within 15.5 miles of operating wind farm installations or expansions but also was discernable at longer distances. [See study titled Wind Turbine Syndrome: The Impact of Wind Farms on Suicide by Eric Zou conducted at the University Chicago Champagne Urbana]. At the time that this adverse effect was discovered in the study, both average and maximum turbine size was considerably smaller than those proposed to be used in this project, and knowing that the low frequency part of the

spectrum will have higher peak sound pressure for large turbines than for small and that lower frequencies travel further distances, these highly significant effects have the potential to be experienced at greater distances.

The notion that wind turbine infrasound emissions would have to be at or above the human frequency thresholds of sound perception in order for them to cause any effects whatsoever on humans seems ill-founded given (i) infrasound elicits an excitation of the outer hair cells of the inner ear which cells do have some afferent innervation, (ii) infrasound may affect tissues directly through resonance, and (iii) infrasound can alter the properties of non-infra sound waves that are within the hearing range, affecting perceived sounds and the ability to perceive them.

Acoustic emissions in the single-digit frequencies can result in the outer hair cells stimulation at sound pressures dozens of decibels below the minimum sound pressure that'd be required to stimulate the inner hair cells ordinarily associated with conscious hearing. Not all innervation of these outer hair cells are efferent. Additionally and independently, acoustic energy can resonate with low frequencies naturally occurring in the body tissues themselves. The possibility that this resonance could result in physiological change - even though it doesn't result in the experience of hearing - probably should not be dismissed out of hand.

Humans cannot hear infrasound but they can feel it. Infrasound has the potential to produce a wide and strange range of effects in those who experience it, including anxiety, shivers, perception of vibration, creepy sensations, and unexplainable feelings of uneasiness, dread, revulsion, or fear.

Generally, humans cannot consciously perceive infrasound as sound, but depending on the frequency range, they can feel it. Tornadoes, and other extreme weather and disastrous phenomenon are known to emit infrasound. It would likely be an adaptive evolutionary benefit to the ability for infrasound to elicit such feelings. Hollywood has been taking advantage of the effects of infrasound on humans for decades; Feelings of dread and anxiety are induced in the movie viewer by playing infrasound during certain scenes to elicit these feelings, supplementing the effects that the motion picture itself and its audible sounds have.

Finally, infrasound waves are also known to be able to modulate the amplitude of higher-frequency sounds even though they do not affect the frequency or the phase of such sounds. Thus infrasounds can and do play a role in how we experience hearing sounds of within thresholds of hearing perception and affect such thresholds.

A.3.19.3. Materials and Waste Management

Comment Number: BOEM-2021-0038-DRAFT-0020-6

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The dredging, construction, and installation practices must not increase any type of community exposure to pollution, this includes: transportation of construction materials, storage, port and infrastructure upgrades, and removal & decommission of materials

Comment Number: BOEM-2021-0038-DRAFT-0021-3

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

We are afraid they will leak oil and lubricant into the marine environment.

Comment Number: BOEM-2021-0038-DRAFT-0024-20

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Target Information Gathering to Inform Decommissioning Protocols

We also encourage BOEM to, at the earliest stages possible for this and other projects, evaluate the utilization of foundations and scour protection as habitat for fish and invertebrates and use that information to inform projections of eventual decommissioning requirements. Currently, regulations require all man-made structures be removed at the end of a project's operational life, to a depth of 15 feet (4.6 meters) below the mudline (BOEM (30 CFR § 585.910(a))). However, a recent review by Fortune and Paterson (2021) on the impacts of decommissioning man-made structures provides the case for considering alternatives to this regulation. [Footnote 1 Fortune, I. S. and D. M. Paterson. 2020. Ecological best practice in decommissioning: a review of scientific research. ICES Journal of Marine Science, Volume 77, Issue 3, 1079–1091, <https://doi.org/10.1093/icesjms/fsy130>] The paper emphasizes the potential importance of man-made submerged structures as complex habitats that can support a rich localized food web long after the project's lifespan. This ecological importance can only be quantified through careful habitat monitoring of these novel hard surfaces, including the Nature-Based Design products. Documenting the established epifaunal community inhabiting the project structures will provide information on their habitat value, including their value as refugia, spawning habitat, and as a food source for fish and invertebrates. The data gathered from these post-construction surveys should be used to inform decommissioning strategies, as well as to inform the design and development of Nature-Based Design options in the future.

The Rigs-to-Reef program is a functional example of man-made structures being left in situ to continue providing complex habitat for marine life. Upon decommissioning of oil and gas platforms in the Gulf of Mexico and California, developers apply to leave a portion of each structure in place to continue functioning as an artificial reef (Fortune and Paterson, 2021); California guidelines even call for enhancement of man-made habitat upon decommissioning (Schroeder and Love, 2004). [Footnote 2 Schroeder, D. M., and M. S. Love. 2004. Ecological and political issues surrounding decommissioning of offshore oil facilities in the Southern California Bight. *Ocean & Coastal Management*, 47: 21–48.] Part of the costs saved by not removing the entire structure is put towards management of the artificial reef (Fortune and Paterson, 2021). Monitoring studies that have been sponsored by the federal government include addressing habitat value, fish recruitment and attraction, and impacts to species upon platform removal (BSEE, 2021). [Footnote 3 Bureau of Safety and Environmental Enforcement (BSEE). 2021. Decommissioning FAQs: Bureau of Safety and Environmental Enforcement. [bsee.gov](https://www.bsee.gov). <https://www.bsee.gov/subject/decommissioning-faqs>.]

Although decommissioning will be decades away, potential decommissioning requirements will influence decisions that developers make concerning investments in voluntarily incorporating Nature-Based Design into scour protection, as well as foundation selections, because different foundation types will require different amounts of scour protection.

Comment Number: BOEM-2021-0038-DRAFT-0024-21

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Additional considerations concerning decommissioning include the network of federally approved artificial reef areas in the vicinity of proposed wind farms, and/or the potential to create new ones to accommodate suitable materials that become available upon decommissioning. For example, New York

State Department of Environmental Conservation has federal permits for nine artificial reef sites totaling more than 10 square miles in the New York Bight including its newly established 16 Fathom Reef which is near to the Empire Wind site and the New Jersey Department of Environmental Protection holds permits for 17 artificial reefs encompassing a total of 25 square miles. These sites have potential to serve as a recipient of artificial reef-appropriate materials upon decommissioning. In essence, even though decommissioning is decades away, uncertainty concerning decommissioning requirements is influencing decisions that are made during construction planning. Thus, to the extent that uncertainty can be reduced early on, it will be beneficial, and could lead to greater interest in using marine life-friendly foundation types and incorporating intentional habitat creation into the designs of scour protection and foundations.

Comment Number: BOEM-2021-0038-DRAFT-0027-4

Commenter: Donald Weigl

Commenter Type: Individual

Comment Excerpt Text:

Hopefully, and mandatorily, sufficient and proper ongoing decommissioning funding should be included for when these structures have exceeded their lifetimes, that includes proper disposal/recycling of all parts. I am not sure about pollution from maintenance activities and leaks of lubricants, but I ask that those be minimized at the very least or better yet, prevented entirely with the best technology. (I have heard of these problems from existing wind power structures, but not sure if that is true).

Comment Number: BOEM-2021-0038-DRAFT-0041-31

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Decommissioning

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 if and 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-2021-0038-DRAFT-0043-10

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The final offshore wind development plan should require the project developer to describe how it intends to handle the end of the project's estimated operating life. This should include a consideration and evaluation of several potential options, including repowering and/or refurbishing at one or more stages of the project's projected lifespan, as well as ultimate decommissioning. [Footnote 4: Topham, Eva & McMillan, David. (2016). Sustainable Decommissioning of an Offshore Wind Farm. Renewable Energy 102, 471-472. Retrieved from https://www.researchgate.net/publication/309654822_Sustainable_Decommissioning_of_an_Offshore_Wind_Farm. Federal regulations governing the decommissioning of offshore renewable energy projects can be found at 30 CFR, Part 585, Subpart I, 585.900-913.]

Consideration of these issues at the outset may positively impact design and construction decisions from the perspective of both environmental mitigation and overall project cost.

Decommissioning considerations should take into account the environmental and ecological impacts of both a wholesale dismantling and removal of all structures and associated apparatus (essentially retuning the site to a “pre-build state”) as well as a more selective approach in which some elements of the project may remain in place. The impact of decommissioning on the surrounding ecosystem should be the first and highest consideration. Consideration of the reuse and recycling of decommissioned equipment should also be part of the process, with disposal/landfilling of material to be considered as a last resort. [Footnote 5: Topham & McMillan (2016), 475.]

There have been several decommissionings of offshore wind facilities in Europe [Footnote 6: Ibid, 470; Smith, Gillian & Lamont, Graeme. (2017). Decommissioning of Offshore Wind Installations - What We Can Learn, presented at Offshore Wind Energy 2017, London, UK. Retrieved from https://www.researchgate.net/publication/318340068_Decommissioning_of_Offshore_Wind_Installations_-_What_we_can_learn] and BOEM and New York should look to these for lessons to be learned. While quite different from an offshore wind facility, there may also be lessons to be learned from the much longer history of decommissioning offshore oil and gas facilities. [Footnote 7: Smith & Lamont (2017); Kaiser, Mark J. & Snyder, Brian. (2010), Offshore Wind Energy Installation and Decommissioning Cost Estimation in the U.S. Outer Continental Shelf, 63-64. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.456.4948&rep=rep1&type=pdf>] In addition, the United Kingdom has issued guidelines for decommissioning offshore renewable energy facilities [Footnote 8: UK Department of Energy and Climate Change (January 2011, revised). Decommissioning of Offshore Renewable Energy Installations under the Energy Act 2004 – Guidance Notes for Industry. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/80786/orei_guide.pdf] and Ontario Ministry of the Environment and Climate Change has more recently published an “Assessment of Offshore Wind Farm Decommissioning Requirements.” [Footnote 9: Ontario Ministry of the Environment and Climate Change (May 17, 2016). Assessment of Offshore Wind Farm Decommissioning Requirements (Document No.: 800785-CAMO-R-06 Issue: C).. Retrieved from https://files.ontario.ca/assessment_of_offshore_wind_farm_decommissioning_requirements.pdf] While these sources will undoubtedly yield useful information, it is important to bear in mind that ultimately any decommissioning plan must be uniquely tailored to the environment in which the project is operating and where the work will occur.

Comment Number: BOEM-2021-0038-DRAFT-0043-5**Organization:** Save the Sound**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

- Plans for assessing alternatives to, and alternative approaches for, decommissioning the project. The impact of decommissioning on the surrounding ecosystem should be the first and highest consideration.

Comment Number: BOEM-2021-0038-DRAFT-0044-19**Organization:** Mid-Atlantic Fishery Management Council and New England Fishery Management Council**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

The COP states that offshore cables will be removed during decommissioning, which we think is essential. 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-2021-0038-DRAFT-0062-8

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

TOTAL IMPACTED LAND USE INCLUDING FOR EXTRACTION OF RAW MATERIAL AND DISPOSAL INTO LANDFILL

An examination of the environmental effects of Equinor's Empire wind-turbine power plant should necessarily include a reasonable estimate of the area of land that is needed or that is expected to be used for extraction of raw material and for landfill to dispose of turbine blades and other components after expiry of useful life, as well as associated effects of the mining operations including release of ground pollutants and a reasonable estimate of the area of land generated by disposal, would be required to support the Equinor power plant over its lifetime, how that compares to the quantitative area of land that may be required by of other types of power plants which are also low/no emissions during operation.

It is important that estimates of land use and land degradation be estimated at this juncture so the total environmental cost of meeting the goals of the Climate Leadership and Community Project Act by using wind power plants as a primary source of power can be understood.

Comment Number: BOEM-2021-0038-TRANS-071321-0005-1

Commenter: Alexander Kazowski

Commenter Type: Individual

Comment Excerpt Text:

I have already noticed there is a large amount of landfill impact that these turbine blades tend to build up over time, they are hard to destroy because they are made to withstand such strong wind and hail and horrible weather and the erosional impact that they are actually hard to get rid of and maintenance and actually effects their ability to function as efficiently as, you know, as designed on paper.

A.3.19.4. General Wildlife

Comment Number: BOEM-2021-0038-DRAFT-0021-8

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

We are concerned about the process of building the wind turbines and the effect that would have on fish and wildlife.

Comment Number: BOEM-2021-0038-DRAFT-0022-3

Commenter: M Gill

Commenter Type: Individual

Comment Excerpt Text:

Turbines are disruptive to the natural environment and will pose more problems that they will solve. IE.....adverse effects to marine life / bird migration/ and not to mention commercial and recreational fishing.

Comment Number: BOEM-2021-0038-DRAFT-0030-38

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

ESA Section 7 Consultation

Under section 7(a)(2) of the ESA, each Federal agency is required to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species. Because the activities that are reasonably certain to occur following the proposed approval of the Empire 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 with the Cooperating Agency draft of the EIS. This BA must reflect all activities associated with EW1 and EW2 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-2021-0038-DRAFT-0030-39

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Considerations for the EIS

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 and to incorporate that into this EIS as appropriate.

Comment Number: BOEM-2021-0038-DRAFT-0030-42

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

It is our understanding BOEM will develop a Biological Assessment (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 DEIS. We are not opposed to an approach whereby the EIS would serve as the BA, provided sufficient detail and analyses can be 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-2021-0038-DRAFT-0030-5

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

As noted in the FR Notice, it is our understanding that BOEM will be preparing one EIS to evaluate two single and complete projects, EW 1 and EW 2, which include independent utilities, 4 as described in the single COP. While EW1 and EW2 are considered two independent projects, BOEM will be executing a single proposed action to either approve, approve with modifications or disapprove the COP. As there is a single COP approval, this will result in one ESA section 7 consultation and one EFH consultation with our agency. As such, we anticipate there would be a single set of EFH conservation recommendations and a single Incidental Take Statement (as appropriate within the Biological Opinion) with accompanying Reasonable and Prudent Measures and Terms and Conditions that will apply to both EW1 and EW2.

BOEM is planning to expedite the review of the COP (and the two projects) through a two-year timeline to complete the NEPA process and consultations. We have reviewed your timeline, including a detailed timeline and agreed to proposed dates for our consultations as reflected on the project's FAST-41 dashboard. As we have noted in the past, our ability to meet the consultation milestones laid out in the permitting timeline is contingent upon us making the determination that we have received complete and adequate consultation documents (BA and EFH assessments) that contain all necessary information to consult on the project. This timeline is also contingent upon receipt of an adequate and complete MMPA Letter of Authorization (LOA) application by March 1, 2022. Our Biological Opinion under the ESA is comprehensive and must consider all proposed actions associated with the project, including the proposed issuance of LOAs. If we do not receive the necessary information to initiate our consultations by the dates outlined in the permitting timeline, delays in the overall project schedule may result.

Comment Number: BOEM-2021-0038-DRAFT-0030-64

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Fish and Wildlife Coordination Act

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.

Comment Number: BOEM-2021-0038-DRAFT-0031 -13

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

A synopsis of wildlife resources of concern to the parks is provided below and more detailed park-specific information is available for many resources. We request this information be considered in more detailed analyses and discussions with applicable agencies, such as U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) and its National Marine Fisheries Service (NMFS), regarding appropriate mitigation strategies to avoid adverse impacts to these species.

The New York State Energy Research and Development Authority (NYSERDA) State of the Science Workshops on Wildlife and Offshore Wind Energy reports also provide a good summary of questions related to potential offshore wind impacts to some of these resources of concern to the NPS and other groups (e.g., benthic habitat, fish and invertebrates, sea turtles, marine mammals, bats, and birds). These resources could be affected by a range of stressors and environmental changes associated with various stages of project development (e.g., pre-construction, construction, operation, decommissioning). Without more detail regarding the proposal (e.g., completed COP appendices, including resource impact analyses), it is impossible for the parks to assess potential impacts, however we look forward to being able to review and comment in the future when more detailed information and analyses are provided.

Comment Number: BOEM-2021-0038-DRAFT-0031 -14

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

The NPS requests a geographic information system (GIS) mapping overlay of the project cable routes and landing points with the underwater marine animals siting maps is created. The map will help evaluate potential impacts to fish, marine mammals, sea turtles and nesting shorebirds.

Comment Number: BOEM-2021-0038-DRAFT-0039-12

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The ESA (16 U.S.C. 1531 et seq.) mandates the conservation of the nearly 2,000 terrestrial and aquatic endangered and threatened species and their habitats. The National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS) jointly administer the ESA for marine and anadromous species, and freshwater and terrestrial species respectively. [Footnote 34: Endangered Species Act (ESA) | Bureau of Ocean Energy Management (BOEM)]

ESA Section 7 requires all other Federal Agencies including BOEM to consult with NMFS and/or USFWS to ensure that “any “agency action” is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of an endangered or threatened species’ critical habitat.” [Footnote 35: USFWS. ESA, Section 7 Consultation: A Brief Overview. <https://www.fws.gov/midwest/endangered/section7/section7.html>]

Pursuant to EO 13990, [Footnote 36: White House. (2021, January 27). Executive Order on Tackling the Climate Crisis at Home and Abroad. Executive Order 14008] the USFWS and NMFS just released a plan “to improve and strengthen implementation of the ESA” through which the agencies seek to revise,

rescind, or reinstate five regulations finalized by the prior administration. Through one of them, “Reinstate protections for species listed as threatened under ESA”, the USFWS proposes to reinstate its “blanket 4(d) rule,” which “establishes the default of automatically extending protections provided to endangered species to those listed as threatened, unless the Service adopts a species-specific 4(d) rule.” [Footnote 37: USFWS. (2021, June 4). U.S. Fish and Wildlife Service and NOAA Fisheries to Propose Regulatory Revisions to Endangered Species Act. Press Release. https://www.fws.gov/news/ShowNews.cfm?ref=u.s.-fish-and-wildlife-service-and-noaa-fisheries-to-propose-regulatory-&_ID=36925] NMFS must join FWS in the reinstatement and implementation of the blanket 4(d) rule as an extremely urgent imperative since EW and other OSW projects along the Atlantic coast will have enormous impacts on ESA-listed species within the EA area such as critically endangered North Atlantic right whale. This whale and other marine species have not only not recovered since their ESA listing several decades ago, are now facing almost certain extinction.

ESA Section 4(d) and Section 9 provide for (unintentional, but not unexpected) Incidental Take which is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” [Footnote 38: NOAA Fisheries. Incidental Take Under ESA] NMFS must be extremely judicious in its approvals of Incidental Take and Incidental Harassment (see Sec. 4.4 below) during the OSW process, given the existential crisis that marine and coastal species are currently facing.

Interagency collaboration between USFWS, NMFS, and BOEM is essential in the successful deployment of OSW projects that will not imperil any coastal and marine species and their habitats. USFWS and NMFS statutory obligations and BOEM’s regulatory authority in OSW development must be guided by both the spirit and letter of the ESA.

