Appendix N: Responses to Comments on the Draft Environmental Impact Statement

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N.1 Introduction

On February 17, 2023, the Bureau of Ocean Energy Management (BOEM) published a notice of availability for the SouthCoast Wind Project (Project) Draft Environmental Impact Statement (EIS), consistent with the regulations implementing the National Environmental Policy Act (NEPA; 42 U.S. Code [USC] 4321 et seq.), to assess the potential impacts of the Proposed Action and alternatives. The Draft EIS was made available in electronic form for public viewing at https://www.boem.gov/renewable-energy/state-activities/southcoast-wind, and hard copies or electronic copies were delivered to other entities as specified in Appendix M of the Draft EIS. The NEPA review process requires agencies to allow the public the opportunity to comment on a Draft EIS. The notice of availability initiated a 45-day public comment period for the Draft EIS. BOEM extended the public comment period by 15 days. The comment period closed on April 18, 2023. This appendix describes the Draft EIS public comment processing methodology and definitions, includes responses to comments received on the Draft EIS, and describes where specific updates to the Final EIS can be found in the document.

N.2 Objective

BOEM reviewed and considered all written and oral public submissions received during the Draft EIS public review and comment period. BOEM's goal was to identify comments to be addressed in this Final EIS and to categorize those comments based on the applicable resource areas or NEPA topics. 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. All public comment submissions received can be viewed online at http://www.regulations.gov by typing "BOEM-2023-0011" in the search field.

N.3 Methodology

N.3.1 Terminology

The following terminology is used throughout this appendix:

- 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, and a transcript of an oral comment given at a public hearing meeting were each 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. A comment can consist of more than once sentence, as long as those grouped sentences express a single idea. One submission may contain many comments.
- Substantive Comment: Draft EIS submissions were reviewed to identify and categorize "substantive" comments. To be substantive, a comment must relate to the reasonably foreseeable impacts of the Proposed Action, alternatives, or cumulative actions and do one or more of the following:

- Question (with supporting rationale) the accuracy of information in the Draft EIS
- Question (with supporting rationale) the adequacy of, methodology for, or assumptions used for the environmental analysis
- Present new information relevant to the analysis
- Present reasonable alternatives or mitigation measures other than those analyzed in the Draft EIS
- Present or cause modifications to alternatives or mitigation measures analyzed in the Draft EIS
- Correct factual errors in the content of the Draft EIS

- General Comment: General comments are comments other than substantive comments. General comments may: (1) express interest or concern regarding an impact topic without providing specific comments on the information, methods, or findings presented in the Draft EIS, (2) express general support for or opposition to the proposed Project, or (3) comment on a topic unrelated to the proposed Project.

N.3.2 Comment Submittals

Federal agencies, tribal governments, state/local governments, and the general public had the opportunity to provide comments on the Draft EIS via the following mechanisms.

- Electronic submissions via www.regulations.gov on docket number BOEM-2023-0011.
- Hard-copy comment letters submitted to BOEM via traditional mail.
- Comments submitted verbally at each of the public hearings.

BOEM held three online public hearings via Zoom to solicit verbal comments to inform preparation of the Final EIS. The hearings were free and open to the public with no reservations required. Locations and dates of these hearings are outlined in Table N.3-1.

Table N.3-1. Public hearings

Date	Time	Location
March 20, 2023	5:00 p.m. Eastern Time	Zoom Webinar: https://www.boem.gov/renewable-energy/state-activities/boem-southcoast-public-meeting-3202023
March 22, 2023	1:00 p.m. Eastern Time	Zoom Webinar: https://www.boem.gov/renewable-energy/state-activities/boem-southcoast-public-meeting-3222023
March 27, 2023	5:00 p.m. Eastern Time	Zoom Webinar: https://www.boem.gov/renewable-energy/state-activities/boem-southcoast-public-meeting-3272023

All submissions initially provided by methods other than www.regulations.gov, including the transcripts of comments recorded at each public hearing listed in Table N.3-1, were uploaded to the docket. Each submission, including testimony by individual speakers at the public hearings listed in Table N.3-1, was assigned a unique identification number. That unique Submission ID was retained throughout the comment management process, for both submissions and the individual comments within those submissions.

N.3.3 Comment Processing

BOEM downloaded and reviewed all submissions from regulations.gov. These submissions were provided in Hypertext Markup Language (html) format, while attachments provided by stakeholders as part of their regulations.gov submission were typically provided in PDF or Microsoft Word format. Text from all formats was parsed, coded, and exported into a single Microsoft Excel file that served as the primary submission database. In cases where an attachment did not contain comments specific to the docket for the SouthCoast Wind Draft EIS, the attachment was retained separately for BOEM reference as applicable, linked to the main body of the submission through the unique Submission ID. Examples of this type of attachment include copies of comment letters that were originally submitted during the scoping period, copies of comment letters that were originally submitted on another docket, or attached photos, published reports, news articles, or other secondary material. The submission database also included information about each submission, including the submitter's contact information, submission date, and whether the submitter was a government entity or agency.

Each submission and all oral testimonies were read to identify individual substantive and general comments (as defined under N.3.1, *Terminology*). Each comment was parsed, coded, and exported to a spreadsheet that served as the master comment database. Each comment then received a unique comment ID number, tied to the Submission ID. For example, the fourth comment identified in regulations.gov submission 0005 was identified as BOEM-2023-0011-0005-0004.

Substantive comments from cooperating agencies were organized by agency and are presented verbatim in N.4. Other agency, stakeholder, and public comments were each assigned to one section of the Draft EIS, based on the document's table of contents, or to a general topic such as "NEPA/Public Involvement Process." Substantive comments are presented verbatim in Section N.5. General comments are summarized in Section N.7 and the specific comments that contributed to a comment summary are identified by comment number.

N.4 Responses to Cooperating and Participating Agency Comments on the Draft EIS

N.4.1 Cooperating Federal Agencies

N.4.1.1 National Oceanic and Atmospheric Administration, National Marine Fisheries Service

Table N.4.1-1. Responses to comments from National Ocean and Atmospheric Administration, National Marine Fisheries Service (BOEM-2023-0011-0185)

Comment No.	Comment	Response
BOEM-2023-0011-0185-0001	One of our most significant concerns involves the potential impacts of the construction and operation of this project on endangered North Atlantic right whales. As described in previous correspondence Nantucket Shoals and adjacent waters are a biologically important area for right whales and a primary winter foraging aggregation area for right whales (see for example Quintana-Rizzo et al. 2021 Davis et al. 2017). Use of this area has increased significantly since 2010 as right whale habitat use has shifted (Quintana-Rizzo et al. 2021 NMFS 2022). Without the implementation of robust and effective mitigation measures it is our view that significant impacts on North Atlantic right whales may occur from project construction and operation due to direct impacts on North Atlantic right whales during construction long-term impacts to foraging as a result of project operations and potential mortality or serious injury from vessel strikes over the life of the project. The DEIS preliminarily concludes that the proposed mitigation measures are not sufficient to avoid vessel strike on North Atlantic right whales. BOEM concludes in the DEIS that vessel strike of a North Atlantic right whale cannot be ruled out even with SouthCoast Wind's proposed avoidance minimization and mitigation measures (AMMs). The death of a single North Atlantic right whale would have population level consequences; therefore impacts of vessel traffic are considered major in the DEIS. As such BOEM	The EIS addresses the known use of the Project area, including the vicinity to marine mammal habitat and proximity to Nantucket Shoals, and considers the importance of these habitats. Final Environmental Impact Statement (EIS) Section 3.5.6, *Marin Mammals,* discusses the potential impact of the proposed Project on marine mammals and has been revised to include more detail on the Project's proposed mitigation measures that specifically focus on protecting North Atlantic right whales (NARWs). In response to concerns related to pile-driving activities occurring in the Nantucket Shoals region, SouthCoast Wind proposed a NARW Mitigation and Monitoring Plan (Appendix G, Attachment G-3) This plan intends to supplement the existing applicant-proposed monitoring mitigation measures and includes expanded monitoring coverage of the pre-start clearance and shutdown zones and Level B harassment zones within the National Marine Fisheries Service (NMFS) area of concern (20 kilometers [km] of the 30-meter isobath on the west side of Nantucket Shoals). Measures in this plan also include SouthCoast Wind's commitment to only use impact pile driving during the installation of the foundations associated with Project 1 in the northern portion of the Lease Area (Project 1), which includes all locations within the NMFS area of concern.

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	should require additional mitigation measures that would minimize risk of vessel strike such that it would not be expected to occur; any such measures should be clearly described and their impact and effectiveness analyzed in the FEIS.	A comprehensive list of mitigation and monitoring measures (Appendix G, Table G-1, under *Vessel Operations*) that would be implemented to avoid, minimize, and mitigate adverse impacts on marine mammals, specifically the NARW. These measures include, but are not limited to, avoidance of peak NARW seasonal presence, use of sound attenuation technologies, use of Protected Species Observers (PSOs), passive acoustic monitoring (PAM), soft-start procedures, shutdown procedures, and other measures. These mitigation measures will effectively eliminate the risk of vessel strikes, and the EIS has been updated to state this more clearly. The Bureau of Ocean Energy Management (BOEM) and NMFS continue to work together to use the best available information to determine appropriate mitigation measures. Additionally, mitigation and monitoring measures may arise from consultations from federal and state resource agencies and will be considered by decision-makers and potentially adopted as conditions for approval as necessary.
BOEM-2023-0011-0185-0002	We have previously expressed concern about the operational impacts of the project on North Atlantic right whales. Those concerns remain. We continue to encourage BOEM to more fully evaluate the available literature to assess the impacts of the presence of structures and operation of WTGs on ecological conditions that support right whale foraging in Southern New England and to develop measures to avoid and minimize these effects from the SouthCoast Wind project. While we agree that there is some uncertainty and more research is needed the DEIS does not fully evaluate the extent of all potential impacts in the Presence of Structures section for the proposed action (Alternative B section 3.5.6.5). The DEIS does not recognize the importance of Nantucket Shoals and surrounding waters as a primary foraging habitat for North Atlantic right whales and does not fully address the potential effects of the action including the approximately 30-year operational period on North Atlantic right whale prey foraging behavior and health and fitness of	BOEM has partnered with the National Academies of Science Engineering and Math (NASEM) for an independent peer review of potential hydrodynamic impacts for offshore wind facilities on prey species. The report concluded that hydrodynamic impacts from offshore wind projects adjacent to Nantucket Shoals will likely be difficult to distinguish from the ongoing effects of climate change currently occurring in this region. Likewise, BOEM finds that measurable impacts of offshore wind farms to the foraging success of whales that would result in population-level effects are not reasonably likely to occur and that a recommended NARW conservation buffer is not warranted based on the review of best available information and expert opinion found in the report. Further monitoring studies would be needed to have the spatial and temporal coverage to adequately understand the impact of future wind farms, and BOEM will continue to coordinate with partners to develop regional monitoring strategies to obtain scientific information on the potential hydrodynamic

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	individual right whales. As currently written the impact determination for Presence of Structures focuses on reef effects and accumulation of ghost gear. It does not provide any conclusion related to oceanographic or wind wake effects on the abundance or distribution of prey or the effects on North Atlantic right whale foraging within the SouthCoast Wind project area or the surrounding waters of Nantucket Shoals. We consider these issues and effects to be significant requiring focused attention and evaluation in the FEIS.	effects of wind turbine generators (WTGs). Based on the current information available, including the initial meetings associated with the peer review, BOEM is of the position that the current National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) analyses accurately reflect the expected impacts on NARWs from offshore wind projects, as well as provide an adequate suite of measures to avoid, minimize, or mitigate impacts on NARWs.
BOEM-2023-0011-0185-0003	BOEM has included Alternative D which considers the removal of up to six turbine locations at the northern end of the lease as an alternative to reduce impacts to North Atlantic right whales. However as acknowledged in the DEIS this alternative would have no appreciable reduction in impacts on North Atlantic right whales as compared to the proposed action (which the DEIS describes as a major impact). We agree with BOEM's determination that Alternative D would provide no meaningful difference for North Atlantic right whales from the proposed action and recommend that BOEM not carry this alternative forward for full evaluation (i.e. include in the FEIS as considered but not carried forward). NMFS provided a recommended alternative that would have precluded development of WTGs within a 20-km buffer of the Nantucket Shoals 30- meter isobath which was not carried forward by BOEM based on the determination that it was not economically feasible. NMFS recommends that BOEM works with NMFS to identify and	The primary basis for the recommended alternative, as presented by NMFS, is the potential for the presence of WTGs to result in hydrodynamic effects that change zooplankton productivity and aggregations, which may reduce foraging opportunities for the NARW. Based on best available science, BOEM believes there is a lack of conclusive evidence that the proposed WTG locations within the Lease Area have the potential to result in hydrodynamic effects on NARW foraging in the vicinity of Nantucket Shoals.[1] The best available science suggests that effects are most likely to be localized to the immediate vicinity of the turbine array and to not extend to Nantucket Shoals. Primary studies supporting this position include modeling of the full build-out of the southern New England lease areas (Johnson et al. 2021), hydrodynamic studies of wind facilities in the North Sea (Christiansen et al. 2022), and recent comprehensive literature reviews (NASEM 2024). In particular, the NASEM study was commissioned to "evaluate the potential for

[1] Two of the primary conclusions from the NASEM report *Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales* (2024) demonstrate that it is not reasonable to conclude eliminating a large number of WTGs from SouthCoast Wind would have a significant beneficial effect. Specifically, "**Conclusion:** The paucity of observations and uncertainty of the modeled hydrodynamic effects of wind energy development at the turbine, wind farm, and regional scales make potential ecological impacts of turbines difficult to predict and/or detect." and "**Conclusion:** The hydrodynamic impacts from offshore wind development in the Nantucket Shoals region on zooplankton will be difficult to isolate from the much larger magnitude of variability introduced by natural and other anthropogenic sources (including climate change) in this dynamic and evolving oceanographic and ecological system."

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	analyze an alternative that would meaningfully reduce impacts of the project including considering the removal of a greater number of turbine positions in the northern portion of the lease area. We also request that you revisit the "Preclude the Development of WTGs within a 20-kilometer buffer of the Nantucket Shoals 30-meter isobath" and the "Eliminate up to 17 WTGs in the northeastern portion of the Lease Area" alternatives.	offshore wind farms in the Nantucket Shoals region to affect oceanic physical processes, and, in turn, how those hydrodynamic alterations might affect local regional ecosystems." The study, titled *Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales,* concluded that "the impacts of offshore wind projects on the NARW and the availability of their prey in the Nantucket Shoals will likely be difficult to distinguish from the significant impacts of climate change and other influences on the ecosystem" (NASEM 2023). Furthermore, the key recommendation from the study is "while wind energy planning and development progresses, the BOEM, NOAA, and others should promote observational studies and modeling that will advance understanding of potential hydrodynamic effects and their consequent impacts on ecology in the Nantucket Shoals region during all phases of wind energy development." BOEM is also supporting additional research on this topic, in accordance with the NASEM recommendations. During the process of identifying the Massachusetts lease areas BOEM excluded certain areas identified as important habitats that could be affected if ultimately developed with the installation of WTGs. Nantucket Shoals was among the areas excluded from the subsequent commercial leasing. BOEM does not assert there are no effects from wind turbine wake and corresponding wind speed and clarifies that the effects would not likely have a detectable effect on foraging and would not have population-level impacts on important species including NARW. Without impacts on foraging and a reasonable causal connection to population impacts, NMFS's reasoning for this alternative is not justifiable or persuasive. NMFS has not demonstrated its 20-kilometer buffer alternative is warranted or provided any new information to support it, and current available peer-reviewed studies and data constituting best available science do not conclude that

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		there would be a reasonable expectation of population-level impacts.
BOEM-2023-0011-0185-0004	In order to issue an Incidental Take Authorization (ITA) under the MMPA NMFS OPR needs to make a determination that the authorized take will have a "negligible impact" on the stock. Many studies spanning marine mammal taxa and sound source types show noise exposure may result in behavioral disruption including avoidance and foraging cessation (see for example Southall et al. 2021 Duarte et al. 2021 Goldbogen et al. 2013). Persistent disturbance of foraging can accrue to impact reproduction and survival especially for unhealthy animals with limited energy reserves (Keen et al. 2021 McHuron et al. 2021 Pirotta et al. 2023). For populations with low abundance high mortality rates and low reproductive rates impacts to reproductive success or survival of any individuals can adversely impact populations. As you are aware NMFS OPR has proposed pile driving-related mitigation measures for SouthCoast to mitigate the impacts from construction related noise adequately for NMFS to be able to make a negligible impact determination. Also we continue to work with SouthCoast to identify and include measures that would adequately reduce the risk of vessel strike such that zero strikes are expected which is also necessary in order to make negligible impact determination.	BOEM has proposed a suite of mitigation, monitoring, and reporting conditions that are expected to avoid and minimize any potential impacts. These measures include seasonal restrictions on pile driving to times of year during which NARWs are least likely to occur. Additionally, conditions are proposed to lower sound levels that would decrease the area in which whales might be exposed. The monitoring conditions would also avoid exposure to noise when whales are sighted by not allowing pile driving to occur or by minimizing the duration of exposure such that long-term reductions in foraging would not occur. Stringent vessel strike avoidance measures are also proposed that go above and beyond what NMFS requires through regulation. BOEM agrees with NMFS regarding the status of the NARW, including the overall concerns for the recovery of the population. BOEM will continue to work cooperatively with NMFS to assess the best available information and identify any conditions that are reasonable provided support and analysis based upon such information.
BOEM-2023-0011-0185-0005	Last we remain concerned about the impacts of installing and operating wind turbines in North Atlantic right whale feeding habitat and how that will impact right whale foraging success. As we have clearly articulated to SouthCoast additional habitat mitigation may be necessary prior to the issuance of any final rule and will be informed by the ESA section 7 consultation and public comments on the proposed rule. NMFS OPR will continue to work with you on these issues and in particular discuss both how the NEPA process may be affected and how the additional mitigation measures can be incorporated into and analyzed in the FEIS.	Thank you for the comment. BOEM remains committed to avoiding and minimizing any impacts on the foraging success of whales if a rigorous analysis of the best available information suggests such impacts may occur. BOEM has made plausible assumptions in its analysis and has proposed mitigation measures based on its analysis of the best available information. BOEM is committed to applying the best available information throughout its environmental review.

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BOEM-2023-0011-0185-0006	We remain concerned about our ability to reach a "no jeopardy" conclusion in the pending ESA consultation for this project without incorporating mitigation measures designed to avoid and minimize impacts of construction and operation on North Atlantic right whales into the proposed action for consultation. We are currently reviewing the March 2022 draft biological assessment (BA) to determine if all of the information necessary to initiate consultation has been provided. The DEIS and BA should be consistent when addressing effects to North Atlantic right whales And drawing conclusions related to exposure to stressors including the risk of vessel strike; they currently are not. We look forward to working with you to incorporate any needed mitigation measures designed to avoid and minimize impacts of construction and operation on North Atlantic right whales throughout the ongoing ESA consultation to help BOEM ensure that the project is not likely to jeopardize the continued existence of the species.	The Final EIS and Final Biological Assessment (BA) have been revised and all conclusions are in alignment between the documents. The effects analysis of the BA includes conclusions regarding the construction, operation, and decommissioning of the proposed offshore wind project. BOEM, and SouthCoast through the Marine Mammal Protection Act (MMPA) Incidental Take Regulation (ITR) application process with NMFS, have proposed many mitigation and monitoring measures to avoid and minimize impacts on NARWs. Review of the best available information does not lead any analysis to conclusions that population-level impacts on NARWs, and jeopardy, are likely to result from the proposed action.
BOEM-2023-0011-0185-0007	We appreciate the consideration of a land-based alternative for the export cable corridor and we consider this to be the environmentally preferred alternative for the export cable route. Avoiding the Sakonnet River through a land-based cable route would reduce impacts to aquatic resources including important estuarine habitats and designated Habitat Areas of Particular Concern (HAPC) for juvenile Atlantic cod. The DEIS does not recognize or discuss the potential differences in anticipated impacts of construction within an estuarine environment compared with an offshore environment. Further the DEIS references outstanding surveys for the cable route that are necessary to evaluate how this alternative compares with the proposed action. The document appears to suggest without supporting evidence that cable installation within an estuarine environment would have the same effects as cable installation offshore and suggests that impacts to EFH finfish and invertebrates from avoiding construction in the Sakonnet River would "not [be]	The Final EIS (Section 3.5.2, *Benthic Resources*, and Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*) has been revised to include additional discussion of the difference in impacts on benthic and essential fish habitat (EFH) resources between the Proposed Action, which would lay cable in the Sakonnet River, and Alternatives C-1 and C-2, which would avoid the Sakonnet River by installing cable overland, including the difference in estuarine benthic disturbances. Following the release of the Draft EIS, SouthCoast Wind, at BOEM's request, commissioned two desktop studies using existing site-specific and regional data to inform BOEM's assessment of the Alternative C cable routes: *SouthCoast Wind BOEM Alternative C Geohazard Desktop Study* (TetraTech 2023) and *SouthCoast Wind BOEM Alternative C-1 Benthic Desktop Study* (INSPIRE 2023). The findings from these desktop studies have been incorporated into the Final EIS (principally Section 3.5.2, *Benthic Resources,* and Section

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	measurably different" from the proposed action. However the DEIS does not consider the unique features and value of the estuarine environment or how impacts of the project may vary along the alternative cable routes. Rather the analysis appears to discount the reduction in impacts to estuarine environments and associated fisheries that would be anticipated from the selection of the land-based alternative. We recommend that this analysis be revised to evaluate these unique estuarine features as further survey information becomes available.	3.5.5, *Finfish, Invertebrates, and Essential Fish Habiata*) and support BOEM's analysis of the cable routes. BOEM believes the information contained in these desktop studies, along with existing information that BOEM and SouthCoast Wind have already gathered (including a terrestrial archaeological desktop study [PAL 2022] and a marine archaeological desktop study [RCG&A 2022]; refer to Section 3.6.2, *Cultural Resource*s) provides adequate information for BOEM to make an informed decision regarding the alternatives.
BOEM-2023-0011-0185-0008	In many sections of the DEIS there is little to no detailed analysis of the action alternatives or an evaluation of the differences in impacts between the action alternatives. The analysis for each of the action alternatives does not include consideration of the actual design parameters of the proposed action nor where these parameters are specifically located within the project area. The analyses are also very general and depict the lease area and surrounding waters as indistinguishable from any other parts of the continental shelf. This approach does not allow the reader to understand or identify any meaningful distinctions between the impacts of each of the action alternatives nor does it include a comparison of the impacts of the action alternatives to each other (beyond the affected footprint of the alternative) which is a key component of the EIS needed to inform decision making. The analysis remains solely focused on acreage of area impacted and does not consider other important factors such as the location and resources present in the affected area.	BOEM believes the analysis in the Draft EIS provided an appropriate level of detail and comparative analysis among alternatives for the public and decision-maker to distinguish the impacts between alternatives. The level of analysis and detail by alternatives is commensurate with other BOEM offshore wind EISs. However, to improve the discussion and understanding of the differences between alternatives, BOEM has added a Comparison of Alternatives section to each Chapter 3 resource section that compares the impacts among alternatives. Refer also to responses to comments by resource section regarding where BOEM has made revisions to the Final EIS based on specific NMFS comments about the alternatives analysis.
BOEM-2023-0011-0185-0009	Effects from the different alternatives will vary depending on the location of where the impact producing factors occur. However those variations in impacts are not captured in the DEIS and the analysis inaccurately assumes that fewer acres impacted is better without an assessment of potential trade-offs between alternatives. For example under Alternative F	BOEM agrees that the alternatives vary in impacts based on the location that the impact- IPFs would occur and has described those impacts to the extent the information is known and available. As it relates to Alternative F, BOEM has included additional discussion in various resource Final EIS sections (e.g., Section 3.5.2, *Benthic Resources*, and Section

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	the DEIS does not discuss the trade-offs between the installation of fewer cables and the long-term impacts to fish stocks from larval impingement associated with operation of the open loop cooling system of an HVDC converter station. This trade-off analysis may vary depending on the habitat types being impacted by cable installation and the location of the converter station but that is not discussed in the DEIS. We recognize that the EIS is a tool to inform decision making for this project; however the DEIS does not currently include the analysis and justification necessary to inform decisions related to alternatives and/or measures to reduce project impacts.	3.5.6, *Marine Mammals*) about the varying impacts and tradeoffs of Alternative F to the extent they are known. SouthCoast Wind has not yet identified the location of a potential second high-voltage direct current (HVDC) converter offshore substation platform (OSP) associated with the Project 2 interconnection, except that it would be located in the southern portion of the Lease Area. Additionally, the location of the cables that would not be installed under Alternative F (due to the reduction in the number of cables from five to three) is not known precisely, except that the amount of disturbance within the cable corridor would be reduced. Therefore, the acreage of disturbance is a useful metric in the absence of knowing the specific location of each individual cable.
BOEM-2023-0011-0185-0010	Similarly information on benthic characteristics to identify where and to what extent cable preparation activities will take place (trenching sand wave clearance boulder relocation cable protection etc.) is lacking and should be included in the FEIS.	BOEM believes the level of detail of potential area of cable preparation is sufficient and comparable to other offshore wind EIS documents. Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat,* has been revised to include a figure showing the location of boulder and sand wave clearance areas and anchoring locations. Additional project-specific detail is included in the EFH Assessment and a statement has been added to the Final EIS referring the reader to the EFH Assessment for more detail.
BOEM-2023-0011-0185-0011	Finally, the FEIS should include an evaluation of the most recent fishery data including fishing operations within state waters by state permitted vessels and impacts to shoreside support services to fully evaluate potential impacts and ensure proposed mitigation/compensation measures reflect all fishery operations and impacts. This information is needed to allow for a complete and thorough evaluation of each alternative in the FEIS.	Section 3.6.1.5 qualitatively assesses impacts on the shoreside support services, noting that the impacts on other fishing industry sectors, including seafood processors and distributors and shoreside support services, would be long term and minor to major, depending on the fishery in question. Further analysis of the socioeconomic impacts on fishing support industries is included in Section 3.6.3, *Demographics, Employment, and Economics*, and Section 3.6.4, *Environmental Justice*. Furthermore, BOEM is proposing a mitigation measure that would require SouthCoast Wind to conduct an analysis of impacts on

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		shoreside seafood businesses and to develop a plan to compensate for losses to shoreside businesses. BOEM has added this measure to the Final EIS (refer to Section 3.6.1-11 and Appendix G, Table G-2; CF-5).
BOEM-2023-0011-0185-0013	The DEIS contains sections where BOEM is relying on mitigation measures to reduce impacts but does not specify which of these measures if any are factored into the impact determination. In addition assumptions about the success of mitigation measures are made despite a lack of evidence or adequate detail regarding specific mitigation measures (e.g. fisheries and scientific survey impact mitigation). We recommend the FEIS address the anticipated impacts of the proposed action mitigation measures that are considered to be part of that action the effectiveness of these measures the expected impacts if mitigation methods are applied and the likelihood that such measures will be required and implemented. We ask that BOEM clarify if additional measures may be implemented upon COP approval but were not factored into the impact analysis.	As described in Final EIS Section 2.2, Section 3.2, and Appendix G, BOEM considers all SouthCoast Wind-committed measures as part of the Proposed Action and has factored them into all impact determinations. The applicant-committed measures are listed in Appendix G, Table G-1 and Attachment G-1 and are described in the analysis of each Chapter 3 resource section as appropriate. For example, Section 3.5.5.2 summarizes several of the applicant-committed measures applicable to the resource, and the analysis of the Proposed Action in Section 3.5.5.5 analyzes how these measures reduce impacts. Additional agency-proposed mitigation measures are identified in Appendix G, Table G-2. These measures are not part of the Proposed Action but are additional measures that BOEM may require to further avoid, minimize, or mitigate impacts. These measures are not factored into the impact determinations of each alternative because they are not part of the Project. Instead, within each Chapter 3 resource section, BOEM has included a *Proposed Mitigation Measures* section that describes and analyzes the effect of each agency-proposed measure. The analysis describes how the measures reduce impacts and whether the measures would change the impact determinations.
BOEM-2023-0011-0185-0014	We continue to have significant concerns related to the major impacts offshore wind development will have on our NOAA scientific surveys. The DEIS does not include any discussion on how these major impacts will be mitigated at the project level other than referencing the ongoing BOEM/NMFS survey mitigation efforts. However the mitigation strategy is not currently resourced and does not set requirements or standards with which projects must	BOEM has committed to working with the National Oceanic Atmospheric Administration (NOAA) to implement the Federal Survey Mitigation Strategy program (https://repository.library.noaa.gov/view/noaa/47925). Implementation of the program is pending. As discussions between BOEM and NOAA on implementation of the program continue, specific details of appropriate mitigation measures will be added to the environmental analysis. In

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	comply. In order to minimize the major adverse impacts expected on scientific surveys we recommend mitigation measures be required and implemented before development moves forward consistent with our joint survey mitigation efforts. We will continue to work with you to ensure these details can be included in the FEIS.	Final EIS Section 3.6.7.10, *Proposed Mitigation Measures*, BOEM has indicated that the individual survey mitigation plans associated with the NOAA and BOEM Federal Survey Mitigation Program have not been developed and funding is not currently available to support survey mitigation plans to date.
BOEM-2023-0011-0185-0015	EIS Section: Global PDF Page: Global Comment: Cumulative Effects of Alternative A (No Action) - All anticipated IPFs should be fully analyzed for all resources. There are varying levels of concluding statements for each IPF under the cumulative effects of Alternative A (No Action) across the resource sections. Without a clear concluding statement (including minor moderate or major; beneficial or adverse) for the impacts of each individual IPF it is difficult for the reader to fully understand the makeup of the overall impact conclusion for the cumulative effects of the No Action alternative.	The Final EIS has been updated to ensure an impact rating is included for each IPF considered under the *Cumulative Effects of the No Action Alternative* analysis for each Chapter 3 resource area.
BOEM-2023-0011-0185-0016	Executive Summary EIS Section: List of Tables PDF Page: 6 Comment: Table ES-1 and ES-2 should be listed here. EIS Section: List of Tables PDF Page: 12 Comment: Figure ES-1 should be listed here. Please add the following sentence that has been dropped "In addition NMFS has an independent responsibility to comply with NEPA and will rely on the information and analyses in BOEM's final EIS after independent review to fulfill its NEPA obligations." preceding the following sentence: "NMFS intends to adopt the Final EIS if after independent review and analysis it determines the Final EIS to be sufficient to support the authorization."	The tables and figure in the Executive Summary have been added to the Table of Contents in the Final EIS. The requested sentence regarding NMFS's independent responsibility to comply with NEPA has been added to the Executive Summary.
BOEM-2023-0011-0185-0017	EIS Section: ES.1 PDF Page: 22 Comment: The first sentence mentions the NEPA regulations but cites the U.S. Code for NEPA itself. The proper citation would be: (40 CFR 1500-1508).	The sentence is referencing the NEPA statute and does not mention the implementing regulations. The U.S. Code citation was retained.
BOEM-2023-0011-0185-0018	EIS Section: ES.4.4 PDF Page: 30 Comment: NMFS has proposed several changes to Alternative D in the cover letter	BOEM believes the information regarding hydrodynamic effects included in the description of Alternative D in

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	that accompanies this table. However, if Alternative D remains as is this Executive Summary section should present a description of the alternative. The discussion of the modeling conducted appears misplaced and does not describe the alternative. Accordingly please remove sentences 3 through 6 specifically the following words: "However modeling of the full build out of the entire southern New England lease areas indicates that minor local changes to the physical hydrodynamic features may occur on the western side of Nantucket Shoals adjacent to the BOEM lease areas (Johnson et al. 2021). Based on best available science, BOEM believes there is a lack of conclusive evidence that the removal of proposed turbine locations in the northeastern portion of the Lease Area would measurably lessen these minor impacts on the hydrodynamic features. If the potential hydrodynamic effects are consistent with the modeling of the southern New England lease areas and other hydrodynamic studies of wind facilities in the North Sea the effects would be local to the immediate vicinity of the turbine array and not extend to Nantucket Shoals. If the potential hydrodynamic effects are as extensive as potential wind wakes that could extend tens of kilometers under stable conditions which has not been demonstrated then the removal of turbines would not remove this potential range of effects from extending far enough from the turbine array to overlap with Nantucket Shoals. Nonetheless…" NMFS has made the same comment in Chapter 2 where the same language appears.	Executive Summary Section 4.4 and Chapter 2, Section 2.2.4 provides important context for why the alternative was identified, developed, and analyzed in the EIS. BOEM has added additional information to the Final EIS to describe the findings from the 2024 NASEM study on hydrodynamic impacts in the Nantucket Shoals region, which provides further context for the purpose and intent of the alternative.
BOEM-2023-0011-0185-0019	EIS Section: ES.5 PDF Page: 33 Comment: Please change to the title of the table to reflect that it accurately reflects that impacts do include mitigation. ES.5 37 Comment: The footnote for the table indicates that light green is used for boxes that are "negligible or beneficial to any degree" but there is no light green shown in the table.	Final EIS Table ES-2 and the text preceding the table was revised to clarify that the impacts are with no agency-proposed mitigation. The Proposed Action and action alternatives analyzed in the EIS assume implementation of all applicant avoidance, minimization, and mitigation measures (AMMs).