Comment Number: BOEM-2021-0038-DRAFT-0039-2

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EW area (which encompasses the entire footprint of the two projects) has valuable and unique natural resources within the marine and coastal ecosystems including essential fish habitat, benthic resources, fish, mollusks, annelids, arthropods, sea turtles, resident and migratory shorebirds, songbirds, raptors, wading birds, pelagic birds, bats, whales, dolphins, seals, harbor porpoises, manatees, etc. These natural resources will be adversely impacted to variable extents by activities associated with the construction, operation, maintenance, and decommissioning of EW projects such as from the use of marine vessels, vehicles, aircraft, and heavy equipment, site and seafloor preparation (clearing, grading, trenching), scour protection, installation of foundations for turbines and substations, pile driving, vessel anchoring, cable routing, foundation removal, and WTG disassembly. These activities will result in temporary or permanent adverse impacts to biological resources from vessel and vehicle collisions, noise, habitat alteration, seafloor/land disturbance, sediment suspension and deposition, electromagnetic fields, discharges/releases of chemicals, trash, and debris, etc.

Comment Number: BOEM-2021-0038-DRAFT-0041-6

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Endangered Species Act and Marine Mammal Protection Act

The project must include current, robust analysis of the immediate and cumulative effects of the project on species listed under the ESA and MMPA. 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 an Incidental Harassment Authorizations under the Marine Mammal Protection Act.

Comment Number: BOEM-2021-0038-DRAFT-0047-4

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Potential interference with known migratory pathways, flyways, and overwintering sites of Rare, Threatened and Endangered Species, as well as important coastal habitats. Of particular concern is the migratory pathway for marine mammals and migratory birds. BOEM also should identify alternatives that avoid impacts to saltmarshes and submerged aquatic vegetation.

Comment Number: BOEM-2021-0038-DRAFT-0056-14

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS should encompass all applicable protocols for evaluating wildlife impacts of wind turbines located in tidal waters that are set forth in NJDEP's Technical Manual for Evaluating Wildlife Impacts of Wind Turbines Requiring Coastal Permits. For offshore projects, the NJDEP Technical Manual requires, for instance, a habitat evaluation, including species surveys to establish the movement corridors and distribution of birds, bats and marine organisms at the project site. The surveys are to include information regarding species composition, abundance, distribution, behavior and, for birds and bats, flight patterns and heights. The surveys must further document species diversity, abundance, and behaviors of birds, bats and marine organisms, such as marine mammals, sea turtles, and fish using the habitat, including airspace, where the turbine(s) will be constructed. BOEM should similarly require and review such surveys and other requirements included in the NJDEP Technical Manual. [Footnote 37: New Jersey Department of Environmental Protection Technical Manual, available at https://www.nj.gov/dep/landuse/download/cp_013.pdf.]

Comment Number: BOEM-2021-0038-DRAFT-0056-3

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The NY/NJ Bight is rich with diverse species and extraordinary natural features. Species diversity include over 30 species of whales and dolphins, including the endangered Northern Atlantic right whale; 5 species of sea turtles; 300 species of fish; 350 species of birds; 4 species of seals; hundreds of invertebrates [Footnote 7: Hutchison et al., The Interaction Between Resource Species and Electromagnetic Fields Associated with Electricity Production by Offshore Wind Farms, 96 Oceanography Vol. 33, No. 4 (December 2020).], eels and other species; and 20 threatened and endangered species.

The NY/NJ Bight experiences intense ocean mixing, called a "Cold Pool" effect, that stimulates massive phytoplankton blooms central to the structure of all NY/NJ Bight ecosystems. Due to its relative warmth, heavy flows of freshwater and inland nutrients from the Hudson River, and unique bathymetry, the NY-NJ Bight holds rich habitat for whales and other species. Ocean currents wash over these bottom features and stir up nutrients that are absorbed by phytoplankton. In essence, the NY/NJ Bight has unique features that are ideal for a vast variety of ocean life, ranging from deep sea corals to over 300 fish species.

[Footnote 8: New York Ocean Action Plan, Department of Environmental Conservation (2016-2026), available at https://www.dec.ny.gov/docs/fish_marine_pdf/nyoceanactionplan_final.pdf]

The Cold Pool in the Mid-Atlantic Bight supports some of the richest ecosystems and fisheries in the nation, including the most profitable shellfish fisheries and “second-most lucrative single-species fishery, sea scallops, in the western Atlantic.” [Footnote 9: Travis Miles, Josh Kohut, and Daphne Munroe et al., Could federal wind farms influence continental shelf oceanography and alter associated ecological processes? A literature review, Rutgers University and Science Center for Marine Fisheries (SCEMFIS) (Dec. 1, 2020), available at <https://scemfis.org/wp-content/uploads/2021/01/ColdPoolReview.pdf>] The Bight is also vital to the migratory patterns of many different species, ranging from deep sea corals to invertebrates. [Footnote 10: New York Ocean Action Plan, Department of Environmental Conservation (2016-2026), available at https://www.dec.ny.gov/docs/fish_marine_pdf/nyoceanactionplan_final.pdf] The Atlantic sea scallop (*Placopecten magellanicus*), Atlantic surfclam (*Spisula solidissima*), and ocean quahog (*Arctica islandica*) habitat along the Mid-Atlantic Bight is consistently among the most profitable fisheries in the world. [Footnote 11: National Marine Fisheries Service, 2020: Fisheries of the United States, 2018. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2018.]

Further, water column stratification could affect a number of species vital to fisheries and local ecosystem health, including summer flounder. [Footnote 12: T.M. Grothues and E. A. Bochenek, 2011: Fine scale spawning habitat delineation for winter flounder (*Pseudopleuronectes americanus*) to mitigate dredging effects –Phase II (Cycle 8), 2/2011.] The health of habitat for these and other species is closely associated with Mid-Atlantic Ocean conditions. Further, increased mortality and reduced reproductive success of shellfish and other species has been associated with warming-induced shifts to the stratification of cycles in oceanographic conditions. [Footnote 13: D. A. Narvaez, D. M. Munroe, E. E. Hofmann, J. M. Klinck, and E. N. Powell, 2015: Long-term dynamics in Atlantic surfclam (*Spisula solidissima*) populations: the role of bottom water temperature. *Journal of Marine Systems*, 141, 136-148.] This indicates that further alterations to ocean mixing may lead to changes in vital species activities across the board. Turbine arrays may directly or indirectly affect seasonal processes that dictate water column nutrient transfer among ecosystems and species. [Footnote 14: Travis Miles, Josh Kohut, and Daphne Munroe et al., Could federal wind farms influence continental shelf oceanography and alter associated ecological processes? A literature review, Rutgers University and Science Center for Marine Fisheries (SCEMFIS) (Dec. 1, 2020), available at <https://scemfis.org/wp-content/uploads/2021/01/ColdPoolReview.pdf>]

Many species in the waters and migratory corridors surrounding and within the project area could be vulnerable to interruptions in foraging, migration, or other effects of the foundations, cables, and all submerged gear. With these diverse marine resources and wildlife in mind, the ecological and socioeconomic impacts to include, assess, and address in Empire Wind’s COP EIS are described in the following sections. In sum, siting offshore wind turbines will affect marine species, many of which are already “on the brink” of becoming threatened or endangered.

Comment Number: BOEM-2021-0038-DRAFT-0057-3

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As recognized by the United Nations Environment Program Convention on the Conservation of Migratory Species of Wild Animals, migratory species, such as migratory marine species, are particularly vulnerable to climate change impacts. [Footnote 8: UNEP/CMS Secretariat, Bonn, Germany, Migratory Species and Climate Change: Impacts of a Changing Environment on Wild Animals (2006) at 40-41 (available at http://www.cms.int/publications/pdf/CMS_CimateChange.pdf). “As a group, migratory wildlife appears to be particularly vulnerable to the impacts of Climate Change because it uses multiple habitats and sites and a wide range of resources at different points of their migratory cycle. They are also subject to a wide range of physical conditions and often rely on predictable weather patterns, such as winds and ocean currents, which might change under the influence of Climate Change. Finally, they face

a wide range of biological influences, such as predators, competitors and diseases that could be affected by Climate Change. While some of this is also true for more sedentary species, migrants have the potential to be affected by Climate Change not only on their breeding and non-breeding grounds but also while on migration.”] Similarly, a report by National Audubon Society found that bird species, already facing threats from habitat loss and other stressors, face significant impacts from climate change that can be ameliorated if we prevent warming from reaching higher levels. [Footnote 9: Wilsey, C, B Bateman, L Taylor, JX Wu, G LeBaron, R Shepherd, C Koseff, S Friedman, R Stone. Survival by Degrees: 389 Bird Species on the Brink. National Audubon Society: New York (2019), <https://www.audubon.org/sites/default/files/climatereport-2019-english-lowres.pdf>.]

Against this backdrop of unprecedented climate change risks threatening species extinction and shifts in distribution, it is imperative that all offshore wind development activities move forward with strong protections in place for coastal and marine habitats and wildlife, using science-based measures to avoid, minimize, mitigate, and monitor impacts on valuable and vulnerable wildlife and ecosystems. BOEM must consider sufficient measures to protect our most vulnerable threatened and endangered species and require a robust plan for pre-, during, and post-construction monitoring that can enable effective adaptive management strategies.

Comment Number: BOEM-2021-0038-DRAFT-0057-4

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 and monitoring 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-2021-0038-TRANS-071321-0005-5

Commenter: Alexander Kazowski

Commenter Type: Individual

Comment Excerpt Text:

So just on a personal level, you know, beyond the aesthetic effect, you know, my biggest concern is environmental impact and moving forward, if it’s something that the environment and biodiversity cannot overcome or adapt to, especially since reports have shown that hundreds of thousands of birds have been killed by turbines to date, then perhaps there may need to be some form of alternative solution proposed.

A.3.19.5. Electromagnetic Fields (EMF)

Comment Number: BOEM-2021-0038-DRAFT-0047-17

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Provide baseline electromagnetic fields (EMF) levels.

Comment Number: BOEM-2021-0038-DRAFT-0047-67

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Evaluate methods that reduce EMF to background levels for areas where cable burial is not feasible.

Comment Number: BOEM-2021-0038-DRAFT-0047-74

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

In the New York State review pursuant to Article VII of the Public Service Law (§120,et.seq.) the New York State Department of Public Service will be reviewing conformance of the proposed facility design with the criteria adopted by the Public Service Commission for EMF levels at right-of-way edge.

Comment Number: BOEM-2021-0038-DRAFT-0056-8

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Electromagnetic Fields

- a. Main cables associated with the Empire Wind project include interarray cables and larger export cable. The orientation of fish may be impaired by the magnetic fields surrounding electric cables and thus impact migration patterns.
- b. Electricity produced at offshore wind farms is usually transmitted to shore through high voltage alternating or direct current cables. The current in these cables creates electric and magnetic fields (EMF). While the electric field generated by the current is isolated within the cable, the magnetic field is measurable around the cable.
- c. There has been significant concern about the impact on crustaceans and their sensibility to EMF as it can impact their ability to locate food and may cause avoidance or large areas.
- d. Fish species that employ electrical currents for orientation such as sharks and rays, eels and electric fish are the most sensitive. It has been suggested that many such species may be able to detect EMF at a distance over 1,000 ft.

A.3.19.6. Other

Comment Number: BOEM-2021-0038-DRAFT-0034-21

Organization: Seafreeze Ltd/Seafreeze Shoreside

Commenter: Meghan Lapp

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

On March 2, 2017, the Director of RIDEM wrote to BOEM again to bring attention to this document, as well as RIDEM comments submitted to BOEM as part of the EA and PSN notices. This letter notes:

and in the case of Vineyard Wind, approve projects without resolving the issue beforehand. (See more below in the [Bold and Underline: “HF radar”] section of this comment.)

At no stage of the BOEM process have commercial fishing interests been accommodated. We asked to be accommodated before the EA, and before the Equinor lease sale, before there were other parties involved. We were told no- BOEM will consider fisheries interests at the end of its offshore wind “process”. Seafreeze Shoreside therefore joined with other commercial fishing interests, commercial fishing ports and municipalities and challenged this in court, knowing that neither BOEM nor the developer would want to consider our interests at the end of the process. In that case, Statoil/Equinor submitted an amicus brief admitting as much and asserting that vacating the lease even at that earlier stage would “squander the resources and the five years that BOEM has expended to date in the leasing process” [Footnote 5: Fisheries Survival Fund et. al. vs Zinke, Defendant-Intervenor’s Cross Motion for Summary Judgment and Opposition to Plaintiffs’ Motion for Summary Judgment, 2017, page 24 .] -which is why BOEM should have done its due diligence to exclude fishing areas from the lease in the first place as requested and recommended by all the entities quoted above. However, in that case, the judge ruled that the fishing industry could only sue once a project had been approved. BOEM therefore cannot use spent resources of either the agency or developer as an excuse for not fully addressing commercial fishing needs from both a fishing and a safety perspective at this later stage; we have attempted to incorporate it through every possible public process, including the courts. Developers also cannot use the excuse with BOEM that they have invested time and money into site assessment as a reason for not now fully acknowledging that their project may not realize full buildout to accommodate the existing commercial fishing interests that we and other state/federal agencies have clearly done our best to bring to BOEM’s attention and of which Equinor is well aware.

Comment Number: BOEM-2021-0038-DRAFT-0034-25**Organization:** Seafreeze Ltd/Seafreeze Shoreside**Commenter:** Meghan Lapp**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

Marine radar: We will reiterate our extensive marine radar interference comments that we submitted to BOEM as part of the Vineyard Wind SEIS via reference here.[Footnote 13: See Seafreeze Comments VW SEIS Final 7_27_20 at Regulations.gov.] BOEM has also abdicated its responsibility to ensure safety per OSLA by approving Vineyard 1 before ensuring a sure solution for mitigation of this interference prior to project buildout. Instead, it merely requires the developer to “conduct a marine radar study to evaluate potential radar impacts and identify potential future mitigation measures, the results of which will be discussed with BOEM and the USC. BOEM and USCG may work with Vineyard Wind to implement any identified mitigations.” [Footnote 15: Vineyard Wind ROD, p. 95, measure 88, at <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Final-Record-of-Decision-Vineyard-Wind-1.pdf>.] BOEM continues to allow the developer to run the show, allowing them to hopefully come up with a mitigation solution after construction approval has been granted so that BOEM and the USCG can implement these as yet nonexistent solutions after the fact. After mariner’s lives have been placed in jeopardy.

Comment Number: BOEM-2021-0038-DRAFT-0034-31**Organization:** Seafreeze Ltd/Seafreeze Shoreside**Commenter:** Meghan Lapp**Commenter Type:** Non-Governmental Organization

Comment Excerpt Text:

BOEM should prohibit any and all COP approval in the region until successful marine radar interference solutions can be identified and implemented. This also must be included as an alternative, as it is the only alternative that provides for safety.

Comment Number: BOEM-2021-0038-DRAFT-0047-49

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Consideration of electric facilities reliability.

- Consideration of public safety and facility compatibility with existing utility infrastructure.

Comment Number: BOEM-2021-0038-DRAFT-0047-75

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

The installation of cables and conduits in, on, or over New York State-owned underwater lands would require the issuance of an easement(s) pursuant to Public Lands Law §3(2). Further, in accordance with the provisions of Public Lands Law §75(7), the New York State Office of General Services has adopted rules and regulations with respect to the procedures involved in applying for the use of underwater lands including the establishment of fees, and factors to be examined in considering an application, including without limitation: the environmental impact of the Project; the values for natural resource management, recreational uses, and commercial uses of the pertinent underwater land; the size, character and effects of the Project in relation to neighboring uses; the potential for interference with navigation, public uses of the waterway and rights of other riparian owners; the effect of the Project on the natural resource interests of the State in the lands; the water-dependent nature of the use; and any adverse economic impact on existing commercial enterprises.

Comment Number: BOEM-2021-0038-DRAFT-0047-8

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Use of High Voltage Direct Current (HVDC) export cable for Empire Wind 1 and Empire Wind 2 to reduce the number of export cables and landfall sites and enable meshing with future offshore wind projects.

Comment Number: BOEM-2021-0038-DRAFT-0057-24

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, 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 78: E.g., SFWF DEIS at 3.1.1, Tbl 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 79: 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 80: 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-2021-0038-DRAFT-0057-29

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

ECOSYSTEM CHANGE SHOULD NOT BE FRAMED AS “BENEFICIAL”

The Empire Wind 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 Empire 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 Empire 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-2021-0038-DRAFT-0062-12

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

WEATHER IMPACTS OF THE WIND TURBINE POWER PLANT ON BOTH QUALITY OF LIFE AND ENERGY USAGE

Wind turbine power plants of large scale are known to affect weather patterns. The COP does not give consideration to expected changes in weather resulting from the turbines, postulate the effects of such change (frequency of clear days or haze, humidity, temperature, clearing of suspended particulates) or say whether the expected weather changes will be large enough or of a type known to impact the quality of life for residents within the area of project effects or result in changes in energy demand and use.

Turbine power plants can affect local temperatures because they significantly slow wind velocity and draw warm air, the effect of which is more pronounced at night due to temperature gradients being higher.

Assessment should include consideration of power plant's effect on the weather and whether such weather changes have the potential to affect quality of life and energy demand/use

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

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

EXPECTED HUMAN FATALITIES AND SERIOUS INJURIES

The COP contains no rough estimate of how many deaths and injuries to workers will result from the power plant over the course of its lifecycle, based upon the expected duration and scale of activities required for construction and operation of the plant and plant size.

For sure permits takings of endangered species will be expected to be issued based on estimated deaths under the ESA. Human life is valuable as well; Quantitative expected 'takings' of human life resulting from construction and operation and decommissioning of a plant of this size and scale over its lifetime should be estimated so that the risks to worker health and safety can be taken into consideration with other factors to determine the overall human health and safety risks and how best to mitigate individual risks.

It is estimated that more accidental deaths and serious injuries per MW of power produced result from Wind Energy power production than from any other form of power production. These deaths that occur during the manufacture and transport of wind turbine components, and the construction and maintenance of turbines and other wind energy onshore and offshore infrastructure are known to commonly include falls, severe burns from electrical shocks and/or arc flashes or fires, and crushing injuries. The expected human cost of serious injury and death of workers needs to be included in the COP in the form of a quantified estimate for NEPA review.

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

Commenter: Alena Walters

Commenter Type: Individual

Comment Excerpt Text:

RISK TO PERSONS WITH PACEMAKERS

The risk of pacemaker malfunction from crossing a buried high voltage cable to persons with certain types of installed pacemakers that happen to be sensitive to magnetism or magnetic flux, if any, should be estimated and disclosed.

Comment Number: BOEM-2021-0038-DRAFT-0063 -3

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Radar solutions, which presently do not exist, must be found before loss of life occurs within a wind farm due to the inability of present day commercial fishing radar to work inside a wind energy area without throwing false targets or masking other targets within the wind turbine zone. National security must solve the ARSR 4 problem.

Comment Number: BOEM-2021-0038-DRAFT-0063 -7

Organization: Long Island Commercial Fishing Association

Commenter: Bonnie Brady
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Solutions to the loss of National Ocean Service's OOS high-frequency radar, noted to a letter to BOEM in 2014 [Footnote 2: National Ocean Service letter to BOEM 2014] must be realized, both in concept and in practice before this project goes forward, as not only will it effect the ability of NOAA to track oil spills and measure current height for hurricane and tsunami/flooding prediction, if the Empire Wind One & Two projects are built in the area, it will destroy the United States Coast Guard's Search and Rescue Operations program due to model failure with the loss of the HF radar which will create false hot zone targets due to incorrect current height values. That will translate into the possible loss of life within the wind farm should a search and rescue be warranted. The Department of Energy held a webinar series in 2020, the PowerPoint documents from the series can be found here. [Footnote 3: Importance of Reliable and Accurate Environmental Data in the U.S. Coast Guard's Search and Rescue Optimal Planning System (SAROPS)]

Marine radar solutions must be found also, because as of this writing no solutions to radar interference exist, even with the help from Sandia Labs and MIT. A solution to radar interference must be found BEFORE construction of wind turbine energy areas to prevent loss of life.

The same goes for FAA radar, which many small scale regional airports still use and which will not work according to the same WTRIM webinar held last summer. A full host of the problems with radar and wind turbines can be found at the WTRIM series online. [Footnote 4: DOE Wind Turbine Radar Interference Mitigation Series]

Comment Number: BOEM-2021-0038-DRAFT-0064 -1

Organization: U.S. Coast Guard
Commenter: Michael Emerson
Commenter Type: Federal Agency

Comment Excerpt Text:

Impacts this project will have on Coast Guard aviation and maritime search and rescue operations

Comment Number: BOEM-2021-0038-TRANS-063021-0014-1

Organization: Sierra Club
Commenter: Shay O'Reilly
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

And I wanted to say, one of the things that we know about offshore wind, is that it generates a lot of power during peak demand times and I hope that will come into account in the overall assessment of this project.

A.3.20 Planned Activities Scenario/Cumulative Impacts

Comment Number: BOEM-2021-0038-DRAFT-0008-6

Commenter: Isaac Rysdahl
Commenter Type: Individual

Comment Excerpt Text:

I ask that the EPA investigate the environmental impacts of a wind farm in offshore waters, but also to investigate the effects of inaction in the face of an electrical grid so tied to the fossil fuels that pollute our water, land, and lungs.

Comment Number: BOEM-2021-0038-DRAFT-0009-1

Commenter: David Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

When assessing the environmental impact of the wind farm, we must bring into account the cost of inaction. The price of inaction on climate change is nearly incalculable with rising and acidifying oceans, desertification of our land, death and destruction from severe storms (Sandy alone cost over 19 billion dollars of damage and lost economic activity in New York City), and the rise in asthma in New York City youth.

Comment Number: BOEM-2021-0038-DRAFT-0024-10

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Cumulative Impacts Analyses

The Conservancy has been consistent in our assertion that anticipated project specific effects and impacts be viewed in the context of thorough analyses of potential cumulative impacts of offshore wind development along the U.S. east coast, as well as through a lens that compares unavoidable impacts to the climate change mitigation tradeoffs of failing to achieve our collective decarbonization goals. We have consistently asserted that analyses of potential cumulative impacts must be updated as new scientific information becomes available, as new technology becomes available, and as circumstances change (such as the anticipated addition of eight lease areas in the New York Bight later this year and/or if there are appreciable changes to populations of particularly vulnerable habitats and/or species).

Comment Number: BOEM-2021-0038-DRAFT-0024-11

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Data Standardization, Information Sharing, Coordination, and Adaptive Management

As the first set of offshore wind projects proceed and as project specific and regional research and monitoring results become available, BOEM must create a process to appropriately update guidance and even change issued permit conditions based on significant changes in the best available science using an adaptive management approach. While it is possible that adaptive management of this type could result in new requirements or conditions, it is equally likely that new information could result in changing or relaxing of requirements or conditions on later projects based on what is learned from monitoring done as part of the early projects. Results of pre-, during-, and post-construction monitoring of early projects could foreseeably begin to inform guidance for projects later in the project pipeline, projects in other regions and/or decommissioning requirements. Thus, standardization of data collection and transparent and timely sharing of research and monitoring results must be a requirement for all mandatory, developer-led research and monitoring efforts, as well as for all research and monitoring supported in part or in whole with federal funding. While there may be an up-front coordination burden of such provisions, these requirements will undoubtedly save time and money by avoiding unnecessarily repeating or duplicating activities and reducing uncertainty that is inherent in comparing the results of studies performed using different methods.

Comment Number: BOEM-2021-0038-DRAFT-0024-12

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As part of its 2020 State of the Science Workshop on Wildlife and Offshore Wind Energy NYSERDA supported seven workgroups that focused on identifying near-term research and monitoring priorities concerning development of fixed foundation offshore wind along the Atlantic outer continental shelf. The seven focal areas were Environmental Change, Fishes and Mobile Invertebrates, Birds, Bats, Sea turtles, Marine Mammals, and Benthos. Reports produced by these workgroups were recently posted at <https://www.nyetwg.com/2020-workgroups>. We strongly encourage BOEM's continued collaboration with the Regional Wildlife Science Entity (RWSE) and the Responsible Offshore Science Alliance (ROSA) for data sharing/hosting/standardization, as well as for prioritization and administration of regional and cumulative impacts research and monitoring that goes beyond and is complimentary to project-specific efforts that may be required as part of permit conditions for Empire Wind and the other project proposals under review. These working group reports represent a strong starting point for BOEM as well as RWSE and ROSA to identify near-term research and monitoring priorities aimed at providing information to inform adaptive management of BOEM's wind farm permitting process.

Comment Number: BOEM-2021-0038-DRAFT-0024-4

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM should establish an adaptive management process that enables decisions concerning later phases of this project and future projects to be readily informed and or revisited when the best available science changes thanks to yet to be completed research and monitoring programs.

Comment Number: BOEM-2021-0038-DRAFT-0030-15

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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-2021-0038-DRAFT-0030-30

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 Vineyard Wind project to help inform discussions of cumulative effects on marine resources from other offshore wind development projects for this EIS. 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 given the proximity of those potential lease areas and the fact that lease areas will be defined and auctions completed before the EIS for this project has been finalized.

Comment Number: BOEM-2021-0038-DRAFT-0030-31

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

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 is particularly important for migrating species, such as marine mammals, sea turtles, fish, and invertebrates that may use or transit multiple proposed project areas. The potential cumulative impacts on the migration and movements of these species resulting from changes to benthic and pelagic habitats and potential food sources due to the presence of multiple projects should be evaluated in the cumulative effects analysis.

Comment Number: BOEM-2021-0038-DRAFT-0030-34

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Assessment of Overlapping Activities

The EIS should evaluate, in detail, the cumulative impacts on protected species, habitat, and fisheries resources associated with overlapping construction activity of regional projects, including elevated noise levels, displaced fishing effort, cable routing and burial, and changes in species abundance, among other impacts. Although Empire Wind is not immediately adjacent to another project and certain impact factors may not overlap with other regional wind projects, temporally overlapping activities by other regional projects may adversely affect certain activities (migration) or multiple sub-populations of particular species. 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 and migratory 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. In addition, an assessment of cumulative impacts of existing and proposed transmission cables should also be considered. Based on the proposed wind development projects in this region, there is the potential for substantial additive impacts associated with the number of required cables. As part of the cumulative effects analysis, measures to minimize the additive impacts should be considered, including the evaluation of designated cable routes and coordination and consolidation with adjacent projects to minimize cumulative impacts.

Comment Number: BOEM-2021-0038-DRAFT-0030-35

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Assessment of Regional Fishery Impacts

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. 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. 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-2021-0038-DRAFT-0031 -15

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Overall, as the marine environment is built out by several proposed offshore wind projects in the vicinity of the Empire Wind Projects, the potential cumulative impacts to marine mammals and sea turtles are currently unknown. Many of the potentially affected species do not occur in areas where utility-scale offshore wind exists today (e.g., Europe), and so there is no parallel data from which to draw conclusions.

Comment Number: BOEM-2021-0038-DRAFT-0037-10

Organization: Offshore Power LLC

Commenter: William O'Hearn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Finally, we request a more comprehensive discussion of cumulative impacts on fisheries from continued offshore wind power development. It is essential we have a well-established framework for monitoring cumulative impacts now to avoid consequences for fisheries down the line.

Comment Number: BOEM-2021-0038-DRAFT-0039-16

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Vessel strikes and fishing gear entanglements causing injury and death, underwater noise and other disturbances causing stress and behavioral changes, marine debris/pollution causing starvation and death, and habitat alteration resulting in displacement/habitat avoidance, changes in prey distribution/availability are existential threats to marine species of all taxa. These threats are expected to increase with the additional vessel traffic, behavioral changes from project-generated electromagnetic fields (EMFs), altered seafloor topography, and changing hydrodynamics from EW project siting, construction, operations, and decommissioning activities. Over the ~3 decade life of the EW projects, other impacts such as those from climate change, multiple ongoing and proposed OSW projects in the region, non-OSW activities offshore, near shore, and coastal activities will combine to pose unprecedented risks to ecosystems in the EW area which include habitats of endangered species with rapidly declining populations from every taxon.

The EIS must therefore include a thorough project-specific impacts analysis and the analysis of cumulative impacts on endangered species of every taxon and their habitats within the marine (pelagic and benthic), nearshore, coastal, and terrestrial environments of EW area. These analyzes must inform the development and implementation of avoidance and mitigation strategies based on best available current science and utilizing the latest state-of-the-art technologies as well as emerging technologies. In the following sections, we describe general and taxon-specific requirements of the EIS, and provide recommendations to avoid, minimize and/or mitigate adverse impacts which are central to successful EW development.

Comment Number: BOEM-2021-0038-DRAFT-0039-47

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The EIS must include a comprehensive quantitative analysis of cumulative impacts on listed marine mammals expected from EW and other activities in the region, relative to the baseline level. The analysis must quantify the percentage of NARW population potentially exposed to conceivable impacts from OSW development on an annual basis [Footnote 216: Goodale, W. (2018). Cumulative adverse effects of offshore wind energy development on wildlife. Presentation at the NYSERDA State of the Science Workshop on Wildlife and Offshore Wind Development, Fox Hollow, Woodbury, NY.] and, as a worse-case scenario, the potential impact on population viability from a permanent loss of foraging and other habitat within EW area.

Comment Number: BOEM-2021-0038-DRAFT-0039-49

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- The EIS must use the cumulative impact analysis to ensure that any potential shifts in habitat usage by NARW and other large whale species and stocks are reflected in sound exposure modeling associated with OSW development. Because of the long-term cumulative effects of various stressors, NARW “body lengths have been decreasing since 1981” and this reduction in physical size “may lead to reduced reproductive success and increased probability of lethal gear entanglements”, according to a just published study. [Footnote 234: Stewart, J. D. et al. (2021). Decreasing body lengths in North Atlantic right whales. *Current Biology*, 31, 1–6.]

Comment Number: BOEM-2021-0038-DRAFT-0039-6

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Empire Wind (EW) area has important and unique ecosystems with numerous at-risk species from multiple taxa that will be impacted from EW siting, construction, operation, maintenance, and decommissioning activities. Adopting the responsible framework for all project activities will ensure successful energy generation while protecting species and their habitats. In our comments, we use the term “EW area” to include the OCS leased area for siting wind turbine generators (WTGs) for the two proposed projects (EW1 and EW2), offshore substations, export cable routes, onshore landing sites, onshore substations, connections to transmission grids on land, and the corridor surrounding these and any other infrastructural elements of the projects.

Comment Number: BOEM-2021-0038-DRAFT-0039-62

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

[Underlined: Analyses of cumulative impacts]

BOEM must use this scoping process to identify & evaluate potential impacts to natural resources from the EW1 and EW2 projects, in cumulation with those from other current and reasonably foreseeable future actions by federal, non-federal agencies, and private parties. [Footnote 24: Cornell Law School, Legal Information Institute. NEPA - Cumulative impacts, 32 CFR § 651.16.] With the national goal of generating 30 GW offshore wind power capacity by 2030, it is more than foreseeable that multiple OSW projects will come online on an expedited schedule. This, coupled with climate crisis, increasing energy demands of growing coastal populations [Footnote 25: <https://www.census.gov/topics/preparedness/about/coastal-areas.html>; Cohen, D. (2019, July 15). 94.7M Americans Live in Coastline Regions <https://www.census.gov/library/stories/2019/07/millions-of-americans-live-coastline-regions.html>] and concomitant expansion of built environment, means the OSW-related impacts to wildlife will only be amplified, further necessitating the analysis of the magnitude and significance of cumulative impacts.

On April 16, 2021, Secretary Deb Haaland, Department of the Interior (DOI), issued a Secretarial Order reiterating the fact that the NEPA statute hasn’t changed and DOI agencies, including BOEM, must follow the statute in including an analysis of cumulative impacts. [Footnote 26: NEPA - 40 C.F.R. §1508.7: Cumulative Impacts:

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.] BOEM’s NEPA EIS analyses must, therefore, assess cumulative effects as required by longstanding case law interpreting NEPA [Footnote 27: National Association of Environmental Professionals (NAEP) NEPA Case Law Review https://ceq.doe.gov/laws-regulations/case_law.html] and in no way prohibited by currently paused regulations. [Footnote 28: Hanly v. Kleindienst, 471 F.2d 823, 830-31 (2d Cir. 1972)]

Comment Number: BOEM-2021-0038-DRAFT-0039-7

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Within the offshore and onshore footprints of EW1 and EW2 are important marine, coastal, and terrestrial biological resources which will be temporarily or permanently impacted by EW1-EW2 project activities.

Among these resources are various at-risk flora, resident and migratory fauna, and their habitats including those protected under several statutes as described sections 4 and 5.

Because of the large number of impact producing factors of EW projects, from site characterization and assessment through construction and decommissioning phases, and the broad range of biological resources potentially impacted (see Section 5), BOEM must adopt a programmatic ecosystem-wide approach in conducting a cumulative impacts analysis. This analysis must include not only EW impacts but those from current and reasonably foreseeable non-EW activities offshore, near-shore, and onshore, regional OSW development, as well as climate change impacts in order to identify and design effective avoidance and mitigation strategies.

Comment Number: BOEM-2021-0038-DRAFT-0040-11

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

Finally, we request a more comprehensive discussion of cumulative impacts on fisheries from continued offshore wind power development. It is essential we have a well-established framework for monitoring cumulative impacts now to avoid consequences for fisheries down the line.

Comment Number: BOEM-2021-0038-DRAFT-0042-8

Commenter: Paul Eidman

Commenter Type: Individual

Comment Excerpt Text:

Finally, we request a more comprehensive discussion of cumulative impacts on fisheries from continued offshore wind power development. It is essential we have a well-established framework for monitoring cumulative impacts now to avoid consequences for fisheries down the line.

Comment Number: BOEM-2021-0038-DRAFT-0043-7

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Plans for a cumulative impact analysis that considers the impacts of the project in conjunction with pending and anticipated projects in other offshore lease areas.

Comment Number: BOEM-2021-0038-DRAFT-0044-20

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The EIS must include a meaningful cumulative impacts assessment. We supported the criteria used in the Vineyard Wind EIS for defining the scope of reasonably foreseeable future wind development; however, that scope should now be expanded to include the anticipated New York Bight lease areas, especially because they are in relatively close proximity to this lease. Cumulative impacts and risks need to be evaluated for species that are widely distributed along the coast. Species such as bluefish, summer flounder, and others that migrate along the coast could be affected by multiple offshore wind projects, and well as other types of coastal development.

Comment Number: BOEM-2021-0038-DRAFT-0046-11

Organization: Fisheries Survival Fund

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The DEIS is closely focused on the Empire Wind project area. For its part, the NOI states, “The Draft EIS will identify and describe potential effects of the Proposed Action on the human environment that are reasonably foreseeable and have a reasonably close causal relationship to the Proposed Action. This includes such potential effects that are later in time or occur in a different place.” It is unclear from the above-quoted language in the NOI whether and to what extent BOEM is going to continue requiring cumulative impacts analyses. However, a single wind farm does not occur in a vacuum, and certainly not in the context of this Administration’s ambitious plans for offshore wind, which are recognized at the very outset of the NOI.

In 2020, BOEM directed that the supplement to the Vineyard Wind DEIS consider the cumulative impacts of approximately 22 GW of Atlantic offshore wind development, which encompassed some 16 windfarms. So, too, should the Empire Wind DEIS consider the cumulative impacts of BOEM’s comprehensive windfarm construction program. Moreover, in terms of what is actually foreseeable from a cumulative effects analysis, BOEM has committed to reviewing at least 16 COPs by the end of 2025. The cumulative impacts of all these windfarms need to be considered in each COP. Regarding the scallop fishery, cumulative impacts affect, at the very least, the following “potential impacts” identified in the NOI: water quality, benthic habitat, essential fish habitat, invertebrates, commercial fisheries, employment, economics, environmental justice, navigation, and vessel traffic.

Comment Number: BOEM-2021-0038-DRAFT-0047-1

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Potential impacts to vessel traffic and anchorages, effective fishing bottom-gear deployment, finfish and shellfish stocks, and related habitat that may be harmed or inaccessible to fishing due to the proposed development. BOEM should analyze these concerns in light of the current Project and through a focused cumulative impacts analysis that considers planned offshore wind development in the same geographic region.

Comment Number: BOEM-2021-0038-DRAFT-0047-57

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Cumulative Impacts:

- Evaluation of cumulative impacts in geographic area from Massachusetts to North Carolina including:
- Economic impacts on commercial fishing and shipping, including both displacement of effort and stress on commercially valuable fish and shellfish stocks; impacts on greenhouse gas and other emissions levels; and impacts to migratory patterns of protected avian and marine mammal species, by the Project and reasonably foreseeable activities, including at a minimum, currently leased areas and proposed leasing in the New York Bight (BOEM-2021-0033), particularly survey activities and/or planned development.
- Economic impacts on commercial fishing from the Project and potential sand mining. [Italics: Note: New York State has signed agreements ·with BOEM to evaluate sand resources.]

- Growth-inducing effects from use of ports and new O&M facility.
- Identification and details on all utility crossings. Consideration of as-built survey to identify cable protection area and all cables in the area.
- Consideration of capacity of the onshore cable for accepting additional power. [Italics: Note: if additional energy capacity is included as part of the proposed onshore cable corridor, then the possibility of potential future build-out and expansion should be made clear and any related, planned expansion should be discussed.]

Comment Number: BOEM-2021-0038-DRAFT-0056-1

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Overall, COA has concerns about the scope and magnitude of the totality of projects and proposals currently moving rapidly forward in the NY/NJ Bight, especially with the dearth of science available about the impacts to the physical environment, benthos, fisheries, mammals, bird, and bats. BOEM's process is woefully inadequate and fails to fully recognize the massive impact of all this industrialization in the Atlantic Ocean. The ecosystem is interconnected and fluid and all projects in the Atlantic from the North to the South Atlantic Planning Areas will impact marine life and waters that are shared within the ecosystem.