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	Recommend removing this from the footnote to eliminate confusion.	The footnote for Table ES-2 was updated to remove light green as the color was not used in the table.
BOEM-2023-0011-0185-0020	Chapter 2: Alternatives EIS Section: 2.1 PDF Page: 50 Comment: In the fourth paragraph there is no consultation under the MMPA. NMFS suggests correcting the sentence by replacing it with: "Consultations under ESA Section 7 and the Magnuson–Stevens Fishery Conservation and Management Act (MSA) as well as the submission for and issuance of other necessary permits and authorizations under applicable statutes including the MMPA may result in additional measures or changes to these measures."	Final EIS Section 2.1 has been revised as suggested.
BOEM-2023-0011-0185-0021	EIS Section: 2.1 PDF Page: 50 Comment: Please modify the fourth paragraph to indicate that the applicant-proposed mitigation measures listed in Table G-1 will be included in the proposed action and that additional mitigation and monitoring measures that BOEM may require are listed in Table G-2. (See Appendix G pp 1-2).	Final EIS Section 2.1 has been revised as suggested.
BOEM-2023-0011-0185-0022	EIS Section: 2.1 PDF Page: 50 Comment: NMFS advises that if any mitigation measures are analyzed in the impact analysis and they influence the impact determinations and selection of an alternative those measures must be mandatory in the preferred and selected alternative for a proper impacts analysis.	Comment acknowledged.
BOEM-2023-0011-0185-0023	EIS Section: 2.1.4 PDF Page: 67 Comment: NMFS has proposed several changes to Alternative D in the cover letter that accompanies this table. However if Alternative D remains as is this section should present a description of the alternative. The discussion of the modeling conducted appears misplaced and does not describe the alternative. Accordingly please remove sentences three through six specifically the following words: "However modeling of the full build out of the entire southern New England lease areas indicates that minor local changes to the physical hydrodynamic features may occur on the western side of	Please refer to response to Comment BOEM-2023-0011-0185-0018.

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	Nantucket Shoals adjacent to the BOEM lease areas (Johnson et al. 2021). Based on best available science BOEM believes there is a lack of conclusive evidence that the removal of proposed turbine locations in the northeastern portion of the Lease Area would measurably lessen these minor impacts on the hydrodynamic features. If the potential hydrodynamic effects are consistent with the modeling of the southern New England lease areas and other hydrodynamic studies of wind facilities in the North Sea the effects would be local to the immediate vicinity of the turbine array and not extend to Nantucket Shoals. If the potential hydrodynamic effects are as extensive as potential wind wakes that could extend tens of kilometers under stable conditions which has not been demonstrated then the removal of turbines would not remove this potential range of effects from extending far enough from the turbine array to overlap with Nantucket Shoals. Nonetheless…" NMFS has made the same comment on the Executive Summary where the same language appears.	
BOEM-2023-0011-0185-0024	EIS Section: 2.1.4 PDF Page: 69 Comment: The caption for Figure 2-7 incorrectly states that Alternative D is the removal of six WTGs. The correct language is: "up to six WTGs." This error also appears in Sections 3.5.3.7 and 3.5.6.7.	Text in Final EIS Figure 2-7, Section 3.5.3.7, and Section 3.5.6.7 has been corrected to “up to six WTGs.”
BOEM-2023-0011-0185-0025	EIS Section: 2.1.6 PDF Page: 76 Comment: Please provide more detailed information about Alternative F including information on the habitat types and species of importance in the Muskeget Channel how much area of seabed disturbance would be avoided as well as locations (maps) of the HVDC converter OSPs and planned offshore export cable routes.	SouthCoast Wind has not yet identified the location of a potential second HVDC converter OSP associated with the Project 2 interconnection, except that it would be located in the southern portion of the Lease Area. It would be impracticable and imprudent for BOEM to select the location of the OSP for Alternative F as the selection of an OSP location is based upon geotechnical data, offtake agreements, material/equipment procurement process, and other factors to which BOEM is not privy. The location of the cables that would not be installed under Alternative F (due to the reduction in the number of cables from five to three) is also not precisely known except that all cables would be

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		within the Falmouth Export Cable Corridor (ECC) as mapped in Chapter 2, Figure 2-1. Additional information about habitat types, including complex habitat in the Muskeget Channel, within the Falmouth ECC where impacts could be reduced under Alternative F has been added to the relevant Chapter 3 resource sections in the Final EIS, including Section 3.5.2, *Benthic Resources*, and Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*.
BOEM-2023-0011-0185-0026	EIS Section: 2.2 PDF Page: 78 Comment: In the row of Table 2-3 for the alternative "WTG generation capacities that analyze different deployment ranges of WTG MW generation capacities" the justification for dismissal states that the developer has 1275 MW in existing offtake agreements. Earlier in the document in sections ES.2 and 1.2 it is stated that the developer has PPAs for 804 and 400 MW - for a total of 1204 MW. Please clarify the reason for the numerical difference or explain the difference between PPAs and offtake agreements.	In light of SouthCoast Wind's bid into the Massachusetts 83C IV and multi-state solicitations, selection of WTG design(s) with specific nameplate capacities cannot be deferred until the Record of Decision (ROD) under the current market conditions. Specifically, waiting until the ROD is issued for the government to decide whether to select a turbine capacity for Project 1 of the Project would undermine the integrity of SouthCoast Wind's bid and a selection of a WTG outside of SouthCoast Wind's Project Design Envelope (PDE) would render the Project infeasible by invalidating a potential award, which includes WTG specifications and economic assumptions based on the capacity of the WTG and creating delays that would prevent the ability for SouthCoast to meet the required capacity for Project 1. The needed capacity for Project 1 into the NE Multistate Solicitation is 1,275 megawatts (MW).
BOEM-2023-0011-0185-0027	EIS Section: 2.2 PDF Page: 79 Comment: In the row of Table 2-3 for the alternative "Preclude the development of WTGs within a 20-kilometer buffer of the Nantucket Shoals 30-meter isobath" the justification for dismissal states that the developer has 1275 MW in existing offtake agreements. Earlier in the document in sections ES.2 and 1.2 it is stated that the developer has PPAs for 804 and 400 MW - for a total of 1204 MW. Please clarify the reason for the numerical difference or explain the difference between PPAs and offtake agreements.	BOEM determined this alternative is economically infeasible and not consistent with the Project purpose and need to provide up to 2,400 MW of clean, renewable wind energy to the northeast United States, including Massachusetts, Connecticut, and/or Rhode Island, which each have existing state offshore wind procurement laws in place as well as decarbonization goals and targets. Under this alternative, 53 WTGs would be eliminated, leaving 94 WTG and 2 OSP positions; 85 WTGs and 1 OSP, out of the remaining 96 positions would be needed for Project 1, assuming the use of a 15 MW WTG model. BOEM determined the use of a 15 MW

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		WTG for Project 1 is a reasonable assumption based on the PDE in the Construction and Operations Plan (COP) and Request for Information (RFI) responses from SouthCoast Wind. SouthCoast Wind needs the 85 WTGs for Project 1 to achieve the 1,275 MW in planned offtake that SouthCoast Wind has bid into the Massachusetts 83C IV and multi-state Massachusetts, Rhode Island, and Connecticut solicitation for up to 6,000 MW of offshore wind power. SouthCoast Wind confirmed that their Project 1 bid includes the shallowest WTG positions in their lease (which also overlap with the positions that are closest to Nantucket Shoals and to shore) because they provide the most cost-competitive rates for consideration for an award. Consequently, if BOEM were to relocate the majority of the WTG positions for Project 1 into deeper waters it would invalidate SouthCoast Wind's bid.
BOEM-2023-0011-0185-0028	EIS Section: 2.2 PDF Page: 79 Comment: In regards to the "Preclude the development of WTGs within a 20-kilometer buffer of the Nantucket Shoals 30-meter isobath" alternative in Table 2-3 the text notes that only 2/3 of full geotechnical surveys have been completed and due to the positions impacted by the 20-km buffer SouthCoast is not able to analyze and design foundations in time in the remaining 1/3 of the lease area to meet the deadlines in their Massachusetts PPAs as rationale for why the alternative was rejected. Additionally, the rationale also states that 53 WTGs would be eliminated by the 20-km buffer but NMFS analysis shows that 49 WTGs would be removed. At 15-MW per WTG this is 60 MW that should be accounted for in the text. Lack of complete survey coverage in a timely fashion should not preclude feasible alternatives from consideration. The text also states that SouthCoast's primary goal includes interconnecting at POIs that have a maximum capacity of 1200 MW. This goal can still be achieved with the 20-km buffer as there would still be a suitable number of positions left to fulfill their 1200 MW PPA with MA.	NMFS requested that BOEM consider an alternative that would prohibit installation of WTGs within a 20-kilometer buffer of the Nantucket Shoals 30-meter isobath to reduce potential impacts on this important foraging area for aquatic species, such as the NARW and sea ducks. Under this alternative, 53 WTGs would be eliminated, leaving 94 WTG and 2 OSP positions; 85 WTGs and 1 OSP, out of the remaining 96 positions would be needed for Project 1, assuming the use of a 15 MW WTG model. BOEM determined the use of a 15 MW WTG for Project 1 is a reasonable assumption based on the PDE in the COP and RFI responses from SouthCoast Wind. SouthCoast Wind needs the 85 WTGs for Project 1 to achieve the 1,275 MW in planned offtake that SouthCoast Wind has bid into the multi-state Massachusetts, Rhode Island and Connecticut solicitation for up to 6,000 MW of offshore wind power. Under this alternative, for Project 2 SouthCoast would only have 9 WTGs and 1 OSP left with a total nameplate capacity of 162 MW, assuming 18 MW WTGs were used. BOEM determined the use of an 18 MW WTG for Project 2 is a reasonable assumption based on the PDE in the

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	Lastly the rationale also notes that SouthCoast is competing for PPAs with NY RI and MA. However, SouthCoast did not compete for RI or NY in either recent RFP. MA has not issued their RFP yet but notably Commonwealth Wind (which previously withdrew from its MA PPA) will also be bidding against SouthCoast among others. Thus, it is conceivable that SouthCoast may be selected for the MA PPA but it is not certain and this also has implications for other projects (i.e. Commonwealth Wind) and that rationale should be applied consistently across the NEPA process. Given this the rationale provided is not adequate justification for dismissal of an alternative as SouthCoast Wind can technically meet their PPA with MA and their goal of interconnecting with a POI with 1200 MW capacity.	COP and RFI responses from SouthCoast Wind. The smallest bid for which a New England state has sought in a procurement since 2022 is 600 MW for Rhode Island (State of Rhode Island General Assembly 2022). A 162 MW project falls well below this amount and the multi-state solicitation between Rhode Island, Massachusetts and Connecticut are only seeing bids that are 800 MW and above with the states trending toward requesting projects that are over 1,000 MW. Furthermore, BOEM and the National Renewable Energy Laboratory (NREL) conducted technical-economic modeling of Projects 1 and 2 and found this alternative to be economically infeasible due to uneconomical increases in the Levelized Cost of Energy (LCOE). Consequently, this alternative is not reasonable under NEPA because it is not consistent with the purpose and need, nor SouthCoast Wind's primary goals, and is not economically feasible or practicable and would, therefore, be equivalent to the No Action Alternative.
BOEM-2023-0011-0185-0029	EIS Section: 2.2 PDF Page: 79 Comment: In the row of Table 2-3 for the alternative "Preclude the development of WTGs within a 20-kilometer buffer of the Nantucket Shoals 30-meter isobath" the NMFS letter was focused on right whales and not sea ducks and other aquatic species (although the alternative could benefit other species).	This table characterizes the area as being used by multiple species.
BOEM-2023-0011-0185-0030	EIS Section: 2.4 PDF Page: 87 Comment: Please confirm that Table 2-4 represents impacts "with no mitigation." Section 2.1 states that mitigation proposed by the applicant is included in the proposed action and the analysis under Chapter 3 utilizes the implementation of mitigation when determining impact levels. If the levels in Table 2-4 do not represent the findings in the later analysis please indicate that and provide a rationale. Please ensure the title of the table on the following page reflects any changes.	Final EIS Table 2-4 and the text preceding the table was revised to clarify that the impacts are with no agency-proposed mitigation. As stated in Section 2.1, the Proposed Action and action alternatives analyzed in the EIS assume implementation of all applicant-proposed AMMs.

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BOEM-2023-0011-0185-0031	EIS Section: 2.4 PDF Page: 90 Comment: In the row for "3.5.6 Marine Mammals" in the boxes for the Proposed Action and other action alternatives the summary text states that there are "potentially beneficial impacts." Please classify the level of these impacts as negligible minor moderate or major for the Proposed Action and each action alternative. See similar comment for section 3.5.6.	Final EiS Table 2-4 has updated to indicate there would be “minor beneficial impacts.” Similar changes were also made in Section 3.6.5.
BOEM-2023-0011-0185-0032	EIS Section: 2.4 PDF Page: 90 Comment: Alternative F: Consider noting that this could have a potential beneficial impact to harbor seal pupping on Muskeget Island.	Text regarding the potential for a reduction in impacts on harbor seal pupping under Alternative F has been added to the analysis of marine mammals in Section 3.5.6.6. This information was not included in Section 2.4 because that section is intended to present only a high-level summary of impacts.
BOEM-2023-0011-0185-0033	Section 3.1-3.3 (IPFs Mitigation and Definition of Impact Levels) EIS Section: 3.2 PDF Page: 101 Comment: After the end of the 2nd sentence (after "in this chapter.") please add language along the lines of: "If any mitigation measures are analyzed in the impact analyses and those measures influence the impact determinations those measures will be required as part of the alternative." Any mitigation and monitoring terms that influence the impact conclusions and final agency decision need to be committed measures in order for the assumptions and conclusions of the analysis to be accurate. They are not optional measures. This comment has been made previously in other EISs.	Final EIS Section 3.2 has been revised to incorporate language similar to the text suggested in the comment.
BOEM-2023-0011-0185-0034	EIS Section: 3.2 PDF Page: 101 Comment: Please change the 3rd sentence to read "In addition other mitigation measures may be required through completion of consultations, authorizations, and permits with respect to several environmental statutes such as the MMPA, Section 7 of the ESA, or the MSA." The MMPA process is not a consultation and the recommended language corrects the sentence.	Final EIS Section 3.2 has been revised as suggested in the comment.
BOEM-2023-0011-0185-0035	Section 3.5.2: Benthic Resources EIS Section: 3.5.2 PDF Page: Global Comment: For each alternative please provide a	Under the analysis of Alternatives C, D, E, and F, separate IPF headings were not considered necessary if the analysis could

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	separate subheading and complete discussion/evaluation for each IPF. Avoid using one large paragraph with minimal information for each IPF as this provides incomplete and confusing analyses.	be more concisely described without the headings or the IPF being discussed was apparent from the context. This approach is consistent with other BOEM offshore wind EISs.
BOEM-2023-0011-0185-0036	EIS Section: 3.5.2 PDF Page: Comment: It is unclear if the mitigation measures discussed are planned or confirmed to be implemented. Using language such as "may" or "potentially" when discussing implementation of mitigation or minimization measures is misleading. Additionally potential or possible mitigation measures should not be used as justification for reduced impacts. Only mitigation measures that are committed to by BOEM and the developer during the Project's lifespan should be discussed or used as part of impact evaluations.	BOEM has described all applicant measures in the EIS as proposed by SouthCoast Wind in the COP. Agency-proposed measures are included in Appendix G, Table G-2. BOEM has considered all public comments on the Draft EIS and has made changes to the mitigation measures as appropriate, which is reflected in the Final EIS.
BOEM-2023-0011-0185-0037	EIS Section: 3.5.2 PDF Page: Global Comment: Please ensure impact evaluations are specific to the Project and the alternative and do not simply reference information presented for the No Action alternative which is non-specific and encompasses much larger and often much different habitats and species. For example under Impacts of Alternative B Accidental Releases IPF an evaluation of the potential impact of invasive species releases on benthic resources should be provided which are specific to this Project area and this alternative. Simply stating that impacts will be similar to the No Action Alternative does not provide a clear analysis of effects from this specific project as it does not consider the habitat types and species in this Project area that may be affected.	The types of species to be spread or where they could be released based on accidental releases cannot be known with certainty, and no specific impacts can be stated with confidence other than what is described in the No Action Alternative. The *accidental releases* IPF in Section 3.5.2, *Benthic Resources*, is also consistent with the *accidental releases* IPF in other offshore wind EISs, including Revolution Wind and Ocean Wind 1. The *presences of structures* IPF is a good example of where the Proposed Action does not refer to the No Action Alternative for invasive species. In EIS Section 3.5.5.5, the subtidal invasive species known within the region are laid out and one species (D. vexillium) is detailed in its impact and expands on its documented spread to WTG and scour protections of other offshore wind farms.
BOEM-2023-0011-0185-0038	EIS Section: 3.5.2 PDF Page: Global Comment: At this time concluding: "The impacts resulting from individual IPFs associated with construction and installation O&M and decommissioning of the Project under [Alternatives C-F] would be similar to those described under the Proposed Action" is unsupported and the necessary level of	Under the analysis of Alternatives C, D, E, and F, separate IPF headings were not considered necessary if the analysis could be more concisely described without the headings or the IPF being discussed was apparent from the context. This approach is consistent with other BOEM offshore wind EISs. BOEM has also reviewed the impact conclusions for each

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	information to determine this is not provided. Site survey information and individual analyses for each IPF are missing. Additionally there are measureable impact reductions to benthic habitats from in these alternatives which would result in different overall impacts from to those of the Proposed Action. Currently the conclusion that impacts for Alternatives C-F are the same as the Proposed Action is unsupported and dilutes each alternative and bolsters the Proposed Action. All alternatives should receive the same level of robust analysis and consideration under NEPA. Please address.	alternative and believes they are appropriate and supported by the analysis. Alternatives C-F were developed to minimize specific environmental impacts in certain geographies, such as minimizing cable emplacement in the Muskeget Channell. While impacts may be reduced, the 149 WTG/OSP positions, interarray cables, export cables would still be installed and affect the benthic habitat so a change in the overall impact level is not supported. Regarding the analysis of Alternative C, BOEM has updated the analysis with additional desktop studies performed by SouthCoast Wind, which include a benthic desktop study and a geohazard study. To further describe the difference in impacts among the alternatives, BOEM has added Section 3.5.2.10, *Comparison of Alternatives*, to the Final EIS.
BOEM-2023-0011-0185-0039	EIS Section: 3.5.2.1 PDF Page: Global Comment: Any identified HAPC should be explicitly identified mapped and described in the Affected Environment section even if it is referenced later in the chapter. This includes in the Lease Area Sakonnet River export cable corridors landfall areas and any other areas that may be impacted by the proposed action.	All sensitive habitats are identified in Final EIS Section 3.5.5.1, *Essential Fish Habitat*. This section contains tables describing Habitat Types by Project Component – Offshore/Onshore Export Cable with acreage of each habitat type found in each EEC (Tables 3.5.5-2, 3.5.5-3, 3.5.5-4 and 3.5.5-5). A cross reference to these tables has been added to Section 3.5.2.1. Maps depicting inshore submerged aquatic vegetation (SAV) habitat for potential cable landing sites in Brayton Point and Falmouth are included in COP Appendix K (Seagrass and Macroalgae Report) Section 4.3 in Figures 4-1, 4-2, 4-3, and 4-4.
BOEM-2023-0011-0185-0040	EIS Section: 3.5.2.1 PDF Page: 180 Comment: The "three gravelly samples" observed should include further discussion and identification of location.	Exact coordinates and a brief location description has been added to the Final EIS Section 3.5.2.1, *Inshore Project Area.*
BOEM-2023-0011-0185-0041	EIS Section: 3.5.2.3 PDF Page: 182 Comment: Under Accidental Releases please provide a source for the following information: "The chemicals with potential to sink or dissolve rapidly are predicted to dilute to non-toxic levels before they would reach benthic resources."	Source (Vineyard Wind 1 EIS) has been added to the text.

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BOEM-2023-0011-0185-0042	EIS Section: 3.5.2.3 PDF Page: 190 Comment: Presence of Structures IPF: There is significant information lacking on the potential adverse impacts of newly introduced artificial material on benthic communities such as changes in oxygen and nutrient cycling heterotrophic and autotrophic community structure and changes to bacterial composition of sediment (Degraer et al. 2020; Tong et al. 2022). The "reef effect" of the proposed structures is currently described as a net benefit but there is also potential for artificial structures to cause adverse impacts to benthic ecosystems and these topics should be thoroughly addressed and evaluated.	Information regarding the impacts imposed by the presence of structures can be found in EIS Section 3.5.2.5, *Presence of structures*. In this section, BOEM discusses the invasive species present and how they can colonize novel hard bottom substrate like WTGs. Impacts from Degraer et al. (2020) are consistent with what is discussed in the Final EIS (net positive on biodiversity, increased deposition of fecal matter from biofouling community, and novel hard bottom substrate from WTG and scour protection could act as steppingstone habitat for invasive species spread). Findings from Tong et al. (2022) on bacterial activity and community composition on novel artificial structures compared to 10-year-old artificial structures and control sites is incorporated into Section 3.5.2.5.
BOEM-2023-0011-0185-0043	EIS Section: 3.5.2.5 PDF Page: 195-196 Comment: EMF IPF: This section should tie together the EMF levels studied in the cited references with the EMF levels expected by the project. Many of the referenced effects could adversely affect benthic species in the analysis area.	Information in Section 3.5.2.5, *EMF* has been expanded to indicate that the intensity of electromagnetic field (EMF) levels on benthic species in cited studies is much higher than predicted production levels for offshore wind cabling. Further reiteration is available and referenced in EIS Section 3.5.2.3 *Cumulative Impacts of No Action Alternative*.
BOEM-2023-0011-0185-0044	EIS Section: 3.5.2.5 PDF Page: 196 Comment: EMF IPF: There has been much more research on this topic since Exponent 2018 which was previously cited. The text suggests that if the animal leaves the area then it would no longer be affected by EMFs. Which area does this refer to the entire wind farm and cable corridor? Please clarify.	BOEM states that EMFs produced during operation occur from the interarray and export cabling. Section 3.5.2.5 describes measures SouthCoast Wind has committed to minimizing EMFs, including electric shielding and cable burial. Scientific literature stated in this section also points to the potential impacts of EMFs on marine mobile fauna.
BOEM-2023-0011-0185-0045	EIS Section: 3.5.2.5 PDF Page: 196 Comment: EMF IPF: The conclusion that impacts will be “localized long-term and minor” should be reconciled with the literature cited in this section which provides evidence for large adverse impacts on predator/prey interactions movement navigation avoidance or attraction behaviors and physiological and developmental processes.	The impacts were deemed as localized long term and minor because the cables are intended to be fully buried. Hence, maximal exposure to EMFs would only occur around areas where they are uncovered (land/sea interface) or if they were uncovered by sediment transport due to waves and storm events. Most literature states that there is little to minor effects on invertebrates. Most studies on fish or electrosensitive species like elasmobranchs (sharks, skates, rays) are conducted in laboratory settings in which these

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		organisms are exposed to EMFs at intensities that are two to three orders of magnitude above maximal measured EMF intensity from submarine cables (Normandeau et al. 2011). For example, Normandeau et al. (2011) measured EMF intensities at varying horizontal distances, and varying cable burial depths from energized HVAC and HVDC cables and found that 0m away and 0m beneath the sediment, HVAC and HVDC produced 7.85 µT and 78.27 µT EMFs respectively. At 4 meters away (horizontally) from the cables, the EMF intensity drops to 1.47 µT and 5.97 µT for HVAC and HVDC cables and burying these cables 5 meters beneath the surface decrease the intensities further to 0.35 µT and 2.73 µT for HVAC and HVDC cables. Since this project aims to bury interarray and export cables to a target depth of 6 feet (1.8 meters), according to Normandeau et al. (2011), the intensity of EMFs felt by marine life would be minimal.
BOEM-2023-0011-0185-0046	EIS Section: 3.5.2.5 PDF Page: 197 Comment: Cable Emplacement IPF: When discussing impacts to habitat (particularly SAV/eelgrass) please include a discussion of amount and location of HAPC that would be impacted by each of the cable emplacement methods.	All sensitive habitats are identified in Final EIS Section 3.5.5.1, *Essential Fish Habitat*. This section contains tables describing Habitat Types by Project Component – Offshore/Onshore Export Cable with acreage of each habitat type found in each EEC (Tables 3.5.5-2, 3.5.5-3, 3.5.5-4 and 3.5.5-5). A cross reference to these tables has been added to Section 3.5.2.1. A map of the Falmouth inshore SAV for alternative and potential landing sites is also referenced in Final EIS Section 3.5.2.1, *Inshore Project Area* (COP Appendix K, Figure 6, 7 and Figure 5-1). No SAV were detected offshore and, therefore, are only mapped in the nearshore maps for the sea to land ECC maps.
BOEM-2023-0011-0185-0047	EIS Section: 3.5.2.5 PDF Page: 200 Comment: Noise IPF: Analysis is insufficient. Please review relevant literature including the following and the references therein: Sole et al. 2023 (doi: 10.3389/fmars.2023.1129057) (Hyperlink: https://www.frontiersin.org/articles/10.3389/fmars.2023.1129057/full) Hawkins et al. 2021 (doi.org/10.1121/10.0004773) (Hyperlink:	The impact of noise is analyzed in greater detail in Section 3.5.2.3, *Noise*. The suggested references were added to the discussion in Final EIS Section 3.5.2.3, *Noise*. Impacts of anthropogenic sound on invertebrate taxa were noted from Sole et al. (2023). References to the analysis of particle motion sound and its relevance to benthic invertebrates from Hawkins and Popper (2017), and Popper and Hawkins (2018)

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	http://doi.org/10.1121/10.0004773); Hawkins and Popper 2017 (doi: 10.1093/icesjms/fsw205) (Hyperlink: https://academic.oup.com/icesjms/article/74/3/635/2739034?login=false); Popper and Hawkins 2018 (doi.org/10.1121/1.5021594) (Hyperlink: http://doi.org/10.1121/1.5021594).	were added to the text. WTGs generation of vibration as noted in Hawkins et al. (2021) was included in the review.
BOEM-2023-0011-0185-0048	EIS Section: 3.5.2.5 PDF Page: 200 Comment: Noise IPF: An analysis of noise from G&G activities and turbine operation should be included here. The analysis should include a discussion of both sound pressure and particle motion as well as substrate vibration for all aspects of the project the involve noise.	The noise related IPF associated with all stages of wind farm development and potential impacts on benthic resources are introduced in Alternative A and are expected to be similar for Alternative B. A note has been made in Final EIS Section 3.5.2.5, *Noise*, to clarify this. Section 3.5.2.3, *Noise* contains a discussion of geophysical and geotechnical (G&G) activities and turbine operation as well as sound pressure, particle motion, and substrate vibration.
BOEM-2023-0011-0185-0049	EIS Section: 3.5.2.5 PDF Page: 201 Comment: Presence of Structures IPF: Analysis is insufficient. This analysis should include a discussion of FAD (fish aggregating device) effects; artificial reef effects; modification of the prey field and diet for upper level predators the potential for structures to facilitate the establishment and range expansion of non-native species; local and broad scale wind-wake effects on larval transport etc. Please also include relevant supporting literature to support statements made. There is a growing body of knowledge on these topics and the majority of this information is missing from the analysis.	Section 3.5.2.3, *Presence of structures* has been revised to include additional analysis and references regarding effects related to nonnative species. A discussion of fish aggregating around WTGs, artificial reef effects, wind-wake effects, and vertical mixing/hydrodynamic impacts of structures are discussed extensively discussed in the finfish, invertebrates, and EFH analysis in Section 3.5.5.5, *Presence of Structures*.
BOEM-2023-0011-0185-0050	EIS Section: 3.5.2.5 PDF Page: 201 Comment: Presence of Structures IPF: Wind wakes and their effects on hydrodynamics may extend 10s of km from the wind farm. This could affect larval transport the thermal environment primary and secondary production and other important processes. These impacts should be analyzed and the following literature should be included in the analysis: Christiansen et al. 2022 (doi: 10.3389/fmars.2022.818501) (Hyperlink: https://www.frontiersin.org/articles/10.3389/fmars.2022.81	Final EIS Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, has been revised to include additional analyses of wind wake and hydrodynamic effects, including citing Christiansen et al. (2022), Daewel et al. (2022), and Dorrell et al. (2022). Within the benthic resources section, a cross reference has been added to Section 3.5.5 to refer the reader to these more detailed analyses.