Indeed, recent studies and agency letters underscore that BOEM has not conducted the biological and ecological assessments needed to determine the effects and impacts of the extensive development. As such, BOEM will be unable to appropriately evaluate the individual projects much less the cumulative effects or harm. This is also true in individual planning areas. For example:

- New York State Environmental and Technical Working Group recently released a report that is the culmination of over 200 scientists considering the state of science in seven areas (environmental change, fisheries and mobile invertebrates, bats, birds, sea turtles, marine mammals, and benthos). These impressive assessments make clear that there is a lack of comprehensive science to determine the effects and impacts. Thus, it is premature for EIS' for individual projects, including Empire Wind 1 & 2. The result will be the damage will be done too late to avoid, reduce or mitigate the harm. [Footnote 3: State of the Science Workgroups, State of the Science Workshop on Wildlife and Offshore Wind Energy 2020: Cumulative Impacts, 2 020 State of the Science Workshop Work Groups | ETWG (nyetwg.com).]

- The National Oceanic and Atmospheric Administration (NOAA) and National Marine Fisheries Service (NMFS) are charged under the Magnuson-Stevens Fishery Conservation and Management Act to protect important habitats of federally managed marine and anadromous fish species, including by protecting Essential Fish Habitat. It appears the repeated requests by this federal agency have been ignored or not fully complied with as evidenced in a NOAA/NMFS March 29, 2021 letter:

[Italics: "As we discussed in our May 27, 2020, letter to you, we have found that the existing Bureau of Ocean Energy Management (BOEM) benthic survey guidelines for collecting acoustic and benthic data across a lease area have not been applied consistently and are inadequate to ensure the collection of sufficient site- specific baseline data for our consultations. While your guidelines state that consultation with our agency is recommended prior to conducting these surveys, applicants have not consistently done so and, as a result, our recommendations have not been incorporated consistently across all projects. We hope that these recommendations will help to alleviate that inconsistency.

The attached updated document provides additional information for each step in the mapping process, includes details on sampling frequency, and incorporates recommendations for mapping inshore habitats, such as submerged aquatic vegetation. In addition, as we have discussed with your staff, we understand

that in many cases, benthic sampling is conducted concurrently with the collection of acoustic data. However, this method is not consistent with standards for habitat mapping. We strongly recommend that you work with the developers to ensure that they use the 2 acoustic data to focus and refine additional, targeted benthic sampling to characterize habitat delineations. Incorporating these recommendations will provide the level of accurate and precise baseline habitat data necessary for an efficient and effective consultation process.”] [Footnote 5: March 29, 2021, Letter from Louis A. Chiarella, Assistant Regional Administrator, NMFS to Michelle Morin, Environmental Branch Chief, BOEM, at 1-2 (emphasis added).]

The letter also states:

[Italics: “We encourage BOEM and developers to meet with us early in the process, prior to developing benthic survey plans, to facilitate an understanding of our resource concerns and information needs for the consultation process.”] [Footnote 6: See id, at 2.]

Enclosed in the letter is NMFS’ “Recommendations for Mapping Fish Habitat” document. The fact that the agency must make repeated efforts to obtain cooperation and compliance by applicants and even BOEM is unacceptable and is evidence of a reckless approach by BOEM in OSW development.

Of note is that New Jersey Department of Environmental Protection’s (NJDEP) studies on offshore wind were completed in July 2010 – over 11 years ago. These studies are dated. It is also unlikely that they would meet the NMFS’s Recommendations for Fish Habitat assessments.

It is clear the state of knowledge and science on the impacts to the marine ecosystem from one project, much less numerous OSW projects, is extremely limited to non-existent. Federal and state resource agencies are not embraced and even ignored. Thus, decisions made by BOEM will not allow effects and impacts to be avoided, reduced or mitigated. Indeed, how do you protect or mitigate that which has failed to be measured?

Comment Number: BOEM-2021-0038-DRAFT-0056-15

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

In an alternative analysis, BOEM should utilize an extensive cumulative impact analysis based on the potential harm to sensitive areas in the NY/NJ Bight, especially in consideration of the unprecedented footprint for offshore wind energy proposed across the East Coast. During the leasing and planning phases of offshore wind development, BOEM only reviews impacts that are “reasonably foreseeable.” [Footnote 38: Vineyard Wind Supplemental Environmental Impact Statement, p 1-2.] As a result, cumulative effects and extensive, precautionary steps have taken a back seat. Even though BOEM expanded the scope of their cumulative impact analysis during the Vineyard Wind programmatic review, there could still be cascading effects to vulnerable New Jersey and New York ecosystems, wildlife, and communities along the Mid- Atlantic Bight.

The siloed-nature of BOEM’s approach to Section 102 of the National Environmental Policy Act (NEPA) could prevent proper siting, construction, and analysis. Section 102 states simply that a “detailed statement be prepared by the responsible official” when appropriate for “actions significantly affecting.” [Footnote 39: Id.] For instance, the Supplemental Environmental Impact Statement (SEIS) from Vineyard Wind 1 “assumes that best management practices (BMPs) incorporated from the [Record of Decision] on the 2007 Final Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf, will be implemented. [Footnote 40: Federal Register, 1/10/2008, available at <https://www.federalregister.gov/documents/2008/01/10/E8-210/record-of-decision-for-the-final-programmatic-environmental-impact-statement-for-alternative-energy>]

BOEM finally shifted their analysis from the 2007 Record of Decision during the Vineyard Wind extended environmental review process. [Footnote 41: Vineyard Wind 1 Offshore Wind Supplemental Environmental Impact Statement, 1-2 (2020).] In July of 2020, BOEM published the SEIS, which exclusively focused on cumulative impacts from the project in relation to others in the same geographical area. The results of the SEIS detailed the importance of early planning and a robust cumulative impact analysis. The SEIS concluded that the proposed action, as well as all six alternatives, would result in “major impacts” to both commercial and recreational fishing as well as navigation. [Footnote 42: Vineyard Wind Supplemental Environmental Impact Statement (2020), p. ES-5.] The previous project specific EIS found that, individually, Vineyard Wind would only result in “minor” to “moderate” impacts to these industries. [Footnote 43: Bureau of Ocean Energy Management, Vineyard Wind – Draft Environmental Impact Statement, Docket No. BOEM 2018-060, at ES-8.] The SEIS and a cumulative impact approach illustrate how the impacts change when viewed in relation to the surrounding developments. Further, the SEIS outlined why it is essential that regulators engage in increased cumulative impact analyses that focus on the development of the offshore wind industry holistically, as well as on an individual project-by-project basis.

With the Vineyard Wind project, BOEM changed their tiered analysis of “reasonably foreseeable” impacts to include “those proposed offshore wind projects with COPs submitted or approved at the time of analysis.” [Footnote 44: Id.] BOEM expanded their “quantitative cumulative impacts analysis” in their SEIS to include all projects with submitted or approved COPs, all projects with onshore energy awarded, and all announced and future solicitations and lease sales. However, BOEM still did not expand this to apply to transmission, interconnection, or onshore impacts. Nor did they cover the full extent of navigation and transit concerns as “reasonably foreseeable.” COA supports the continued application of BOEM’s “quantitative cumulative impact analysis” and urges BOEM to continue revising its approach to include the aforementioned additional cumulative impacts.

Comment Number: BOEM-2021-0038-DRAFT-0056-2**Organization:** Clean Ocean Action**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

Moreover, COA is specifically concerned about the location of Empire Wind’s projects; the widespread and largely unknown significant environmental impacts as identified by marine scientists, and the cumulative impacts of the numerous large offshore wind projects in various stages of development in the NY/NJ Bight. The majority of known effects associated with constructing wind turbine generators and foundations are most severe during the construction and surveying periods of a project’s lifecycle. Moreover, there is uncertainty regarding the long- term and onshore impacts associated with this unprecedented scale of offshore development.

COA appreciates the acknowledgement by BOEM and Equinor in the Construction and Operations Plan (COP) that there will be adverse impacts and welcomes the consideration of avoidance, minimization and mitigation. In general, COA’s expectation for responsible development off offshore wind energy focuses on the following principles, which COA recommends being applied in the EIS:

- the siting of an offshore wind project must avoid prime fishing areas; Empire Wind is siting in historically and economically important fishing areas.
- identifying and assessing cumulative environmental impacts from the first and each successive project as well as the cumulative impacts from all known and proposed projects being considered in the region. The land use experience over the last 200 years has proven that piecemeal development will lead to mistakes and ecological harm.

- transparency to the public at all levels of design, construction, operation and maintenance, and decommissioning, which means more disclosure of activities onshore and offshore with minimal redaction;
- meeting legal requirements through the lens of maximizing opportunities for environmental protection;
- implementation of coastal resiliency and adaption for sea level rise and storm surges for all onshore and offshore facilities, especially as the life span of these projects is 35 years;
- Meaningful interagency review at the local, state and federal levels; this is especially important during the EIS development with natural resource agencies and community and citizen resource agencies to ensure environmental justice, public health, over- development and over-burdened communities' issues are identified and addressed;
- protecting undersea Public Trust lands as these facilities are occupying, constructing, and altering what was (and still will be) treasured public resources, and habitat for extraordinary marine life; therefore, they must have the utmost respect and care.
- Meaningful public involvement —not just hosting meetings but actual measurable evidence of project modification to meet public concerns.

Comment Number: BOEM-2021-0038-DRAFT-0057-5

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The National Environmental Policy Act (NEPA) [Footnote 11: 42 U.S.C. § 4321 et seq.] is the fundamental tool for ensuring a proper vetting of the impacts of major federal actions on wildlife, natural resources, and communities; for ensuring reasonable alternatives are considered and identifying the most environmentally preferable alternative; and for giving the public a say in federal actions that can have a profound impact on their lives and livelihoods. [Footnote 12: It is important to note that in July 2020, the Council of Environmental Quality (CEQ) published a final rule revising long-standing NEPA regulations. These regulations went into effect on September 14, 2020 (85 FR 43304). Pursuant to President Biden's Executive Order 13990, these rules are being reviewed for possible repeal or replacement. To begin this process, the Administration has issued an interim rule extending the deadline by two years for Federal agencies to develop or revise proposed procedures for implementing the procedural provisions of NEPA (86 FR 34154). This interim rule is expected to be followed by a second rulemaking phase that will seek to address the many deficiencies of the 2020 rule (See White House Press Release, CEQ Extends Deadline for Agencies to Propose Updates to National Environmental Policy Act Procedures). Additionally, Department of the Interior Secretary Haaland issued a Secretarial Order stating that the 2020 rule will not be applied "in a manner that would change the application level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect on September 14, 2020" (Secretarial Order No. 3399, § 5 (a)).] NEPA requires "efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man" [Footnote 13: Id. § 4321.] and mandates that "to the fullest extent possible" the "policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with [NEPA]." [Footnote 14: Id. § 4332] To comply with NEPA, an EIS must, inter alia, include a "full and fair discussion" of environmental impacts, [Footnote 15: 40 C.F.R. § 1502.1.] including positive as well as negative impacts, and assess possible conflicts with other federal, regional, state, tribal, and local authorities. [Footnote 16: Id. § 1502.16(a)(5).]

Consistent with the Department of the Interior Secretary Haaland's Secretarial Order, in drafting the EIS, BOEM should ignore the Trump Administration's repeal of 40 C.F.R. § 1508.7, which required the

consideration of cumulative impacts. Rather, BOEM should include an analysis of cumulative impacts, as defined under 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.

BOEM must include a robust cumulative impacts analysis in the Draft EIS, which is required by longstanding case law interpreting NEPA and in no way prohibited by the current regulations. [Footnote 17: 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-2021-0038-DRAFT-0057-7

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 development . . . from what was considered in the Draft EIS [for Vineyard Wind], which only considered in detail projects that had submitted construction plans (approximately 130 MW) in federal waters at that time.” [Footnote 22:

Vineyard Wind 1 Offshore Wind Energy Project, Supplement to the Draft Environmental Impact Statement (June 2020), at ES-2. (VW1 SEIS)] BOEM kept this scope for the Vineyard Wind 1 Final EIS, issued on March 12, 2021. [Footnote 23: Vineyard Wind 1 Offshore Wind Energy Project, Final Environmental Impact Statement (Mar. 2021), at 1-5. (VW1 FEIS).] Likewise, the January 2021 South Fork Draft EIS also used this broader scope for its cumulative impact analysis. [Footnote 24: South Fork Wind Farm and South Fork Export Cable Project, Draft Environmental Impact Statement (Jan. 4, 2021), at 1-6. (SFWF DEIS).] This scope is described as the state capacity planned commitment for existing Atlantic leases (21.8 GW, or approximately 22 GW). 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. 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 expand the Empire Wind 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. 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-2021-0038-DRAFT-0057-8

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As acknowledged in previous environmental reviews of offshore wind projects, [Footnote 25: See SFWF DEIS at E4-10 (“it is difficult to accurately predict future technology for . . . offshore wind”).] 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 26: 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 27: SFWF DEIS at E4-10.] Changes in turbine size could have beneficial impacts (such as fewer turbines spaced further apart) as well as potentially negative impacts (larger rotation zones that could impact certain species like higher flying birds). The Vineyard Wind 1 project is one example of successfully incorporating evolving technological changes. In Empire Wind's Draft EIS, we urge BOEM to ensure that future cumulative impact models continue to keep pace with technology.

Comment Number: BOEM-2021-0038-DRAFT-0057-9

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

BOEM Must Ensure Robust Data Collection and Monitoring at the Project and Regional Level to Properly Assess Cumulative Impacts

BOEM must consider strong and intentional action in the preparation of the EIS to advance robust monitoring, which will 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 offshore wind impacts can be clearly understood with relation to pre-development environments. To this end, BOEM must establish and ensure 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 inform future decisions in the growing offshore wind industry and minimize risks associated with offshore development. Without strong monitoring in place, we lose the ability to detect and understand potential impacts. It also risks setting an under-protective precedent for offshore wind development generally, and future offshore wind development in particular. 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.

BOEM must also collaborate with state efforts and agencies (e.g., New York State Department of Environmental Conservation, New York State Environmental Facilities Corporation, New York State Geospatial Advisory Council, New York State Energy Research and Development Authority), 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 Empire Wind 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 informs 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 Empire Wind. This will ensure that BOEM can swiftly minimize damages of unintended or unanticipated impacts to ecosystems or wildlife and inform strategies for future wind projects to avoid potential impacts.

Comment Number: BOEM-2021-0038-DRAFT-0059-5**Organization:** Responsible Offshore Development Alliance**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:****BOEM MUST TAKE A CUMULATIVE APPROACH TO OFFSHORE WIND DEVELOPMENT**

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 continuing to review individual projects in isolation despite the large number of projects it is “fast tracking” and the existing (arbitrary) OSW energy production targets. 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.

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 differently—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, although the new leadership at Department of Interior has made clear that they disapprove of any of the environmental review practices of the last Administration so these are likely to change. Politics must not interfere with scientific integrity or transparency and we request BOEM clarify what document the public should review to understand the cumulative impact of potentially 3,000 turbines whose installation it is “streamlining” into the seabed between MA and VA alone. We further request BOEM to provide explicit information as to how it will approach cumulative impacts reviews for this and future projects.

The need for a cumulative approach is highlighted by the effect the announcement of Hudson North WEA had on RODA’s collaboration with Equinor. As described above, based on direct feedback from the fishing industry in the region Equinor has adjusted its layout design for Phase I of Empire Wind to reduce impacts to fishing. Unfortunately, the discussions about nuanced spacing and transit accommodations for Empire Wind are greatly affected by what ultimately occurs in the Hudson North WEA, which abuts the southeastern edge of the lease. This heavily transited and fished area is now slated to become a larger contiguous developed area, further displacing existing users. Due to the many leases and expansive nature of this new infrastructure, every aspect—from biological, ecological, and physical to navigational and access-related—must be looked at in a cumulative manner.

BOEM, as the agency hiring consultants to draft the Environmental Impact Statements for offshore wind projects, has implemented an inadequate cumulative impacts strategy. It is unclear how BOEM decides which projects are included in an EIS. For the earliest projects (Vineyard Wind 1, South Fork, and Ocean Wind 1) BOEM’s NEPA review focused on a single proposed project with a Power Purchase Agreement (PPA) in place. For Coastal Virginia Offshore Wind- C, the EIS will be prepared without the project having a PPA, but for Vineyard Wind South the EIS will be prepared while Phase I has a PPA with Connecticut’s Public Utilities Regulatory Authority but Phase II does not and ambiguously provides energy to “the northeastern states.” [Footnote 3: 86 Fed. Reg. 34782 (June 30, 2021).] Here, both Phase 1 and 2 (both with PPAs) of Empire Wind are analyzed together. In summation, there appears to be 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. As the PPAs have, in the past, determined BOEM’s range of alternatives and what fisheries mitigation measures can be considered within the project parameters, this leads to significant uncertainty regarding how BOEM will conduct the upcoming NEPA reviews. Moreover, 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.

Although cumulative impacts analyses are needed at the earliest stages of OSW review, the ability to predict thorough cumulative effects for each OSW project currently under consideration will necessarily evolve and upfront analysis must be paired with an adaptive management approach as we learn more about the impacts of OSW in the Atlantic region. There are currently only seven turbines in U.S. waters, and the scant scientific studies associated with those turbines which are insufficient to understand the impacts of full-scale development (especially with the much larger proposed turbines). European waters have had offshore wind turbines for at least a decade, however, not enough research has been conducted to help inform the potential impacts on the Mid- Atlantic cold pool, impacts to spawning, changes in hydrodynamics which may affect settlement, impacts on protected resources (especially the endangered North Atlantic right whale), changes in cost of electricity, impacts of onshore cables, costs and resources associated with upgrading current grid infrastructure needed to accommodate this energy source, and the true number of well-paying, permanent jobs. Substantially more research is needed now and in the future.

Comment Number: BOEM-2021-0038-DRAFT-0064 -4

Organization: U.S. Coast Guard

Commenter: Michael Emerson

Commenter Type: Federal Agency

Comment Excerpt Text:

Cumulative effects of this project and potential future projects from the NY Bight proposed sale notice currently out for public comment (BOEM-2021-0033).

Comment Number: BOEM-2021-0038-DRAFT-0065-22

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Environmental Impact

What will be the environmental impacts be from the wind farms if no base line research has taken place over a long periods of time. The wind developers and BOEM have had years to get environmental base lines on their lease. They could have start on the ecology and habitat studies of their lease area, but did not do so. With no base line, then there is no way to measure the changes. It is reasonable to assume that there will be negative changes, however, if no research is done then no one can prove damage to the marine environment has been done. At this time the developers are funding small short term research project on the ecosystem under pressure from the states and the other ocean users for fear that there will be large a negatives impacts in the lease area and cable routes. However, without an extensive base line of data it will be hard to prove the amount of harm these wind turbines have done to the ocean environment. It is clear that the impact of thousands of wind turbine in the Northeast part of the Atlantic Ocean is going to have a strong native effect. The problem is it will be hard to quantify if a detailed and complete base line is not done over a long period.