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	8501/full); Daewel et al. 2022 (doi.org/10.1038/s43247-022-00625-0) (Hyperlink: http://doi.org/10.1038/s43247-022-00625-0); Dorrell et al. 2022 (doi: 10.3389/fmars.2022.830927) https://www.frontiersin.org/articles/10.3389/fmars.2022.830927/full.	
BOEM-2023-0011-0185-0051	EIS Section: 3.5.2.5 PDF Page: 201 Comment: Please provide a citation for the following sentence: "The addition of new substrate could provide stepping stones for invasive species colonization." The work by Coolen et al. 2020 (DOI: 10.1111/mec.15364) (Hyperlink: https://onlinelibrary.wiley.com/doi/10.1111/mec.15364) would be a strong citation.	The suggested citation (Coolen et al. 2020) was added to Section 3.5.2.5.
BOEM-2023-0011-0185-0052	EIS Section: 3.5.2.6 PDF Page: 205 Comment: In this section BOEM provides a quantitative measurable amount of impacts to benthic resources that would be reduced through this alternative. This includes avoidance of impacts to mixed or complex hard bottom EFH live crepidula reefs and crepidula shell hash all which are important habitats which many species depend on. However a few paragraphs later BOEM states that "the long-term effects of avoiding construction through these habitats is difficult to quantify and benthic habitats would likely recover within a few years after construction; therefore impacts would be temporary." NMFS disagrees that effects would be temporary as it is contrary to available information on recovery times for complex habitats. Impacts to complex habitats are expected to result in long-term or permanent impacts. The impacts determination language should more accurately represent the information presented and available literature related to recovery of complex habitats.	Final EIS Section 3.5.2.6 has been revised to indicate that impacts associated with cable emplacement in complex or sensitive habitats such as areas with *Crepidula* reefs, cobbles, or boulders, may impose long-term or permanent impacts where these habitats are present within the cable route.
BOEM-2023-0011-0185-0053	EIS Section: 3.5.2.6 PDF Page: 205 Comment: In this section BOEM states that "Alternative C-1 and 4 miles [6.4 kilometers] under Alternative C-2) have not been surveyed and therefore the specific benthic resources that would be	SouthCoast Wind, at BOEM's request, commissioned two desktop studies in 2023 using existing site-specific and regional data to inform BOEM's assessment of the Alternative C cable routes: *SouthCoast Wind BOEM Alternative C*

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	affected are not known at this time but are anticipated to be similar to the benthic resources found along the Proposed Action's cable corridor given the proximity of the routes." More information should be provided on the anticipated timing of these surveys including if BOEM plans to incorporate the information into the FEIS. Any currently available information should also be used to further characterize the cable routes. It is also unclear how these cable routes are considered similar to the proposed action if they avoid estuarine habitats.	*Geohazard Desktop Study* (TetraTech 2023) and *SouthCoast Wind BOEM Alternative C-1 Benthic Desktop Study* (INSPIRE 2023). The findings from these desktop studies have been incorporated into the Final EIS, Section 3.5.2.6, and BOEM believes the information contained in these desktop studies, along with existing information that BOEM and SouthCoast Wind have already gathered, provides adequate information for BOEM to make an informed decision regarding the alternatives. Text has also been added on the decrease in estuarine benthic disturbance under Alternative C.
BOEM-2023-0011-0185-0054	Section 3.5.4: Coastal Habitat and Fauna EIS Section: 3.5.4 PDF Page: Global Comment: Please include accidental releases (including marine debris oil and gas and invasive species) as part of your impacts analysis for all alternatives.	The coastal habitat and fauna geographic area analysis is defined in Section 3.5.4, *Coastal Habitat and Fauna*, as the area within a 1.0-mile buffer of the Onshore Project area and focuses on the impacts on terrestrial flora and fauna, including noise, land disturbance, presence of structures, and traffic. The effects of accidental releases on nearshore waters are described in Sections 3.5.2, *Benthic Resources*; 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*; 3.5.6, *Marine Mammals*; 3.5.7, *Sea Turtles*; and 3.4.2, *Water Quality*. This is consistent with other BOEM offshore wind EISs, such as Empire Wind.
BOEM-2023-0011-0185-0055	EIS Section: 3.5.4 PDF Page: Global Comment: Under the Noise IPF for each alternative please provide more information on what type of noise is anticipated from what activities and when these noise activities are expected to occur.	Section 3.5.4.5 describes construction and O&M noise impacts on coastal habitat and fauna, including noises from construction of converter stations/substations and cable-laying routes. Because the onshore noise impacts are temporary and would be consistent with typical construction noise in the geographic analysis area, BOEM anticipates negligible impacts and believes the information provide is adequate to characterize these onshore impacts.
BOEM-2023-0011-0185-0056	EIS Section: 3.5.4 PDF Page: Global Comment: Please present full descriptions of the BMPs alluded to. For example under Impacts of Alternative B Traffic it states "Mayflower Wind would develop a Vegetation Management Plan and implement best management practices to minimize potential impacts on vegetation communities during construction." The	The analysis in Section 3.5.4 summarizes some of the applicant-committed measures that would avoid and minimize impacts and refers the reader to Appendix G of the EIS and the COP Volume II for more details. Listing all the measures proposed by the applicant in each Chapter 3 resource section would add unnecessary page length when

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	FEIS should outline the BMPs that are committed to by BOEM and the developer.	the measures are readily available in Appendix G, *Mitigation and Monitoring*.
BOEM-2023-0011-0185-0057	EIS Section: 3.5.4 PDF Page: Global Comment: Cumulative impacts analyses for all alternatives should also consider impacts and damages to marine habitats and fauna within 3 nm of shore and should not be limited to impacts to terrestrial habitats. This includes any cable emplacement dredging HDD etc. Any impact level determinations should be modified to include these habitats if necessary.	The coastal habitat and fauna geographic area analysis is defined in the Draft EIS in Section 3.5.4, *Coastal Habitat and Fauna* (Figure 3.5.4-1). This section covers the area within a 1.0-mile buffer of the Onshore Project area. The environment and environmental consequences of Project activities that are in the geographic analysis area and extend into state waters are presented in Sections 3.5.2, *Benthic Resources*; 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*; 3.5.6, *Marine Mammals*; 3.5.7, *Sea Turtles*; and 3.4.2, *Water Quality*.
BOEM-2023-0011-0185-0058	EIS Section: 3.5.4.1 PDF Page: 242 Comment: Per the BOEM description coastal habitat includes flora and fauna within state waters (which extend 3 nm [5.6 kilometers] from the shoreline). However the current Description of Affected Environment section is lacking identification and/or description of aquatic or marine coastal habitats within this area (e.g. SAV) and the description is currently limited to primarily onshore and terrestrial resources. Please include all coastal habitats that occur within this defined area.	See response to comment BOEM-2023-0011-0185-0057.
BOEM-2023-0011-0185-0059	EIS Section: 3.5.4.5 PDF Page: 255 Comment: Land Disturbance IPF: Please provide more specific information on planned HDD operations. Where they will be occurring how much habitat will be impacted at what depths will they occur etc. Additionally provide further analysis on how these operations may impact marine coastal flora and fauna within 3 nm of shore.	Section 3.5.4.5, *Land Disturbance*, of the EIS describes the landfall and horizontal directional drilling (HDD) locations and impacts and refers to the COP for additional detailed mapping. EIS Chapter 2, *Alternatives,* includes maps showing the landfall locations. For marine coastal flora and fauna within 3 nautical miles (nm) of shore, please see response to comment BOEM-2023-0011-0185-0057.
BOEM-2023-0011-0185-0060	EIS Section: 3.5.4.5 PDF Page: 255 Comment: Land Disturbance IPF: the DEIS states "To the greatest extent practicable construction would take place away from significant fish and wildlife habitats and during times when highly sensitive species are not likely to be present." Please	The text referenced by the comment is an applicant-committed measure from the COP. The measure does not include details but is rather a general commitment to minimize effects on fish and wildlife habitat, which would include adhering to any state-required timing or avoidance

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	provide more information on these timelines and identify the highly sensitive species to which you are referring. 3.5.4.5	buffers and other requirements for ESA-listed species identified through Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS).
BOEM-2023-0011-0185-0061	EIS Section: 255 Comment: Traffic IPF: the DEIS states "To the extent practicable construction activities would take place outside of periods when highly sensitive species are likely to be present." Please provide more specific information on these timelines and identify highly sensitive species that may be impacted.	Please refer to response to comment BOEM-2023-0011-0185-0060.
BOEM-2023-0011-0185-0062	EIS Section: 3.5.4.6 PDF Page: 257 Comment: In this section the DEIS states that "The types of impacts under Alternative C-1 and Alternative C-2 would be similar to those described for the Proposed Action but slightly greater due to the larger area of land disturbance in coastal habitats" and that "In context of reasonably foreseeable environmental trends the incremental impacts contributed by Alternative C to the cumulative impacts on coastal habitat and fauna would be slightly greater than the Proposed Action..." When determining impacts it is important to consider not just total area impacted but the rarity sensitivity and importance of the habitats impacted. In this case although Alternative C does impact more area than the proposed alternative this onshore area is previously disturbed existing road ROWs which do not provide the same important habitats for managed species as does the habitat within the Sakonnet River which would be fully avoided by this alternative. As such please ensure that language and impact evaluations accurately represent the cumulative impacts not just the total area.	The impact described in Section 3.5.4.6 is on coastal habitat and fauna in the geographic analysis area, which includes the area within a 1.0-mile buffer of the Onshore Project area. Therefore, the analysis focuses on relative impacts on terrestrial resources. The beneficial impacts of avoiding environmental resources within the Sakonnet River are discussed in other resource sections, including Sections 3.5.2, *Benthic Resources*, and 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*.
BOEM-2023-0011-0185-0063	EIS Section: 3.5.4.7 PDF Page: 259 Comment: Please provide the same level of analysis for all alternatives including separate evaluations for each potential IPF. There is significant information lacking for Alternatives D E and F on Coastal Habitats and Fauna which are currently grouped together. In order to properly evaluate impacts to NOAA trust	As described in Section 3.5.4.7, because Alternatives D, E, and F would involve modifications only to offshore components, impacts on coastal habitat and fauna from Alternatives D, E, and F would be the same as those under the Proposed Action. In-depth evaluations of NOAA trust resources for Alternatives D, E, and F are presented in Draft EIS Sections 3.5.2, *Benthic Resources*; 3.5.5, *Finfish, Invertebrates, and*

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	resources complete robust evaluations of potential impacts for are necessary for all alternatives.	*Essential Fish Habitat*; 3.5.6, *Marine Mammals*; 3.5.7, *Sea Turtles*; and 3.4.2, *Water Quality.*
BOEM-2023-0011-0185-0064	EIS Section: 3.5.4.8 PDF Page: 259 Comment: Please provide rationale for why there are currently no mitigation or minimization measures proposed for this section. Various adverse impacts on coastal habitats and fauna are presented so NMFS recommends adopting BMPs and mitigation measures that can minimize these impacts where possible.	Impacts on coastal habitat and fauna are identified as minor for all resources and it was therefore determined that no mitigation was warranted. Additionally, coastal habitat and fauna are outside of BOEM's jurisdiction; any state requirements for wildlife mitigation would be followed.
BOEM-2023-0011-0185-0065	Section 3.5.5: Finfish Invertebrates and Essential Fish HabitatEIS Section: 3.5.5 PDF Page: Global Comment: NMFS biological opinions are not primary literature and should not be used as citations for project impacts. All such references should be replaced by primary literature.	NMFS (2019) and NMFS (2021d) biological opinion citations have been removed and/or replaced with primary literature throughout the Section 3.5.5*, Finfish, Invertebrates, and Essential Fish Habitat*.
BOEM-2023-0011-0185-0066	EIS Section: 3.5.5 PDF Page: Global Comment: Please provide a clear impact determination (including duration and severity) for each IPF as defined by Table 3.5.5-2. Please provide a distinct subheading for each IPF accompanied by its own complete analysis rather than lumping several IPFs into one paragraph. Robust evaluations and consideration of IPFs should be provided for all alternatives not just for the Proposed Action. Additionally ensure that impact determinations for each IPF are consistent with the best available science and consistent throughout the document and match the information provided within the analyses. Again refer back to impact determination tables at the beginning of the section for a clear definition of each impact level. Similarly, please ensure the language within the evaluations and conclusions are not being used to either dilute alternatives under consideration or bolster the Proposed Action alternative (Alternative B). For example, it is stated that Alternative C would "avoid EFH and HAPC reduce the total export cable route by 9 miles and reduce the total offshore export cable route by 12 miles." However, it is later stated that the measures under this alternative "would not have measurably different impacts on finfish invertebrates	BOEM has reviewed each Chapter 3 resource section and included an impact determination for each IPF if one was not already provided in the Draft EIS and ensured the impact determinations are appropriate based on the impact level definitions and the information contained in the analysis. Under the analysis of Alternatives C, D, E, and F, separate IPF headings were not considered necessary if the analysis could be more concisely described without the headings or the IPF being discussed was apparent from the context. This approach is consistent with other BOEM offshore wind EISs. Regarding the analysis of Alternative C, BOEM has updated the analysis with additional desktop studies performed by SouthCoast Wind, which include a benthic desktop study and a geohazard study. The language regarding difference in impacts not being measurable has been removed; however, the overall impact conclusion has not changed as Alternative C would only result in a change to a small portion of the overall Project. To further describe the difference in impacts among the alternatives, BOEM has added Section 3.5.5.10, *Comparison of Alternatives*, to the Final EIS.

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	and EFH than the Proposed Action" and that "In the context of reasonably foreseeable environmental trends cumulative impacts of Alternative C would be similar to those described under the Proposed Action." These statements are contradictory. NFMS disagrees that there would not be measurable differences. The quantitative number of miles of benthic habitat (including HAPC and EFH) spared by Alternative C is indeed a measurably different (and reduced) impact as well as the importance of locations being avoided. Please ensure evaluations are fair and indicative of all information presented and avoid language that inaccurately equalizes impacts the Proposed Alternative to other alternatives if this comparison is unsupported.	
BOEM-2023-0011-0185-0067	EIS Section: 3.5.5 PDF Page: Global Comment: Any mitigation measures that are mentioned within the evaluation of alternatives should be clearly explained and committed to during construction operation and decommissioning. Simply stating that mitigation or minimization measures "may" be put into place should not be considered within impacts evaluations. For example under Accidental Releases it is stated that "any accidental releases are expected to be localized and subject to mitigation to minimize environmental impacts." However no description or requirement of these mitigation measures is provided. Similarly a following sentence states "therefore with mitigation measures in place the total volume of contaminants and trash debrs from accidental releases would be negligible...". Lower or reduced impacts determinations cannot be justified by a mitigation measure if it is not clear what the mitigation measure fully entails or whether the developer is committed to implementing the measure. Please ensure all mitigation measures are fully explained and do not discuss actions or mitigations that will not be required of the developer.	Applicant-committed mitigation measures proposed by SouthCoast Wind in its COP or other applications (e.g., ITR application, National Pollutant Discharge Elimination System [NPDES] permit application) are considered part of the Proposed Action and are analyzed as such in the text. BOEM and other agency proposed mitigation measures are not considered part of the Proposed Action and are separately described in Section 3.5.5.11, along with a discussion of the effect of each measure. The two text excerpts referenced in the comment about accidental releases are under the analysis of the No Action Alternative and are not specific to the Proposed Action. The specific mitigation measures proposed for all ongoing or planned offshore wind and non-offshore wind project are not fully known, but BOEM anticipates compliance with regulations and industry standards would minimize the potential for and effects from accidental releases, as is stated in the text.
BOEM-2023-0011-0185-0068	EIS Section: 3.5.5 PDF Page: Global Comment: Based on our review of the DEIS it does not appear that all necessary data	Text in Section 3.5.5.5 subsection on Noise: G&G survey (HRG Surveys and Geotechnical Drilling Activities) has been revised

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	has been collected to fully evaluate effects of the proposed action and compare those effects with the proposed alternatives. It is unclear when these outstanding surveys will be completed and how BOEM will use that information to inform their decision-making process. For example site assessment surveys have not yet been completed for the alternative offshore export cable routes. Additionally under Cable Emplacement and Maintenance in Section 3.5.5.3 it is stated that "Contractors and engineers for Mayflower Wind would perform additional surveys and evaluations of geological conditions of the surface and shallow subsurface layers prior to developing the precise route." On page 3.5.5-50 under Noise it states "The geotechnical surveys would take place prior to construction... The HRG and geotechnical surveys would help identify sensitive habitats (e.g. shellfish SAV beds) and allow these areas to be avoided to the extent practicable for siting of the WTGs OSPs and cable routes." Surveys necessary to identify sensitive habitats should be done prior to the DEIS. It is also unclear if this project has completed geotechnical cores to understand the feasibility of construction in the lease area. This information should be completed earlier in the process and should inform the analysis in the EIS.	to indicate that geotechnical surveys have been completed between 2019 and 2022 including the identification of sensitive habitats. However, while reconnaissance high-resolution geophysical (HRG) surveys have been conducted, HRG surveys would be conducted intermittently during construction to identify any seabed debris and provide construction support. HRG surveys would also be carried out on a routine basis during the operations phase (3 years following the first 2 years of construction). For the geotechnical surveys already conducted, geotechnical boreholes were taken across the Lease Area in 2019 and 2020. A vibracoring campaign was conducted in 2020 to gain an understanding of site conditions along the Falmouth ECC. Additional geotechnical surveys of the shallow sections on the Falmouth ECC, the full Brayton Point ECC, and the Lease Area were completed in 2021. Text regarding additional surveys for cable emplacement has been updated in Section 3.5.5.5, *Cable emplacement and maintenance*, with updated site-specific information on cable routing and impacts in the Brayton Point and Falmouth ECCs. The shallow nearshore survey was conducted to map SAV and show that horizontal directional drilling (HDD) exit pits would occur outside of the furthest extent of eelgrass beds and not directly impacted. Further information of SAV impacts are outlined in the Final EIS, Section 3.5.2, *Benthic Resources*, section and COP Appendix K. For Alternative C, SouthCoast Wind, at BOEM's request, commissioned two desktop studies using existing site-specific and regional data to inform BOEM's assessment of the Alternative C cable routes: *SouthCoast Wind BOEM Alternative C Geohazard Desktop Study* (TetraTech 2023) and *SouthCoast Wind BOEM Alternative C-1 Benthic Desktop Study* (INSPIRE 2023). The findings from these desktop studies have been incorporated into the Final EIS (principally Section 3.5.2 and Section 3.5.5) and support BOEM's analysis of the cable routes.

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		SouthCoast Wind completed geotechnical surveys for the full Lease Area build out in 2023. Geotechnical data indicates that seabed conditions support installation of the foundation types and sizes in the PDE.
BOEM-2023-0011-0185-0069	EIS Section: 3.5.5.1 PDF Page: 260 Comment: In the 2nd sentence add "anadromous" in the parenthetical list of life history/habitat groupings. 3.5.5.1 PDF Page: 262 Comment: American eels are very common in Delaware River/Bay and Chesapeake Bay not just New England. Please clarify.	"Anadromous" has been added to the parenthetical list of life history/habitat groupings in Section 3.5.5.1. The sentence on American eel distribution has been edited to "coastal river systems along the east coast of North America."
BOEM-2023-0011-0185-0070	EIS Section: 3.5.5.1 3.5.5.3 and 3.5.5.5 PDF Page: 264 293 and 312 Comment: Given that project vessels will transit specific waterways that Atlantic sturgeon inhabit (i.e. Port of Virginia/James River) risk of vessel strike may not be extremely unlikely to occur. This text needs to be revised in the EIS to accurately assess the risk of project vessel traffic on listed fish. Risk of vessel strike to Atlantic sturgeon in the James River is of particular concern particularly during the time of year when spawning adults are entering the river. We recommend that BOEM more comprehensively address the risk of vessel strike in this portion of the action area.	The potential for vessel strikes to Atlantic sturgeon was revised to extremely unlikely to occur in the majority of the Project area. Following the release of the Draft EIS, SouthCoast Wind removed the Port of Virginia as a potential marshalling port from its COP. Therefore, the Final EIS has been revised to remove the discussion of potential effects associated with sturgeon presence in the James River.
BOEM-2023-0011-0185-0071	EIS Section: 3.5.5.1 PDF Page: 270 Comment: In Table 3.5.5.1 please ensure to differentiate the status harvest trend stock trend and biomass of individual stocks (sub- populations) of each species for which EFH exists within the project area. Specifically more detailed information is needed for separate stocks of cod yellowtail flounder haddock silver hake red hake and monkfish. Stock status and associated stock/fishery trends can differ within a species. For example cod are currently managed as 2 stocks (Georges Bank and Gulf of Maine) but that may increase to up to 5 stocks based on information provided in McBride and Smedbol 2022 (https://repository.library.noaa.gov/view/noaa/48082) (Hyperlink: https://repository.library.noaa.gov/view/noaa/48082). Stock status and resource trends for individual stocks can be found	More information on the different stocks of Atlantic cod, yellowtail flounder, haddock, silver hake, red hake, and monkfish has been incorporated into Table 3.5.5-1 using data from NOAA Fisheries Stock SMART (NMFS 2024a).

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	using NOAA Fisheries' Stock SMART tool (https://apps-st.fisheries.noaa.gov/stocksmart?app=homepage) the same reference listed in the DEIS.	
BOEM-2023-0011-0185-0072	EIS Section: 3.5.5.1 PDF Page: 278 Comment: Essential Fish Habitat: This paragraph states "Evidence of cod spawning has been observed in an area known as Cox ledge which lies on the northwest corner of the Massachusetts and Rhode Island wind energy areas. Variations of this proposal would designate the area around Cox Ledge and parts of the wind energy area as an HAPC for cod spawning but would not overlap the Project area. An alternative variation of this proposal would extend the HAPC beyond Cox Ledge to cover all complex habitat in the southern New England wind energy area with a 10-km buffer around the wind energy area." This statement is incorrect and should be revised in the FEIS. The project overlaps with HAPC for summer flounder and juvenile cod and the recently approved HAPC for spawning cod and complex habitats. The NEFMC approved an HAPC that is focused on protecting two elements - 1) complex habitats; and 2) cod spawning activity - from the anthropogenic pressure and development in Southern New England specifically offshore wind development. To be considered for an HAPC designation the 2002 EFH regulations (50 CFR Part 600.815(a)(8)(i)-(iv)) requires one or more of the following four criteria to be met: 1) importance of historic or current ecological function for managed species; 2) sensitivity to anthropogenic stresses; 3) extent of current or future development stresses; and/or 4) rarity of the habitat type. As described in detail in the NEFMC's Draft Submission to us dated August 22 2022 the Council's approved HAPC meets all four of these criteria for the designation of an HAPC for Atlantic cod spawning activity and three of the criteria for the designation of an HAPC for complex habitat. The Council's approved HAPC applies to any area where cod spawning activity is identified (based upon specified criteria) regardless of the habitat type where spawning occurs. This is particularly	Final EIS Section 3.5.5.1 has been revised to include the Southern New England habitat area of particular concern (HAPC) specific to cod spawning in addition to the summer flounder HAPC and juvenile Atlantic cod HAPC. The paragraph discussing the Southern New England HAPC has been revised and the proposed alternatives as presented in the New England Fishery Management Council (NEFMC) (2023) document have been included. Reference to the Atlantic cod spawning dynamics study by Van Hoeck et al. (2023) has also been added.

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	important to clarify as cod spawn over a variety of habitat types and use different habitat types within aggregation areas. These HAPCs should be accurately described and impacts evaluated in the EIS. Additionally it should be noted that data collected in adjacent lease areas and recently presented at the NYSERDA SOS workshop (Van Parijs S. Dean M. McGuire C. Cadrin S. and Frey A. 2022 July 26-28. Preconstruction evaluation of Atlantic cod spawning in Southern New England offshore wind areas [Conference presentation]. NYSERDA State of the Science Workshop Tarrytown NY United States) indicated that spawning condition cod were captured in lease areas immediately adjacent to the project area during pre-construction fisheries surveys completed for other projects. The presence of ripe and ripe & running cod in the trawl indicates that spawning occurs within the immediate vicinity of captured spawning condition cod; however surveys to detect the location of spawning aggregations have not yet been conducted in this area. While surveys have not yet been conducted in this project area there is data to suggest spawning is occurring in adjacent areas and outside Cox Ledge.	
BOEM-2023-0011-0185-0073	EIS Section: 3.5.5.3 PDF Page: 280 Comment: The citation provided (NOAA 2019) does not appear to support the conclusion about which gear types are the major contributors of the identified bycatch.	The NOAA (2019) in-text citation has been removed and the sentence has been simplified to only include commonly impacted species from bycatch. The NOAA (2019) reference has been deleted from Appendix J as a global edit removing biological opinion references used as primary literature.
BOEM-2023-0011-0185-0074	EIS Section: 3.5.5.3 PDF Page: 282 Comment: Impacts to pelagic eggs should be added under adverse effects of accidental releases not just larvae.	Pelagic eggs have been added to the sensitive life stages that could experience potential lethal or sublethal effects from accidental releases.
BOEM-2023-0011-0185-0075	EIS Section: 3.5.5.3 PDF Page: 284 Comment: Clarify what species the distances of EMF detection are based on. Some elasmobranchs demonstrate sensitivity down to 0.5– 1000 mVm-1 (Kalmijn 1982; Kilfoyle et al 2018); EMFs of 0.5–100mVm-1 may attract some species whereas EMFs over 100 mVm-1 are generally avoided (Kalmijn 1982; Tricas and Gill	The statement, “an EMF that could elicit a behavioral response in an organism would likely extend less than 50 feet (15.2 meters) from each cable”, has been removed and replaced with text noting that the area around submarine power cables with elevated EMF levels extends less than approximately 33 feet (10 meters) around each cable.

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	2011). Good discussion in Horodysky et al 2022. 3.5.5.3 and 3.5.5.5	
BOEM-2023-0011-0185-0076	EIS Section: 284 and PDF Page: 302 Comment: Undersea cables have been shown to affect migratory routes of salmonids (Wyman et al 2018) and swimming rates of telemetered eels (Westerberg and Lagenfelt 2008). Overhead cables affect migratory behavior in Atlantic salmon and Russian sturgeon (Poddubny et al. 1979). Please consider incorporating these sources.	Neither Westerberg and Lagenfelt (2008) nor Wyman et al. (2018) suggest deleterious effects to the migration of the studied organisms. Westerberg and Lagenfelt (2008) ultimately conclude that the approximately 40 minute slow-down in the 7,000 kilometers migration of European eels was not significant from a fitness standpoint for European eels. Further, the cable studied was unburied and was AC. The cable under study in Wyman et al. (2018) was much more applicable to the cable used for Southcoast Wind, with an achieved burial depth of ~6 feet, and the cable was DC, however with less load than the proposed cables for Southcoast Wind 200 kilovolts (kv) versus 320 kv. While cables did appear to affect juvenile salmonid migration, these effects were minor and did not greatly reduce the ability of Juvenile salmonds to migrate along the cable route out into the Pacific Ocean. Other environmental factors further confound the ability to accurately predict the impact the cable had on migrating smolt, such as discharge, temperature, depth, and release location of tagged salmonids. Salmonids showed an attraction to the cable in all array locations, but this did not lead to an overall decrease in the ability of salmonids to migrate to the open ocean, compared to the two previous years when the cable was inactive. Poddubny et al. (1979) is about an overhead transmission line, which is not proposed for the SouthCoast Wind Project. The Wyman et al. (2018) source was added to Section 3.5.5, *Finfish, Invertebrates and Essential Fish Habitat*.
BOEM-2023-0011-0185-0077	EIS Section: 3.5.5.3 PDF Page: 286 Comment: Artificial light at night (ALAN) can alter migratory patterns and even food webs via point source (Cooke et al 2017) or general sky illumination (see Mazur and Beauchamp 2006). But shadows of overwater structures can also affect adult migration larval	Text added to Section 3.5.5.5 to incorporate additional information on impacts from artificial light, including impacts on larval and zooplankton diel migratory patterns. The overall impact conclusion is supported by the best available literature and is unchanged.

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	settlement feeding predation risk etc. (Ono and Simenstad 2014; Sabal et al 2021; O'Connor et al 2019). It doesn't take much light for hormonal changes (Kupprat et al 2020). And the effects can be seen across multiple trophic levels (Bolton et al 2017). Consider incorporating these references.	As stated in Section 3.5.5.5, the light from WTGs and OSPs would be intermittent flashes of red hues, and marine navigational lights, which are characterized by intermittent flashes of yellow hues, neither of which present a continuous light source. Additionally, red and yellow lights are among the shallowest penetrating lights on the ultraviolet (UV) spectrum due to light attenuation properties in seawater, meaning that the impact of these intermittent light sources would have very localized effects. After reviewing the cited literature in this response and further analysis, the cited impacts do not all necessarily apply. For example, Mazur and Beauchamp (2006) is a model of projected increased predation rates and foraging success of trout experiencing constant light pollution, which is not anticipated for the Proposed Action. Ono and Simenstad (2014), argue shading of structures effects on juvenile salmon; shading from a dock and a WTG are not equivalent. The findings in Kuppart et al. (2020) appear species dependent as Newman et al. (2015) and Szekeres et al. (2017) found conflicting results (no impact on stress levels in salmon; no behavioral impacts on bonefish). Largely, these studies revolve around coastal or inland species which would experience much more persistent and intense forms of artificial light at night than at offshore wind farms. Lastly, the description of artificial light impacts are consistent with other BOEM offshore wind EISs, including Ocean Wind 1 and Empire Wind EISs.
BOEM-2023-0011-0185-0078	EIS Section: 3.5.5.3 PDF Page: 289 Comment: Pile driving effects on flatfish and skates/rays is unknown but can be hypothesized as more extreme (they directly contact the benthos over a large surface area potentially transmitting shock to internal organs) unless they evacuate. Studies in Europe and NE USA show low probability of harm if pile driving is conducted when flatfish are at low abundance.	Flatfish including Winter Flounder and other elasmobranchs (e.g., rays, skates, and sharks) do not have swim bladders. As such, they are least susceptible to sound. COP Appendix N provides sound levels that would provide mortality, injury or avoidance behaviors for fishes (flatfishes and skates/rays) without swim bladders. The Underwater Acoustic Assessment (COP Appendix U2) provides the results of sound modeling associated with the foundation pile driving. Mortality or injury due to sound exposure would only occur in the

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		immediate vicinity of the pile driving. Behavioral disturbances may occur up to 10.6 miles (17 kilometers) away, depending on the jacket foundation/monopile size, hammer energy, and fish size (see Section 3.7 of COP Appendix U2 for detailed tables).
BOEM-2023-0011-0185-0079	EIS Section: 3.5.5.3 PDF Page: 291 Comment: Please provide a source for the information presented when describing noise impacts of HRG on finfish and invertebrates.	The citation in question (BOEM 2021) has been added to Section 3.5.5.3. Sound impacts on finfish and invertebrates, and avoidance behaviors are now also detailed in COP Appendices N and U2.
BOEM-2023-0011-0185-0080	EIS Section: 3.5.5.3 PDF Page: 294 Comment: Recommend reviewing Christiansen et al (2022) as this research suggests the potential for large-scale hydrodynamic effects.	The *presence of structures* IPF in Section 3.5.5.3 has been expanded with added discussion on hydrodynamic effects which also incorporates Christiansen et al. (2022) and other similar studies. BOEM has also partnered with NASEM for an independent peer review of potential hydrodynamic impacts of offshore wind facilities in the Nantucket Shoals region. Results of this study are reported in the *presence of structures* IPF in Section 3.5.5.5.
BOEM-2023-0011-0185-0081	EIS Section: 3.5.5.5 PDF Page: 298 Comment: Anchoring IPF: please include a discussion of spud can impacts to EFH unless listed elsewhere or not intended to be an anticipated impact. Use of spud cans for construction vessels could result in long-term impacts to EFH including the need for backfill and associated potential habitat conversion. If spud cans will be used for this project the impacts should be included in the EIS.	A reference to spud can impacts has been included in the *anchoring* IPF in Section 3.5.5.5. Spud can impacts are also discussed in the COP Volume 2, Section 6.6.2.2.2, and are incorporated into the overall acreage of *anchoring* IPFs in Section 3.4.1.1 of the COP Volume 1.
BOEM-2023-0011-0185-0082	EIS Section: 3.5.5.5 PDF Page: 299 Comment: Discharges/Intakes - Please provide more information on discharge and intake specifics of the project including where the outflow and inflow pipes will be located and at what depths.	Additional information has been added regarding the intake and discharge specifics of the converter station OSP cooling water intake system including the location of intake and discharge pipes relative to the converter station OSP design and the potential depths of seawater withdrawal in Section 3.5.5.5. Indicative geographic location of one of the converter station OSP is shown in Appendix B, Figure B-2.