Comment Number: BOEM-2021-0038-DRAFT-0065-27

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Long Term Effect on the Ocean and Other Ocean Users

Since there has not been any long-term environmental studies of the current lease sites. The leaseholder has had years to start the research and they have done little to nothing. Therefore, there is no definitive base line of the lease ecosystem including ecology of the area, fish, shellfish, marine mammal's populations and habitat or oceanography. In the future there will be no way to understand what has changes once construction starts and what changes take place once the wind farm is in operation. What are the long-term impacts on the lease and surrounding areas? Without clear base lines before construction starts, there will be no data to compare the effect of any positive or negative impacts and that is unacceptable. As operations progress and the effects become clear requiring mandatory detailed and comprehensive monitoring, there will be no base line to compare positive or negative effects on the ecosystem because of the wind farm (s) lack of cooperation. The developer must be held responsible for any negative effects caused by their wind farm (s).

Comment Number: BOEM-2021-0038-DRAFT-0065-6

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

No one will understanding what the cumulative impacts of thousands of turbines on the protected species, fisheries, birds the water column and ocean and ocean floor until after the fact.

Comment Number: BOEM-2021-0038-TRANS-071321-0002-3

Organization: Clean Ocean Action

Commenter: Carrie Martin

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Further Clean Ocean Action is particularly concerned with the cumulative impacts to offshore habitat for a host of commercial and species and other marine species including marine mammals.

Comment Number: BOEM-2021-0038-TRANS-071321-0008-3

Organization: Fishery Survival Fund

Commenter: Brett Sparks

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Further I believe some of the other commentors have noted this concept of cumulative impacts of development. President Biden has promised 16 project reviews for these wind leases over the next four years. That's a huge amount of development that's getting ready to be deployed in the mid-Atlantic and New England areas, this Environmental Impact Statement as well as all future impact statements must consider those cumulative impacts on -- not only on fisheries but as many other folks have talked about, the marine environment as a whole, impact to birds, impacts to whales, marine mammals, this is not something that can be considered in isolation.

A.3.21 Proposed Action/Project Design Envelope

Comment Number: BOEM-2021-0038-DRAFT-0020-5

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Environmental: Construction and installation of the project must abide by the strictest industry health and environmental standards

Comment Number: BOEM-2021-0038-DRAFT-0021-6

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

we are concerned about how much power they actually produce.

Comment Number: BOEM-2021-0038-DRAFT-0021-7

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

we are concerned about how much of any power produced would be lost before arriving where it is needed called line loss. will there be diesel generators and platforms to regenerate the power on its way to where it is needed?

Comment Number: BOEM-2021-0038-DRAFT-0024-15

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Opportunities Concerning use of Gravity Based Foundations

Equinor’s proposal to utilize gravity-based foundations (GBF) for Empire 1 & 2 creates exciting and innovative opportunities for the U.S. labor force in and beyond New York State, while also alleviating legitimate and serious concerns about the impacts of pile driving noise on marine mammals and other marine life – including the critically endangered North Atlantic Right Whale (NARW). The Conservancy has consistently advocated for the use of offshore wind foundation types that do not require pile driving (a.k.a., quiet foundations, including gravity-based, jack-up, suction bucket, ELISA, and hybrids) in the build-out of the offshore wind energy industry along the east coast of the U.S. Equinor is the first developer to advance a construction and operation plan for such a project in the U.S. with one of these foundation types as the preferred alternative. Because of this, Empire Wind 1 & 2 have the potential to provide a critically transformative example of how we think about designing and implementing additional projects tailored to the U.S. market, using U.S. ports, U.S. materials, and U.S. labor – all while avoiding the impacts of pile driving noise on U.S. marine life.

Comment Number: BOEM-2021-0038-DRAFT-0024-22

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Local Input for Nearshore and Onshore Project Components

Cable landing and near/onshore transmission and interconnection sites for Empire 1 & 2 are proposed to occur in or near densely developed areas and ecologically important areas. As of this time there is still much work to do by the developer in communicating with community members, state and local officials, stakeholders, and potentially impacted groups on planning for aspects of the projects that will touch down in state and local jurisdictions. It is possible that route alternatives could be refined during the development of the Draft EIS as local experts are further consulted by the developer, or as NYSERDA advances examination of pre-planned approaches for transmission and offloading of the totality of New York State’s offshore wind energy procurement objectives. Thus, for this and other offshore wind projects connecting to New York we encourage BOEM to allow for some flexibility in the review of these aspects of the construction plan to account for plan modifications that are likely to occur as all options are thoroughly vetted, receive local input, and ongoing transmission studies are concluded.

Comment Number: BOEM-2021-0038-DRAFT-0024-8

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The scope should maintain some project flexibility so that subsequent local input can be factored into cable landing and nearshore/onshore transmission construction and impact mitigation details.

Comment Number: BOEM-2021-0038-DRAFT-0027-2

Commenter: Donald Weigl
Commenter Type: Individual

Comment Excerpt Text:

What will keep the cables buried deep enough and is scouring going to be a problem?

Comment Number: BOEM-2021-0038-DRAFT-0027-5

Commenter: Donald Weigl
Commenter Type: Individual

Comment Excerpt Text:

Lastly, I am wondering if monopoles are the better option from the standpoint of the footprint and possible collisions, though other known support structures would be more stable and encouraging to a variety of marine life, the latter a known fact.

Comment Number: BOEM-2021-0038-DRAFT-0029-12

Organization: Citizens Campaign for the Environment
Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

3. Fisheries Protection

CCE supports Equinor's plan to use gravity-based foundations for Empire Wind where possible, which will allow the project to avoid pile driving. With the increased sightings of whales, dolphins, and other marine life in the area, utilizing gravity-based foundations will minimize potential impacts to wildlife and allow for less disruptive installation and decommissioning of the turbines. The EIS should maximize the use of gravity-based foundations where ever feasible.

In addition, the proposed decrease in the number of foundations from 242 to 176 will not only decrease the overall footprint of the wind farm, it will also reduce conflicts on squid, scallop, and other fishing grounds. CCE supports the updated layout which will reduce use-conflicts with squidders and fishermen and protect essential habitat.

Comment Number: BOEM-2021-0038-DRAFT-0030-13

Organization: NOAA National Marine Fisheries Service
Commenter: Michael Pentony
Commenter Type: Federal Agency

Comment Excerpt Text:

We are aware that benthic habitat data has been collected and is being processed and interpreted by the developer, and additional information may be provided to supplement the COP in the coming months. Some benthic habitat data has been included in the COP in narrative form or in example figures, however, we have yet to review any complete benthic habitat mapping documents, habitat data, or a draft EFH assessment. This limits our ability to provide site- specific feedback on the proposed project and potential alternatives. More specifically, at this time, it is not possible for us to specify detailed habitat minimization alternatives for both the wind farm area and cable corridors until we have comprehensively reviewed the benthic habitat mapping data. It would be helpful to have this information in the COP at the scoping stage to help formulate a more detailed alternative.

Comment Number: BOEM-2021-0038-DRAFT-0030-20

Organization: NOAA National Marine Fisheries Service
Commenter: Michael Pentony

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, pile driving, increased vessel traffic, anchoring, and transmission cable installation. 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; electromagnetic fields (EMF); habitat alteration; presence of structures (WTGs, substations, and cables); and localized changes in currents. 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. The ecological impacts resulting from the loss of seabed and the associated benthic communities and forage base should be evaluated. This should include a discussion of the ecological and economic impacts associated with habitat conversion from the installation of WTGs, offshore substations, cables, and scour protection. Analysis of habitat conversion should include site-specific benthic data collection and an evaluation of project impacts on different habitat types and on fisheries resources that rely on them. 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. The assessment of these impacts should be completed at scales relevant to each impact type to enable meaningful comparisons between alternatives.

Comment Number: BOEM-2021-0038-DRAFT-0030-4**Organization:** NOAA National Marine Fisheries Service**Commenter:** Michael Pentony**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 (Biological Assessment (BA) and Essential Fish Habitat (EFH) Assessment). A maximum impact scenario 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 FR notice refers to a "preliminary proposed action" described as including up to 174 turbines, which may include monopile foundations, gravity based structures with associated support and access structures, or some combination of the two. This "preliminary proposed action" appears to align with the existing Power Purchase Agreements (PPAs) for EW 1 (816 MW) and EW 2 (1,260 MW). However, it is unclear why the proposed action is considered preliminary and if the "preliminary proposed action" identified in the FR notice is considered to be the maximum parameters of the PDE. Also, the PDE for the proposed projects appears to have been modified between the April 2021 COP we were provided in May, and the more recent July 2021 COP. While some of these design parameters remain consistent, it appears the maximum design parameters previously presented to us may have been reduced or modified. It is also unclear why the proposed action is considered preliminary or if the proposed action is expected to be further modified during the NEPA process. The NEPA document should evaluate a reasonable PDE, and you should maintain a consistent proposed action between the NEPA document, the LOA application, the BA, and the EFH Assessment.

Comment Number: BOEM-2021-0038-DRAFT-0033-1**Commenter:** Charles Gary**Commenter Type:** Individual

Comment Excerpt Text:

In addition to reiterating oral public comments previously made at one of the public hearings relating to community benefits, payment for property rights of municipalities affected, and PILOT for communities where cables project to land, I also believe the scope of this proposal must include the decommissioning and demolition of the EF Barrett power plant. One would not rationally build offshore wind without also removing the natural gas plant the project intends to replace. Additionally, the plant is an eyesore and must be removed by the project sponsor as a conditional of approval. The NEPA scope should reflect same at this time.

Comment Number: BOEM-2021-0038-DRAFT-0039-57

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Develop programmatic, ecosystem-wide Best Management Practices (BMPs) as part of the OSW industry permitting requirements, based on current science and state-of-the-art/emergent technologies to protect natural resources in all OSW projects.

Comment Number: BOEM-2021-0038-DRAFT-0039-59

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

- Address the issue of proposed/confirmed offtake/power purchase agreements prior to permitting decisions on the proposed OSW projects as such agreements could result in inflexibility on the part of the developer in the consideration of least-impactful alternatives, and other requirements, and could also influence the permitting agencies into accepting the proposed project as-is or no project as the only two alternatives available.

Comment Number: BOEM-2021-0038-DRAFT-0041-21

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Site Characterization

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-2021-0038-DRAFT-0041-23

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Construction

The EIS must include alternatives to schedule 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 North Atlantic right whales and other protected species may be present.

Comment Number: BOEM-2021-0038-DRAFT-0041-24

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Gravity-based Foundations

Quiet fixed foundation technology should be used whenever possible to avoid the noise generated by pile driving. Gravity-based foundations have been used successfully for decades in Europe and are a good alternative to louder installation technology. The EIS should prohibit installation of gravity-based foundations when protected species are present in the project area, in addition to any dynamic restrictions due to the presence of NARW or other endangered species. The EIS must analyze the potential for seafloor disruption where foundations are placed and include alternatives to minimize adverse effects.

Comment Number: BOEM-2021-0038-DRAFT-0041-25

Organization: Oceana

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Pile driving

Offshore wind development will include installation of equipment at the project site and may include both driven piles and piles installed using vibratory techniques. Each of these produce 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 restrictions due to the presence of NARW or other endangered species.

Clearance Zones for all pile driving, including vibratory

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 zones 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-2021-0038-DRAFT-0043-2

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

With that in mind, we commend the effort being undertaken to ensure that the project proceeds with a minimal environmental footprint. Fundamental criteria necessary to ensure a strong framework to help mitigate potential environmental and ecological impacts include the need for (1) flexibility through an adaptive operational plan approach that can meet changing circumstances, [Footnote 2: With respect to the importance of flexible and adaptive operational planning, we note that the Vineyard Wind 1 project (BOEM 2020-025) was able to take advantage of a delay in its permitting process to upgrade its design proposal to incorporate new, larger turbine blades into its design, lowering the number of towers from 84 to 62, and reducing the overall footprint of the project. "Vineyard Wind Switches to GE Turbines, Delays

Permitting Process” (December 2, 2020). Available at <https://www.greentechmedia.com/articles/read/vineyard-wind-switches-to-ge-offshore-wind-turbines-delays-permitting-application>.] (2) continuing stakeholder engagement, and (3) a robust data gathering, sharing, and management plan.

Comment Number: BOEM-2021-0038-DRAFT-0043-8

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

With respect to the “project design envelope” approach to permitting offshore wind projects, we would recommend a slight modification to that process. We understand that the offshore wind industry is evolving rapidly and appreciate that utilizing a design envelope approach provides the project developer the flexibility to take advantage of industry advancement and innovative technologies as the project progresses. Save the Sound would like to see an emphasis, however, on ensuring that the design envelope approach ensures maximum environmental and natural resource protection. While we appreciate that under the project design envelope approach a “maximum design scenario” is presented within the scope of various proposed construction parameters and, indeed, may be “approved” within the scope of such design envelope, we believe that the project developer should bear a burden of proof in deciding to move forward with any design alternative that does not minimize adverse impacts to natural resources and wildlife. That is, if an alternative design within the “design envelope” that is not most protective of natural resources is ultimately chosen for adoption, then BOEM and other permitting agencies should be permitted to evaluate whether the applicant has met a burden of proof that a more environmentally protective design alternative with the “design envelope” is not feasible prior to giving final approval for construction activities.

Comment Number: BOEM-2021-0038-DRAFT-0044-4

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

It would be helpful for the EIS to specify the range of turbine sizes under consideration for the projects, both in terms of their nameplate capacity in megawatts and the turbine and foundation dimensions. Providing the range of capacities under consideration will allow for a better understanding of how many turbines might be required to meet New York’s procurements. Dimensions for all turbines under consideration are important since foundation dimensions influence the magnitude of seabed impacts.

Comment Number: BOEM-2021-0038-DRAFT-0044-7

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

While the seabed along the export cable route is generally described in the COP as being amenable to burial, there are several places where the COP indicates that crossings with other cables or pipelines might be required. The COP states that the approach to cable laying at such intersections will be negotiated with cable and pipeline owners. The COP describes armoring materials to be used at crossings (Volume 1, page 3-18), suggesting that external armoring is the likely approach. From both a habitat and fisheries operation perspective, the EIS should describe whether shallower burial might be possible at these crossings, or if surface lay with external armoring is most likely, and if so the extent of these unburied sections, because the choice will influence the environmental impacts of the project. We expect that surface lay will have greater impacts on fishing operations compared to buried cables. The New

England Council's [Underline: submarine cables policy] recommends that when cable burial is not possible, cables should be protected with materials that mimic natural, nearby habitats where possible.

Comment Number: BOEM-2021-0038-DRAFT-0044-8

Organization: Mid-Atlantic Fishery Management Council and New England Fishery Management Council

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

To the extent that conditions at the site would allow Empire Wind to select either gravity base or monopile foundations, or a combination of both, the EIS should be clear about the tradeoffs associated with selecting one type over the other, recognizing that the choice will affect various resources differently, and over different time frames. 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.

Comment Number: BOEM-2021-0038-DRAFT-0047-2

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

BOEM should evaluate a range of depths and the potential for anchor strikes from vessels. NYS is encouraged that Empire has agreed to a target cable burial depth of 6 feet, except in navigation channels and federally designated and unofficial anchorage areas and other locations, where conditions necessitate deeper burial depths.

Comment Number: BOEM-2021-0038-DRAFT-0047-30

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Evaluation of export cable burial depth to avoid EMF impacts and conflict with fishing gear. BOEM should evaluate a range of depths and the potential for anchor strikes from commercial shipping and fishing vessels.

Comment Number: BOEM-2021-0038-DRAFT-0047-60

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Site Design and Layout:

- Evaluation of site design and layout considerations to avoid, minimize and mitigate impacts to fishing, vessel traffic, visual resources, etc.

Comment Number: BOEM-2021-0038-DRAFT-0047-65

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Robust siting analysis to avoid dynamic areas with known high seabed mobility.

Comment Number: BOEM-2021-0038-DRAFT-0048-3

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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. 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-2021-0038-DRAFT-0052-1

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

The EIS should include a complete description of the entire project, including all project elements (wind turbine array lay out, offshore electrical service platforms, offshore transmission to shore, onshore underground transmission, and the onshore substation) with construction phases. It should include an existing condition plan that locates and delineates resource areas based on site specific surveys conducted by the proponent, including but not limited to eelgrass, shellfish, hard/complex bottom, intertidal flats, and rare and endangered species. It should also include an evaluation of water-dependent uses in state and federal waters, such as commercial and recreational fishing, shipping, and marine transportation. Data on potential effects to resource areas and water dependent uses as a result of the construction and operation of the project in both New York state and federal waters should be presented in the EIS.

Comment Number: BOEM-2021-0038-DRAFT-0052-2

Organization: Massachusetts Office of Coastal Zone Management

Commenter Type: State Agency

Comment Excerpt Text:

Empire Wind has indicated that a more detailed geophysical survey corresponding to the array and cable corridor areas was initiated in 2020 and will continue into 2021. The EIS should use the updated survey information to present detailed information and comparison of cable routes evaluated as part of an alternatives analysis, including the preferred Export Cable Corridor. The EIS should also include details of what surveys and data collection were done prior to the filing of the EIS. The data, analysis, and conclusions reached from these surveys, including the multi-beam, side scan sonar, sub-bottom profiling, vibrocore sampling, benthic grab samples, and underwater video transects data should be included in the EIS, along with the geophysical track lines surveyed. The EIS should present a scope of work for a detailed survey and sampling plan that covers both proposed cable corridors. The impacts of the cable installation should be described in detail, along with a discussion of the predicted recovery time for any

affected resources. This information should be updated as data is received and included in the EIS. Details of a post-construction survey, including video and acoustic assessments over the buried cable should be included to document as-built conditions, to verify appropriate depth of burial, and to document the estimated period of seafloor recovery. The EIS should include an analysis of all the potential impacts of the cable installation, including the estimated length and area of cable protection, and it should include a description of a comprehensive cable inspection program on a regular and as needed basis during the lifetime of the project to ensure adequate burial, including remediation plans for cables that are found to be at inadequate burial depth after inspection.

Comment Number: BOEM-2021-0038-DRAFT-0057-20

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

GRAVITY-BASED FOUNDATIONS OFFER SIGNIFICANT ENVIRONMENTAL BENEFITS AND FLEXIBILITY

Our organizations welcome Empire Wind’s embrace of gravity-based foundations as a preferred foundation type. Gravity-based foundations offer several environmental benefits over the other offshore wind foundations evaluated in the COP. Most significantly, gravity-based foundations do not require pile driving and thus avoid the noise impacts stemming from that activity. [Footnote 63: 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 64: “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.nyserdera.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, 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 65: 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 result in impacts to species in the water column as well as the seabed, although these impact pathways require further study. [Footnote 66: 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.]

By entirely avoiding the impact of pile driving noise, the installation of gravity-based foundations represents ‘best practice’ in the context of the mitigation hierarchy (avoid, minimize, mitigate) for this impact producing factor. [Footnote 67: 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 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.).

While our organizations support consideration of gravity-based foundations for the Empire 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 gravity-based foundations in the United States.

We urge BOEM to work closely with Equinor 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 this foundation type.

Comment Number: BOEM-2021-0038-DRAFT-0064 -3

Organization: U.S. Coast Guard

Commenter: Michael Emerson

Commenter Type: Federal Agency

Comment Excerpt Text:

Ample burial depth for cables proposed in federal channels, especially Gravesend Bay in New York harbor.