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BOEM-2023-0011-0185-0083	EIS Section: 3.5.5.5 PDF Page: 299 Comment: Under discharges/intakes please differentiate hake species if possible and note that substantial annual removals of eggs and larvae of stocks in poor condition such as white hake Atlantic herring and Southern New England red hake could have long- term impacts to the long-term sustainability of the species and associated fishery. This should be noted here and in Section 3.6.1 of the DEIS (entrainment estimates were not discussed in this section or the potential impacts to individual species or fisheries).	"Hakes" referred to the unidentified hake species in data. These organisms were identified down to family or genus, so this is a catch all identification for potentially all species found in the area (red, white, and silver). The limitations of larval entrainment estimates associated with SouthCoast Wind's proposed HVDC converter OSP is described in a footnote in Section 3.5.5.5. SouthCoast Wind's NPDES permit application notes that fish larvae with the most relatively abundant species identified within 10 miles (16 kilometers) of the proposed intake location from 2010 through 2019 were unidentified hakes, summer flounder, and silver hake (*Merluccius bilinearis*).
BOEM-2023-0011-0185-0084	3.5.5.5 PDF Page: 300 Comment: (1) Clarify if SouthCoast Wind is proposing ventless trap surveys as part of their fisheries monitoring surveys. (2) Any capture/collection of listed species is generally not considered safe some methods/measures may reduce risk such as shorter tow times and handling times. However the text does not state what the proposed tow times or handling measures are. The text about trawl survey impacts on listed fish species should be revised to include relevant information about the survey and to accurately assess the risk and impact of the fisheries resource surveys. Additionally any analysis of impacts of listed fish should be moved to the Alternative B – Proposed Action on ESA-Listed Species subsection.	The *gear utilization* IPF in Section 3.5.5.5 has been updated to include details on the proposed fisheries and benthic habitat monitoring surveys that would be conducted in the Project area. Survey types include trawl, trap, camera, and acoustic surveys for fisheries monitoring, and remotely operated vessel (ROV) stereo-camera, sediment grab sampling, and SPI/PV for benthic monitoring. Details provided for the demersal otter trawl survey also include tow speed (3.0 knots) and tow time (20 minutes). An analysis of fisheries resource survey impacts on ESA-listed fish species has been added to the *Impacts of Alternative B – Proposed Action on ESA-Listed Species* subsection of Section 3.5.5.5.
BOEM-2023-0011-0185-0085	EIS Section: 3.5.5.5 PDF Page: 301 Comment: EMF IPF: This IPF should contain a discussion about the differences between direct current and alternating current relative to EMF. This is especially pertinent as an HVDC OSP is proposed.	Text has been added to Section 3.5.5.5 discussing the differences in EMFs produced by alternating current (AC) and direct current (DC) cables.
BOEM-2023-0011-0185-0086	EIS Section: 3.5.5.5 PDF Page: 301-302 Comment: EMF IPF: Saying that there is a lack of evidence for detrimental population-level effects suggests that such evidence has been sought and not found. In actuality there have been primarily lab based studies in controlled settings. However impacts on	The statement on population-level detrimental impacts has been removed and replaced with an evidence-based statement regarding the lack of EMF effects on the population health of some fish and invertebrate species. Results from additional EMF-effect studies by Hutchison et al.

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	larval stages suggests the potential for effects that are important to populations.	(2018) and Klimley et al. (2017) are provided in the preceding text.
BOEM-2023-0011-0185-0087	EIS Section: 3.5.5.5 PDF Page: 302 Comment: EMF IPF: The conclusion for EMF is that "BOEM expects localized and long-term though not measurable impacts on finfish invertebrates and EFH from EMFs from the Proposed Action." However above there are citations for important effects on larval haddock and crustaceans (e.g. Cresci et al. 2022 and Harsangyi et al. 2022). Please reconcile these pieces of text.	The conclusions provided for EMF impacts in Section 3.5.5.5 have been revised to reflect findings of the studies referenced in this section.
BOEM-2023-0011-0185-0088	EIS Section: 3.5.5.5 PDF Page: 302 Comment: Lighting IPF: There is a lot of literature on how fish interact with artificial light sources. Please review this literature and incorporate it into the analysis. In particular search term ALAN (Artificial Light at Night).	The lighting subsection in Section 3.5.5.5 has been expanded to include more information on the effects of artificial light on finfish and invertebrates.
BOEM-2023-0011-0185-0089	EIS Section: 3.5.5.5 PDF Page: 302 Comment: Most NE region managed marine fishes do not see red (lack red photopigments); striped bass are a clear exception that does respond visually to red wavelengths (Horodysky et al 2010). Most managed NE region marine fishes that have been studied see yellow wavelengths extremely well (Horodysky et al 2008 2010 2013). Flash rates < 60 Hz will be seen by most species as individual flashes which could be attractive or distractive (Horodysky et al 2022). But lighting also creates shadows which may serve as movement barriers or obstacles for juvenile fishes (Ono and Simenstad 2014; Sabal et al 2021; O'Connor et al 2019). Consider incorporating this information and references into the analysis in the FEIS.	Text added to Section 3.5.5.5 to incorporate additional information on impacts from artificial light, including impacts on larval and zooplankton diel migratory patterns. The overall impact conclusion is supported by the best available literature and is unchanged. Please refer to response to comment BOEM-2023-0011-0185-0077 for additional information.
BOEM-2023-0011-0185-0090	EIS Section: 3.5.5.5 PDF Page: 303 Comment: Under cable emplacement and maintenance please provide an estimate of the scale location and timing of potential seabed preparation activities including how any boulders would be deposited and where. If such information is not currently available at this time please note that and caution that the full impacts cannot be accurately estimated until such	More detail has been added in the discussion of impacts from cable emplacement and maintenance in Section 3.5.5.5 including the scale and location of potential seabed preparation activities (boulder relocation; dredging; vessel anchoring), associated impacts to habitats, finfish, invertebrates, and EFH, and mitigation measures (micro-routing of cables). Additional information on impacts from

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	information becomes available. This information is necessary to fully evaluate the impacts of cable emplacement activities on EFH and marine species as the location scale duration and seasonality of such activities substantially affect the resulting impacts. For example the section suggests for both impacts would be negligible but that depends on where the entrainment occurs relative to spawning sites and whether such activities occur during spawning season for species in the affected area. Further text notes habitat loss and conversion yet still concludes that impacts are temporary and short-term which is incorrect without specifying how much habitat would be converted the type of habitats affected and where such impacts would occur. Finally please note any mitigation measures that would be employed to reduce impacts from cable emplacement.	cable installation methods has also been added along with associated impacts. More specific details on impacts on EFH are addressed in the SouthCoast Wind Project EFH Assessment.
BOEM-2023-0011-0185-0091	EIS Section: 3.5.5.5 PDF Page: 304-309 Comment: Noise IPF: Please clarify what the overall conclusion for the impact of noise is. This section ends with a conclusion regarding G&G surveys rather than noise overall.	The concluding sentence in the noise impacts under Section 3.5.5.5 has been revised to reflect the overall noise impact of all project activities that are expected to generate noise.
BOEM-2023-0011-0185-0092	EIS Section: 3.5.5.5 PDF Page: 304-309 Comment: Noise IPF: The analysis of noise lacks a discussion substrate vibration effects on early life stages. Also missing is a discussion of how noise interacts with behavior and communication (e.g. de Jong et al. 2020 https://doi.org/10.1007/s11160-020-09598-9 (Hyperlink: https://doi.org/10.1007/s11160-020-09598-9); Siddagangaiah et al. 2021 doi: 10.1002/rse2.231 (Hyperlink: https://zslpublications.onlinelibrary.wiley.com/doi/10.1002/rse2.231); Stanley et al. 2020 doi.org/10.1242/jeb.219683) (Hyperlink: https://journals.biologists.com/jeb/article/223/13/jeb219683/222906/Ontogenetic-variation-in-the-auditory-sensitivity). The discussion on particle motion should additionally include more recent work by Sigray et al. 2022 (doi.org/10.1016/j.marpolbul.2022.113734) (Hyperlink: https://www.sciencedirect.com/science/article/pii/S0025326	The *noise* IPF analysis has been expanded to include discussions on potential disruptions of communication and behavior in fish and invertebrates as well as an expanded discussion on particle motion effects in invertebrates, specifically, and cephalopods.

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	X22004167?via%3Dihub); Sole et al. 2022 (doi.org/10.1016/j.envpol.2022.119853) (Hyperlink: https://www.sciencedirect.com/science/article/pii/S0269749122010673?via%3Dihub); Hawkins 2022 (doi.org/10.1121/10.0013994) (Hyperlink: https://asa.scitation.org/doi/10.1121/10.0013994).	
BOEM-2023-0011-0185-0093	EIS Section: 3.5.5.5 PDF Page: 305 Comment: Please clarify why the acoustic radial distance at Location 1 is smaller for behavioral effects at 150 dB than small fish injury at 183 dB. This seems counterintuitive when the distance is larger at Location 2.	Table 3.5.5-8 showing acoustic radial distances for fish during pile driving has been revised to reflect results from updated underwater acoustic modeling scenarios in Limpert et al. (2023). For all pile-driving scenarios, acoustic radial distances are largest for the Behavioral (all fish) category, followed by the Injury over 24hr (fish < 2 grams) category, then the Injury over 24hr (fish ≥ 2 grams) category. The smallest acoustic radial distances are in the Single Strike Injury (all fish) category for all pile driving scenarios modeled.
BOEM-2023-0011-0185-0094	EIS Section: PDF Page: 306 Comment: Clarify what "small fish" and "large fish" refer to in Table 3.5.5-5. This information should be included below the table.	Table 3.5.5-8 for fish during pile driving under various scenarios, with 10-decibel noise attenuation from a noise-abatement system) has been updated and no longer includes the terms *small fish* and *large fish*.
BOEM-2023-0011-0185-0095	EIS Section: 3.5.5.5 PDF Page: 308 Comment: Noise IPF: Mooney et al. 2020 is incorrectly cited. The information attributed to this reference was cited by Mooney et al. 2020 but was not research conducted by them.	The Mooney et al. (2020) reference in Section 3.5.5.5 has been replaced with the appropriate citation: Westerberg (1994, as cited in Mooney et al. 2020).
BOEM-2023-0011-0185-0096	EIS Section: 3.5.5.5 PDF Page: 308 Comment: Noise IPF: Please include a full description of the potential impacts from noise and vibration associated with construction and operations. Operational noise as noted for marbled rockfish could also mask acoustic communication for other species such as cod that rely upon communication for spawning. This would occur for the duration of the project and would have a lingering effect unlike temporary masking from ship noise. Pile driving noise may produce a startle or avoidance response that may interrupt social spawning for species like cod and squid that exhibit elaborate spawning behavior.	Section 3.5.5.5 has been expanded to include discussions on the effects of noise on behavior, communication, and spawning of fish and invertebrate species.

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	Vibrations within the sediment has also been shown to affect shellfish respiration and feeding as noted in our comments for previous actions. This section should note these impacts.	
BOEM-2023-0011-0185-0097	EIS Section: 3.5.5.5 PDF Page: 308 Comment: Idealized propagation distances for reproductive vocal communications of sciaenid fishes (croakers and drums) are provided in Table 4 in Horodysky et al 2008. These species can hear each other's soniferous lekking from 8-128 m away absent any background noise. Some are offshore spawners in regions sited for wind and should be included herein as Atlantic croaker (and black drum) are moving north with climate change.	A description of the impacts to soniferous fish (mainly Atlantic cod) has been added to Final EIS, Section 3.5.5.5.
BOEM-2023-0011-0185-0098	EIS Section: 3.5.5.5 PDF Page: 309 Comment: It is unclear why seasonal restrictions of UXO detonations from December through April will eliminate exposure to Atlantic sturgeon when the species is generally in the ocean at this time. Adults may spawn in rivers from the spring into summer but not all adults move into the river system at this time. This assessment of UXO impacts on listed fish species should be revised to be more comprehensive. Additionally any analysis of impacts of listed fish should be moved to the Alternative B – Proposed Action on ESA-Listed Species subsection.	If Atlantic sturgeon are present in the Project area during December through April, they would benefit from seasonal restrictions on unexploded ordnance (UXO) detonation. More detail on the UXO desktop study and potential impacts from UXO detonation has been added to Section 3.5.5.5 under the *noise* IPF.
BOEM-2023-0011-0185-0099	EIS Section: 3.5.5.5 PDF Page: 309 Comment: The DEIS does not consider impacts to reproduction/spawning activity from UXO detonation. Specifically further analysis of impacts to finfish and invertebrate species particularly those that aggregate to spawn including Atlantic cod and longfin squid should be analyzed in the FEIS.	A discussion on impacts to reproduction/spawning activity for Atlantic cod and longfin squid has been added to the noise section in Alternative B.
BOEM-2023-0011-0185-0100	EIS Section: 3.5.5.5 PDF Page: 309 Comment: Presence of Structures IPF: Please note that predator-prey interactions may change due to increases to certain structure-affiliated species which may result in positive and negative impacts to various species. For example increased structure may attract black sea bass which could prey on younger lobster resulting	Text has been added to Section 3.5.5.5 regarding changes to trophic dynamics and predator–prey interactions, with specific mention of adverse impacts on some juvenile fishes and invertebrates due to the presence of structures.

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	in positive impacts for black sea bass but negative impacts to lobsters and other prey species.	
BOEM-2023-0011-0185-0101	EIS Section: 3.5.5.5 PDF Page: 309-310 Comment: Presence of Structures IPF: Analysis of the presence of structures is insufficient. This analysis should include a discussion of FAD (fish aggregating device) effects; artificial reef effects; modification of the prey field for upper level predators the potential for structures to facilitate the establishment and range expansion of non-native species; local hydrodynamic and broad scale wind-wake effects on larval transport primary and secondary production planktonic food availability etc. Please also include relevant supporting literature to support statements made. Other than the COP there is scant literature provided grey or peer- reviewed to support any of the statements made. There is a growing body of knowledge on these topics and the majority of this information is missing from the analysis.	The presence of structures IPF analysis in Sections 3.5.5.3 and 3.5.5.5 has been revised with added discussions on artificial reef effects, fish aggregation, altered trophic dynamics, invasive-species spread, changes in primary production, effects on larval transport, and localized and broad-scale atmospheric and hydrodynamic effects. The revised text is presented along with appropriate references.
BOEM-2023-0011-0185-0102	EIS Section: 3.5.5.5 PDF Page: 310 Comment: Please note that while net primary productivity in the entire North Atlantic may not be measurably affected by the presence of structures localized primary productivity would likely be affected at measurable levels based on the text included in this section and recent literature on this topic. This could have important localized effects on marine species that rely on primary and secondary productivity. Comparing project level effect to the entire North Atlantic due to the Gulf Stream artificially dilutes the potential impacts that may occur within the project area.	The *presence of structures* IPF in Section 3.5.5.5 has been revised to acknowledge that both localized and broad scale impacts can occur as a result of atmospheric and hydrodynamic effects from the presence of WTGs, which include changes in stratification and primary productivity. Section 3.5.5.3 has also been expanded with added discussions on this topic.
BOEM-2023-0011-0185-0103	EIS Section: 3.5.5.5 PDF Page: 312 Comment: The Impacts of Alternative B – Proposed Action on ESA-Listed Species subsection only briefly assesses noise and traffic impacts on listed fish however all other IPFs assessed for finfish in the greater section should also be assessed for listed fish in the subsection. This is especially pertinent for UXOs fisheries/marine resource surveys water	Section 3.5.5.5, *Impacts of Alternative B – Proposed Action on ESA-Listed Species*, has been revised to include additional information on impacts specific to ESA-listed fish species. Text relevant to all fish species is retained in the main analysis section to avoid repetition.

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	withdrawals/impingement and benthic impacts from habitat loss dredging and cable laying - both offshore and in nearshore habitats. This information should be consistent with the BA (see comment below). Additionally mentions to listed fish are intermingled throughout the analysis of IPFs on finfish inverts and EFH - to avoid confusion all IPF impacts on listed fish should be included in the Alternative B – Proposed Action on ESA-Listed Species subsection.	
BOEM-2023-0011-0185-0104	EIS Section: 3.5.5.5 PDF Page: 312 Comment: The EIS should contain a summary of the findings in the BA. The New England Wind DEIS (and our ensuing comments) can be used as a structure to follow for integrating this information. If the BA will not be included as an appendix to the final document we encourage BOEM to make the BA publicly available on the SouthCoast webpage (not just on the ESA consultation page) so that the information can be easily referenced by the public.	Findings from the BA have been incorporated in various parts of Section 3.5.5, as well as other sections as appropriate, specifically in Section 3.5.6, *Marine Mammals*, and Section 3.5.7, *Sea Turtles*. The BA is publicly available on BOEM's website at https://www.boem.gov/renewable-energy/state-activities/nmfs-esa-consultations.
BOEM-2023-0011-0185-0105	EIS Section: 3.5.5.5 PDF Page: 312 Comment: The rationale for why Atlantic sturgeon will not suffer injury from pile driving even though the distance to injury thresholds are short is not provided in the text. The distance to LE is ~9km and it is unlikely that a sturgeon would stay within this proximity for 24 hours however Lpk is 0.14 km and thus a sturgeon could be within that range to pile driving to sustain injury. If information supports that injury will not occur the EIS should clearly state the rationale for why injury will not occur and include supporting information as part of this rationale.	Discussions on impacts of pile-driving noise on Atlantic sturgeon in the *Noise: Pile driving* and *Impacts of Alternative B – Proposed Action on ESA-Listed Species* IPF in Section 3.5.5.5 have been expanded to include a clear rationale on why injury due to pile driving noise is not expected.
BOEM-2023-0011-0185-0106	EIS Section: 3.5.5.6 PDF Page: 314 Comment: Because seabed preparation trenching and cable installation and operation would be fully avoided the Sakonnet River Alternative C would result in fewer impacts to EFH compared to the proposed action. This should be noted in this section. We disagree with BOEM's conclusion that the potential benefits of avoiding cable emplacement within the Sakonnet River	Section 3.5.5.6 has been updated to include specific details of the cable route deviations for Alternatives C-1 and C-2, including potential habitat features that may be affected by the alternative routes and the decrease in estuarine disturbance and EFH/HAPC. At BOEM's request, SouthCoast Wind commissioned a geohazard study of Alternatives C-1 and C-2 and a benthic desktop study of Alternative C-1, and

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	would not measurably reduce impacts on finfish invertebrates and EFH from both construction and operations/maintenance activities. This conclusion is also contrary to the analysis provided in the text.	the results of these analyses have been added to the Final EIS.
BOEM-2023-0011-0185-0107	EIS Section: 3.5.5.6 PDF Page: 315 Comment: The analysis in the DEIS should consider that shortnose sturgeon may occasionally be present in nearshore coastal waters such as the Sakonnet River as some individuals occasionally make coastal migrations.	Final EIS Section 3.5.5.6 has been edited to include the potential reduction of impacts on shortnose sturgeon under Alternative C. However, shortnose sturgeon are very unlikely to be in the Project area.
BOEM-2023-0011-0185-0108	EIS Section: 3.5.5.7 PDF Page: 316 Comment: Please note that Alternative D would also reduce impacts to longfin squid. Longfin squid EFH overlaps with the northern portions of the project area as noted in Guida et al 2017 (Guida V. A. Drohan H. Welch J. McHenry D. Johnson V. Kentner J. Brink D. Timmons E. Estela-Gomez. 2017. Habitat Mapping and Assessment of Northeast Wind Energy Areas. Sterling VA: US Department of the Interior Bureau of Ocean Energy Management. OCS Study BOEM 2017-088. 312 p.).	Final EIS Section 3.5.5.7 has been edited to include the Longfin inshore squid on the list of species with EFH for all life stages in the Lease Area.
BOEM-2023-0011-0185-0109	EIS Section: 3.5.5.7 PDF Page: 316 Comment: Please clarify the analysis on whether turbines would have substantial or localized effects on hydrodynamic and atmospheric effects in this section and throughout the DEIS. Reference to Christiansen et al. 2022 on page 3.5.5-55 suggests that hydrodynamic and atmospheric effects have been shown to extend for several 10s of kilometers beyond a wind farm. This contradicts discussions of such effects in other sections of the document (Executive Summary page ES-9) that suggest only localized effects in referencing Johnson et al. 2021 and North Sea studies (see page 3.4.2-13) and Li et al. 2014 (page 3.5.5-35) indicating impacts up to a kilometer from a monopile.	Revisions have been made to clarify that atmospheric and hydrodynamic effects can be both localized and broad scale as shown by the studies cited on the topic. While the Johnson et al. (2021) modeling focuses on the area near the Project area, Christiansen et al. (2022) conclude that the changes brought about by salinity and temperature from vertical structures is small compared to the long-term and interannual variability of temperature and salinity. Such changes may not be of a magnitude to be detectable because they may not differ significantly from natural variation. Despite the lack of evidence to support detectable changes in hydrodynamic patterns at such distances, the range of impacts has been updated to include ten of kilometers speculated from Christiansen et al. (2022). Revisions in Sections 3.4.2, 3.5.5.3, and 3.5.5.5 now indicate that the effect scale can range from hundreds of meters to tens of kilometers.

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BOEM-2023-0011-0185-0110	EIS Section: 3.5.5.8 PDF Page: 318 Comment: Alternative E-2 and E-3 would significantly increase the benthic disturbance and habitat loss of the proposed action. Given that Atlantic sturgeon forage benthically the impacts of this potential habitat loss should be assessed.	Text has been added in Section 3.5.5.8 stating that Alternatives E-2 and E-3 would have a larger impact on soft-bottom habitats, EFH species associated with these habitats, and ESA-listed species that forage in these habitats such as Atlantic sturgeon.
BOEM-2023-0011-0185-0111	EIS Section: 3.5.5.9 PDF Page: 318 Comment: Please be more clear about the trade-offs inherent under Alternative F in that reductions in area impacted by fewer cables may be at the cost of increased impacts to egg larvae and plankton through entrainment. Annual entrainment of millions of larvae for individual stocks of certain species in poor condition and with negative trends (cod white hake red hake and herring) due to HVDC converter stations could result in long-term impacts to those species since it will be operational during the life of the project. Additionally the trade-off of converter station operation and fewer cables will depend on the habitat type where cables are being installed. For example cables running through complex habitats are more likely to result in long-term to permanent impacts and elevated scour protection compared with cables that can be fully buried in softer sediments. These trade-off should be further discussed in the analysis.	The discussion in Section 3.5.5.9 has been expanded to include potential entrainment effects on fish with poor stock status, EMF effects from DC cables, and the reduction of impacts to complex habitats from cable emplacement activities with the reduction of the number of cables from five HVAC to three HVDC cables.
BOEM-2023-0011-0185-0112	EIS Section: 3.5.5.9 PDF Page: 319 Comment: (1) Exact terminology should be used to describe proposed project impacts suggest revising "slightly" to the extent of benthic impacts on ESA-listed fish species that will be reduced through Alternative F and what the impacts of that are. (2) An increase in HVDC converter stations poses potential risks to listed fish species and also prey of protected species those impacts should be described here.	Impacts of Alternative F on ESA-Listed Species in Section 3.5.5.9 have been revised to describe the extent of reduced benthic impact under this alternative and the potential added impact to prey of ESA-listed species due to a second converter OSP.

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BOEM-2023-0011-0185-0113	EIS Section: 3.5.5.9 PDF Page: 319 Comment: The increase in direct current cables and effects of EMF relative to alternating current cables should be discussed as part of this alternative. Fewer cables does not necessarily mean less impact the type of electrical current is also a factor. See Cresci et al. 2022.	Text has been added to section 3.5.5.9 discussing the difference in EMF amplitude produced by AC and DC cables and previous studies on DC EMF effects on fish and invertebrates.
BOEM-2023-0011-0185-0114	EIS Section: 3.5.5.9 PDF Page: 319 Comment: We recommend the lessee and BOEM consult available data and NMFS experts to determine the location of any HVDC converter station to avoid not just Nantucket Shoals but also other areas where spawning condition fish are detected and where larvae for specified stocks (see previous comments) are found. ECOmon survey data could be one source to help identify such areas. We also encourage the lessee to consult with NMFS experts about the location that would minimize impacts to such species.	The potential converter station location provided in Appendix B, Figure B-2 is the indicative location of the Project 1 HVDC converter OSP. The facility's design will implement mitigation measures to reduce impacts on fish stocks, as stated in the NPDES permit application. The HVDC converter station will not use traveling water screens, and the cold-water intake system will include a bar rack and inline pump filter screens. ECOmon survey data were assessed and used in the SouthCoast Wind NPDES permit application. SouthCoast Wind and the HVDC designers are also considering the available data in COP Appendix M, Benthic and Shellfish Resources Characterization Report, and COP Appendix E, MSIR, while working with the EPA through the NPDES permitting process to develop the HVDC design. The HVDC converter station will not be placed on any hard-bottom habitat and will be located outside of the Enhanced Mitigation Area defined in the EIS.
BOEM-2023-0011-0185-0115	Section 3.5.6: Marine Mammals EIS Section: 3.5.6 PDF Page: Global Comment: Overall there is very little mention of project decommissioning and how each of the impacts will affect marine mammals during that phase. Be sure to include this phase of the project under each IPF. As an example how will the amount of lighting change during decommissioning?	The EIS has been revised to include more detail on effects related to the Decommissioning Phase of the Project where applicable. Based on Section 3.5.6, *Marine Mammals*, BOEM anticipates that operational lighting effects on marine mammals would be negligible; thus, effects of lighting during the decommissioning phase of the Project would also be considered negligible.
BOEM-2023-0011-0185-0116	EIS Section: 3.5.6 PDF Page: Global Comment: As you are aware after independent review and a determination of sufficiency NOAA's National Marine Fisheries Service (NMFS) intends to adopt this FEIS for purposes of fulfilling our	Thank you for the suggested resource. Reusable content has already been developed with NMFS review and input, please coordinate within your agency accordingly for additional information. Accordingly, the SouthCoast Wind EIS has been

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	independent responsibilities under the National Environmental Policy Act (NEPA) to support our decision of whether to issue an incidental take authorization to SouthCoast Wind allowing the take of marine mammals. To improve the analysis directly related to our action NMFS recently provided BOEM extensive edits to the Marine Mammals section of Chapter 3 of the Ocean Wind draft PDEIS. NMFS requests all edits provided on the Ocean Wind draft FEIS be incorporated into the SouthCoast Wind FEIS. This includes an additional determination on the effects of the No Action Alternative (i.e. not approving the Construction and Operations Plan) on marine mammals that is comparable to the effect determinations for each Alternative. Further we recently learned BOEM is developing reusable content directly applicable to the acoustic analysis on the impacts of marine mammals. NMFS requests the opportunity to review this content and that any resulting analysis be incorporated into all FEISs including SouthCoast Wind. Given the substantial changes likely to occur we also request the opportunity to review the SouthCoast Wind FEIS again prior to it being published.	updated throughout based on the reusable content from NMFS to ensure that the discussions and analyses under *Alternative A – No Action Alternative* is presented more consistently and conforms with other BOEM EIS documents. Further, the sections under *Alternative B – Proposed Action* have also been revised extensively based on the recent acoustic modeling updates in the MMPA Incidental Take Authorization (ITA) (December 2023) and are in alignment with the analyses in the SouthCoast Wind BA.
BOEM-2023-0011-0185-0117	EIS Section: 3.5.6 PDF Page: 321 Comment: Please explain why the marine mammal geographic analysis area is limited to "the majority of movement ranges" and does not encompass all movement of all analyzed species. Because this GAA is the basis for the quantity and location of the activities listed in "Planned and ongoing activities" which is a major component of the cumulative effects analysis an explanation for this approach is important. NMFS has also identified this issue in other ongoing offshore wind EISs.	The use of the selected geographic analysis area is in keeping with the precedent set by previous offshore wind EISs. The current geographic analysis area sufficiently captures the majority of the movement range of the marine mammal species of focus, and a revision of the geographic analysis areas area is not expected to add additional impacts to the “planned and ongoing activities” that are not currently discussed in this EIS.
BOEM-2023-0011-0185-0118	EIS Section: 3.5.6.1 PDF Page: 323 Comment: The DEIS references Appendix B for "summary table of species included in the analysis" but the values in Table B-7 (Species information) are outdated based on Hayes et al. 2020 and 2021. The right whale abundance value in the table is 368	The population estimates for marine mammal species other than the NARW were not changed from the 2021 to the 2022 estimates, these figures are still accurate according to the best science. The NARW population estimate in the Appendix B table was updated to reflect the most recent (2022) search

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	which is inconsistent with the abundance values referenced elsewhere and the best available science. Please update Table B-7 with information from the publicly available draft 2022 SARs.	and rescue (SAR) efforts (published Hayes et al. 2023) and cited accordingly.
BOEM-2023-0011-0185-0119	EIS Section: 3.5.6.1 PDF Page: 323 Comment: Please indicate the species for which abundance and density values were derived from Palka et al. (2017). Abundance values are available in the draft 2022 SARs and density values are available using the Duke habitat-based cetacean density models. Please clarify why it was necessary to use Palka et al. (2017) values given the availability of these other data sources.	The results of the Atlantic Marine Assessment Program for Protected Species (AMAPPS) studies from the Palka et al. (2017) reference are being used to supplement information from SARs and density models in order to give a more holistic view of marine mammal populations. The Palka et al. (2017) information is not being used as a replacement for other data sources.
BOEM-2023-0011-0185-0120	EIS Section: 3.5.6.1 PDF Page: 323 Comment: At the end of the middle paragraph please note that the New England Aquarium aerial surveys have continued to the present day.	Text has been added to the paragraph to note that the New England Aquarium aerial surveys are currently ongoing.
BOEM-2023-0011-0185-0121	EIS Section: 3.5.6.1 PDF Page: 323 Comment: At the last paragraph on the page please correct the description of the AMAPPS survey coverage area. Most of the AMAPPS shipboard surveys have been concentrated further offshore but aerial surveys regularly cover that area with some shipboard surveys focused directly in the wind energy areas.	The text in the paragraph has been edited to note that aerials surveys regularly cover the project area, and that certain shipboard surveys focus on wind energy areas.
BOEM-2023-0011-0185-0122	EIS Section: 3.5.6.1 PDF Page: 323 Comment: Aside from the Duke University modeling the AMAPPS program AMAPPS has also conducted density models. Please cite the appropriate papers and website with regards to these efforts (for example https://apps-nefsc.fisheries.noaa.gov/AMAPPSviewer/ (Hyperlink: https://apps-nefsc.fisheries.noaa.gov/AMAPPSviewer/) could also cite Chavez et al 2019 DOI: 10.1038/s41598-019-42288-6) (Hyperlink: https://www.nature.com/articles/s41598-019-42288-6)	The AMAPPS Spatial density visualization tool has been cited as Palka et al. (2021). The habitat-density modeling done by Chavez-Rosales et al. (2019) has also been referenced.

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BOEM-2023-0011-0185-0123	EIS Section: 3.5.6.1 PDF Page: 324 Comment: Please clarify the difference between the modeled density peaks of sperm whales. Two different months/time frames are given with two different values. It is not clear if these were from the same time frame and there were two different peaks or if the second value was reporting on a different time frame or model.	This was an error; the first value is the density of sperm whales within the Lease Area. The second value is the density of sperm whales on Nantucket Shoals; however, the wrong value was recorded. This has been clarified in the text and the corrected values are now presented.
BOEM-2023-0011-0185-0124	EIS Section: 3.5.6.1 PDF Page: 324 Comment: Please update with more recent AMAPPS survey data (beyond 2010-2013) in the Threatened and Endangered Marine Mammals section. There have been several AMAPPS surveys since 2013. https://www.fisheries.noaa.gov/resource/publication-database/atlantic-marine-assessment-program-protected-species.	Sightings of blue, fin, sei, and sperm whales have been updated to reference data from the AMAPPS II surveys from 2015 to 2019. Referenced as Palka et al. (2021).
BOEM-2023-0011-0185-0125	EIS Section: 3.5.6.1 PDF Page: 324 Comment: Please consider including an explanation earlier in the text in this chapter about why Nantucket Shoals is important and how it relates to the project area (i.e. the lease area and ECCs) and GAA.	Discussion of Nantucket Shoals as an important habitat for marine species is discussed earlier in the EIS (Executive Summary Section ES.4.4, and Chapter 2, Section 2.1.4) as well as in the BA and EFH Assessment.
BOEM-2023-0011-0185-0126	EIS Section: 3.5.6.1 PDF Page: 325 Comment: Please revise the following text for clarity: "highest number of days of acoustic detections in the winter and spring; with 22 to 67 days of acoustic detections from November to February and again from March to April." It is not clear how "22 to 67" relates to the months in this text.	The number of days of acoustic detections were based off a range (1–3 days; 4–21 days; 22–67 days) captured during each season (Winter – November to February; Spring – March to April) when NARWs were detected at its highest peak. Please see Atlantic Marine Assessment Program for Protected Species: FY15–FY19 (noaa.gov), p. 189 for further clarification.
BOEM-2023-0011-0185-0127	EIS Section: 3.5.6.1 PDF Page: 325 Comment: The draft 2022 SARS (Hayes et al. 2023) provides a NARW abundance estimate of 338. Please correct the statement "2022). The draft 2022 NMFS stock assessment report gives a population estimate of 365 NARWs (Hayes et al. 2022)."	The statement in the FEIS has been revised with the updated NARW abundance estimate (365–338) based on the most recent 2022 Marine Mammals Stock Assessment Report (Hayes et al. 2023).
BOEM-2023-0011-0185-0128	EIS Section: 3.5.6.1 PDF Page: 325 Comment: Listed "NAWR UME up to 92 individuals." Please correct the acronym to NARW.	This typographical error has been corrected in the Final EIS.

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BOEM-2023-0011-0185-0129	EIS Section: 3.5.6.1 PDF Page: 325 Comment: Please update the NARW UME values to reflect the most current information immediately prior to publication of the FEIS.W	The Final EIS has been revised with the updated total number of NARW unusual mortality events (UMEs) based on the data reported in https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2024-north-atlantic-right-whale-unusual-mortality-event (accessed October 2024).
BOEM-2023-0011-0185-0130	EIS Section: 3.5.6.1 PDF Page: 325 Comment: The final sentence of the NARW population estimate paragraph states that NARW population size is fewer than 350 individuals and cites NOAA Fisheries. Earlier in the paragraph there are two models discussed one reporting a population estimate of 336 individuals and one reporting a population 365 the second being above 350. Please either remove the statement that there are fewer than 350 individuals or clearly state the number/estimate that you are moving forward with. This is repeated on PDF page 354.	These sections on the EIS have been revised with the appropriate NARW abundance estimate of 338 individuals based on the most recent 2022 Marine Mammals Stock Assessment Report (Hayes et al. 2023). Statements indicating a range “under/fewer than 350 individuals” rather than the actual abundance estimate have been removed for clarity.
BOEM-2023-0011-0185-0131	EIS Section: 3.5.6.1 PDF Page: 325-326 Comment: Consider different citation other than Palka et al. (2021) for acoustic detections.	Data from AMAPPS (Palka et al. 2017, 2021) are the best publicly available source that provides the most current density estimates (via acoustic detection) on NARW in the Atlantic Ocean. Along with AMAPPS data, density models reported by the Duke University Marine Geospatial Ecology Laboratory (Roberts et al. 2022a–m) are also used throughout the sections to provide modeled density estimates for marine mammals.
BOEM-2023-0011-0185-0132	EIS Section: 3.5.6.1 PDF Page: 326 Comment: Please specify whether the peak density value (NARW/nm^2) in November and December was the same as the density from January to May. If not provide the value.	Peak density values (NARW/nm^2) in November and December were the same as the density from January to May. The text in this section has been revised to reflect this.
BOEM-2023-0011-0185-0133	EIS Section: 3.5.6.1 PDF Page: 326 Comment: Please include the fact that NARW residency time in the MA and RI/MA WEAs from December through May tripled to 13 days during the two study periods 2011-2015 to 2017-2019 (Quintana-Rizzo et al. 2021).	The EIS has been revised to include the modeled residency time of NARWs in the Massachusetts and Rhode Island wind energy areas (WEAs) based on the Quintana-Rizzo et al. (2021) data.

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BOEM-2023-0011-0185-0134	EIS Section: 3.5.6.1 PDF Page: 326 Comment: At the end of the paragraph beginning "Thus NARW observations..." please add "Right whales have been observed feeding in this area in all seasons in southern New England."	The EIS has been revised to include the statement that NARWs have been observed feeding in all seasons in southern New England (O'Brien et al. 2022).
BOEM-2023-0011-0185-0135	EIS Section: 3.5.6.1 PDF Page: 326 Comment: In the last sentence of the first paragraph please remove reference to a spring breeding period which is incorrect.	The EIS has been revised and the statement alluding to foraging during spring breeding period at Brayton Point ECC has been removed.
BOEM-2023-0011-0185-0136	EIS Section: 3.5.6.1 PDF Page: 326 Comment: Please note that right whale critical habitat has not been updated since 2016 and right whale habitat use particularly in southern New England has shifted significantly in recent years.	This comment has been noted. The EIS and other submittals will be updated, wherever applicable, regarding NARW critical habitat and habitat use when new data/information become available.
BOEM-2023-0011-0185-0137	EIS Section: 3.5.6.1 PDF Page: 327 Comment: Please update the humpback whale and minke whale UME values to reflect the most current information immediately prior to publication of the FEIS.	The EIS has been revised with the updated total number of humpback whale and minke whale UMEs based on the data presented in https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2024-humpback-whale-unusual-mortality-event-along-atlantic-coast (accessed October 2024).
BOEM-2023-0011-0185-0138	EIS Section: 3.5.6.1 PDF Page: 329 Comment: In the MMPA ITA application SouthCoast Wind did not include harp seals as a species likely to occur in the project area. Please consider removing references to harp seals.	The harp seal is an uncommon species in the Project area, which means it occurs in low numbers or on an irregular basis. While there are insufficient data to estimate the population size in U.S. waters, the whole population is estimated at 7.6 million, and harp seal occurrences have been increasing in the northeastern United States since the 1980s (CRMC 2010; Hayes et al. 2022). Harp seal was included in the noise modeling that went into the MMPA ITA application; thus, BOEM sees no reason to exclude this species' information from the EIS. Clarifications regarding its population distribution were added.
BOEM-2023-0011-0185-0139	EIS Section: 3.5.6.1 PDF Page: 331 Comment: Please remove the equations in Table 3.5.6-5 and references to the equations used to calculate thresholds based on effects observed in 50 percent of exposed animals. Neither NMFS nor SouthCoast consider these equations when estimating the number of animals that might be exposed to UXO	The Final EIS has been revised with the updated equation based on the more conservative 1 percent threshold. Any statements referring to the equation have also been updated.

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	detonations or any related mitigation. Retaining the equations in the DEIS may be confusing for readers. This is an example of the text that was revised for the Ocean Wind EIS which should be revised here based on those updates (see global comments for Section 3.5.6).	
BOEM-2023-0011-0185-0140	EIS Section: 3.5.6.3 PDF Page: 335 Comment: Please consider creating a bullet point that provides more detail about the site assessment surveys using HRG equipment. Simply saying "site assessments" does not provide enough information.	The statement in the EIS has been revised to include a bulleted list of site characterization activities that could potentially affect marine mammals.
BOEM-2023-0011-0185-0141	EIS Section: 3.5.6.3 PDF Page: 336 Comment: Please add UXO detonations to the list of offshore wind activities that could generate underwater noise and discuss the potential impacts of UXO detonations later in the text.	The statement in the EIS has been revised to include UXO detonations in the list of offshore wind activities that generate underwater noise. A more detailed discussion of UXO detonations is discussed in its own subsection under *Noise*.
BOEM-2023-0011-0185-0142	EIS Section: 3.5.6.3 PDF Page: 337 Comment: Please revise "This act" to say "The MMPA."	This statement has been corrected in the Final EIS for clarity.
BOEM-2023-0011-0185-0143	EIS Section: 3.5.6.3 PDF Page: 337 Comment: Need to add earlier that Level A harassment may also include "other non-auditory injury not leading to serious injury or mortality." This becomes important for the UXO discussion that needs to be added.	The sentence on Level A harassment has been updated to include the statement “other non-auditory injury not leading to serious injury or mortality.”
BOEM-2023-0011-0185-0144	EIS Section: 3.5.6.3 PDF Page: 337 Comment: Need to revise text in parentheses to say "(and other non-auditory injury not leading to serious injury or mortality)." This parenthetical addition a response to a comment on the PDEIS presently makes is sound like this words in the parentheses are describing PTS but the correction is meant to indicate that UXO detonations part of offshore wind activities could cause different forms of Level A harassment including gastrointestinal or lung injury.	Please see response to comments BOEM-2023-0011-0185-0143 and BOEM-2023-0011-0185-0145.
BOEM-2023-0011-0185-0145	EIS Section: 3.5.6.3 PDF Page: 337 Comment: As commented on for the PDEIS we still suggest that it is important that the "Physiological effects" section include more extensive	Subsections under *Noise* have been added to include *Non-auditory injury*. The sections under *UXO Detonations* and *Summary Statement for Noise* have also been extensively

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	discussion on mortality serious injury and stress. Please include.	revised to include the physiological effects of *UXO detonation* to marine mammals.
BOEM-2023-0011-0185-0146	EIS Section: 3.5.6.3 PDF Page: 337 Comment: The following sentence should be edited: "While experiencing either TTS the hearing threshold rises and a sound must be louder to be detected." This also describes PTS so please add "or PTS" after TTS.	This statement in the EIS has been revised as requested.
BOEM-2023-0011-0185-0147	EIS Section: 3.5.6.3 PDF Page: 341 Comment: The concluding statement that "seals are likely to exhibit no detectable response or mild orientation responses to impact pile- driving activities" is not supported by the previous examples. All citations above show that seal abundance was greatly reduced during pile driving activities in radii up to tens of km. Seals were all were found to return after construction ceased but all exhibited a behavioral response to pile driving activities.	This statement in the EIS has been revised to say that seals generally exhibit moderate, but temporary behavioral responses to pile-driving activities.
BOEM-2023-0011-0185-0148	EIS Section: 3.5.6.3 PDF Page: 345 Comment: The potential for overlapping UXO detonations from nearby projects being unlikely is not a conclusion that can be drawn by the previous sentence stating that the number and location of detonations are unknown.	The section discussing UXO detonations in the No Action Alternative has been revised extensively in the Final EIS. The conclusions for UXO detonation under No Action have been revised to state that with mitigative measures in place, the impacts associated with UXO detonations would be minor and similar to those described for the Proposed Action.
BOEM-2023-0011-0185-0149	EIS Section: 3.5.6.3 PDF Page: 346 Comment: Please provide more detail as to why the impacts for NARW would be minor and impacts for all other marine mammals in the low-frequency hearing group would be moderate.	The section under No Action Alternative discussing the Summary Statement for Noise has been revised to provide clarity. The concluding statement on noise has been corrected to state that noise-generating sources would result in moderate, short-term impacts on low-frequency cetaceans (LFCs), mid-frequency cetaceans (MFCs), high-frequency cetaceans (HFCs) and pinnipeds. Similarly, while impacts would have population-level effects on the NARW, with implementation of minimization measures expected from ongoing offshore wind activities, impacts would likely be moderate.

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BOEM-2023-0011-0185-0150	EIS Section: 3.5.6.3 PDF Page: 346 Comment: This section is missing an assessment of entrainment risk of marine mammal prey from the HVDC OSP(s). Please add a section relative to this risk. Heated effluent is assessed under Accidental Releases though these releases are regular as opposed to accidental. Consider revising this.	The section on *Cumulative Impact of the No Action Alternative* under *Accidental Releases and Discharges* has been revised to include the entrainment risk of marine mammal prey from HVDC OSPs. Impacts from actions related to accidental release and discharges from offshore wind activities, such as entrainment of marine mammal prey, would likely be minor for marine mammals, and moderate for NARW; however, with the application of operational mitigative measures (e.g., flow reduction, physical barriers) that would be required from developers, impacts would be minimized and would be expected to be of low intensity and localized.
BOEM-2023-0011-0185-0151	EIS Section: 3.5.6.3 PDF Page: 346 Comment: The phrase "...the models would be distinguishable relative to natural variability in oceanographic conditions..." does not properly characterize the issue. There are cases where effects may be different than natural variability. Even if the magnitude is within the range of inter-annual variability the direction spatial changes and consistency of these changes may not be. Please revise	Text has been revised to clarify findings of Daewel et al. (2022) where primary production changes were recorded locally at the wind-farm scale, but region-wide averages in estimated annual primary productivity remained almost unchanged.
BOEM-2023-0011-0185-0152	EIS Section: 3.5.6.3 PDF Page: 347 Comment: Daewel et al. (2022) does not show that impacts on primary productivity are not expected to be different than natural variability and instead reports that spatial patterns are likely to change.	Text has been revised to clarify findings of Daewel et al. (2022) where primary production changes were recorded locally at the wind-farm scale, but region-wide averages in estimated annual primary productivity remained almost unchanged.
BOEM-2023-0011-0185-0153	EIS Section: 3.5.6.3 PDF Page: 347 Comment: The discussion of the Golbazi et al. 2022 paper is misleading please revise. When quoting that "...meteorological changes at the surface…will be nearly imperceptible…" this is primarily referencing the difference in air temperature just above the water's surface which was the primary focus of the paper. The focus of the paper is not on oceanographic impacts. These studies do not necessarily cast doubt on the oceanographic conclusions from Daewel et al. 2022 as stated in the draft BA because the Daewell study focuses on	Text has been revised to report the implications of the findings of Golbazi et al. (2022) specific to potential changes to near-surface atmospheric properties, without contrasting to the Daewel et al. (2022) study.

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	atmospheric effects rather than hydrodynamic or oceanographic effects.	
BOEM-2023-0011-0185-0154	EIS Section: 3.5.6.3 PDF Page: 347 Comment: In the last sentence on the page please note that primary productivity could decrease also.	Generally, primary production in the summer in this region is nutrient-limited, so increased mixing would be likely to bring nutrients to the surface and increase production.
BOEM-2023-0011-0185-0155	EIS Section: 3.5.6.3 PDF Page: 348 Comment: At the end of the first full paragraph the description of the scale of impacts could be appropriate if discussing the impacts of the turbine structures directly (not the extraction of wind energy from the system). The use of the term "hydrodynamic" is not always used consistently in the document as meaning impacts from a static feature (i.e. turbine structure) on water and currents.	Please see response to comment BOEM-2023-0011-0185-0002. Edits have been made to clarify use of “hydrodynamic.”
BOEM-2023-0011-0185-0156	EIS Section: 3.5.6.3 PDF Page: 349 Comment: Please provide an updated source for percentage of NARW that show evidence of entanglement. One example would be the NOAA Fisheries North Atlantic Right Whale Page (https://www.fisheries.noaa.gov/species/north-atlantic-right-whale) that states "NOAA Fisheries and our partners estimate that over 85 percent of right whales have been entangled in fishing gear at least once."	The statement in the EIS that discusses NARW entanglement has been revised to include a more recent report based on the suggested source.
BOEM-2023-0011-0185-0157	EIS Section: 3.5.6.3 PDF Page: 350 Comment: Appendix D indicates that ongoing and planned offshore wind activities will likely include mitigation measures similar to those that have been proposed by this applicant and by the cooperating agencies. This includes vessel speed restriction. Please modify the analysis under the "Traffic" section to accurately represent the assumptions regarding mitigation made in Appendix D which are used to influence the impact determinations of Alternative A.	The sections under *Traffic (vessel strike*) under No Action Alternative in the EIS have been extensively revised, and analysis of Traffic has been updated to include examples of mitigative measures similar to those described in Appendix G, as would be required from developers for offshore wind activities.

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BOEM-2023-0011-0185-0158	EIS Section: 3.5.6.3 PDF Page: 353 Comment: When analyzing the potential impacts from Port Utilization it appears that this IPF is being conflated with Vessel Traffic (and Noise to some extent). Please clarify how port utilization itself excluding vessel traffic would impact marine mammals. If the actual IPF of concern regarding port utilization activities is vessel traffic then perhaps port utilization vessel traffic should be included in the Vessel Traffic IPF.	The section on *Port Utilization* under *No Action Alternative* has been revised in the Final EIS to discuss infrastructure upgrades and port expansions at larger ports such as those planned by the Port of Massachusetts and Port of Virginia (based on Appendix D, *Planned Activities Scenario*) and that offshore wind activities would only make up a small portion of the activities at these ports. Further clarification was made by stating that the realized impacts on marine mammals associated with port utilization would be through increased vessel interaction, exposure to noise, and localized turbidity plumes from dredging (and referred to those related sections for the IPF-specific discussions).
BOEM-2023-0011-0185-0159	EIS Section: 3.5.6.3 PDF Page: 354 Comment: The text: "From 2013 to 2017 the minimum rates of human-caused mortality for sei whales fin whales and NARWs were calculated at 1 2.35 and 6.9 individuals per year respectively" is outdated. Please revise with more recent information.	This section in the EIS has been updated to report the latest human-caused mortality rates for sei whales, fin whales (Hayes et al. 2022), and NARWs (Hayes et al. 2023) based on the most recent Marine Mammals Stock Assessment Reports. https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region
BOEM-2023-0011-0185-0160	EIS Section: 3.5.6.4 PDF Page: 356 Comment: Please explain how HRG surveys are considered a measure to minimize impacts on marine mammals. NMFS disagrees that this statement in the DEIS is true.	The statement was meant to say “HRG survey-specific mitigation measures” such as pre-start clearance and shutdown zones, as described in detail in Appendix G, *Mitigation and Monitoring*. The Final EIS has been revised to correct this statement.
BOEM-2023-0011-0185-0161	EIS Section: 3.5.6.4 PDF Page: 356 Comment: The phrase "until the PSO has reported no marine mammals in the respective shutdown zone" should be revised to say "until the PSO has reported no marine mammals in the respective clearance zone."	This statement in the Final EIS has been corrected and revised to say that “Ramp-up activities would not be activated until the PSO has reported no marine mammals in the respective clearance zone” consistent with the mitigation measures in Appendix G, *Mitigation and Monitoring*.

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BOEM-2023-0011-0185-0162	EIS Section: 3.5.6.4 PDF Page: 356 Comment: Please incorporate consideration of the proposed vessel speed rule when discussing vessel speed.	Thank you for the comment. No change is required at this time. BOEM has already proposed a 10-knot speed restriction for all vessel sizes operating port-to-port between November 1 and April 30, as well as additional conditions that go above and beyond what NMFS currently requires through regulation.
BOEM-2023-0011-0185-0163	EIS Section: 3.5.6.4 PDF Page: 357 Comment: NMFS and BOEM have yet to determine whether nighttime pile driving will be allowed. Please revise this phrase to account for the possibility that nighttime pile driving may not be approved by NMFS.	Thank you for the comment. No change is required at this time. BOEM and NMFS are assessing the proposed project presented by the lessee. Any decisions, including those regarding nighttime pile driving, are subject to the outcomes of consultations, incidental take regulations issued by NMFS under the MMPA, and ultimately BOEM decision-makers that will approve, disapprove, or approve the COP with conditions. NMFS is considering allowing nighttime pile driving under some circumstances, and BOEM acknowledges that this conversation would continue through consultation and between NMFS and the applicant that may affect the final conditions required for the Project.
BOEM-2023-0011-0185-0164	EIS Section: 3.5.6.4 PDF Page: 357 Comment: Please add "and UXO detonations" after "pile driving" in the phrase "avoiding pile driving activity between January 1 and April 30."	This statement has been revised in the EIS to include UXO detonations as one of the Project-related activities bound by a seasonal restriction.
BOEM-2023-0011-0185-0165	EIS Section: 3.5.6.5 PDF Page: 357 Comment: In the MMPA ITA application SouthCoast Wind proposed using vibratory pile driving to install most foundation piles. Please remove "if used."	The statement has been corrected and the phrase “if used” for vibratory pile driving has been removed with concurrence to Appendix C, *Project Design Envelope and Maximum-Case Scenario*.
BOEM-2023-0011-0185-0166	EIS Section: 3.5.6.5 PDF Page: 358 Comment: "Each WTG requires 1 monopile or 4 to 8 pin piles" does not align with what SouthCoast proposed. Each WTG foundation would require installation of 4 pin piles if piled jacket foundations are installed. OSP foundations may require more than 4 pin piles. Please correct this here and throughout as appropriate.	The Final EIS has been updated throughout to reflect the latest installation scenarios that were used for the noise modeling described in the December 2023 ITR application.
BOEM-2023-0011-0185-0167	EIS Section: 3.5.6.5 PDF Page: 358 Comment: Please correct the phrase "with each pin pile or monopile requiring 4 or 2 hours of driving to install respectively." This is not the timing	The section *Noise: Pile Driving* under *Alternative B - Proposed Action* has been updated throughout to reflect the latest installation parameters as outlined in the MMPA ITA

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	SouthCoast proposed in their MMPA ITA application. Instead SouthCoast assumed each monopile would require up to 20 minutes of vibratory pile driving and 4 hours of impact pile driving. Each pin pile would require up to 90 minutes of vibratory pile driving and 2 hours of impact pile driving. In addition there would be a 2-4 hour period after vibratory pile driving when the hammer would be changed from vibratory to impact.	(December 2023). The modeled parameters for foundation installation have been corrected and now states that each WTG requires one monopile or four pin piles for jacket foundation. Monopile installation requires 4 hours of piling (including 20 minutes of vibratory piling). Pin-pile installation requires 2 hours of piling (including 90 minutes of vibratory piling). Both monopile and pin pile installations would require an additional 1 hour of pre-start clearance period and 4 hours to move to the next piling location.
BOEM-2023-0011-0185-0168	EIS Section: 3.5.6.5 PDF Page: 358 Comment: SouthCoast is no longer considering potential installation of 11-m monopiles and 2.9-m pin piles (the "Realistic" scenario) in their MMPA ITA application but is still considering installation of 16-m monopile foundations and 4.5-pin piles for piled jacket foundations. Please update the DEIS to reflect the most current maximally impactful construction scenarios SouthCoast is considering (included in the MMPA ITA application).	The EIS has been updated throughout to reflect the latest installation scenarios that were used for the noise modeling described in the December 2023 ITR application. Information pertaining to the previously modeled scenarios with smaller-diameter piles has been removed.
BOEM-2023-0011-0185-0169	3.5.6.5 PDF Page: 358 Comment: Please specify that the phrase "where potential injurious" refers to PTS.	The section *Noise: Pile Driving* under Alternative B - Proposed Action has been updated throughout to reflect the latest installation scenarios in the December 2023 MMPA ITR application. Discussions regarding PTS and behavioral disturbance have been revised for clarity throughout.
BOEM-2023-0011-0185-0170	EIS Section: 3.5.6.5 PDF Page: 359 Comment: Please consider removing references to the results of modeling for the "Realistic" scenario (including Tables 3.5.6-11 and 3.5.6.- 12 and 3.5.6.-13) as it is no longer being considered by SouthCoast as a potential construction scenario.	The EIS has been updated throughout to reflect the latest installation scenarios that were used for the noise modeling described in the December 2023 MMPA ITR application.
BOEM-2023-0011-0185-0171	EIS Section: 3.5.6.5 PDF Page: 359 Comment: Please clarify if Tables 3.5.6-8 through 3.5.6-13 include Level B ER95% values to the behavioral threshold based on NOAA (2005) or Wood et al. (2012).	The section *Noise: Pile Driving* under Alternative B - Proposed Action has been updated throughout to reflect the latest installation scenarios as outlined in the MMPA ITR (December 2023). As such, the acoustic modeling scenarios and modeled values to Levels A and B thresholds have been updated and are reflected in the results in Tables 3.5.6-9–3.5.6-11. The

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		frequency weighted distances (ER95% for Level A and R95% for Level B) reported in the EIS were calculated using the NMFS 2018 Technical Guidance auditory weighting functions. This is stated in the paragraph below Table 3.5.6-7
BOEM-2023-0011-0185-0172	EIS Section: 3.5.6.5 PDF Page: 359-360 Comment: The title for Tables 3.5.6-8 through 3.5.6-13 are incorrect. Please revise. Level A values relate to PTS (injury) thresholds and Level B values relate to the behavioral threshold for impact pile driving. The tables present values for both thresholds but the table titles only mention behavioral thresholds.	The section *Noise: Pile Driving* under Alternative B - Proposed Action has been updated throughout to reflect the latest installation scenarios as outlined in the MMPA ITA (December 2023). The tables associated with the new modeling scenarios and calculations to exposure and acoustic ranges have been updated accordingly.
BOEM-2023-0011-0185-0173	EIS Section: 3.5.6.5 PDF Page: 361 Comment: Please discuss how it was determined that: "These effects are considered moderate for LFC HFC and pinnipeds and minor for MFC."	The section *Noise: Pile Driving* under Alternative B - Proposed Action has been updated throughout to reflect the latest installation scenarios in the MMPA ITA (December 2023). Based on the updated acoustic modeling calculations, the effects of pile driving leading to auditory injury (Level A) and behavioral disturbance (Level B) are considered moderate for all species groups (LFC, MFC, HFC, phocid pinnipeds)
BOEM-2023-0011-0185-0174	EIS Section: 3.5.6.5 PDF Page: 361 Comment: SouthCoast did not produce a "Protected Species Mitigation and Monitoring Plan" but did provide a "Marine Mammal and Sea Turtle Monitoring and Mitigation Plan." Please correct in text.	Thie statement has been corrected to state that a Marine Mammal and Sea Turtle Monitoring and Mitigation Plan was developed for the Proposed Action.
BOEM-2023-0011-0185-0175	EIS Section: 3.5.6.5 PDF Page: 361 Comment: This paragraph "Mayflower has proposed measures " is focused on mitigation and monitoring measures. Discussion of critical habitat does not belong here. In addition although the project area does not include critical habitat it does include core NARW core feeding habitat. In a separate paragraph please include a discussion of the possible avoidance and displacement of NARWs due to pile driving.	Text discussing critical habitat has been removed from this paragraph. Critical and core habitats related to the Project area are discussed in Section 3.5.6.1. Discussion on possible avoidance and displacement of NARWs and other marine mammals can be found in Section 3.5.6.3 – Pile Driving Noise.
BOEM-2023-0011-0185-0176	EIS Section: 3.5.6.5 PDF Page: 361 Comment: Please describe what conservative approach was implemented when determining the magnitude of effects.	For many marine mammal species, there are a lack of behavioral studies related to pile driving noise focused on that species. The conservative approach was to conclude that behavioral effects should be considered moderate for all species for which data are lacking. This is based on a study of

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		harbor porpoises, which found moderate behavioral effects in that species (Southall et al. 2021). These conclusions are being applied to species that have not yet been the subject of a behavioral study.
BOEM-2023-0011-0185-0177	EIS Section: 3.5.6.5 PDF Page: 362 Comment: Please clarify that SouthCoast would install Scenario 1 or Scenario 2 but not both.	While the exact installation scenario has not been identified, SouthCoast Wind intends to only select one type of installation scenario for Year 1 and Year 2. Based on the most recent MMPA ITA (December 2023), the foundation installation scenarios have been revised.
BOEM-2023-0011-0185-0178	EIS Section: 3.5.6.5 PDF Page: 362 Comment: Please specify size of WTG monopiles modeled for Scenario 1 (9/16-m).	The size of WTGs on all scenarios involving monopile foundation was modeled using a maximum tapered diameter of 9/16 meter to represent the largest potential foundation diameter in the PDE.
BOEM-2023-0011-0185-0179	EIS Section: 3.5.6.5 PDF Page: 362 Comment: The sentence beginning "Results of the modeling..." should either be added to the Scenario 1 bullet as well or moved out of the Scenario 2 bullet in to a separate sentences below the bullets for both Scenarios. In addition those results should also provide behavioral exposures not just PTS exposures. Please correct.	The section *Noise: Pile Driving* under Alternative B - Proposed Action has been updated throughout to reflect the latest installation scenarios in the MMPA ITA (December 2023). The entire section has been revised for clarity and now outlines the parameters for each scenario separately. The results of the modeled scenarios also show both Level A (PTS) and Level B (behavioral) exposures and are reflected in the results discussion and in Tables 3.5.6-9–3.5.6-11.
BOEM-2023-0011-0185-0180	EIS Section: 3.5.6.5 PDF Page: 362 Comment: Replace "takes" with "harassment" throughout the document. There is no term "Level A and Level B take" defined in the MMPA or implementing regulations.	The term *take* has been replaced in instances referring to level A or B harassment.
BOEM-2023-0011-0185-0181	EIS Section: 3.5.6.5 PDF Page: 362 Comment: SouthCoast is only requesting Level A harassment and Level B harassment for Scenario 1 which resulted in the larger exposure estimates (versus Scenario 2).	SouthCoast Wind has submitted a revised MMPA ITA Application, updated in December 2023, reflecting the latest installation scenarios occurring in construction periods Years 1 and 2. In the latest MMPA ITA, Level A and B harassment takes have been requested for installation scenarios occurring in both Years 1 and 2. The sentence in question has been revised reflect this change.