Comment Number: BOEM-2021-0038-DRAFT-0065-11

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Wallace & Associates suggest Empire Wind's COP be Disapproves and sent back to the leaseholder to address the issues that are important but not being addressed.

Comment Number: BOEM-2021-0038-TRANS-063021-0001-3

Organization: Long Island Traditions

Commenter: Nancy Solomon

Commenter Type: Individual

Comment Excerpt Text:

My third question is whether the cables that are going to be connecting the wind farm through Long Beach and Oceanside, are those going to be under the bay bottom or above the bay and if they are under the bay, are you going to examine their potential impact to the shell fish beds and the bay houses.

A.3.22 Purpose and Need

Comment Number: BOEM-2021-0038-DRAFT-0020-1

Organization: UPROSE

Commenter: Summer Sandoval

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Offshore wind is a necessary part of transitioning away from an extractive, polluting energy system that has perpetuated a legacy of health disparities to an equitable clean energy economy rooted in justice for Sunset Park, New York State, and the country. Investments in offshore wind is an opportunity to model

how to center frontline community leadership in clean energy development and meet local, state, and federal climate mandates.

Comment Number: BOEM-2021-0038-DRAFT-0024-2

Organization: The Nature Conservancy

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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. Ensuring proper siting, monitoring, mitigation, and environmental protections are in place will enable offshore wind projects to be developed in a sustainable manner that future administrations and future generations do not regret.

Comment Number: BOEM-2021-0038-DRAFT-0029-1

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

New York State is a leader in the fight against climate change and national champion for offshore wind, having passed the strongest climate change law in the nation in 2019. New York is working towards achieving mandates of 70% renewable energy by 2030, carbon neutral electricity by 2040, and a net zero carbon economy by 2050. We cannot achieve these goals, particularly in downstate New York, without achieving or exceeding our target of 9,000 mw of offshore wind. The Biden administration announced plans to address climate change and put forth a goal of reaching a net-zero carbon economy by 2050.

Comment Number: BOEM-2021-0038-DRAFT-0029-3

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

New York selected five offshore wind farms that will power over 2 million homes with clean, renewable energy and bring New York nearly halfway to our goal of 9,000 mw of offshore wind. These projects are also kickstarting a critical “offshore windustry”, which are projected to create nearly 7,000 jobs in project development, manufacturing, installation, and operations and maintenance and create over \$12 billion in economic benefits to NY. Offshore wind will expedite our ability to close antiquated, polluting fossil fuel power plants, thus improving air quality and, according to NYSERDA, resulting in \$1 billion in health benefits to New Yorkers.

Empire Wind 1 will power over half a million homes in New York City with 800 mw of renewable energy, while Empire Wind 2 will bring 1,260 mw of power to the south shore of Long Island. It is imperative that Empire Wind and the other projects are well-sited and completed in an environmental responsible manner, but it is also critical that these projects move forward in a timely fashion so that we can curb the worst impacts of climate change.

Comment Number: BOEM-2021-0038-DRAFT-0035-2

Organization: NJDEP

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The New Jersey Global Warming Response Act, N.J.S.A., 26:2C-37, et seq., directed the New Jersey Department of Environmental Protection (NJDEP) to develop plans for reducing emissions of climate

pollutants, including through the adoption of renewable energy plans and policies consistent with the State's Energy Master Plan (EMP). As New Jersey and our neighboring states pursue the responsible development of offshore wind, the NJDEP is obligated, pursuant to the federal Coastal Zone Management Act, 16 U.S.C. § 1451, et seq., and related state laws, to preserve, protect, restore, and enhance the resources of the State's coastal zone. As an affected state, we look forward to coordinating with BOEM as the Empire Wind EIS is developed to ensure that impacts to natural resources are avoided, minimized where avoidance is not possible, and appropriately mitigated for when necessary.

Comment Number: BOEM-2021-0038-DRAFT-0040-1

Commenter: George Browne

Commenter Type: Individual

Comment Excerpt Text:

Governor Cuomo has made New York a national leader in offshore wind with a goal of deploying 9,000 megawatts of offshore wind power, enough to power 4.5 million homes.

The EIS is a critical step to achieve this goal, and I support projects moving through a robust environmental review process that ensures responsible development is achieved every step of the way.

Comment Number: BOEM-2021-0038-DRAFT-0048-2

Organization: BlueGreen Alliance

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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. The industry will also spawn new supply chains that stretch into America's heartland, as illustrated by the 10,000 tons of domestic steel that workers in Alabama and West Virginia are supplying to a Texas shipyard where Dominion Energy is building the Nation's first Jones Act compliant turbine installation vessel.

"Federal leadership, in close coordination with states and in partnership with the private sector, unions and other key stakeholders is needed to catalyze the deployment of offshore wind at scale.

"...the Administration is taking coordinated steps to support rapid offshore wind deployment and job creation:

- Advance ambitious wind energy projects to create good-paying, union jobs
- Investing in American infrastructure to strengthen the domestic supply chain and deploy offshore wind energy
- Supporting critical research and data-sharing."

Further, the January 27, 2021, Executive Order 14008 "Tackling the Climate Crisis at Home and Abroad" includes the goal of doubling offshore wind by 2030 while creating good jobs and ensuring robust protection for our lands, waters, and biodiversity.

Comment Number: BOEM-2021-0038-DRAFT-0061-1

Organization: International Brotherhood of Electrical Workers, Third District

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Equinor's Empire Wind project will provide positive Socio-Economic impact and significantly move the needle on Environmental Justice. Empire Wind will provide thousands of good, family sustaining jobs for

impacted and non-impacted populations. The estimate on investment into New York's economy top \$2.7 billion. This investment will provide opportunity for all, from seasoned professional IBEW members to populations deserved of Environmental Justice.

The Empire project will have substantial positive impact in a broad range of New York communities and cities via development of an offshore wind supply chain. Key investments include the following:

- South Brooklyn Marine Terminal will be revitalized with upwards of \$280 million in capital investment. The Terminal will host assembly and staging of the projects' wind turbines, be home to Equinor's Operations and Maintenance center providing hundreds of good paying job opportunities for residents and host a community engagement center designed to educate residents on the project and its opportunities. These facilities will be available to other entities involved in New York's 9000MW offshore wind generation commitment.

- The Port of Albany will become an offshore wind tower and transition piece manufacturing facility, where it will produce components for Equinor's projects, including Empire Wind, creating many construction and full-time jobs for area residents. The IBEW is currently involved with workforce development and member recruiting efforts based on and in conjunction with Empire Wind. The Port of Albany, as with the South Brooklyn Marine Terminal, will be available for other entities in support of the offshore wind industry, creating more Socio-Economic benefits.

Empire Wind will result in the investment of tens of millions of dollars in developer-funded, much needed grid upgrades that will increase resiliency in the power supply for the New York City and Long Island markets while providing many good paying, family sustaining Union jobs.

The IBEW's Third District encourages BOEM to move forward with development of the Environmental Impact Statement based on the Proposed Action by Equinor's Empire Wind.

Comment Number: BOEM-2021-0038-DRAFT-0065-16

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Wind Farms Cannot Carry the Base Load

Wind farms are only at best fifty percent effective at delivering the array's nameplate capacity. Therefore, the ocean wind farms are incapable of supplying a constant supply of power over a length of time. What is worse, in the summer the demand is the highest and the wind speed is at its lowest. In the northeastern section of the country, in the summer there are long periods of time when the wind does not blow at all. Therefore, it is critical that there be a conventional power sources to carry the load for as long as necessary. This situation of low to no wind speed could last days to week. Therefore, other system must be in place to carry the demand. Nuclear or fossil fuel power plant will be needed to carry the load. While nuclear power does not have any greenhouse gas discharge there is an opposition by some people to the technology. In the long run nuclear power is the only known large capacity electrical power source with no greenhouse discharge.

Comment Number: BOEM-2021-0038-DRAFT-0065-17

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Reliability of the Electrical System

The big problem is how to keep the lights on. Homes, factories and offices cannot operate without electricity. If the power goes off, they are out of business. If there is not one hundred percent back up generating capacity, those factories and office buildings will need to install, in house generators, which will have internal combustion engines. If electricity is not dependable all of the people that live in the suburbs will have backup generator system in their homes to maintain a reasonable living conditions. In third world countries, this is currently the case. The poor are the ones who will pay the price for not having reliable and affordable power system. If they work, depend on public transportation their situation will not be good.

In every major city in the United States, if the power goes off it takes hours to bring the entire system up because the generating systems cannot handle the demand spike when attempting to restore power. The only way to start the system is to start one small section of the grid at a time until all of the system is complete restored.

Comment Number: BOEM-2021-0038-DRAFT-0065-28

Organization: Wallace & Associates

Commenter: David Wallace

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

As for the fishing industry, if some type of compensation consideration is not added to the COP and the turbines are not moved to two by two NM, other developers will understand that BOEM will allow them to disregard the fishing industry. The result may be that many boat owners will go out of business and their crews and support staff will be on the street. There is a good chance that the fishermen and their support group will greatly outnumber the few American jobs that the wind farms will create. Fishing crews and vessel maintenances people are highly skilled and well paid. The fishery jobs and income loss is going to be far greater than what is added by the wind farm operators. How can the federal government and the states justify putting companies and their employees out of business for few jobs in the wind energy industry?

A.3.23 Sea Turtles

Comment Number: BOEM-2021-0038-DRAFT-0039-22

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

5.2 Sea Turtles

Sea turtles live most of their lives in warm open waters of oceans, bays, and estuaries, but adult females come to coastal land to lay their eggs. Of the eight species of sea turtles found on the planet, five can be found in the waters off NY state using this environment primarily as “nursery” waters for young turtles. [Footnote 60: NYS Dept. of Environmental Conservation: Sea Turtles of New York] They migrate to the EW area every year in late June as water temperatures rise and head south by mid-November in search of warmer waters. [Footnote 61: NYS Dept. of Environmental Conservation: Sea Turtles of New York] Sea turtles “migrate hundreds to thousands of miles every year between feeding grounds and nesting beaches” with the leatherback turtles being “among the most highly migratory animals on earth, traveling as many as 10,000 miles or more each year.” [Footnote 62: NOAA Fisheries. Sea Turtles – Overview]

Among the numerous threats faced by sea turtles both in marine waters and on coastal lands the major ones are vessel strikes, fishing gear entanglements, underwater noise, loss of nesting habitats to development; destruction of nests by predators and poachers; harvest of turtles for eggs, meat, leather, and tortoiseshell; and accidental killing by commercial fishing operations. [Footnote 63: NYS Dept. of Environmental Conservation: Sea Turtles of New York]

Data on sea turtle movements, distributions, and habitat use patterns, and interactions with OSW facilities is scarce. Hence the EIS must be conservative in its assessments of EW project impacts so as not to further endanger these sea turtles whose populations have not recovered since being listed under the ESA several decades ago.

Comment Number: BOEM-2021-0038-DRAFT-0039-23**Organization:** Defenders of Wildlife**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

All sea turtle species found in the waters off Long Island, including Long Island Sound and Long Island's eastern bays, are protected under both state and federal laws. [Footnote 64: NYS Dept. of Environmental Conservation: Sea Turtles of New York] Kemp's Ridley (*Lepidochelys kempii*), leatherback (*Dermodochelys coriacea*), and Atlantic Hawksbill (*Eretmodochelys imbricate*) sea turtles are listed as ESA-Endangered, and the green turtle (*Chelonia mydas*) and loggerhead sea turtle (*Caretta sp.*) populations listed as Threatened under the ESA and under state law. All except the Atlantic Hawksbill have regular presence within the EW area.

Data from visual sightings show the sea turtles to be within the EW project area in the greatest numbers during summer and fall (June through November), with very few being present during spring and winter months [Footnote 65: BOEM. (2021). EW COP: Sea Turtle Sightings Poster] (see Figure 1 below). This seasonal pattern is corroborated by satellite tag data, [Footnote 66: Dodge, K. L., et al. (2014); Dodge, K. L., Galuardi, B., & Lutcavage, M. E. (2015). Orientation behaviour of leatherback sea turtles within the North Atlantic subtropical gyre. *Proceedings of the Royal Society B*, 282, art. 20143129; Winton, M. V., Fay, G., Haas, H. L., Arendt, M., Barco, S., James, M. C., Sasso, C., & Smolowitz, R. (2018). Estimating the distribution and relative density of satellite-tagged loggerhead sea turtles using geostatistical mixed effects models. *Marine Ecology Progress Series*, 586, 217- 232.] aerial surveys, [Footnote 67: NOAA Fisheries (2021, Feb 25). Atlantic Marine Assessment Program for Protected Species; Tetra Tech & LGL. (2019). Year 2 annual survey report for New York Bight whale monitoring aerial surveys, March 2018 – February 2019. Technical report Prepared for Division of Marine Resources, New York State Department of Environmental Conservation, East Setauket.] entanglements, [Footnote 68: <https://www.bostonglobe.com/metro/2019/10/10/endangered-leatherback-turtles-found-dead-off-cape-cod-bay/DjqWNOZaAIU2CfKiNbI9kN/story.html#:~:text=A%20half%2Ddozen%20leatherback%20turtles,warming%20waters%2C%20a%20researcher%20said:https://www.capecodtimes.com/news/20190823/2-entangled-sea-turtles-freed-off-cape;>] and strandings. [Footnote 69: <https://www.neaq.org/about-us/mission-vision/sea-turtle-rescue/>] Sea turtles are likely to be found using nearshore habitats such as bays, estuaries, sounds, and inlets during summer and fall months before migrating to pelagic environments for the winter months.

Comment Number: BOEM-2021-0038-DRAFT-0039-24**Organization:** Defenders of Wildlife**Commenter Type:** Non-Governmental Organization**Comment Excerpt Text:**

Short-term impacts on sea turtles from EW1 and EW2 activities include vessel collisions which cause injuries/death, and extreme or excessive disturbances in marine environment which cause displacement,

behavioral disruption, stress, hearing impairment, and changes in prey availability. [Footnote 70: NYSERDA - NYS-ETWG. (2021, Jul). State of the Science Workshop on Wildlife and Offshore Wind Energy 2020 - Cumulative Impacts: Sea Turtle Workgroup Report] Potential long-term impacts include changes in population distributions, reduction in prey distribution and availability, changes in hearing threshold shifts, barotrauma, auditory masking, and ecosystem changes.

Comment Number: BOEM-2021-0038-DRAFT-0039-27

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Current scientific data on sea turtle-OSW interactions is extremely limited. Paucity of data on OSW impacts on sea turtles must not be construed as OSW activities having no impact, and as such BOEM must adopt a precautionary approach in its EIS on the EW COP.

Development of avoidance and mitigation strategies must be based on accurate estimates of sea turtle populations, their precise seasonal location, and a comprehensive assessment of cumulative impacts (described in Sections 3 & 4 above) of all human activities in the region and of climate change. Multiple corroborating approaches are needed to acquire spatiotemporal profiles of different sea turtle species in the project area since the ability to detect sea turtles through visual sightings and aerial surveys is highly variable. The presence in/relative use of nearshore areas by sea turtle species must be accounted for in models of species density to inform impact analysis since some of the EW activities would take place in coastal waters.

The EIS must include cumulative impacts analysis for all impact producing factors from EW, other OSW and non-OSW activities offshore, nearshore, and onshore. As NOAA acknowledged, “(w)e do not understand how noise impacts populations, survivorship or fecundity, nor do we understand the cumulative impacts of noise on individuals or populations when combined with other stresses (bycatch, climate change, etc.)” [Footnote 82: NOAA. The Status of Science for Assessing Noise Impacts on NOAA-Managed Species. Draft Ocean Noise Strategy Roadmap] It is essential that the EIS thoroughly account for all impacts in developing avoidance/ mitigation measures to save the sea turtles from sliding into extinction.

Comment Number: BOEM-2021-0038-DRAFT-0047-21

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Discuss seasonal distribution, abundance, and migration routes.

Comment Number: BOEM-2021-0038-DRAFT-0047-35

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Sea Turtles:

- Behavior and physiological impacts from vessel traffic, noise, foundation lighting and EMF.

Comment Number: BOEM-2021-0038-DRAFT-0056-6

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Four species of sea turtles can be found in the waters of the NY/NJ Bight: Atlantic green (*Chelonia mydas*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and Kemp's ridley (*Lepidochelys kempii*) turtles (Morreale, S. and Standora E., 1998, 2005). All of these species are either threatened or endangered at the state and federal levels. [Footnote 22: Summary Report of the New York Bight Sea Turtle Workshop (Jan 30, 2018).]

(1) It is important to note that expert marine scientists do not know the noise impacts on sea turtles. The COP states, "There is limited information available on the effects of noise on sea turtles, and the hearing capabilities of sea turtles are still poorly understood." It is important that this information be known and addressed in Empire Wind's COP and BOEM's EIS.

Comment Number: BOEM-2021-0038-DRAFT-0057-50

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Status of Sea Turtles in the Empire Wind Project Area

Four sea turtle species are known to occur in the New York Bight: the endangered Kemp's ridley (*Lepidochelys kempii*) and leatherback (*Dermochelys coriacea*) turtles and the threatened green (*Chelonia mydas*) and loggerhead (*Caretta caretta*) turtles. [Footnote 200: New York State Department of Environmental Conservation, "Sea Turtles of New York." NY.gov. Accessed July] In addition to the sea turtle sightings data recorded during the NYSDEC aerial surveys in March 2017 through February 2020, [Footnote 201: Tetra Tech and LGL. 2020. Final comprehensive report for New York Bight Whale Monitoring Aerial Surveys, March 2017 – February 2020. Technical report prepared by Tetra Tech, Inc. and LGL Ecological Research Associates, Inc. Prepared for New York State Department of Environmental Conservation, Division of Marine Resources, East Setauket, NY.] BOEM should also consider AMAPPS, [Footnote 202: 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.] NYSERDA digital aerial surveys, [Footnote 203: Normandeau Associates Inc. and APEM Ltd. "Digital aerial baseline survey of marine wildlife in support of offshore wind energy: Summer 2017 taxonomic analysis summary report." Prepared for New York State Energy Research and Development Authority, Albany, New York, 2018; J. Robinson Willmott, J.C., M. Vukovich, A. Pembroke. 2021. Digital aerial baseline survey of marine wildlife in support of offshore wind energy. Overview and summary, Report Number 21-07. Prepared for New York State Energy Research and Development Authority by Normandeau Associates Inc. with APEM Ltd.] the New Jersey Ecological Baseline Study in 2008- 2009, [Footnote 204: GMI (Geo-Marine Inc.). 2010. Ocean/Wind power ecological baseline studies January 2008 - December 2009. Final report. New Jersey Department of Environmental Protection, Trenton, New Jersey.] other regional data sources, [Footnote 205: Kraus, S., et al., "Northeast large pelagic survey collaborative aerial and acoustic surveys for large whales and sea turtles. Final Report," supra.] including stranding data, when assessing the current occurrence of sea turtles in the New York Bight. In addition, the relative use of nearshore areas as well as offshore areas by sea turtle species should be accounted for in models of sea turtle density and subsequent impact analysis.