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BOEM-2023-0011-0185-0182	EIS Section: 3.5.6.5 PDF Page: 362 Comment: The sentence beginning "Level A takes" includes two different concepts that should be treated separately (i.e. implementation of mitigation/monitoring vs. distances to thresholds). Please revise.	The statement in question conflates two ideas in the same sentence and has been removed. Please note that the entire subsection for *Noise: Pile Driving* under Alternative B - Proposed Action has been updated based on the most recent acoustic modeling in the MMPA ITA (December 2023) and contains significant changes throughout.
BOEM-2023-0011-0185-0183	EIS Section: 3.5.6.5 PDF Page: 362 Comment: Level A harassment and Level B harassment exposures do account for a seasonal restriction on pile driving and UXO detonations from Jan 1 - April 30 so it not correct to say that Level A harassment or Level B harassment takes do not account for any mitigation.	Please refer to the response to comment BOEM-2023-0011-0185-0182. As was done for the section in *Noise: Pile Driving* under Alternative B - Proposed Action, significant updates have also been made in the subsection *Noise: UXO Detonation*. The discussions therein should provide more clarity on how Level A and B exposures have been defined and the associated exposure modeling for *noise* IPFs.
BOEM-2023-0011-0185-0184	EIS Section: 3.5.6.5 PDF Page: 362 Comment: The FEIS should provide ER95% values for impact and vibratory pile driving and animal exposure estimates for at least Scenario 1 which was deemed the most impactful in the MMPA ITA application. Ideally the DEIS should provide this information for both Scenarios included in the ITA application so the public can evaluate the data and clearly see which modeled Scenario is most impactful.	The subsection for *Noise: Pile Driving* under Alternative B - Proposed Action has been updated based on the most recent acoustic modeling in the MMPA ITA (December 2023) and contains significant changes throughout. The updated results in Table 3.5.6-9 show exposure ranges (ER95%) to Level A thresholds based on whether the scenario involved combined (impact and vibratory), concurrent or sequential (impact only) installation. These parameters are also reflected in the updated results in Table 3.5.6-10 for acoustic ranges (R95%) to Level B thresholds. Exposure estimates for Level A and B for each installation scenario are shown in Table 3.5.6-11.
BOEM-2023-0011-0185-0185	EIS Section: 3.5.6.5 PDF Page: 363 Comment: Disturbance from exposure to HRG equipment noise is expected to minimal because the ensonfied zones are small not just because the vessel and whale are moving in relation to each other. Please include the results of acoustic modeling and exposure estimates for HRG surveys.	Section 3.5.6.5, *HRG Surveys and Geotechnical Drilling Activities under the Proposed Action,* has been revised to include HRG survey acoustic modeling and exposure estimate results. Further, the determination of effects statement has been updated to clarify that the size of the ensonified area, the brief and temporary sound exposure to HRG equipment noise, and the implementation of mitigation measures would minimize noise exposure from HRG survey equipment.
BOEM-2023-0011-0185-0186	EIS Section: 3.5.6.5 PDF Page: 363 Comment: In the sentence beginning "UXOs have the potential " please revise to say	The sentence has been revised to clarify that PTS and serious injury are separate concepts.

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	behavioral disturbance injury (PTS) mortality and serious injury. PTS and serious injury are different concepts.	
BOEM-2023-0011-0185-0187	EIS Section: 3.5.6.5 PDF Page: 363 Comment: Please specify that a noise mitigation system will be used during pile driving and UXO detonation.	A 10-decibels (dB) attenuation from the use of a NAS would be implemented for pile driving, as well as for UXO detonations. Each noise IPF subsection has been revised to include details on the proposed mitigation measures, which includes noise attenuation systems.
BOEM-2023-0011-0185-0188	EIS Section: 3.5.6.5 PDF Page: 363 Comment: SouthCoast requested Level A harassment take of 3 species incidental to UXO detonation and 1 species incidental to pile driving. Please add "for some species" after "eliminate potential Level A harassment." Please include the results of acoustic modeling and exposure estimates for UXO detonations.	Please note that SouthCoast Wind has submitted a revised MMPA ITA Application, updated in December 2023, which includes updated takes for UXO detonation. Acoustic modeling has also been conducted for UXO detonations (Hannay and Zykov 2022) and the modeled results and discussions in *Noise: UXO Detonation* under the Proposed Action have been updated based on this report. This subsection includes an updated exposure estimate for each species considered (Table 3.5.6-16) and updated Level A and Level B exposure ranges for each hearing group (Table 3.5.6-15)
BOEM-2023-0011-0185-0189	EIS Section: 3.5.6.5 PDF Page: 364 Comment: Please remove references to bubble guns. SouthCoast did not propose to use this type of equipment.	References to bubble guns have been removed from sections regarding the Proposed Action, as they are not being proposed to be used.
BOEM-2023-0011-0185-0190	EIS Section: 3.5.6.5 PDF Page: 364 Comment: When discussing potential impacts from operational WTGs it's unclear if the "minor impacts" would be from masking (which would follow the topic in the previous paragraphs). Please specify how operational WTGs would impact marine mammals and identify which hearing group(s) would likely be most impacted and why.	The EIS has been revised and the section on Turbine Operation Noise under the Proposed Action has been expounded to provide clarity. LFCs and MFCs that communicate within the same sound frequencies as turbine noise may experience masking effects. However, source levels from operational WTGs are expected to be low and highly localized and anticipated to attenuate to ambient levels within close range to the WTGs. Thus, impacts from operational noise would constitute minor effects on marine mammals belonging to all hearing groups.

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BOEM-2023-0011-0185-0191	EIS Section: 3.5.6.5 PDF Page: 365 Comment: Clarify the amount of vessel traffic for each phase. For example will 15-35 vessels be transiting each day from regional ports to the lease area during the construction phase?	The number of vessels transiting each day is variable and dependent on multiple factors. SouthCoast is working with local stakeholders to manage and minimize vessel impact. It is expected that one to three vessel trips would be made per day between the Lease Area and utilized ports during operations and maintenance (O&M). An average of 1–15 vessel trips daily is expected for the entire Project lifetime (including construction activities, O&M, and decommissioning).
BOEM-2023-0011-0185-0192	EIS Section: 3.5.6.5 PDF Page: 365 Comment: Characterizing the proposed action vessel traffic relative to the GAA is an improper scale comparison. Proposed action vessel traffic should be compared relative to the Project Area (lease area cable route and main regional ports) where the majority of activity will occur.	The statement comparing the increase of vessel traffic, under the Proposed Action, relative to the geographic analysis area has been revised to instead provide emphasis on vessel traffic within the Project area.
BOEM-2023-0011-0185-0193	EIS Section: 3.5.6.5 PDF Page: 367 Comment: Regarding the uncertainty of oceanographic impacts BOEM and NOAA have contracted with the National Academy of Sciences to evaluate potential impacts on marine mammals from potential oceanographic changes particularly right whales. We recommend the findings of this study are incorporated into the FEIS if the timing aligns.	BOEM, in cooperation with NMFS, has requested this issue be reviewed by experts in the relevant fields of science. BOEM has partnered with the NASEM for an independent peer review of potential hydrodynamic impacts for offshore wind facilities on prey species. The report concluded that hydrodynamic impacts from offshore wind projects adjacent to Nantucket Shoals would likely be difficult to distinguish from the ongoing effects of climate change currently occurring in this region. Likewise, BOEM finds that measurable impacts of offshore wind farms to the foraging success of whales that would result in population-level effects are not reasonably likely to occur and that a recommended NARW conservation buffer is not warranted based on the review of best available information and expert opinion found in the report. Further monitoring studies will be needed to have the spatial and temporal coverage to adequately understand the impact of future wind farms and BOEM would continue to coordinate with partners to develop regional monitoring strategies to obtain scientific information on the potential hydrodynamic effects of WTGs. Based on the

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		current information available, including the initial meetings associated with the peer review, BOEM is of the position that our current NEPA and ESA analyses accurately reflect the expected impacts on NARWs from offshore wind projects, as well as provide an adequate suite of measures to avoid, minimize, or mitigate impacts on NARWs.
BOEM-2023-0011-0185-0194	EIS Section: 3.5.6.5 PDF Page: 367 Comment: Please change "prey aggregations" to "disruption of prey aggregation mechanisms."	The introductory paragraph in under the *presence of structures* IPF under the Proposed Action – Alternative B has been revised for clarity.
BOEM-2023-0011-0185-0195	EIS Section: 3.5.6.5 PDF Page: 368 Comment: Baumgartner and Mate 2003 and Baumgartner et al. 2017 are cited incorrectly in the text and should be revised. These references support that copepods need to be organized into dense layers but they do not say that the Shoals prevents this nor can this be inferred due to it being a well-mixed environment. While it is true that Nantucket Shoals is generally well mixed the strong currents could also serve to aggregate prey along ephemeral frontal boundaries either on the Shoals themselves or along the edges of the tidal jet running along the western side of the Shoals.	This sentence has been revised to state that the well-mixed environment of Nantucket Shoals does not necessarily preclude copepod aggregation. Baumgartner and Mate (2003) and Baumgartner et al. (2017) are cited to note the NARW's need for dense layers of copepods for efficient feeding.
BOEM-2023-0011-0185-0196	EIS Section: 3.5.6.5 PDF Page: 368 Comment: Please clarify which studies are being referred to by the phrase "those studies." 3.5.6.5 PDF Page: 369 Comment: The gear utilization section does not reflect the fisheries survey plan developed for the project (i.e. pot/trap surveys are missing). This section should be updated to describe the surveys that will occur and risk to marine mammals. The use of PAM systems should also be assessed in the EIS and not refer readers to the BA.	The statement in question is referring to a study by van Berkel et al. (2020) in European offshore wind farms. However, the *presence of structures* IPF discussion under the Proposed Action of the Final EIS has been revised extensively and the statement in question has been removed as it no longer adds value to the discussion as it relates to NARW prey aggregation. To address the second comment: the *gear utilization* IPF discussion under the Proposed Action of the Final EIS has been revised extensively to provide additional details that include the Fisheries Monitoring Plan and other planned monitoring surveys and associated gear that may pose a risk to marine mammals. The use of PAM, as a monitoring equipment, has also been included in this section.

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BOEM-2023-0011-0185-0197	EIS Section: 3.5.6.5 PDF Page: 369 Comment: Please describe the proposed impact avoidance and minimization measures that would reduce entanglement and bycatch risks during trawl surveys.	Trawl surveys, as part of the Proposed Action, will typically be shorter in duration (20 minutes) and conducted less frequently than conventional commercial trawl tows. SMAST would comply with the LOA requirements submitted to GARFO and does not expect bycatch of or interaction with marine mammals, sea turtles, sturgeons, or other protected species based on best management practices (BMPs) implemented during surveys. While the risk of entanglement and capture is extremely rare and unlikely for marine mammals, applicant-proposed mitigation measures include the use of moorings with the shortest practicable line length, rubber sleeves, weak links, chains, cables, or similar equipment types that prevent lines from looping, wrapping, or entrapping species. Devices attached to the seafloor for continuous periods greater than 24 hours will use the best available mooring systems (vertical and float lines, swivels, shackles, and anchor designs) to minimize the risk of entanglement or entrainment of marine mammals. All of these measures are outlined in Appendix G and discussions have been included in the revised EIS in the under Section 3.5.6.6, *Gear Utilization,* under the Proposed Action.
BOEM-2023-0011-0185-0198	EIS Section: 3.5.6.5 PDF Page: 370 Comment: NMFS is not aware of a reference that supports the sentence stating that ESA-listed whales would have a disproportionate impact as a function of decreased genetic diversity. Please include a citation or delete this sentence.	This sentence has been deleted in the Final EIS.
BOEM-2023-0011-0185-0199	EIS Section: 3.5.6.5 PDF Page: 370 Comment: Suggest revising this section for clarity and accuracy relative to the ESA. The EIS should contain a summary of the findings in the BA. The New England Wind DEIS (and our ensuing comments) can be used as a structure to follow for integrating this information. If the BA will not be included as an appendix to the final document we encourage BOEM to make the BA publicly available on the SouthCoast webpage (not just on the ESA	The discussion in the section *Impacts of Alternative B on ESA-Listed Species* under the *Proposed Action* has been revised in the Final EIS for clarity, updated with the assessments as presented in the SouthCoast Wind BA, and conforms to the discussions as written on other BOEM EIS documents. While this was not added as an appendix to the Final EIS, all referenced information from the SouthCoast BA will be uploaded to the BOEM ESA consultation page website once

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	consultation page) so that the information can be easily referenced by the public.	the final revisions have been reviewed by regulatory agencies.
BOEM-2023-0011-0185-0200	EIS Section: 3.5.6.5 PDF Page: 371 Comment: This conclusion says marine mammal vessel strikes will occur which is inconsistent with SouthCoast Wind's MMPA ITA application.	The reference to vessel strikes in Section 3.5.6.5, *Conclusions*, has been removed.
BOEM-2023-0011-0185-0201	EIS Section: 3.5.6.5 3.5.6.6 3.5.6.7 and 3.5.6.8 371 373 375 and PDF Page: 377 Comment: In the subsection entitled "Conclusions" ("Conclusions of Alternative D" and "Conclusions of Alternative E" for the latter two) it is stated that there are "potentially beneficial impacts." Please classify those impacts as negligible minor moderate or major. This comment has also been made on Table 2-4 in which the same language appears.	The statements in the Final EIS under the subsection *Conclusion* for Alternative D and Alternative E, as well as those in Chapter 2, Table 2-4 have been updated and any references to “beneficial impacts” have been reclassified as “minor beneficial impacts.”
BOEM-2023-0011-0185-0202	EIS Section: 3.5.6.7 PDF Page: 373 Comment: Please clarify what scenario(s) these ranges (from 588–882 hours to 564–846 hours) are based on. In additional please account for the fact that SouthCoast intends to use both vibratory and impact pile driving.	The statement under Alternative D has been revised to clarify that the roughly 4 percent reduction in the number of WTGs for Alternative D would reduce the overall number of impact or vibratory pile-driving hours required for monopile and piled jacket installation from 588–882 hours to 564–846 hours.
BOEM-2023-0011-0185-0203	EIS Section: 3.5.6.7 PDF Page: 373 Comment: The analysis of impacts from the Presence of Structures for Alternative D is lacking. Please include discussion of additional literature beyond the Johnson et al. reference.	The additional citations of Daewel et al. (2022), Christiansen et al. (2022) and Floeter et al. (2022) have been referenced in the discussion of the hydrodynamic effects of wind farms. Degraer et al. (2020) was cited in the discussion of marine mammal presence around offshore wind structures. Hydrodynamic impacts are discussed extensively in the Proposed Action and would also apply to Alternative D, the only difference being that there would be six fewer WTGs under Alternative D. The analysis concludes that six fewer WTGs would not make a measurable difference in hydrodynamic impacts.
BOEM-2023-0011-0185-0204	EIS Section: 3.5.6.7 PDF Page: 375-378 Comment: The description of impacts in this section tend to focus on the reductions of turbines with respect to the whole rather than the specific turbine locations that are being removed. For	The description of impacts under Alternative D has been revised to state that potential impacts would be reduced in the northeastern edge of the Lease Area where these six WTGs are proposed to be removed. This would result in

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	example overall vessel traffic would not significantly decrease but vessels that do not have to travel to the specific locations closest to the Shoals during construction O&M and decommissioning would decrease the risk to NARW who are known to use the area. The same is true for reduction of pile driving noise. While the total hours of noise is not significantly decreased pile driving activities closest to the shoals will decrease removing what is likely to be the closest source of pile driving noise to the NARW and thus a higher risk. While a reduction of 6 turbines is important that is not the main focus of this alternative which is the specific location of the removed turbines. More detail is needed to accurately determine the level of change that this alternative is expected to have on impacts to marine mammals.	reduced disturbance footprint in WTG locations that are closest to Nantucket Shoals, which is noted as an important area. Further, there would be fewer construction vessels transiting to locations close to Nantucket Shoals and associated vessel-related impacts would be similarly reduced.
BOEM-2023-0011-0185-0205	EIS Section: 3.5.6.9 PDF Page: 378 Comment: Please correct the statement that: "NARW occurrence around Nantucket Shoals is greatest in the fall and winter." As noted previously NARW occurrence in that area is greatest in the winter and spring.	This section has been revised and this sentence is no longer included. References to NARWs seasonal abundances specifies winter and spring as the times with the greatest abundance, rather than fall and winter.
BOEM-2023-0011-0185-0206	EIS Section: 3.5.6.9 PDF Page: 378 Comment: Please revise the sentence about implementing a real-time monitoring system to make it clear that aerial imagery cannot detect and localize NARW calls.	This sentence has been revised to clarify that PAM would be used to detect and localize NARW calls while aerial imagery would be used to detect NARWs visually.
BOEM-2023-0011-0185-0207	EIS Section: 3.5.6.9 PDF Page: 378 Comment: NMFS recommends that BOEM consider NARW habitat-use data including sightings of 3 or more NARWs triggering Dynamic Management Areas when determining time/area closures (see Attachment B). Clapham and Pace (2001) indicate that NARWs in group sizes of 3 or more are apt to remain in an area for an extended period of time likely engaged in foraging behavior. Thus including this type of sighting data for the SouthCoast project area informs our understanding regarding the way NARWs are using the specified habitat.	BOEM believes sightings of three or more whales is a conservative measure to designate NMFS Dynamic Management Areas (DMAs) and Slow Zones on short-term time scales. However, short-term use of ephemeral habitat is not a reliable indicator of long-term habitat use patterns by NARWs. Long-term datasets and environmental parameters used to predict NARW densities are statistically rigorous and more reliable. DMAs and Slow Zones would continue to be an important management tool for NMFS to protect NARWs should they occur in the Project area in the future. BOEM intends to continue sharing all collected sightings data through its programs with NMFS.

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BOEM-2023-0011-0185-0208	Section 3.5.7: Sea Turtles EIS Section: 3.5.7 PDF Page: Global Comment: The EIS frequently says that impacts will be "temporary and localized" but does not provide any context of the extent and duration of offshore wind projects and associated activities. Without this context it is misleading and the greater detail should be provided to explain to the public what "temporary and localized" means in this context. This is especially problematic as project activities may occur 24/7 for a number of consecutive years as project construction starts for more and more projects. In general this section lacks any geographic consideration of where activities will occur relative to sea turtle habitat use.	*Localized* is referring to the scale at which construction activities would occur within the large habitat range of sea turtles and the geographic analysis area. With no nesting occurring in Massachusetts or Rhode Island, onshore and cable landfall areas would not affect sea turtles. The potentially affected pelagic and benthic habitats within the ECCs and Lease Area are small relative to the amount of habitat used by sea turtles.
BOEM-2023-0011-0185-0209	EIS Section: 3.5.7.1 PDF Page: 380 Comment: Please provide a citation for the following sentence: "The individual hawksbill sea turtles that have occasionally been documented in and near the southern New England area have been stunned by exposure to unusual cold water events and subsequently transported northward into the region by the Gulf Stream."	Information on hawksbill sea turtle cold stunning is found in Section 3.5.7.1 of the EIS and referenced from Lutz and Musick 1997 and NMFS and USFWS 1993.
BOEM-2023-0011-0185-0210	EIS Section: 3.5.7.1 PDF Page: 383 Comment: Winton et al. 2018 could also be included here (https://www.int-res.com/abstracts/meps/v586/p217-232/)	The Winton et al. (2018) reference has been cited in Section 3.5.7.1 to note the distribution of loggerhead sea turtles.
BOEM-2023-0011-0185-0211	EIS Section: 3.5.7.1 PDF Page: 383 Comment: Text from Dodge et al. 2014 should also be cited with Bailey et al. (https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0091726)	The Dodge et al. (2014) reference has been cited in Section 3.5.7.1 to note the median sea surface temperature of leatherback sea turtle habitat.
BOEM-2023-0011-0185-0212	EIS Section: 3.5.7.2 PDF Page: 386 Comment: Suggest including "habitat" in the impact level definitions so it would read "Impacts on sea turtles and their habitat..."	Impact definitions are related to sea turtles directly. This includes habitat impacts that in turn affect sea turtles but does not include impacts on habitat generally. The language remains unedited to follow precedent set by previous offshore wind EISs.
BOEM-2023-0011-0185-0213	EIS Section: 3.5.7.3 PDF Page: 386 Comment: Throughout this section please ensure to insert an impact conclusion consistent with the impact definitions in Table 3.5.7-2. It	This section has been reviewed and impact conclusions have been edited to reflect NEPA impact definitions where applicable.

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	appears ESA terminology is used sporadically throughout rather than the NEPA impact definitions.	
BOEM-2023-0011-0185-0214	EIS Section: 3.5.7.3 PDF Page: 388 Comment: Fisheries use is listed as an ongoing activity that contributes to impacts on sea turtles. Please provide information on how fishing activity is currently impacting sea turtles to present a full description of baseline conditions.	Text has been added to discuss the impact of fisheries interactions with sea turtles. A study by Finkbeiner et al. (2011) was included to provide an estimate of the frequency of interactions.
BOEM-2023-0011-0185-0215	EIS Section: 3.5.7.3 PDF Page: 388 Comment: Site assessment (geotechnical and HRG) should be added to the list of ongoing offshore wind activities.	Geotechnical and HRG surveys are now discussed in Section 3.5.7.3 under the *noise: G&G Surveys* IPF.
BOEM-2023-0011-0185-0216	EIS Section: 3.5.7.3 PDF Page: 389 Comment: The list of activities described as "planned activities other than offshore wind" are all offshore wind related IPFs (including accidental releases EMF light new cable emplacement and maintenance port utilization noise and the presence of structures). Please revise.	The list of IPFs discussed in the first paragraph under the heading of *Cumulative Impacts of the No Action Alternative* is accurately attributed to non-offshore wind activities. An additional sentence was added to refer the reader to Appendix D, Table D1-20 for a summary of potential impacts associated with planned non-offshore wind activities by IPF for sea turtles. IPFs associated with offshore wind activities are discussed following the discussion of non-offshore wind activity.
BOEM-2023-0011-0185-0217	EIS Section: 3.5.7.3 PDF Page: 389 Comment: A citation is needed for the following sentence: "The amount of trash and debris accidentally released during planned offshore wind activities would likely be miniscule compared to trash releases associated with ongoing activities including land-based activities and commercial and recreational fishing."	This section has undergone editing for clarity and accuracy. While editing, this sentence and references to trash releases compared to other activities were removed.
BOEM-2023-0011-0185-0218	EIS Section: 3.5.7.3 PDF Page: 390 Comment: EMF levels that cables give off should be cited here to add context to what sea turtles can detect. A difference should also be noted about the EMF levels relative to alternating current and direct current cables and how they may impact sea turtles differently.	The average EMF levels from ten offshore windfarms were added to provide context for sea turtle EMF sensitivity.
BOEM-2023-0011-0185-0219	EIS Section: 3.5.7.3 PDF Page: 391 Comment: It is not accurate to say that sea turtle nesting does not occur north of Virginia though rare there have been documented nests in	Text was revised to say that long-established nesting beaches do not occur north of Virginia.

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	New York. See https://www.nps.gov/gate/learn/news/rarest-sea-turtle-nests-on-queens-beach.htm	
BOEM-2023-0011-0185-0220	EIS Section: 3.5.7.3 PDF Page: 392 Comment: The statement that "Any behavioral responses to offshore lighting are expected to be localized and temporary" lacks context and is misleading. During construction project activities will occur 24/7 year-round for multiple years that will produce intense lighting that may attract or deter sea turtles at times when they are in their highest densities in the northeast. The text should be revised to accurately depict project activities.	The discussion on the cumulative effects of artificial light under the section *Impacts of the No Action Alternative* has been revised to include additional supporting information. The statement that behavioral responses to offshore lighting is expected to be short term and localized is supported by the fact that vessels associated with offshore wind activities, due to their transitory nature, would have localized and short term impacts on sea turtles that are also highly mobile. Lighting associated with offshore wind construction would also be considered temporary as lighting would only be required at night. Construction lighting would be localized to foundations and construction vessels. During operations, lighting from WTGs and OSPs would not be expected to have adverse effects on sea turtles as supported by a study by BOEM (Orr et al. 2013) that reports that lighting on WTGs flash intermittently and do not present as a continuous light source and are, thus, unlikely to disorient juvenile or adult sea turtles. However, it is acknowledged that sea turtles still do respond to light stimuli and as such, WTGs and OSPs in planned offshore wind development would be guided by the Federal Aviation Administration (FAA), U.S. Coast Guard (USCG), and BOEM lighting and marking regulations and would avoid direct and continuous light on the water surface to minimize impacts to sea turtles. As offshore development is not in the range of long-established nesting beaches, lighting is also not expected to affect nesting females and their hatchlings. Further, the statement in question is consistent with other BOEM offshore wind EIS documents.
BOEM-2023-0011-0185-0221	EIS Section: 3.5.7.3 PDF Page: 393 Comment: The approximate geographic extent of potential dredging should be included here and mention that dredging may occur inshore and offshore. A greater rationale is needed as to why entrainment will not occur. Additionally impacts to sea turtle	It has been noted that dredging may occur both offshore and inshore during ongoing and planned offshore wind construction. Details on dredging under the Proposed Action specifically are discussed in Section 3.5.7.5. A citation by the National Research Council on sea turtle entrainment was

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	prey are not considered and should be acknowledged given a few species forage benthically.	added to the discussion. The disturbance of foraging habitat for Kemp's Ridley sea turtles was noted, though the area of habitat impacted relative to the available foraging habitat is not expected to cause significant changes in habitat availability.
BOEM-2023-0011-0185-0222	EIS Section: 3.5.7.3 PDF Page: 394 Comment: NMFS has adopted the Navy thresholds as our own (see: https://www.fisheries.noaa.gov/s3/2023-02/ESA%20all%20species%20threshold%20summary_508_OPR1.pdf). Thus it is inaccurate to indicate we (NMFS) have no thresholds. Please instead say "NMFS has adopted the U.S. Navy PTS and TTS thresholds " This should be revised throughout.	The sentence has been revised as suggested.
BOEM-2023-0011-0185-0223	EIS Section: 3.5.7.3 PDF Page: 395 Comment: A citation is needed to support the following sentence that energetic impacts will be small: "Foraging disruptions related to project installation would be temporary and localized to within the wind energy area during construction. This displacement would result in a relatively small energetic consequence that would not be expected to have long-term impacts on sea turtles." There is no consideration for the extent and duration of proposed project activities thus without this context the text is misleading. There is also no consideration of injury and the risk it may occur. This should be discussed in relation to the TTS and PTS thresholds and why BOEM does expected noise levels to remain less 204 dB re 1 µPa2 s in the context of exposure modeling. This section is also missing consideration of vibratory pile driving and should be included.	The section for noise under *Impacts of the No Action Alternative* has been extensively revised for better organization and clarity and now includes subsections of other noise-producing activities (e.g., pile driving, HRG surveys, UXO detonation, site preparation, vessels, turbine operation). Within the *Pile-Driving Noise* subsection, clarification has been given to support the statement in question. That is, physiological stress experienced by sea turtles that exhibit avoidance behavior would dissipate once it is outside of the ensonified area and affected individuals would be expected to resume normal behavioral patterns (i.e., foraging activity) in nearby, adjacent areas. It is acknowledged in the discussion that individuals that are repeatedly exposed to pile driving over a season, year, or life stage may incur energetic costs with long-term consequences. The discussion also includes effects leading to permanent threshold shift (PTS) and temporary threshold shift (TTS). Further discussion on the effects of noise from vibratory pile driving has also been added, as suggested.
BOEM-2023-0011-0185-0224	EIS Section: 3.5.7.3 PDF Page: 396 Comment: Section 3.5.7.5 states that the project area was screened for UXOs and the risk was determined to be low to moderate throughout all of the Lease Area and a relatively equal ratio between Low and	Lifting and detonation of UXO is listed in the *noise* IPF of the No Action Alternative A section. The level of detail is consistent with other Final EIS documents, which is discussed in Section 3.5.7.5. Impacts are expected to be minor due to

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	Moderate within the ECCs. Please provide the source for the conclusion that impacts for other planned project would be similar to those of the Proposed Action. Overall the UXO section is very sparse and does not contain any relevant information about the risk to sea turtles relative to UXO clearance activities. The range of UXO activities (lift and shift low order defralgation detonation etc.) should be included and the risk to turtles should be assessed for each one. Given that sea turtles spend much of their time submerged they are at greater risk of not being detected by PSOs than marine mammals.	the low number of expected UXO detonations and that they would be timed to not occur more than once per day.
BOEM-2023-0011-0185-0225	EIS Section: 3.5.7.3 PDF Page: 397 Comment: The operational noise section only considers WTGs at the turbine level scale and does not discuss wind farms or WEAs as a whole as low frequency point sources of continuous noise. The text should be included to assess this potential impact to sea turtles given the large geographic extent of planned projects and the operational lifespan. Additionally impacts relative to sea turtle habitat use in general should be considered not just impacts to prey. If prey is going to be mentioned it should be in the context of foraging. If entire wind farms deter sea turtles due to the low frequency noise they will not be able to just move to a different area given that many wind farms overlap with sea turtle habitat. 3.5.7.3 PDF Page: 398 Comment: Please add that the aforementioned shifts in vessel traffic have the potential to change the risk of vessel strike to sea turtles.	Due to the low source level of operational turbine noise and the relatively insensitive hearing of sea turtles in comparison to other species (i.e., hearing thresholds are high, meaning the sound must be relatively loud to hear it), underwater noise generated by operating WTGs is expected to be negligible (Section 3.5.7.3). BOEM has determined that the analysis provided is sufficient to support sound scientific judgments and informed decision-making about the proposed Project with respect to its impacts on sea turtles. Additionally, Section 3.5.7.3, *Cumulative Impacts of the No Action Alternative*, address the shifts and increase in vessel traffic near the lease area.
BOEM-2023-0011-0185-0226	EIS Section: 3.5.7.3 PDF Page: 399 Comment: The Port Utilization section is lacking information. Port expansions can disturb benthic habitat which would impact sea turtle foraging to a small degree. It could also require dredging which would lead to sedimentation and may also directly impact sea turtles with entrainment. Though port modifications may undergo their own NEPA analysis the impacts should still be considered and summarized here if	Additional information has been provided discussing port utilization. An increase in port utilization in relation to offshore wind project activities may necessitate the expansion of ports. Discussion of the impacts of port expansion (i.e. dredging, pile driving, noise) was added.