Density estimates and maps for sea turtles are provided in the COP; however, the source of these estimates is unclear (although various sources are cited, none of these appear to be the primary source of the data). We assume that the COP is using the modeled sea turtle densities from the Navy OPAREA

Density Estimate (NODE) for the Northeast OPAREAs. [Footnote 206: DoN (Department of the Navy). 2007. Navy OPAREA density estimates (NODE) for the Northeast OPAREAs: Boston, Narragansett Bay, and Atlantic City. Prepared for U.S. Fleet Forces Command by Geo-Marine, Inc. Contract number N62470-02-D-9997, CTO 0045 Norfolk, Virginia: Naval Facilities Engineering Command, Atlantic. Prepared by Geo-Marine, Inc., Hampton, Virginia.] However, the Navy's density estimates generated via modeling are outdated (used only NMFS aerial survey data collected prior to 2005), and no turtle density modeling has been conducted as part of the Duke University Marine Geospatial Ecology Laboratory's density models. It is our understanding that sea turtle density modeling with recent data is currently being conducted, and results may be available in early 2022. These models should include data from recent AMAPPS and other regional studies as mentioned previously. In addition, stranding [Footnote 207: Sea Turtle Stranding and Salvage Network. <https://www.fisheries.noaa.gov/state-coordinators-sea-turtle-stranding-and-salvage-network>] and tagging data [Footnote 208: 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 satellite and acoustic tagging will provide critical information on habitat use, behavior, residency, and migration. The NYSDEC and Atlantic Marine Conservation Society are working to increase satellite tagging of wild-caught sea turtles, and the New York Marine Rescue Center is conducting acoustic and satellite tagging of rehabilitated and released sea turtles. [Footnote 209: Summary Report of the New York Bight Sea Turtle Workshop. New York State Department of Environmental Conservation. https://www.dec.ny.gov/docs/fish_marine_pdf/dmrturtlereport.pdf] This further investment in tagging and tracking studies [Footnote 210: 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. Additionally, sea turtle tagging and tracking studies, especially for green and hawksbill turtles, 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. Some satellite telemetry data are available from rehabilitated and released Kemp's ridley and green turtles [Footnote 211: 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 suggests 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 be an effective means of gathering useful data. There is already significant investment underway for acoustic telemetry arrays in WEAs for highly migratory fish species, 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 in the New York Bight.

Comment Number: BOEM-2021-0038-DRAFT-0057-51

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:**ACOUSTIC IMPACT CONSIDERATIONS FOR SEA TURTLES**

To date, injury and behavioral zones for sea turtles have not been calculated correctly for other offshore wind projects. [Footnote 212: SFWF DEIS at H-58 footnote states: “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.” Also, DEIS at H-66 states, “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. [Footnote 213: See, e.g., SFWF DEIS at H-765, H-70, H-76.] 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 214: 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 215: 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 216: 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-2021-0038-DRAFT-0057-52

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Mitigation measures for sea turtles should include a speed restriction of 10 knots for all vessels associated with wind energy development in the New York Bight at all times, regardless of whether vessels are transiting or on site. Risk of collision with sea turtles is greatest when vessels are traveling at speeds greater than 10 knots. [Footnote 217: 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 are often directed to slow speeds to 4 knots if a sea turtle is sighted within 100 m of the vessel’s path, 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 218: 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. [Footnote 219: SFWF DEIS at G-13.] A standard 10-knot vessel speed limit ensures protections for a wide array of ocean wildlife, and should be incorporated into the EIS.

Comment Number: BOEM-2021-0038-DRAFT-0057-53

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

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 for any necessary for 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. [Footnote 220: Infrared (IR) cameras and wearable night vision scopes at night and during low-visibility conditions are unlikely to be effective at detecting sea turtles. IR systems detect the temperature difference between body and environment when the animal is at the sea surface; however, sea turtles spend relatively little time at the water’s surface where they could be detected and do not expel a lot of air or exhibit a lot of surface behavior which would enable IR detection. See, Verfuss, U.K., D. Gillespie, J. Gordon, T. Marques, B. Miller, R. Plunkett, J. Theriault, D. Tollit, D.P. Zitterbart, P. Hubert, and L. Thomas. 2017. Low visibility real-time monitoring techniques review. Report SMRUM-OGP2015-002 provided to IOGP.] Monitoring reports must be made publicly available.

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.

A.3.24 Scenic and Visual Resources

Comment Number: BOEM-2021-0038-DRAFT-0010-4

Commenter: Abigail Meola

Commenter Type: Individual

Comment Excerpt Text:

I tend to disagree about many of the listed potential “drawbacks” of the project, which are mainly aesthetic. Instead of seeing this project as an “eyesore” we should instead see it as an asset beacon indicating our commitment to doing right by our citizens and the planet.

Comment Number: BOEM-2021-0038-DRAFT-0015-8

Commenter: Rhea Bozic

Commenter Type: Individual

Comment Excerpt Text:

Further, the expected visual impact from high public use areas will be negative, and will have a deleterious impact on the visual character that defines historic properties such as Jones Beach Central Mall, and the West Bathhouse. Likewise, the visual impact of the turbines will have a deleterious effect on the the West End of Jones Beach, and Fields 1 and 2, ruining the vista of unspoiled ocean which residents and tourists cherish, thereby impeding recreation and tourism, as many users will choose to go to a different location with a pristine view. Our respite from the world, which we find at Jones Beach, gazing onto the unspoiled ocean, should not be impacted by viewing these turbines, which are clearly visible and destroy the peaceful vista. The lighting at night, when they may either stay on all the time, or “blink” upon incoming aircraft approaching them, will destroy the peaceful vista even more. Our view of the ocean should not be impacted by the construction of these turbines and the project should be modified to decrease this impact.

Comment Number: BOEM-2021-0038-DRAFT-0023-2

Commenter: Laura St Germain

Commenter Type: Individual

Comment Excerpt Text:

The ride along Ocean Parkway is one of the most relaxing and inspiring because of the beauty I witness - unspoiled beaches, open ocean, incredible waves and wildlife. Visiting Jones Beach and riding along Ocean Parkway gives me a sense of peace, tranquility and pride that we here on Long Island have such an incredible gem that I have enjoyed with my children, family and friends. But this proposed wind farm will destroy the pristine beauty of this area - my grandchildren and future generations will never know how beautiful Jones Beach used to be. Being a resident of the most populated and developed areas of the United States, Jones Beach and the recreation and natural beauty it offers gives us residents and the tourists that visit a break from the hectic and densely developed world just eight miles to the north of Jones Beach - starting at Merrick Road/Montauk Highway and heading north.

Comment Number: BOEM-2021-0038-DRAFT-0029-11

Organization: Citizens Campaign for the Environment

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

2. Visual Impacts

Empire Wind will be located at minimum 15 miles from shore and Equinor has recently released a simulation of the projected visual impacts of the turbines. To be clear, all energy infrastructure has a

visual impact. The choice, once again, is between seeing a wind turbine 15+ miles offshore or continuing to see fossil-fuel fired power plants. On Long Island, our power plants, including the nearby E.F. Barrett in Island Park, are not only visible but also negatively impact air quality and health in the community. Empire Wind will likely be the only offshore wind farm visible from the shore of the five previously selected projects, and [Bold Italics: CCE urges that this necessary offshore wind project is NOT held to a higher standard than other infrastructure and energy projects during BOEM's evaluation. The notion that energy infrastructure should be invisible in only unjustly applied to offshore wind farms. Visual impacts must be evaluated against the current visible impacts for power plants across our state.]

Comment Number: BOEM-2021-0038-DRAFT-0031 -10

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Night Skies

Protecting the night sky is a critical role NPS pursues at Fire Island National Seashore and Gateway National Recreation Area. Despite the presence of the New York and New Jersey metropolitan areas, both parks provide some of the darkest nighttime skies available to visitors and local residents alike, and night skies are identified as a fundamental resource in the Gateway GMP of 2014. Night skies are an important resource for Fire Island, Gateway and NHLs such as the lighthouses, affecting aspects such as biological and cultural properties, the wilderness and historic setting, and the visitor experience and enjoyment. The opportunity to enjoy starry night skies and other nocturnal phenomenon, as well as landscape features of the park under natural light from the night sky is an integral part of an overall visitor experience. Night skies are one of the many resources protected under the National Park Service Organic Act. The important role that natural cycles of light and dark play in natural resource processes and the evolution of species is well established and, therefore, the NPS protects natural darkness and other components of natural lightscapes in parks by minimizing light from park facilities, and by educating and working cooperatively with neighboring communities, local governments, and the public to minimize the use of outdoor lighting wherever possible considering public safety and other park management objectives.

In general, the COP considered nighttime lighting as part of the visual impact. The COP mentions a number of good points:

- Empire will consider implementing an Aircraft Detection Lighting System (ADLS; or a similar system) to turn the aviation obstruction lights on and off in response to detection of nearby aircraft.
- Security lighting will be directed downward and shielded. Some lights will have motion sensors added.

Other factors that were not considered in the COP that we request be considered include:

- Other important lighting principles such as:
 - a. Control -- lights should be off when not needed. This applies to both the construction phase and operation phase.
 - b. Brightness – the minimum lumen output needed should be used instead of the current statement: “be consistent with existing sources produced by human-made structures near the proposed onshore substation sites.”
 - c. Warm color-temperature light -- use amber lights, when possible, instead of white light.

For the onshore stations, NPS requests that the lighting plan for both construction and operation be included in the EIS.

- For the offshore component, we request visual simulations for both static images and light- flashing animation at night from multiple KOPs. In the current VIA, it seems that the visual simulations were all done in a daytime setting, so it is hard to understand what the nighttime view would look like.

At Fire Island, the night sky, looking south from the park's wilderness has always been one of the more stunning and important aspects related to wilderness character, and WTG night lighting may have an impact on the Natural, Undeveloped, Solitude and Other Features wilderness characteristics of the Fire Island wilderness area. Analysis of dark night skies impacts should consider potential impacts under the Wilderness Act.

Comment Number: BOEM-2021-0038-DRAFT-0031 -5

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Visual Impacts

We understand that the visual impact assessment (VIA) is being redone. NPS would like the opportunity to review and comment on the new VIA when it is available. In order to assess potential impacts, NPS recommends the inclusion of additional key observation points (KOPs) in the new analysis as described below. NPS staff can assist in gaining access to these sites. We expect that the new VIA will be developed according to the Bureau of Ocean Energy Management (BOEM) Seascape/Landscape and Visual Impact Assessment (SLVIA), published in April 2021. Because 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 viewed from the KOPs, and as we've detailed in this letter, Fire Island and Gateway receive a large number of visitors who will see these seascapes and landscapes, we request the inclusion of the new KOPs we recommend in the revised VIA.

Comment Number: BOEM-2021-0038-DRAFT-0031 -6

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Visual Impacts at Fire Island

NPS understands that the VIA is being redone due to changes in the number, size, and configuration of wind turbine generators (WTGs) for the project. NPS recommends the following locations be added as KOPs at the Seashore for this new analysis.

Fire Island National Seashore is interested in assessing the visual impacts from:

- Otis Pike Fire Island High Dune Wilderness: views to the southwest from the eastern and western areas of the Wilderness
- Watch Hill: view from the ocean overlook
- Sailors Haven: view from the ocean overlook
- Fire Island Lighthouse Keepers Quarters: view from the Terrace area
- Fire Island Lighthouse: view from the top of the lighthouse

Comment Number: BOEM-2021-0038-DRAFT-0031 -7

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Protecting “wilderness character” is the bedrock of protecting Wilderness under the Wilderness Act of 1964 (16 U.S.C. § 1131 et seq.). Monitoring and managing wilderness responsibly comes from a framework that uses the five qualities of wilderness character from the legislation:

1. Untrammeled: Wilderness is essentially unhindered and free from modern human control or manipulation.
2. Natural: Wilderness maintains ecological systems that are substantially free from the effects of modern civilization.
3. Undeveloped: Wilderness retains its primeval character and influence and is essentially without permanent improvements or modern human occupation.
4. Opportunities for Solitude or Primitive and Unconfined Recreation: Wilderness provides outstanding opportunities for remoteness from sights and sounds of people and modified areas, for self-reliant recreation, and freedom from restrictions on visitor behavior.
5. Other Features of Value: Wilderness may contain ecological, geological, or other features of scientific, educational, scenic or historical value.

In order to meet this responsibility, and to ensure these unique Wilderness resources are protected, necessary information must be gathered in the VIA to allow NPS to analyze potential impacts to the Wilderness at Fire Island. NPS staff can assist in more detailed discussions on this topic.

Comment Number: BOEM-2021-0038-DRAFT-0031 -8

Organization: Department of the Interior, National Park Service

Commenter: Mary Krueger

Commenter Type: Federal Agency

Comment Excerpt Text:

Visual Impacts at Gateway

The Gateway GMP of 2014 identifies views of the New York Harbor as a fundamental park resource. The VIA should evaluate the maximum impacts of the proposed project on the uninterrupted sea view from the seven ocean-front historic districts and 31 miles of ocean beaches, dunes and water.

Gateway National Recreation Area is interested in assessing the visual impacts from:

- Sandy Hook Lighthouse: View from the top of the lighthouse looking southeast
- Sandy Hook beaches: View from B beach cross-over looking southeast
- Riis Park boardwalk: View from boardwalk in front of bathhouse looking southeast
- Battery Harris, Fort Tilden: View from viewing platform looking southeast
- Fort Wadsworth: View from overlook looking southeast

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

Commenter: Andrew Berko

Commenter Type: Individual

Comment Excerpt Text:

1. Empire Wind Area 1 is the closest to shore - this will have a severe and detrimental impact to Jones Beach and its surrounding areas which are a NATIONAL treasure for all, especially LI and NYC residents who routinely visit, use and cherish this magnificent location for its tranquil beauty and oceanic vistas that will otherwise be ruined for future generations.

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

Commenter: Andrew Berko

Commenter Type: Individual

Comment Excerpt Text:

2. Even if the wind patterns were ideal, a wind farm would NEVER be built within eyesight of the Grand Canyon and yet millions more people visit Jones Beach regularly to escape the urban jungle in search of tranquility found in the natural beauty, indeed national treasure of an uninterrupted ocean vista.

Comment Number: BOEM-2021-0038-DRAFT-0053-4

Organization: Point O'Woods Association, submitted by Cultural Heritage Partners PLLC

Commenter: William Cook

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Furthermore, the COP does not discuss how Equinor or BOEM will adequately address potential lighting impacts, other than noting that Aircraft Detection Lighting Systems "may" be deployed. The Association is especially concerned about lighting impacts to the dark night sky both during and after construction, and urges BOEM to take a hard look at these impacts and mandate ADLS. In addition, BOEM should also consider visual impacts of lighting at each proposed turbine's base.

Comment Number: BOEM-2021-0038-TRANS-063021-0004-2

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The second thing I want to say is for the scoping document, when you talk about in their visual impacts, I think it's very important that we don't compare the wind farm to nothing. So for instance, if we are going to be able to see a little bit of the wind farm on the Horizon, that should be compared to the fact we can also see our current fossil fuel power plants, whether it's Barrett, Northport, Port Jeff. Energy infrastructure is not invisible and I am not exactly sure where the concept came from that wind farms should be invisible. We can see power lines, we can see power plants, we can see telephone poles, we can see our infrastructure. So for me, I feel it's unreasonable to be able -- for some to expect that wind farms are invisible, so in the scoping document, and in the EIS, I think it's reasonable to compare the visible -- the visible power plants to the Horizon view which may happen for Empire 1 on a clear day.

Comment Number: BOEM-2021-0038-TRANS-063021-0007-1

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

I lived for sometime on the sixth floor of a full ocean view suite, and I am very concerned about this wind farm being within the sight of something where I would be spending half a million dollars to look at.

Comment Number: BOEM-2021-0038-TRANS-063021-0007-3

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

Plus this is an area around Far Rockaway, so that is a very special place like nowhere else in the world, where you look out from there, you have the world's longest stretch of Atlantic Ocean, world's longest stretch of ocean, over 17,000 miles with no island in site. I really want to preserve that view of eternity, it's like nowhere else in the world for generations to come.

Comment Number: BOEM-2021-0038-TRANS-063021-0010-2

Commenter: Ben Orloff

Commenter Type: Individual

Comment Excerpt Text:

I'd like to mention secondly the importance of innovation and leadership for the communities, the municipalities, the counties, the State, become an example for many. I'd want to add a third point that the visuals really can be a positive as well as a negative. I deeply understand the feelings of the previous speakers who interred his mother's ashes in these water and wishes to preserve them as they are, these waters of course are not static.

Comment Number: BOEM-2021-0038-TRANS-070821-0006-3

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

I want something that I had to last for many generations and I really fear that these wind turbines are really going to take that away, really take the magic of going to the beach away and I am not going to be looking out at eternity and god's presence, I am instead going to be looking out at an industrial wasteland.

A.3.25 Water Quality

Comment Number: BOEM-2021-0038-DRAFT-0030-32

Organization: NOAA National Marine Fisheries Service

Commenter: Michael Pentony

Commenter Type: Federal Agency

Comment Excerpt Text:

Assessment of Hydrodynamics and Oceanographic Conditions

An assessment of the potential impacts of the Empire Wind project-specific (turbine level) and the full build-out/cumulative offshore wind scenario on hydrodynamics, oceanographic, and atmospheric conditions will help evaluate impacts on species distribution and the effects to hydrodynamic conditions, including effects to the Mid-Atlantic cold pool. Offshore habitat for a host of commercial and prey species is defined by the formation and breakdown of the cold pool and the water column stratification associated with this physical oceanographic feature. The potential impact of offshore wind development is not well known, but large scale energy extraction from wind farms and the physical presence of wind turbine foundations could have a significant impact on stratification in this region and therefore the ecology, habitat, and egg/larvae and prey distribution of a number of federally managed fish species and protected species.

Comment Number: BOEM-2021-0038-DRAFT-0047-12

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Consideration and evaluation of currents; bathymetry; microclimates (i.e., air circulation, changing sea surface temperatures, etc.); and metocean data (i.e., temperature, salinity, pH, dissolved oxygen, etc.).

- Characterize areas where the Mid-Atlantic cold pool overlaps with project area. [Italics: Note: see Lentz, S. J. (2017), Seasonal warming of the Middle Atlantic Bight Cold Pool, J. Geophys. Res. Oceans, 122, 941-954.]

Comment Number: BOEM-2021-0038-DRAFT-0047-14

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

Provide water quality baseline levels (i.e., turbidity, nutrients, dissolved oxygen, and contaminants especially where Class C contamination is known or has been detected in the sediment, etc.).

Comment Number: BOEM-2021-0038-DRAFT-0047-29

Organization: NYS Departments of Environmental Conservation and State and the Office of Parks, Recreation and Historic Preservation

Commenter Type: State Agency

Comment Excerpt Text:

- Consideration of New York State Water Quality Standards if contaminants of concern are identified in the sediment. Evaluation conducted in accordance with the New York State Department of Environmental Conservation's Division of Water Technical & Operational Guidance Series (TOGS) 5.1.9.

- Modeling to predict the extent and duration of turbidity plumes from resuspension of sediment. Investigation of potential resuspension during each of the proposed installation activities.

- Evaluation of changes to dissolved oxygen or nutrients in the overlying water column as a result of construction related activities.

Comment Number: BOEM-2021-0038-DRAFT-0056-4

Organization: Clean Ocean Action

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

With regard to Section 4.2 "Water Quality," the Empire Wind projects will intersect many impaired waterbodies in the NY/NJ Bight. These waterbodies are impaired by PCBs, dioxin, pathogens, and floatables, to name a few, and as pointed out in Table 4.2-1 in the COP. The NY/NJ Harbor region is notorious for toxic chemicals found in benthic sediments. These sediments will be disturbed in the digging and cable-burying process. According to Empire Wind's COP, "Despite improvements in water quality, legacy chemicals in the sediments, including mercury, polychlorinated biphenyls (PCBs), dichlorodiphenyltrichloroethane, and dioxin, still exceed acceptable levels, and these contaminants can be resuspended in the water column during major storm events or from activities such as dredging." These pollutants have found their way into the human food chain and have caused numerous species to be subject to fish consumption advisories. [Footnote 15: See e.g., <https://www.nj.gov/dep/dsr/>

Fish_Advisories_2018.pdf.] COA recommends sediment quality testing be required in the areas identified for cabling to understand how water quality will be impacted by stirring-up sediments to bury cables.

We are additionally concerned that the project cables will come ashore at the Brooklyn Marine Terminal. This Terminal was previously found to have a cocktail of pollutants at levels exceeding the Effects-Range Low and Median guidelines. [Footnote 16: May 1, 2000, Letter from Clean Ocean Action to John R. Hartmann, Operations Division Chief, USACE regarding Permit number Buttermilk-00.] PAHs, PCBs, copper, lead, silver, and dioxins compounds were found to bioaccumulate in clams and worms tested in sediment from the Terminal. [Footnote 17: See id.] The cable-burying process will cause suspension of such pollutants at the Terminal and throughout the NY/NJ Bight.

Further, a baseline for water quality is not known for the NY/NJ Bight (Empire Wind COP, 4-48). For instance, “the surface waters along the onshore export and interconnection cable routes have not been monitored, likely due to their small size.” Therefore, how will water quality impacts be measured if there are no baselines? How can there be mitigations if baselines are not known? The EIS must address this lack of baseline data.

A.3.26 Wetlands and Waters of the U.S.

Comment Number: BOEM-2021-0038-DRAFT-0054-10

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #2 - 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 their respective jurisdictions. EPA hopes to be a part of these coordination calls with respect to Empire Wind specifically.

Comment Number: BOEM-2021-0038-DRAFT-0054-9

Organization: EPA Region 2

Commenter Type: Federal Agency

Comment Excerpt Text:

Comment #1 - EPA looks forward to reviewing the forthcoming EIS for identified direct, indirect and cumulative impacts to wetlands along the coastline of New York near where any cables make landfall as well as new structures proposed to be erected for the substation. All impacts including during construction and for operation should be considered along with alternatives for mitigation. For a deeper dive into water resources, your team can consult EPA’s How’s My Waterway [Link: <https://www.epa.gov/waterdata/how-s-my-waterway>] which is an application both available by the web and mobile device in order to assess potential impacts in and around the Leasing Area. The NEPAAssist tool, as introduced above, can also help direct which areas to focus on for analysis.

A.3.27 General Support or Opposition

Comment Number: BOEM-2021-0038-DRAFT-0003-1

Commenter: Aaron Ward

Commenter Type: Individual

Comment Excerpt Text:

DO NOT BUILD THIS WIND FARM. Do not spoil this view. DO NOT.

Comment Number: BOEM-2021-0038-DRAFT-0004-1

Commenter: Jake Monahan

Commenter Type: Individual

Comment Excerpt Text:

I'm in favor of the Wind farm. We have to do these things. It will be a step forward into the future. Our ocean views are of ships waiting to be uploaded. We already have gas pipe running down Long Beach Blvd into the ocean under our beautiful beach

Comment Number: BOEM-2021-0038-DRAFT-0005-1

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

It really saddens me to know if this wind farm will be built. I am not against renewable energy at all (including offshore wind). But it CANNOT be built there, in the proposed area off Long Beach. It CANNOT be built where I last saw my mother upon scattering her ashes in October 2019.

Comment Number: BOEM-2021-0038-DRAFT-0006-1

Commenter: Michael Ascari

Commenter Type: Individual

Comment Excerpt Text:

I fully support this project and we need to see more of this in NYS and other parts of the country immediately. By setting a precedent here in NYS, we are acting as a model for other coastal states to learn from.

Comment Number: BOEM-2021-0038-DRAFT-0007-1

Commenter: Kevin Costa

Commenter Type: Individual

Comment Excerpt Text:

And despite the mass marine and wildlife mortality events, droughts and wildfires out West, and the harsher storms we are seeing each year on the East Coast, I see hope and opportunity for future generations in projects like these.

I would like to take this opportunity to show my support for offshore wind - a critical part of climate action and achieving a decarbonized electric sector. It is of the utmost importance that the federal government prioritize offshore wind development.

Comment Number: BOEM-2021-0038-DRAFT-0008-3

Commenter: Isaac Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

I am writing in support of the action to prepare an environmental impact statement for a proposed wind energy facilities offshore New York.

Comment Number: BOEM-2021-0038-DRAFT-0009-4

Commenter: David Rysdahl

Commenter Type: Individual

Comment Excerpt Text:

We must act against climate change, and I truly believe that off shore wind will be a tremendous tool in combatting our generation's greatest challenge.

Comment Number: BOEM-2021-0038-DRAFT-0010-1

Commenter: Abigail Meola

Commenter Type: Individual

Comment Excerpt Text:

I think this project is a necessary step in securing our cities' future in the face of a changing climate. New York as a state and city has tried to position itself as a leader on climate action (ie Local Law 97), but these promises will not be fulfilled without robust and reliable renewable energy production to reach emissions reduction targets.

Comment Number: BOEM-2021-0038-DRAFT-0010-5

Commenter: Abigail Meola

Commenter Type: Individual

Comment Excerpt Text:

This project is necessary to reach our targets, get New Yorkers back to work, and continue to position ourselves as leaders in the climate mitigation space.

Comment Number: BOEM-2021-0038-DRAFT-0017-5

Commenter: Margaret Weiss

Commenter Type: Individual

Comment Excerpt Text:

Without more information, I am totally against proceeding with this project and it should be better communicated to all Nassau County residents and then put to a vote

Comment Number: BOEM-2021-0038-DRAFT-0019-5

Commenter: Alice Platt

Commenter Type: Individual

Comment Excerpt Text:

This endeavor seems to be an effort to address clean energy when the windmill energy approach has been scientifically proven to be ineffective so it makes me wonder about the people that who are making decisions. What is in this for them? Just an appearance to say "I care about energy when they really don't".

Without more information, I am totally against proceeding with this project and it should be better communicated to all Nassau County residents.

Comment Number: BOEM-2021-0038-DRAFT-0021-1

Commenter: Kevin Halpin

Commenter Type: Individual

Comment Excerpt Text:

We are strongly in opposition to Empire offshore wind project.

Comment Number: BOEM-2021-0038-DRAFT-0022-1

Commenter: M Gill

Commenter Type: Individual

Comment Excerpt Text:

We OPPOSE this offshore wind farm.

Comment Number: BOEM-2021-0038-DRAFT-0023-5

Commenter: Laura St Germain

Commenter Type: Individual

Comment Excerpt Text:

I oppose the windfarm.

Comment Number: BOEM-2021-0038-DRAFT-0027-1

Commenter: Donald Weigl

Commenter Type: Individual

Comment Excerpt Text:

I am in favor of developing offshore wind power, but I am also expressing my very strong view that such development should move forward at a cautionary rate.

We are moving much too fast in my opinion and ask that a much slower timeframe be mandated. Yes, we are in grave need of clean energy, again something I strongly support, but we must also consider possible ramifications that could result from creating a on this form of energy.

There is much to consider, among them the possible impacts to marine fishes and mammals, birds and fisheries in our offshore region, the navigational safety near our adjacent shipping lanes and electromagnetic fields to creatures sensitive to that.

Comment Number: BOEM-2021-0038-DRAFT-0028-1

Commenter: Jane A Quinton

Commenter Type: Individual

Comment Excerpt Text:

I find it ironic that the windshore project was moved from the wealthy eastern Long Island site to the Jones Beach area. It appears NIMBY wealth trumps vocal posturing of concerns of renewable energy.

Comment Number: BOEM-2021-0038-DRAFT-0035-1

Organization: NJDEP

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

New Jersey once again commends BOEM's recent progress with offshore wind development along the Atlantic coast. As a state with one of the most ambitious offshore wind goals in the nation, we are encouraged by BOEM's continued efforts to advance the industry in our region.

Comment Number: BOEM-2021-0038-DRAFT-0036-1

Commenter: Anne Lazarus

Commenter Type: Individual

Comment Excerpt Text:

I oppose the offshore Wind LLC's Proposed Wind Energy. Facilities.

Comment Number: BOEM-2021-0038-DRAFT-0039-1

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We strongly support the responsible development of utility scale offshore wind energy which:

- avoids, minimizes, mitigates, and monitors adverse impacts on marine and coastal wildlife and their habitats,
 - reduces negative impacts on other ocean uses,
 - includes robust consultation with Native American Tribes and communities,
 - meaningfully engages state and local governments, and stakeholders from the outset, and
 - uses the best available scientific and technological data to ensure science-based and stakeholder-informed decision making. [Footnote 4: American Wind Energy Association (AWEA). (2020, Mar). U.S. Offshore Wind Power Economic Impact Assessment.]
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Comment Number: BOEM-2021-0038-DRAFT-0039-4

Organization: Defenders of Wildlife

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Defenders supports responsibly developed OSW as an important component of state and national renewable energy portfolios in meeting climate and clean energy goals. We offer recommendations to inform, guide, and improve the efficiency in BOEM's planning of offshore wind energy development that is based on natural resources conservation. OSW development must safeguard valuable and extremely vulnerable marine, nearshore, coastal, and terrestrial habitats and wildlife, cultural resources, and communities.

Defenders has long advocated for responsibly developed utility-scale offshore wind energy as a critically needed and economically viable climate crisis solution.

Comment Number: BOEM-2021-0038-DRAFT-0041-1

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.

Comment Number: BOEM-2021-0038-DRAFT-0043-1

Organization: Save the Sound

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Save the Sound strongly supports the responsible development of our offshore wind resources as a necessary element of addressing climate change through the widescale deployment of clean, renewable energy. We support the state of New York's goal of developing 9,000 MW of offshore wind by 2035, as well as the Biden administration's goal of developing 30 GW of offshore wind nationally by 2030. Empire Wind 1 and 2's proposed 816 MW and 1,260 MW, respectively, represent important progress towards these goals.

Comment Number: BOEM-2021-0038-DRAFT-0045-1

Organization: Office of the Deputy Mayor for Housing and Economic Development

Commenter Type: Local Agency

Comment Excerpt Text:

As we confront the climate crisis, the City of New York is committed to an equitable transition to 100% clean electricity by 2040 and a carbon-neutral New York City (NYC) by 2050. Connecting NYC directly to offshore wind is a critical component of our clean energy transition and will play an integral role in decarbonizing our energy supply and improving air quality. In addition, offshore wind is a burgeoning industry in the U.S., and as projects are advanced, this new industry has the enormous potential to create tens of thousands of high-quality jobs in the region. The City is committed to accelerating the growth of offshore wind in New York including through efforts to reactivate the South Brooklyn Marine Terminal (SBMT) for staging, installing and operating turbines across the tri- state area. It is expected that the Empire Wind project will bring vital carbon-free electricity to NYC, reducing the City's dependence on old fossil fuel plants, further expand NYC's efforts to support a regional hub for this industry, and stimulate local innovation and job creation.

Comment Number: BOEM-2021-0038-DRAFT-0051-1

Organization: The American Waterways Operators

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

AWO members lead the maritime industry in safety, security, and environmental stewardship. We are committed to working with federal and state agencies to advance these shared objectives. Our commitment to environmental stewardship includes support for the development of renewable energy resources.

Comment Number: BOEM-2021-0038-DRAFT-0051-5

Organization: The American Waterways Operators

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

AWO actively supports the development of offshore wind energy. A number of AWO members are making large investments to take part in this burgeoning industry. We believe that offshore wind projects can and should be sited to minimize conflict with traditional maritime transportation lanes.

Comment Number: BOEM-2021-0038-DRAFT-0057-1

Organization: National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, et al.

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Biden Administration has set forth an ambitious and necessary goal for the nation to have net-zero global greenhouse gas emissions by mid-century or before [Footnote 2: Proclamation No. 14008, 86 Fed. Reg. 7619 (EO 14008).] and committed the U.S. to reducing net greenhouse gas emissions by 50-52% below 2005 levels in 2030. [Footnote 3: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%202021%202021%20Final.pdf>] As the Administration has recognized, offshore wind energy is one of the most abundant sources of zero emissions energy and it must play a significant role if the nation is going to meet these goals. Our organizations are united in support of responsibly developed offshore wind. We have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. Offshore wind provides a tremendous opportunity to fight climate change, reduce local and regional air pollution, and grow a new industry that will support thousands of well-paying jobs in both coastal and inland communities.

Comment Number: BOEM-2021-0038-DRAFT-0058-1

Organization: Climate Jobs NY

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

We urge BOEM to follow the current permitting schedule for this project and to move forward expeditiously on this and other offshore wind projects. The only way to achieve 9,000 megawatts of offshore wind energy by 2035—New York State’s goal, codified into law in July 2019—is to advance permitting in a timely manner and develop safe and fair conditions with community stakeholders.

In this time of bold transformation, smart investments in a clean-energy future can simultaneously put people back to work, build infrastructure to address climate change, and spur economic development in our communities.

Comment Number: BOEM-2021-0038-TRANS-063021-0004-1

Organization: Citizens Campaign for the Environment

Commenter: Adrienne Esposito

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

I want to commend the Empire Wind 1 for two things, one is for reducing the amount of foundations from 242 to 176, this is a 27 percent reduction which is quite significant and really, you know, leaves a much smaller footprint, environmental footprint on the ocean so that is terrific news and one I think we can all agree is a good benefit.

Comment Number: BOEM-2021-0038-TRANS-063021-0005-2

Commenter: Sophie House

Commenter Type: Individual

Comment Excerpt Text:

Empire Wind presents an opportunity to demonstrate how offshore wind can scale near very densely populated areas, proving a clean energy technology to work in these places where available land is scarce. And we need this project urgently, we need it to be done right and as part of a community vision of green industrial development like the one proposed and elaborated by Up Rose in Sunset Park. We know that these projects are critical to our future and that they can be done in a way that benefits human beings, the echo system and whole planet.

Comment Number: BOEM-2021-0038-TRANS-063021-0007-2

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

I was not so certain about this wind farm of the ecological impact and potential ecological disaster that this could have because clean energy is very important but I also see that 174 wind turbines in the space that it takes can really outweigh the benefits.

Comment Number: BOEM-2021-0038-TRANS-063021-0010-4

Commenter: Ben Orloff

Commenter Type: Individual

Comment Excerpt Text:

And that brings me to my final point and it's a very short and simple word and that word is hope. We live in a difficult era, an era of division, we faced enormous shocks with the pandemic, global order not in such good shape and really need to be understand that we can work together to construct new solutions, that the future is not necessary grim for all that we are facing and then the end of a heat wave here in New York and a more severe and unprecedented heat wave in the Pacific northwest that we are also moving with equal rapidity to alternative solutions, the wind farms are a clear example of these solutions. They offer an inspiration to all of us here in the metropolitan area for our country's largest and greatest city so let us find ways to move forward, to listen to each other, to build this valuable solution.

Comment Number: BOEM-2021-0038-TRANS-063021-0013-2

Organization: Ocean Conservation Research

Commenter: Michael Stocker

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

So I am glad we are moving ahead. I am glad there is a lot of public enthusiasm for it, we definitely need to pivot away from fossil fuels if we are going to save ourselves, and I am glad we are going to, looks like some really good planning is being done here and I think everybody has to bare in mind, a shift from one colossal energy source to another colossal energy source is going to be expensive, going to have a lot of impacts and hopefully if we do it right we will be able to do it sustainably but it's also going to cost a lot of money both in terms of monitoring and mitigation. Monitoring both before, during surveys, construction and ongoing operations.

Comment Number: BOEM-2021-0038-TRANS-063021-0014-2

Organization: Sierra Club

Commenter: Shay O'Reilly

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

The Sierra Club is a staunch supporter of offshore wind. We are a very old conservation organization that also understand climate change as a key threat to the natural world we care about and to the human communities that depend upon it.

Comment Number: BOEM-2021-0038-TRANS-063021-0014-5

Organization: Sierra Club

Commenter: Shay O'Reilly

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

So all in all, as Sierra Club, we really really like offshore wind, we are excited about the Empire Wind project, we are excited to work with Equinor where possible to make sure that they are building this project right, we know it can be done and can be a model for the nation, thank you for your time.

Comment Number: BOEM-2021-0038-TRANS-070821-0002-2

Organization: New York League of Conservation Voters

Commenter: Caroline Hahn

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

NYLCV also strongly supports the advancements of the Empire Wind projects. We believe Empire Wind provides a critical opportunity for wind development with minimal impacts to our ocean resources and other ocean users.

Comment Number: BOEM-2021-0038-TRANS-070821-0005-1

Commenter: Tom Barracca

Commenter Type: Individual

Comment Excerpt Text:

About 20 years ago, I was involved as a program manager for the 2002 LIPA offshore wind study that was cosponsored by NYSERDA, so I am very very excited and happy to see the Empire Wind project go forward because that product that I was involved with 20 years ago laid some of the ground work for this project. And although the offshore wind economics and technology wasn't there 20 years ago, it is today, and just I think Equinor and the Empire Wind team have done a tremendous job in planning these projects and making the necessary studies and due diligence, and when issues were raised by the stakeholders, for example, the number of turbines were reduced to reducing the footprint of the project in terms of impact, I think that's just -- goes to show the responsiveness to the stakeholders.

Comment Number: BOEM-2021-0038-TRANS-070821-0006-1

Commenter: Michael Halpern

Commenter Type: Individual

Comment Excerpt Text:

I am really disturbed by the presence of these wind turbines that the view of eternity is blocked by our humanly needs.

Comment Number: BOEM-2021-0038-TRANS-071321-0002-1

Organization: Clean Ocean Action

Commenter: Carrie Martin

Commenter Type: Non-Governmental Organization

Comment Excerpt Text:

Clean Ocean Action supports a responsible and reasonable offshore wind energy development, this includes operation, management and decommissioning as well as the associated entry infrastructure however this new uncertain industry requires additional investigation of areas with the focus on comprehensive inclusive assessments of all offshore wind lifecycle impacts. Clean Ocean Action feels that the number of proposals in various stages of development is too much too fast and -- in the region, in the New York New Jersey region.