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	they are tied to the project and other reasonably foreseeable wind projects considered in this analysis.	
BOEM-2023-0011-0185-0227	EIS Section: 3.5.7.3 PDF Page: 399 Comment: The impact determination for gear utilization is inaccurate impacts would be detectable and measurable as turtles may be incidentally caught. This determination should be changed to minor.	The impact for gear utilization was changed to minor. The sentence was edited to note that although the potential extent and number of animals potentially exposed cannot be determined without Project-specific information, impacts of gear utilization on sea turtles are expected to be minor given the low risk of mortality, the minor risk of entanglement, and the negligible effect on sea turtle prey availability.
BOEM-2023-0011-0185-0228	EIS Section: 3.5.7.3 PDF Page: 401 Comment: (1) The characterization that "some authors have suggested..." is an inappropriate characterization of the best available science and should be revised. (2) While net primary productivity in the entire North Atlantic may not be measurably affected by the presence of structures localized primary productivity would likely be affected at measurable levels based on the text included in this section and European studies. This could have important localized effects on sea turtles that rely on primary and secondary productivity. Comparing project level effect to the entire North Atlantic due to the Gulf Stream artificially dilutes the potential impacts that may occur within the project area. (3) When quoting that "...meteorological changes at the surface…will be nearly imperceptible…" this is primarily referencing the difference in air temperature just above the water's surface which was the primary focus of the paper. The focus of the paper is not on oceanographic impacts.	The *presence of structures* IPF in Section 3.5.7.3 has been revised to clearly characterize what is known regarding the atmospheric and hydrodynamic effects caused by offshore wind structures. This includes an expanded discussion on changes in primary productivity as described in modeling studies, as well as potential impacts on sea turtle prey. A 2024 NASEM study modeled the effects of structures on hydrodynamic processes in the region. This study has been added to the discussion in the *presence of structures* IPF. While Golbazi et al. (2022) primarily focus on meteorological conditions induced by larger wind turbines, results from this study also include a determination that surface wind speed reduction caused by turbine wakes is much less in larger WTGs, like the types proposed for offshore wind projects on the U.S. Atlantic Coast. Please see Section 3.5.7.3 for further details.
BOEM-2023-0011-0185-0229	EIS Section: 3.5.7.4 PDF Page: 403 Comment: (1) OSPs/HVDC converter stations should be added to the list of variances. (2) Benthic impacts should also be added to the impacts under foundations.	OSP/HVDC converter stations were added to the list of variances. Benthic impacts was added to the foundation bullet.
BOEM-2023-0011-0185-0230	EIS Section: 3.5.7.4 PDF Page: 404 Comment: Many of the mitigation and monitoring measures proposed by SouthCoast are specific to marine mammals and may not be effective to	BOEM has proposed additional measures that are protective of sea turtles. Please see the additional measures proposed by BOEM that pertain to sea turtles in Appendix G, Table G-2.

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	sea turtles. Please revise this list with context about the effectiveness of measures for reducing risk to sea turtles.	
BOEM-2023-0011-0185-0231	EIS Section: 3.5.7.5 PDF Page: 404 Comment: This section is missing an assessment of entrainment risk of sea turtles and prey from the HVDC OSP(s). Please add a section relative to this risk. Heated effluent is assessed under Accidental Releases though these releases are regular as opposed to accidental. Consider revising this.	Sea turtles are at a low risk of entrainment due to their low abundances in the area, and due to the mitigation measures that SouthCoast Wind has put in place to reduce sea turtle entrainment. A limited intake velocity and appropriately sized bar racks will minimize the risk of sea turtle impingement. The small scale of the released effluent is not expected to have any impact on sea turtle prey availability. Impacts from HVDC converter OSPs has been added to a new *Discharges/Intakes* section.
BOEM-2023-0011-0185-0232	EIS Section: 3.5.7.5 PDF Page: 405 Comment: (1) Please provide a source to support the statement that there is no direct harm to sea turtles from heated effluent water or entrainment. The negligible determination needs to be supported. (2) Clarify at what scale prey would not be impacted.	A discussion has been added about thermal plume effects on sea turtles based on modeling information from SouthCoast Wind's NPDES permit application for a HVDC converter OSP for Project 1, which is also described in more in detail in the EFH Assessment.
BOEM-2023-0011-0185-0233	EIS Section: 3.5.7.5 PDF Page: 405 Comment: This section is missing project specific details. Please add specific fuels amounts and risk of accidental release added to the environment by the proposed project rather than referring to the COP. This can be a simple table of amounts per WTG and OSP.	Added a table with volumes of oils and chemical fluids in the Project area.
BOEM-2023-0011-0185-0234	EIS Section: 3.5.7.5 PDF Page: 405 Comment: (1) This section does not mention any possibility of cables that are not able to be buried to the proposed depth or what happens when cable crossings occur. Please provide an estimate for the amount of cable that will not be able to be buried to the proposed depth and what additional actions will be taken to minimize the impact of EMF to sea turtles in these sections. (2) The EMF levels that cables give off should be cited here to add context to what sea turtles can detect. A difference should also be noted about the EMF levels relative to	Percentages of the ECCs where target burial depth is not expected to be achieved were added to the text. Mitigation actions, such as adding concrete mattresses and rock piling to insufficiently buried cables, are discussed in the text. Expected EMF levels were added. The differences between AC and DC EMFs are now discussed in this section.

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	alternating current and direct current cables and how they may impact sea turtles differently.	
BOEM-2023-0011-0185-0235	EIS Section: 3.5.7.5 PDF Page: 405 Comment: The Lighting IPF section contains no mention of nighttime construction activities occurring and the light that will be produced as part of those activities. That risk should be acknowledged and any impacts should be assessed.	The *lighting* IPF discussion under the Proposed Action has been updated and acknowledges that nighttime operations may be necessary during construction and decommissioning. Additional details on Project lighting during all phases of the project have been included and the discussion on potential impacts on sea turtles have been expanded. The use, placement, and intensity of lighting would be done in accordance with FAA and USCG lighting standards and would be guided by BOEM best practices to minimize impacts on sea turtles.
BOEM-2023-0011-0185-0236	EIS Section: 3.5.7.5 PDF Page: 406 Comment: The primary prey species of leatherbacks are jellyfish and salps (soft-bodied open ocean species) not bottom dwelling crustaceans and mollusks. Please correct.	Leatherback turtle removed from the list of affected turtles from cable emplacement and maintenance as their primary diet are not benthic invertebrates and are mainly jellyfish.
BOEM-2023-0011-0185-0237	EIS Section: 3.5.7.5 PDF Page: 407-408 Comment: (1) Clarify if vibratory installation and removal of sheet piles for cofferdams is part of the proposed action. Vibratory installation of WTG foundations should also be mentioned here. (2) The information about bubble curtains and noise attenuation systems should be revised and Bellman et al. 2020 should be cited. The applicability of the studies to the proposed action should also be acknowledged (i.e. focus of study type of project location etc.). (3) Multiple models are mentioned in the last paragraph of page 3.5.7-29 please clarify what the proposed action is and suggest adding a table depicting the modeling scenario.	The sentence has been edited as installation and removal of sheet piles for cofferdams is not part of the Proposed Action. Citation of Bellmann et al. (2020) added to note that sound attenuation of 10 dB can be achieved using bubble curtains. Results of the modeling have been updated and expanded. Further details of the modeling are included in COP Appendix U2.
BOEM-2023-0011-0185-0238	EIS Section: 3.5.7.5 PDF Page: 409 Comment: Add a citation for what density inputs were used for the exposure modeling for both tables on this page.	Sea turtle density estimates were obtained from the U.S. Navy Operating Area Density Estimate (NODE) database on the Strategic Environmental Research and Development Program Spatial Decision Support System (SERDP-SDSS) portal (U.S. Navy 2012, 2017) and from the *Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for*

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		Large Whales and Sea Turtles (Kraus et al. 2016). These sources have been added under each exposure modeling table.
BOEM-2023-0011-0185-0239	EIS Section: 3.5.7.5 PDF Page: 409 Comment: Clarify what is meant by "due to the spacing between individual work areas." Suggest providing the spacing as sound propagates/radiates so it could travel to these areas between the distance. Overall this text lacks context and project specific information of the proposed action.	The *noise: Pile Driving* IPF discussion under Alternative B - Proposed Action has been updated throughout to reflect the latest installation parameters as outlined in the MMPA ITA (December 2023). The effects determination has been updated based on the new acoustic modeling parameters and has been clarified to state that sea turtle species that are more common to the Project area (leatherback and loggerhead sea turtles) would be subject to noise levels that could exceed behavioral thresholds and cumulative pile driving noise above PTS thresholds. However, the proper implementation of monitoring and mitigation measures should reduce the potential for stock- or population-level effects.
BOEM-2023-0011-0185-0240	EIS Section: 3.5.7.5 PDF Page: 410 Comment: (1) The following sentence is unclear please revise: "WTGs for the Proposed Action are considered minor but long-term for individual sea turtles that are exposed pile-driving noise that leads to PTS." (2) Please provide examples of and information on the behavioral changes that are expected from noise. The impact to sea turtles should be explained. (3) In regards to operational noise the wind farm as a low frequency point source should be considered in the context of sea turtles avoiding the entire area.	The *noise: pile driving* IPF discussion under Alternative B - Proposed Action has been updated throughout to reflect the latest installation parameters as outlined in the MMPA ITA (December 2023). Examples of behavioral effects from underwater noise is discussed in detail in the section *Impacts of Alternative A - No Action Action* under the *noise* IPF. Results expected from Project-specific noise-generating activities are discussed under *Impacts of Alternative B - Proposed Action* under the *noise* IPF with discussions specific to operational noise under the *noise: turbine operation* IPF discussion. The discussions in this subsection have been revised and includes a discussion on the potential for low-frequency sound, such as those generated by turbines, to result in behavioral effects such as avoidance and decreased foraging efficiency due to displacement.
BOEM-2023-0011-0185-0241	EIS Section: 3.5.7.5 PDF Page: 411 Comment: No project-specific UXO exposure modeling for sea turtles is reported. This is inconsistent with past projects. Please revise this section with project-specific exposure modeling. As	Results from Project-specific UXO exposure modeling have been added to Section 3.5.7.5.

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	presented it is unclear how applicable the references cited are to the proposed action.	
BOEM-2023-0011-0185-0242	EIS Section: 3.5.7.5 PDF Page: 411 Comment: (1) Sea turtles can only detect and flee from a vessel going less than 4 knots see Hazel et al. 2007. This paper should be cited and this caveat should be acknowledged. (2) Please provide the specific speed restrictions and also the speeds project vessels will travel to give context to the impact determination and how the mitigation measures reduce impacts (or not).	The Hazel et al. (2007) study is only relevant in shallow areas (<5 meters), where 97 percent of encounters where foraging or resting on the substrate and referred to as "benthic turtles." This reference could be used for nearshore cable landing sections. Also, the unit used in this study is kilometer h-1, and 4 kilometers h-1 converts to 2 knots instead of 4 knots mentioned in this comment.
BOEM-2023-0011-0185-0243	EIS Section: 3.5.7.5 PDF Page: 412 Comment: It should be noted that visual monitoring for sea turtles is difficult given their small size and limited time spent at the surface the implications of this should be noted relative to the effectiveness of mitigation measures.	BOEM concurs smaller body size and different dive profiles may affect the detectability of animals. However, the relative quantification of mitigation effectiveness based on species-specific size and behavior is difficult to ascertain for any species. The relative success at sighting sea turtles is based on many factors including the equipment used, observer height, sea conditions, size, behavior, season, and observer experience. Despite the difficulty in predicting the conditions under which monitoring would occur, PSO data indicate that sea turtles can be routinely detected. NMFS data show that the ability to detect sea turtles from vessels is high out to 492–656 feet (150–200 meters) after which sightings rates drop off with distance. Therefore, BOEM disagrees that monitoring of sea turtles is difficult at all distances, only at greater distances from an observer position depending on a number of factors. BOEM has considered these factors and requires qualified PSOs and alternative monitoring plans that require PSOs to be able to monitor the extent of shutdown zone or activities must cease until conditions improve. BOEM believes visual monitoring is an important part of the mitigation suite of measures and is effective at avoiding and minimizing any potential impacts.
BOEM-2023-0011-0185-0244	EIS Section: 3.5.7.5 PDF Page: 412 Comment: Clarify why vessels will travel at slow speeds in the lease area. The vessel speed(s) should also be noted here. While risk is lower within	Text has been revised to explain that SouthCoast Wind has committed to measures to avoid vessel strikes on sea turtles by reducing vessel speed and maintaining a distance of 164 feet (50 meters) or greater from sighted turtles. No specific

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	the lease area due to slower vessel speeds strike is still possible.	vessel speed was committed to by SouthCoast Wind in its COP. However, BOEM has proposed mitigation measures in Appendix G, Table G-2, that require vessels to slow down to 4 knots if a turtle is sighted within 328 feet (100 meters) of the operating vessel's forward path. From June 1–November 30, all vessels must avoid transiting through areas of visible jellyfish aggregations or floating vegetation, or slow down to 4 knots while transiting such areas.
BOEM-2023-0011-0185-0245	EIS Section: 3.5.7.5 PDF Page: 412 Comment: (1) Please provide more information about the proposed fisheries surveys including the frequency duration tow speed amount of gear soak time etc. (2) Clarify if any other surveys besides trawl surveys will occur. (3) The text states that trawl surveys could lead to potential capture of loggerhead and Kemp's Ridley. Leatherbacks and greens are not mentioned. Please provide a source that the survey has no risk to leatherback or green sea turtles or include them in the list of species that could be potentially captured as a result of project monitoring.	Demersal otter trawls would be conducted in the Lease Area. SMAST has submitted an LOA Application to NMFS states that it is not expecting bycatch of or interaction with marine mammals, sea turtles, sturgeons, or other protected species due to BMPs during surveys. The potential for minor impacts from gear utilization on leatherback and green sea turtles have been included as they had been observed in the Lease Area. Other non-extractive surveys of oceanography and pelagic fish surveys were added, as well as clam dredge surveys of short 120-second duration.
BOEM-2023-0011-0185-0246	EIS Section: 3.5.7.5 PDF Page: 412 Comment: (1) The text is missing an assessment of GBS/suction buckets and their impacts both benthic and pelagic. (2) The section ends with no impact determination and just says there is uncertainty. This uncertainty should be acknowledged and the range of impacts to sea turtles should be described relative to their habitat use in the project area and surrounding waters. This is especially pertinent to leatherbacks and their prey as noted previously. It is also unclear how the impacts to marine mammals applies to sea turtles as these species have different foraging strategies and prey.	Gravity-based structures have been removed from the PDE and are no longer being considered. Suction-bucket jackets are being considered for up to 85 foundations. Text has been added to this section discussing the larger footprint and area of seafloor disturbance of suction-bucket jackets compared to pin-piled jackets or monopiles. The impact of the presence of structures on sea turtles generally is discussed in greater detail in Section 3.5.7.3. The section refers to Section 3.5.6, *Marine Mammals*, for further analysis on the impact of the presence of structures on planktonic prey, of which the leatherback sea turtles preferred prey of jellyfish are included.
BOEM-2023-0011-0185-0247	EIS Section: 3.5.7.5 PDF Page: 413 Comment: Suggest revising this section for clarity and accuracy relative to the ESA. The EIS should contain a summary of the findings in the BA. The New England Wind DEIS (and our ensuing comments) can be	The discussion in the section *Impacts of Alternative B on ESA - Listed Species* under the Proposed Action has been revised to include additional information on ESA consultation and conforms to the discussions as written in other BOEM

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	used as a structure to follow for integrating this information. If the BA will not be included as an appendix to the final document we encourage BOEM to make the BA publicly available on the BOEM SouthCoast project webpage (not just on the ESA consultation page) so that the information can be easily referenced by the public.	offshore wind EIS documents. While it was not added as an appendix to the Final EIS, all referenced information from the SouthCoast BA will be uploaded to the BOEM ESA consultation page website once the final revisions have been reviewed by regulatory agencies.
BOEM-2023-0011-0185-0248	EIS Section: 3.5.7.5 PDF Page: 414 Comment: (1) The text assumes all other wind farms are built. The proposed action should also be considered in context of the current installed/under construction projects and what the impacts of adding this project are. (2) Please include the cumulative impact of hydrodynamic effects on sea turtles.	The text appropriately describes the cumulative effects from the Proposed Action in combination with other ongoing and planned offshore wind projects and the contribution of the Proposed Action to those cumulative effects. A brief reference to the hydrodynamic effects on sea turtle prey has been added, which is discussed in greater detail under the *Cumulative Impacts of the No Action Alternative* in Section 3.5.7.3, *Presence of Structures*.
BOEM-2023-0011-0185-0249	EIS Section: 3.5.7.6 PDF Page: 415 Comment: (1) Clarify if the Sakonnet River is being referred to as the Project Area here or the actual Project Area the text is unclear and sea turtle sightings in the Project Area are not uncommon - "however sightings of sea turtles in the Project area are..." (2) It is unclear how this alternative is not different than the proposed action given that in-water (and thus sea turtle impacts) would be avoided under this alternative. The last sentence of the first paragraph should be revised. (3) The increase in direct current cables and effects of EMF relative to alternating current cables should be discussed as part of this alternative. Fewer cables does not necessarily mean less impact the type of electrical current is also a factor. See Cresci et al. 2022. (4) The increase in entrainment risk to sea turtles and their prey would increase under this alternative this should be discussed. It is also unclear how the impacts would be the same as the proposed action as more HVDCs would be operating thus risk would increase. (5) Overall the trade- offs of this alternative (less cables more HVDC OSPs) and their risk to sea turtles is unclear. Please clarify.	The text has been revised to clarify that it is referencing the Sakonnet River when stating that sightings of sea turtles are uncommon. The reduction of impacts involved in Alternative C is only relevant to the Sakonnet River and, thus, occur in an area not used by most sea turtle species. The only species that may potentially use the Sakonnet River is the Kemp's Ridley, but because sea turtle sightings are uncommon here, it is not expected to significantly benefit sea turtles. Entrainment of sea turtles in OSPs is expected to be unlikely, due to their low abundance in the OSP areas and mitigation measures in place to prevent entrapment. The addition of a second OSP is not expected to elevate the risk of sea turtle entrapment to a significant degree. Impacts on sea turtle prey are likewise expected to remain negligible with the addition of a second OSP. Text has been added to this section to clarify that the additional factors included in Alternative F do not make a measurable difference in the impact of sea turtles when compared to the Proposed Action.

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BOEM-2023-0011-0185-0250	EIS Section: 3.5.7.6 PDF Page: 416 Comment: Clarify how the impact would be the same as the proposed action when the text on the page above says some impacts would be reduced (also the number of HVDC converter stations would increase so not all impacts would be reduced).	While Alternatives C and F would reduce impacts, notably by reducing seabed disturbance, the impact of seabed disturbance on sea turtles from the Proposed Action was already expected to be minor. Alternatives C and F reduce these impacts, but not enough to make a significant difference with regards to the impact on sea turtles. The sentence has been clarified to note that there is not a significant difference, rather than no difference.
BOEM-2023-0011-0185-0251	EIS Section: 3.5.7.8 PDF Page: 417 Comment: There is no appreciable differentiation between the sub alternatives here. The lack of noise is significant in E-2 and E-3 due to less pile driving however the benthic (and foraging) impacts to some sea turtle species is greater. This should all be discussed and the trade-offs and associated risks analyzed. More detail is required in this section. The differences in the construction of each pile as well as their presence in the water column for each of these alternatives are large and would therefore create differences in the level of impact to sea turtles. Please expand on each type of pile to give a complete picture on how these impacts are not expected to have a measurable difference on impacts to sea turtles.	The text clearly explains that while Alternative E-1 would result in noise impacts related to pile driving, Alternatives E-2 and E-3 would avoid these effects entirely as no pile driving would occur. Additional text has been added about the foundation footprint size and effects on sea turtles from loss of soft bottom habitat in the Lease Area. The discussion addresses multiple aspects and tradeoffs associated with the different proposed foundation types including noise, habitat conversion, artificial reef effect, and entanglement risk. Given that Alternatives E-1, E-2, and E-3 include increases in both beneficial and adverse impacts, there is not expected to be a meaningful difference in impacts on sea turtles.
BOEM-2023-0011-0185-0252	Section 3.6.1: Commercial Fisheries and For-Hire Recreational Fishing EIS Section: 3.6.1 PDF Page: Global Comment: Whenever possible and relevant to the discussion please insert figures and tables from the COP instead of simply referencing them. This would enable the reader to more easily interpret the data and appreciate the implications and impacts of the proposed action. For example on page 3.6.1-32 of the DEIS the text references Figures 2-17 2-18 and 2-20 when discussing fishing activity along the export cable corridor and COP Figures 11-22 and Tables 11-16 through 11-18 regarding prime recreational fishing areas referenced on page 3.6.1-33. These images are important to the discussion	The analysis and data in Section 3.6.1 are commensurate with other BOEM offshore wind EISs.

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	of the proposed action and should be replicated in this document.	
BOEM-2023-0011-0185-0253	EIS Section: 3.6.1 PDF Page: Global Comment: Social and cultural impact assessments on fisheries and fishing communities are not included in any sections of the EIS including 3.6.2 Cultural Resources 3.6.1 Commercial & For Hire fishing or 3.6.4 EJ. Please include based on cooperating agency review comment with the resources and methodologies provided by NMFS.	BOEM has conducted an analysis in Section 3.6.4, *Environmental Justice*, that identifies communities based on NOAA's social indicator mapping for commercial and recreational fishing engagement and reliance.
BOEM-2023-0011-0185-0254	EIS Section: 3.6.1 PDF Page: Global Comment: Please include an evaluation of shoreside impacts. NMFS provided resources for a summary of shoreside businesses that could have impacts from the project and cumulative impacts. Please see prior comments from other project EIS reviews as well as the SouthCoast cooperating agency EIS review with these resources which include summaries by business type number of employees and revenue. See Gaichas et al. 2018 (https://www.frontiersin.org/articles/10.3389/fmars.2018.00442/fullMethodologies) Section 3.2.4 for methodologies and data sources that could be applied here.	Section 3.6.1.5 qualitatively assesses impacts on shoreside businesses, noting that the impacts on other fishing industry sectors, including seafood processors and distributors and shoreside support services, would be long term and minor to major, depending on the fishery in question. Further analysis of the socioeconomic impacts on fishing support industries is included in Section 3.6.3, *Demographics, Employment, and Economics* and Section 3.6.4, *Environmental Justice*. Furthermore, BOEM is proposing a mitigation measure that would require SouthCoast Wind to conduct an analysis of impacts to shoreside seafood businesses and to develop a plan to compensate for losses to shoreside businesses. BOEM has added this measure to the Final EIS in Appendix G, Table G-2; see measure CF-5.
BOEM-2023-0011-0185-0255	EIS Section: 3.6.1.1 PDF Page: 434 and Global Comment: Please ensure that the most recent available data are used to evaluate fishery impacts consistent with our recommendations for fishery impact analysis (https://media.fisheries.noaa.gov/2022-02/Socioeconomic-InfoNeeds-OSW-GARFO.pdf). VMS data used in this DEIS dates to August 2019. More recent VMS data are available and data through 2022 should be used to inform the FEIS. Also please ensure the FEIS includes fishery data based on our January 2023 data request response and for vessels issued only state fishing permits or HMS permits (available from NMFS Southeast Fisheries Science Center). Outdated	As of May 2023, the most up-to-date VMS data on the Northeast Ocean Data Portal goes to 2019 for some fisheries and for others the most-up-to-date data goes to 2016. Further, the <4 knot modifier is not calculated for the 2019 data. The data from the January 2023 data request has been added, and the Lease Area information was updated (Tables 3.6.1-9 through 3.6.1-21). For the ECCs, a qualitative assessment was provided in the subsection *Commercial Fisheries in the Offshore Project Area*. Using NMFS data generated for a 1-nm buffer of the ECCs to calculate vessel revenue and landings would be an overestimate of affected fisheries along the ECC. Impacts within the ECCs would be

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	data from the COP are sometimes referenced instead of the more recent information available for GARFO permitted vessels. Further it is not enough to just note that state and HMS fishery data are not included in specific tables without making an effort to acquire and include such data (see footnote a in Table 3.6.1-9 and other similar tables). This is particularly important in assessing impacts to port communities (see Table 3.6.1-4 and 3.6.1-8). Without state data port landings and revenues are underrepresented which suggests that impacts would also be underestimated. Fishery data for vessels issued federal permits do not include all state waters fishing activity and would underrepresent the potential fishery impacts from the proposed action.	small and temporary in nature during cable installation activities, and secondary cable protection would only be used if cables cannot be buried to target depth and would be mobile bottom-tending gear friendly.
BOEM-2023-0011-0185-0256	EIS Section: 3.6.1.1 PDF Page: 441 Comment: Please insert a figure representing the Regional Fisheries Area identified on page 3.6.1-8. Consistent with the figure of the geographic analysis area a figure depicting this more focused area is needed to ensure the reader knows the smaller area used to contextualize analysis in this section.	The requested figure depicting the Regional Fisheries Area has been added to the Final EIS.
BOEM-2023-0011-0185-0257	EIS Section: 3.6.1.1 PDF Page: 441 Comment: Please define what the inshore waters of Southern New England and the Gulf of Maine represent. Please clarify if the term inshore is being used to describe specific GARFO statistical areas or distance from shore.	Section 3.6.1-1, *Commercial Fisheries in the Regional Fisheries Area*, has been updated to remove reference to inshore as it relates to the Regional Fisheries Area and to explain that most lobster landings in the Regional Fisheries Area occurs in Massachusetts State waters.
BOEM-2023-0011-0185-0258	EIS Section: 3.6.1.1 PDF Page: 446 Comment: Please discuss some of the limitations of relying solely on fishery revenue while analyzing the impacts of potential development. Particularly in Southern New England the interrelatedness and reliance of some fisheries on one another for bait such as the skate fishery and the mixed lobster/Jonah crab/rock crab fishery can conflate and amplify potential impacts for entities that rely on such fisheries. Some fisheries particularly skates and herring are low-value but high volume fisheries that are often left out when discussing fisheries based on revenue alone (e.g. over 600000 lb. of herring was landed from the	Please refer to Section 3.6.1.1, *Commercial Fisheries in the Offshore Project Area*, discussion of high volume/low value fisheries has been added.

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	lease area in 2010 (one of the highest totals in any year and in aggregate) but it does not appear in the top 10 fisheries impacted because of the low revenue associated with such landings.	
BOEM-2023-0011-0185-0259	EIS Section: 3.6.1.1 PDF Page: 449 Comment: Please remove the column describing the number of years a species appeared in the top ten species list based on revenue. As noted in the previous paragraphs the high value of scallops can affect the list of top species based on revenue. Revenue does not always represent significance of an impact as landings volume can produce additional revenue and benefits to communities through processing and other support services that is not reflected in this analysis. Therefore this column is misleading and could result in underestimating the importance of impacts to a particular fishery.	Table 3.6.1-12 shows the average annual revenue and landings as a percentage of the total landings in the geographic analysis area. The last column about years a species appeared as one of the top ten most impacted species by revenue helps to show the point made in this comment. Some species that ranked each year are less exposed than species that ranked in fewer years, this is due to the fluctuations in catch across the years analyzed. The table reinforces the idea that revenue is not the only metric considered for the ranking of importance. Further, the NMFS 2022 update to the socioeconomic data changed this trend.
BOEM-2023-0011-0185-0260	EIS Section: 3.6.1.1 PDF Page: 455 Comment: Please define what the level of revenue reliance of federal permit holders fishing in the Lease area constitutes significance.	The term significant has been changed to majority to reflect that the majority of fishermen do not derive a high level of revenue from the Lease Area.
BOEM-2023-0011-0185-0261	EIS Section: 3.6.1.1 PDF Page: 456 Comment: Please add a column listing the total number of federally permitted vessels fishing in the lease area annually to provide greater context to reviewers.	The number of federally permitted vessels fishing in the Lease Area annually is provided in Table 3.6.1-20.
BOEM-2023-0011-0185-0262	EIS Section: 3.6.1.1 PDF Page: 467 Comment: Please note that the landing and revenue data calculated for the export cable corridors only represents vessels issued a federal fishing permit and is therefore an underestimate of the likely fishery landings and revenue that could be affected along these cable corridors. State data should be included to more accurately and completely describe the potential impacts to fisheries along the export cable corridor.	The Final EIS has been updated to reflect the lack of state-permitted vessel data.
BOEM-2023-0011-0185-0263	EIS Section: 3.6.1.3 PDF Page: 468 Comment: Please insert a discussion of current regional trends referenced in the 2nd paragraph of this section as Section 3.6.1.1 did not discuss regional trends. Instead it presented historical landings and	Please refer to Section 3.6.1.1 under *Economic Value and Landings* for a description of the current trends in the fishing industry.

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	revenue data without evaluating why landings or revenue changed over time. If the analysis of the no action alternative presumes certain trends would continue the DEIS should explicitly discuss what trends would be expected to continue. This was an issue that the Technical Working Group advising BOEM's draft fishery mitigation guidance briefly discussed including suggestions for identifying trends in both landings and biomass as documented in Attachment A of the draft guidance (https://www.boem.gov/renewable-energy/reducing-or-avoiding-impacts- offshore-wind-energy-fisheries).	
BOEM-2023-0011-0185-0264	EIS Section: 3.6.1.3 PDF Page: 470 Comment: Under the Anchoring IPF please clarify if this includes the impacts of spud cans used to fix the position of construction vessels and the potential need to backfill holes left by such spud cans unless that is discussed under the presence of structures IPF. This could result in direct and indirect impacts to fishing operations through habitat conversion and gear snags.	The discussion under the *anchoring* IPF has been revised to discuss potential impacts from use of spud cans.
BOEM-2023-0011-0185-0265	EIS Section: 3.6.1.3 PDF Page: 470 Comment: Under the Cable Emplacement IPF please include a discussion of seabed preparation (leveling boulder clearance trenching and cable laying itself) which could result in fishery operational disturbance as such activities will occur over a prolonged period including several months between each activity. This would increase the scale and nature of the impacts and would likely result in overlapping construction impacts within areas of multiple adjacent wind projects such as NJ NY and RI/MA areas. Also sedimentation and smothering of sessile species will be an impact that should be mentioned here and in the evaluation of other project alternatives particularly for sessile organisms and those with benthic life stages (longfin squid egg mops). Finally the seasonal impact of such operations should be identified for species with social spawning behavior (cod squid etc.) that would have indirect impacts on fishing operations.	A discussion of seabed preparation (sand wave leveling boulder clearance, and cable laying) and sedimentation on fish species is provided the Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*. A cross reference has been added to Section 3.6.1.3 referring the reader to this analysis. Within Section 3.6.1.5, a discussion of cable laying and preparatory activities, including boulder and sand wave clearance, and sedimentation impacts was already included in the Draft EIS, but a specific reference to seabed preparation has been added to the Final EIS, including a cross reference to Section 3.5.5 where a new figure has been added showing the location of seabed preparation activities in both ECCs.

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BOEM-2023-0011-0185-0266	EIS Section: 3.6.1.3 PDF Page: 470 Comment: Under Noise please note that spawning activities may also be disturbed by noise associated with construction activities. Disruption of spawning due to startle or other behavioral responses (masking communication in cod) may have longer-term impacts for certain area-specific spawning aggregations (cod) or those with short lifespans that only spawn once (longfin squid). This section should summarize the geographic distance for which noise-induced mortality and behavioral changes would be observed even if contained in Section 3.5.5 for the reader to fully appreciate the broader geographic implications of noise impacts under the no action alternative.	Section 3.6.1-3 has been modified to note disruption of spawning activities. The extent to which injury or mortality occurs would vary based on ongoing/planned offshore wind project pile size, timing, noise mitigation measures in place, as well as species affected, which is detailed in Section 3.5.5.
BOEM-2023-0011-0185-0267	EIS Section: 3.6.1.3 PDF Page: 471 Comment: Under the Presence of Structures IPF please note that predator/prey relationships would change as a result of structures vessels may be displaced to other areas and clarify if vessels would be directly or implicitly excluded from operating in areas. A recent Notice for Mariners suggested that scour protection was being put in place for Vineyard Wind 1 area months in advance of the actual placement of turbines and that vessels should avoid fishing in those areas for an extended period of time. While this is not a formal exclusion zone it effectively becomes one if vessels are dissuaded from disturbing scour protection for months before cables are buried if they are buried at all (some projects indicated cables won't be buried and will allow for natural sedimentation to cover cables).	BOEM assumes that 100 percent displacement would occur in the Lease Area during construction and operations. Rolling construction zones would be used to minimize displacement along the submarine export cable corridor. Added text noting that highly migratory pelagic predators that are targeted in recreational fisheries (e.g., tuna, billfish, sharks) may also be attracted to the prey that aggregate around WTG foundations. Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, contains additional discussion on the potential for predator/prey dynamics to shift.
BOEM-2023-0011-0185-0268	EIS Section: 3.6.1.3 PDF Page: 476 Comment: Please insert an appropriate caveat regarding the completeness of HMS and state fishery landings/revenue in GARFO logbook data and provide more information about the methods used to derive exposure estimates in this table. As we have commented in previous project EISs GARFO logbook data the source for this table does not fully capture HMS lobster and state-managed fisheries (such as menhaden) and represents only a subset of catch/revenue data for each fishery. Please request	Greater detail has been added for HMS. Figure 3.6.1-14 and 3.6.1-15 show HMS logbook effort and HMS recreational hook effort. The HMS, lobster, and state-managed fisheries reflect a subset of the NMFS data. Greater detail has been added specifically for the lobster fishery, given the overwhelming prevalence of the lobster fishery in Maine state waters. Massachusetts state data suggest that landings of lobster are roughly split in half between federal and state waters. The caveat for the completeness of HMS and state

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	additional HMS data from the NMFS Southeast Fisheries Science Center and state data from relevant agencies to integrate such data into future tables. Additional detail regarding how this table was created would help readers understand how the estimates were calculated and enable validation by our fishery experts.	fishery landings/revenue in GARFO logbook data for calculating exposure is provided in the *presence of structures* IPF discussion of Section 3.6.1.3.
BOEM-2023-0011-0185-0269	EIS Section: 3.6.1.3 PDF Page: 478 Comment: Under Impacts of the No Action Alternative please add "other offshore development" to the last sentence describing the causes of the major impact conclusion. As noted in this section offshore wind projects may result in major impacts to fishing operations. This should be reflected in this conclusion as well.	Section 3.6.1.3, *Conclusions,* has been updated to reflect the requested addition of other offshore development.
BOEM-2023-0011-0185-0270	EIS Section: 3.6.1.5 PDF Page: 480 Comment: Under Cable emplacement and maintenance please revise impacts to long-term to permanent and describe any mitigation or proper remedial action that would be taken to ensure no measurable effects on commercial and for-hire fisheries consistent with a "moderate" impact as defined in Table 3.6.1-22 or revise the impact conclusions to major. Boulder relocation sand wave clearance and other activities would disturb measurable quantities of the bottom and could result in gear damage/loss and reduced fishery catch. Moving boulders grapnel runs through complex habitats and other seabed preparation activities including leveling and trenching that may be necessary to achieve target cable burial depth would result in long-term impacts not short-term impacts. The level of impacts will be reflective of the habitat present but that is not reflected in the document or the impact conclusion.	Additional text has been added explaining SouthCoast Wind's plans relative to boulder clearance and the methods to minimize impacts, including micro-routing cables to avoid boulders, using boulder grabs as the preferred method for boulder relocation, and informing NMFS and BOEM of the coordinates of the boulder being relocated before and after relocation. A new figure has been added to Section 3.5.5, with a cross reference to this figure added in Section 3.6.1.5, showing the location of seabed preparation within the ECCs. Because boulder relocation impacts would be minimized, sedimentation impacts from grapnel runs and sand waver clearance would be temporary, BOEM believes the moderate, short-term impact conclusion is appropriate.
BOEM-2023-0011-0185-0271	EIS Section: 3.6.1.5 PDF Page: 482 Comment: Under the Noise IPF please update references to behavioral and injury impacts to species based on more recent sources than Kirkpatrick et al. 2017 such as tables included in other project EISs and further discuss potential impacts on species that exhibit social spawning behavior that could be disturbed. Those	The noise section refers the reader to FEIS Section 3.5.5.3. This section provides citations for the distances at which behavioral changes are observed in fish from pile-driving (Hastings and Popper 2005). A short description of the potential for displacement has been included with more recent sources.

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	tables as referenced in our comments on those other projects indicate that noise from pile driving in particular could induce behavioral responses in individual species up to and potentially more than 11 km away from the source of the noise. This should be reflected in this section particularly considering that several adjacent projects could be conducting pile driving activities that may compound impacts to local and regional fisheries. Cod and squid have elaborate social spawning behavior (see previous EIS comments for citations) that could be disturbed by behavioral responses to pile driving noise. If disturbed spawning success could be reduced which would have indirect impacts to fishery operations. While this was briefly discussed for G&G surveys please note the potential noise impacts from pile driving on spawning behavior in this section.	
BOEM-2023-0011-0185-0272	EIS Section: 3.6.1.5 PDF Page: 485 Comment: In the first paragraph on this page please include reference to the fact that up to 50 vessels engaged with construction activities may be simultaneously operating in the project area during peak periods of construction as noted earlier under the Port Utilization IPF. This will negatively impact commercial fishery operations and exacerbate congestion and space use conflicts.	The information has been added to the Final EIS as requested.
BOEM-2023-0011-0185-0273	EIS Section: 3.6.1.5 PDF Page: 488 Comment: Under the Presence of Structures IPF please update the text to reflect the most recent data that are available from 2021 include an estimate of potential impacts to shoreside support services and communities due to changes in vessel landings patterns and update the party/charter analysis based on updated information. For example on page. 3.6.1-55 the text notes the highest percentage of total annual revenue attributable to the lease area was 20 percent in 2018. Updated data currently available indicates the highest percentage is 48 percent in 2020. Consistent with our "Information Needs to Assess Fisheries Socioeconomic Impacts from Offshore Wind	Section 3.6.1.5, *Presence of structures* has been updated to reflect more recent data on percentage of revenue attributable in the Lease Area. Section 3.6.1.5 qualitatively assesses impacts on shoreside businesses, noting that the impacts on other fishing industry sectors, including seafood processors and distributors and shoreside support services, would be long term and minor to major, depending on the fishery in question. Further analysis of the socioeconomic impacts on fishing support industries is included in Section 3.6.3, *Demographics, Employment, and Economics* and Section 3.6.4, *Environmental Justice*. Furthermore, BOEM is proposing a mitigation measure that

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	Energy Projects" document (https://media.fisheries.noaa.gov/2022- 02/Socioeconomic-InfoNeeds-OSW-GARFO.pdf) please ensure the FEIS includes the most recent data available (2021) from our January 2023 data request response. Although this section notes qualitative impacts to seafood processors distributors and shoreside support services it does not attempt to estimate such impacts based on the potential for changes to fishery landings amounts or patterns. A quantitative analysis of shoreside/community impacts should be included in the DEIS and FEIS consistent with recommendations and methods outlined in BOEM's draft fishery mitigation guidance (see Appendix A of that document). Finally the text references analysis in Kirkpatrick et al. 2017 to assess party/charter vessel impacts. However that analysis was based on data from 2012. The FEIS should utilize the same approach using more recent data to characterize impacts to the party/charter fleet in the absence of non-confidential federal logbook data.	would require SouthCoast Wind to conduct an analysis of impacts to shoreside seafood businesses and to develop a plan to compensate for losses to shoreside businesses. BOEM believes the analysis by Kirkpatrick et al. (2017) provides useful information to support the analysis of recreational fishing in the area. Additional figures and explanation has been added to further characterize recreational fishing in the offshore project area. NMFS socioeconomic data for recreational fishing has been added.
BOEM-2023-0011-0185-0274	EIS Section: 3.6.1.5 PDF Page: 489 Comment: Please revise the impact conclusion at the bottom of the first full paragraph to moderate to be consistent with Table 3.6.1-22. As noted in this section gear damage/loss is expected along with potential displacement effects to those that operate in this area. Therefore measurable impacts would occur. The gear loss compensation policy would help offset but not eliminate such impacts which is consistent with "moderate" impacts under Table 3.6.1-22 not "minor" impacts which don't require mitigation measures. Finally although it is generally estimated that up to 10 percent of any offshore project's cables may require additional cable protection if target burial depth cannot be reached the DEIS notes that we will not know definitively how much cable protection is necessary or the extent and location of necessary seabed preparation activities until project-specific surveys are completed. Therefore there is still	Revised paragraph identified in the comment in Section 3.6.1.5 to remove the reference to minor impacts. The text notes that with applicant-committed mitigation measures, including SouthCoast Wind's financial compensation policy regarding gear loss or damage, impacts on commercial fisheries may be reduced. Earlier in the discussion of the presence of structures IPF, BOEM acknowledges the potential for major impacts on commercial fishing. The text notes that the amount of cable protection anticipated is an estimate based on G&G surveys that have already been conducted. Regarding impacts associated with seabed preparation and boulder relocation, refer to response to comment BOEM-2023-0011-0185-0270, which describes additional discussion that has been added to the *cable emplacement and maintenance* IPF.

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	uncertainty as to the degree and nature of potential impacts from boulder relocation seabed preparation and cable protection measures. This should be noted in this section of the FEIS.	
BOEM-2023-0011-0185-0275	EIS Section: 3.6.1.5 PDF Page: 489 Comment: At the bottom of the last full paragraph on this page please note that while habitat conversion may not result in changes to species biomass significant enough to affect total quotas, the presence of structures will likely result in the exclusion of scientific research surveys that inform stock assessments for many of the fisheries affected by this project. This will result in increased uncertainty in survey indices and resulting stock assessment conclusions. Existing fishery management council risk policies and harvest control rules dictate that more conservative quotas be set if there is increased uncertainty in stock assessments. Therefore the presence of structures will likely affect fishery quotas for species reliant on existing fishery surveys resulting in indirect negative impacts to associated fisheries. This should be noted in the FEIS.	Section 3.6.1.5, *Presence of Structures*, has been revised as requested to explain that the presence of structures will likely result in the exclusion of scientific research surveys that inform stock assessments for many of the fisheries affected by the Proposed Action.
BOEM-2023-0011-0185-0276	EIS Section: 3.6.1.5 PDF Page: 490 Comment: Under the Traffic IPF please rectify different estimates of the number of construction vessels in the project area during peak operations. During previous discussions the DEIS notes that up to 50 vessels would be operating within the lease area during peak operations. This differs from the 35 maximum vessels listed here. Please correct either discussion with the correct estimate of traffic within the lease area.	Section 3.6.1.5 has been updated to state that 15–35 construction vessels may be operating at any given time with a maximum peak of 50 vessels in the Lease Area at one time. This text is derived from COP Volume 1 Section 3.3.14.1.
BOEM-2023-0011-0185-0277	EIS Section: 3.6.1.5 PDF Page: 491 Comment: In the discussion of the cumulative impacts please ensure that impact conclusions are consistent with the impact definitions listed in Table 3.6.1-22 and discussions in previous text in this section. Even though the project specific contributions to cumulative impacts of a particular IPF may be relatively small the EIS lists measurable impacts resulting from project activities due to listed IPFs. For example the text indicates	Impact conclusions have been updated throughout the cumulative impact sections for Alternative A and B.

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	port utilization impacts would be spread out along the entire Atlantic seaboard not recognizing that vessels affected by this project operate out of multiple ports and could be affected by multiple projects contributing to greater not fewer impacts to commercial fisheries coastwide. Therefore many of the cumulative impacts discussed here should be greater than the impact conclusions for the proposed action itself (i.e. more than minor and likely at least moderate for most IPFs) based on the definitions in Table 3.6.1-22. Otherwise the EIS would appear to be diluting the impacts of this action simply by comparing them to impacts within the region as a whole which is inappropriate for evaluating the impacts of this proposed action.	
BOEM-2023-0011-0185-0278	EIS Section: 3.6.1.5 PDF Page: 493 Comment: Please justify or remove conclusions that the major impact conclusion is primarily driven by climate change and regulated fishing effort. There is minimal discussion of such impacts in this section to support this conclusion.	The conclusion for the cumulative impacts of the Proposed Action was revised to focus on the impacts from the presence of structures from ongoing and planned offshore wind consistent with the analysis contained in Section 3.6.1.5, *Cumulative Impacts of the Proposed Action*.
BOEM-2023-0011-0185-0279	EIS Section: 3.6.1.6 PDF Page: 494 Comment: Please include estimates of aquaculture revenue and commercial and recreational fishing effort within state waters including trips landings and revenue that would be maintained by routing export cables onshore under Alternative C. This is needed to not only evaluate the potential impacts avoided (benefits) of this alternative but it could also serve as a means of estimating impacts from running the export cable up the Sakonnet River under Alternative B which was not included in Section 3.6.1.5.	Section 3.6.1.1 was revised to include estimates of aquaculture for both Rhode Island and Massachusetts. Aquaculture has been included in the discussion of impacts in Alternative B and Alternative C.
BOEM-2023-0011-0185-0280	EIS Section: 3.6.1.8 PDF Page: 495 Comment: In the analysis of Alternative E please provide or reference discussions of noise-induced behavioral effects from the use of smaller pin piles under Alternative E-2. This will help characterize the extent of potential behavioral effects to compare between the proposed action and Alternative E.	Alternative E-2 does not propose smaller pin piles; rather, Alternative E-2 proposes suction-bucket foundations which would not require pile driving. Alternative E-1 would involve the use of all piled foundations, which could include either monopile or pin piles, depending on the foundation selected. Alternative E-1 does not represent a choice between

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		monopile or pine piles; both are an option under this alternative, which is consistent with SouthCoast Wind's PDE.
BOEM-2023-0011-0185-0281	EIS Section: 3.6.1.9 PDF Page: 496 Comment: Please insert a discussion of the details of potential converter stations (location scale height in water column of intake/outlet pipes and flow rate) and associated impacts under Alternative F. Such converter stations would have direct long-term impacts on fishery resources in the form of entrainment and changes to local water temperature that will have indirect and long-term impacts on commercial and recreational fisheries. Entrainment in the converter stations will result in direct mortality to eggs and larvae and may reduce egg distribution and future recruitment to the fishery. While the relative impact may be localized and may not result in population level effects it could lead to less certain stock assessments by altering the stock-recruitment assumptions for certain species. These impacts should be noted here and not excluded from this discussion given these converter stations are not included under the proposed action.	A cross reference was added to Section 3.5.5.9, *Finfish, Invertebrates, and Essential Fish Habitat*, for a description of HVDC converter OSPs and their impacts on fishery resources. Also, it should be noted that HVDC converter OSPs are included as an OSP option under the Proposed Action. Alternative F is within SouthCoast Wind's PDE and represents a narrowing of the PDE from five cables to three cables and from HVAC or HVDC to HVDC only.
BOEM-2023-0011-0185-0282	EIS Section: 3.6.1.10 PDF Page: 497 Comment: Please summarize or replicate Tables 11-10 through 11-12 in Volume II of the COP in this section to enable the reader to understand the potential impacts to the commercial fishery including the inter-annual variability of fishery revenue. Please ensure that compensation amount used to support this mitigation measure is based on the most recent fisheries data available through 2021 that we provided in January 2023 and include impacted vessels fishing in state waters with state permits. Because the compensation amount listed in the COP tables does not reflect the latest data or state fishery operations that may be affected and that BOEM's draft fisheries mitigation guidance has not been finalized it is premature to conclude that the compensation measure would be sufficient to reduce impacts from major to moderate. Given that the text itself indicates the	BOEM believes that the buffer areas used to calculate revenue from each ECC overestimates the area/size of impact on fisheries landings/revenue. These tables have been replicated in the EIS but include data up to 2018. Additional detail on how BOEM has calculated exposure can be found in Appendix A, Data and Methodology for Developing Revenue Exposure Estimates in the Northeast Atlantic.

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	compensation scheme "could mitigate 'indefinite' impacts" it is not guaranteed that income losses would be mitigated as proposed. Therefore the original impact conclusions should remain as "minor to major." This is supported by conclusory text at the bottom of page 3.6.1-65.	
BOEM-2023-0011-0185-0283	Section 3.6.6: Navigation and Vessel Traffic EIS Section: 3.6.6.1 PDF Page: 616 Comment: Please use the more recent information available when evaluating fishing vessel traffic patterns using vessel monitoring system data. The DEIS notes the use of 2016 VMS data. Such data are outdated and do not fully reflect more recent data available from the NOAA Office of Law Enforcement. Further as we recommend in our fisheries socioeconomic impact analysis information needs document please use data for more than 1 year as fishing regulations market and fuel prices and other factors alter vessel operational and transit patterns.	The text referred to by the commenter is describing the Vessel Monitoring System (VMS) data used in the SouthCoast Wind Navigation Safety Risk Assessment (COP Appendix X). BOEM revised the text in Section 3.6.6 to "vessel monitoring system data from NMFS through 2016" to be consistent with the Navigation Safety Risk Assessment (NSRA), which included more than 1 year of data. In the EIS, this information was used to inform the impacts on navigation and vessel traffic, along with other information, and was not used to directly assess socioeconomic impacts on commercial fishing, which are described in Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*. Section 3.6.1 presents VMS data from multiple years.
BOEM-2023-0011-0185-0284	Section 3.6.7: Other Uses (Marine Minerals Military Use Aviation Scientific Research and Surveys) EIS Section: 3.6.7.9 PDF Page: 356 Comment: Thank you for referencing the NOAA and BOEM Federal Survey Mitigation Program throughout this section. Please add that individual survey mitigation plans have not been developed and funding is not currently available to support survey mitigation plans to date.	Thank you for your comment. The suggested text edit has been incorporated into Final EIS Section 3.6.7.10, *Proposed Mitigation Measures*.
BOEM-2023-0011-0185-0285	Section 3.6.8: Recreation and Tourism EIS Section: 3.6.8 PDF Page: 676 Comment: Please provide an up to date analysis based on Kirkpatrick's detailed methodology for recreational private angler exposure. The data reported in Kirkpatrick is outdated but can be replicated with updated data. Data is publicly available through MRIP. See section 3.1.4.2 and 3.1.4.2 for methodologies. https://espis.boem.gov/final%20reports/5580.pdf	The Kirkpatrick reference is used to characterize recreational private angler exposure as part of the analysis of cumulative impacts of the No Action Alternative (Section 3.6.8.3) and is appropriate as cited. An analysis of commercial fisheries and for-hire recreational fisheries exposure is included in Final EIS Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*.

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BOEM-2023-0011-0185-0286	Section 4.1: Unavoidable Adverse Impacts of the Proposed Action EIS Section: 4.1 PDF Page: 724 Comment: In the first line of the text the correct reference is 40 CFR 1502.16(a)(2).	The NEPA implementing regulatory citation in Section 4.1 was corrected in the Final EIS.
BOEM-2023-0011-0185-0287	Section 4.3: Relationship Between the Short-term Use of Man's Environment and the Maintenance and Enhancement of Long-term Productivity EIS Section: 4.3 PDF Page: 730 Comment: In the first line of the text the correct reference is 40 CFR 1502.16(a)(2).	The NEPA implementing regulatory citation in Section 4.3 was corrected in the Final EIS.
BOEM-2023-0011-0185-0288	Appendix B: Supplemental Information and Additional Figures and Tables B.3 PDF Page: 26 Comment: Please update the values in this table based on the draft 2020 NMFS SARs (Hayes et al. 2023) including NARW abundance.	NARW abundance value in this table has been updated to reflect the draft 2022 Sound Acoustics Report from Hayes et al. 2023.
BOEM-2023-0011-0185-0289	EIS Section: D PDF Page: Global Comment: NMFS has concerns about the structure content and usage of Appendix D. Please indicate whether the list of activities in Appendix D has been developed for this specific project or if this same list of activities was developed and is being included for all OSW projects in the Atlantic regardless of project location scale or project-specific details.	Appendix D, *Planned Activities Scenario*, was developed specifically for the SouthCoast Wind Project to describe ongoing and planned activities that could occur in the geographic analysis area for each resource. The geographic analysis area varies for each resource as described in the individual resource sections of Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS. As such, there is overlap in the geographic analysis area for some resources between planned offshore wind projects in the Atlantic. The outline and general language in Appendix D are common to other offshore wind EISs but have been specifically tailored for the geographic analysis areas relevant to the SouthCoast Wind Project.
BOEM-2023-0011-0185-0290	EIS Section: Attachment 1 PDF Page: 138 Comment: Please remove the second sentence at the top of page D-33 that reads: "The content of these tables has been vetted by cooperating agencies to the EIS and therefore has been included in whole for their use in impact and cumulative analyses and for ease in reference by the reader." This language suggests that the exact content of the tables that now appear in Appendix D were copied in their entirety from another document which had been "vetted" by the	The language highlighted by the commenter has been deleted from Appendix D, *Planned Activities Scenario*, of the Final EIS.

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	cooperating agencies at some point. NMFS in its cooperating agency role has not vetted the content of these tables. While NMFS has approved of tables that appeared in previous EISs and follow a similar approach and contain similar elements (i.e. South Fork Wind and Vineyard Wind), the content and variables of the tables in Appendix E are different than what was "vetted" by NMFS in those previous instances. NMFS has identified this issue in other recent reviews of offshore wind EISs from BOEM and maintain our concern regarding the use of this language.	
BOEM-2023-0011-0185-0291	Appendix F: USACE 404(b)(1) Analysis EIS Section: F PDF Page: 211-220 Comment: Throughout Appendix F on the pages indicated in the headings text and tables Alternative C is referred to as the "Habitat Minimization Alternative." The correct name is the "Habitat Impact Minimization Alternative" and this should be corrected throughout Appendix F.	The name of Alternative C has been revised to “Fisheries Habitat Impact Minimization Alternative” in Appendix F of the Final EIS.
BOEM-2023-0011-0185-0292	Appendix G: Mitigation and Monitoring EIS Section: G PDF Page: 222 Comment: In the fourth paragraph after the conclusion of the first sentence please add the following sentence: "If a mitigation measure was analyzed in the impacts analysis for the selected alternative and that measure influenced the impact determination for a particular resource that measure will be included as a term and condition." NMFS maintains its position that any mitigation and monitoring terms that influence the impact conclusions need to be committed measures or proposed as part of the action in order for the assumptions and conclusions of the analysis to be accurate. This issue has been identified and commented on in other offshore wind EISs in development.	Appendix G of the Final EIS has been revised to incorporate language similar to the text suggested in the comment.
BOEM-2023-0011-0185-0293	EIS Section: G.1 PDF Page: 235 Comment: It is not clear what "limit duration of pile driving activities" means. Please clarify how SouthCoast would limit duration of pile driving activities.	Limiting the duration of pile-driving activities refers to commitments SouthCoast Wind has made to restrict when pile driving occurs to minimize impacts from the activity. SouthCoast Wind has committed to not conduct pile-driving activities from January 1–April 30. Additionally, SouthCoast

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		Wind has committed to only conducting pile-driving activities within the Enhanced Mitigation Area (as identified in Final EIS Appendix G) between June 1 and October 31. Furthermore, SouthCoast Wind has developed a *Supplemental North Atlantic Right Whale Monitoring and Mitigation Plan for Pile Driving*, included as Attachment G-3 in Appendix G, which describes additional commitments SouthCoast Wind has made to monitor for NARW during pile-driving activity.
BOEM-2023-0011-0185-0294	EIS Section: G.1 PDF Page: 236 Comment: Please replace 'clearance zone' with 'shutdown zone' in the measure "Mayflower Wind will employ shut-down procedure when protected species are detected in their respective clearance zones in the Project Area" here and throughout the document where appropriate.	SouthCoast Wind has modified its applicant-committed measures to replace “clearance zone” with “shutdown zone” as identified in the comment. Text in Appendix G, Table G-1 has been revised accordingly.
BOEM-2023-0011-0185-0295	EIS Section: G.1 PDF Page: 236 Comment: Suggest replacing "does not intend" with "would not" in the following measures: "Mayflower Wind does not intend to conduct pile-driving activities from January 1 through April 30."	The comment is in regard to an applicant-committed measure, which BOEM cannot revise unless revised by SouthCoast Wind. SouthCoast Wind has committed to the pile-driving time-of-year restriction of January 1–April 30 across the Lease Area.
BOEM-2023-0011-0185-0296	EIS Section: G.1 PDF Page: 236 Comment: If a vessel is stationary the vessel must not engage engines until the NARW has moved beyond 1640 ft. (500 meters) not 100 m. Please revise.	The comment is in regard to an applicant-committed measure, which BOEM cannot revise unless revised by SouthCoast Wind. However, BOEM has proposed mitigation measure BA-8 in Appendix G, Table G-2, which states in part, “If stationary, the vessel must not engage engines until the ESA-listed large whale has moved beyond 1,640 feet (500 meters).”
BOEM-2023-0011-0185-0296-1	G.1 PDF Page: 237 Comment: In their MMPA ITA application SouthCoast proposed that CTVs be exempt from the 10-knot speed restriction in a DMA which does not align with the measure in Table G-1. Please clarify if BOEM is requiring all SouthCoast vessels including CTVs to travel at 10 knots or less in a DMA.	Under *Vessel Strike Avoidance Measures* in Appendix G, the Applicant has proposed the following mitigation measures for crew transfer vessels (CTVs): • Except for CTVs, all vessels are required to comply with NMFS regulations and speed restrictions (≤10 knots) in NARW management areas including seasonal management areas (SMAs) and active DMAs during

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		migratory and calving periods from November 1 to April 30. • All vessels (including CTVs) will reduce speed to ≤10 knots when mother/calf pairs, pods, or large assemblages of marine mammals are observed. • A PAM system will be developed consisting of near real-time monitoring such that NARW or other large whale calls made in or near the transit corridor can be detected and transmitted to the transiting vessel and will also be used to facilitate the safe transit of CTVs in SMAs and DMAs. The detections will be used to determine areas along the transit corridor where the CTV would be allowed to travel at >10 knots if no detections had occurred in the previous 12 hours or required to transit at <10 knots if detections had been made in the previous 12 hours. In the event the system temporarily stops working, CTVs would then be required to reduce speed to <10 knots.
BOEM-2023-0011-0185-0297	EIS Section: G.1 PDF Page: 237 Comment: In the MMPA ITA application SouthCoast proposed a measure stating: "The PSO team and the APSO team will each have a lead observer (Lead PSO and Lead APSO) with prior experience working as a PSO and/or APSO in the northwestern Atlantic Ocean on similar projects." Please consider adding that here.	Measures proposed by SouthCoast Wind in its MMPA ITA Application are included in Appendix G, Attachment G-1 and are considered part of the Proposed Action. BOEM confirmed the measure referred to in the comment is in Attachment G-1.
BOEM-2023-0011-0185-0298	EIS Section: G.1 PDF Page: 261 Comment: When PSOs are monitoring at night the use of night-vision goggles with thermal clip-ons and a hand-held spotlight is only sufficient during HRG surveys given the very small Level B harassment zone. If this measure applies to nighttime pile driving the technology included in this measure insufficient. Please clarify to which activity this measure applies.	The comment is in regard to an applicant-committed measure, which BOEM cannot revise unless revised by SouthCoast Wind. However, As described in Section 11.2.4 of SouthCoast Wind's ITR Application, during nighttime operations, night vision equipment (night vision goggles) and infrared/thermal imaging technology will be used. SouthCoast Wind has committed to the following nighttime piling monitoring and mitigation methods: • During nighttime operations, visual PSOs on watch will rotate in pairs: one PSO observing with a night vision device (NVD) and one monitoring the infrared thermal

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		imaging camera system. There will also be an acoustic PSO on duty conducting acoustic monitoring in coordination with the visual PSOs. • The PSOs on duty will monitor for marine mammals and other protected species using night-vision goggles with thermal clip-ons, a hand-held spotlight (one set plus a backup set), and/or other electronic method(s), such that PSOs can focus observations in any direction. • If possible, deck lights will be extinguished or dimmed during night observations when using the NVDs (strong lights compromise the NVD detection abilities); alternatively, if the deck lights must remain on for safety reasons, the PSO will attempt to use the NVDs in areas away from potential interference by these lights. Because visual observations within the applicable shutdown zones can become impaired at night or during daylight hours due to fog, rain, or high sea states, visual monitoring with thermal and NVDs will be supplemented by PAM during these periods.
BOEM-2023-0011-0185-0299	EIS Section: G.1 PDF Page: 262 Comment: Please clarify whether or not BOEM intends to allow nighttime pile driving.	Yes, nighttime pile driving is part of the Proposed Action. There will be a nighttime pile driving plan that covers effective monitoring of the level A zone.
BOEM-2023-0011-0185-0300	EIS Section: G.1 PDF Page: 263 Comment: Please clarify how SFV results would be used to estimate effects in a post-construction monitoring report.	SouthCoast Wind has committed to preparing a detailed plan for Sound Source Verification that would be developed and submitted to NMFS prior to the planned start of pile driving and UXO detonations (Appendix G, Table G-1). In addition, BOEM has added mitigation measure MA-4 to Final EIS Appendix G, Table G-2, which requires SouthCoast Wind to develop a Sound Field Verification Plan for review and comment by BOEM and NMFS. The purpose of the plan is to ensure that the distance to injury and behavioral thresholds for marine mammals, sea turtles, and ESA-listed fish are no larger than those modeled assuming 10 dB noise attenuation by conducting field verification during pile driving.

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BOEM-2023-0011-0185-0301	EIS Section: G.1 PDF Page: 263 Comment: "Because of the low probability of a long-term exposure event and for practical implementation reasons. " does not seem like a necessary justification for the zone sizes. Please provide adequate justification for the zone sizes proposed.	SouthCoast Wind developed clearance zone sizes based on acoustic modeling results, as presented in Section 11.2.9 (see Final EIS Appendix G, Attachment G-1) of the ITR application. Noise abatement systems (NAS) will be implemented to achieve the modeled ranges associated within 10 dB of noise. If an NAS is not feasible, SouthCoast Wind will implement mitigation measures for the larger unmitigated zone sizes with deployment of PSO vessels adequate to cover the zones before construction activities commence.
BOEM-2023-0011-0185-0302	EIS Section: G.1 PDF Page: 263 Comment: Please consult the MMPA ITA application for the actual proposed clearance and shutdown zone sizes. There is a considerable disparity between the sizes included here and the application which were based on modeling results.	The comment is in regard to an applicant-committed measure, which BOEM cannot revise unless revised by SouthCoast Wind. However, the zone sizes included in the MMPA ITR application are correct and are the current zone sizes that SouthCoast Wind is proposing to adhere to, once approved by NMFS. Specific construction activity shutdown zones can be found in the MMPA ITA application in Section 11.2.9 (see Final EIS, Appendix G, Attachment G-1).
BOEM-2023-0011-0185-0303	EIS Section: G.1 PDF Page: 264 Comment: Pile driving would be shut down when a marine mammal enters the 'shutdown zone' not 'clearance zone.' Please correct the terminology here.	SouthCoast Wind has modified its applicant-committed measures to replace “clearance zone” with “shutdown zone” as identified in the comment. Text in Appendix G, Table G-1 has been revised accordingly.
BOEM-2023-0011-0185-0304	EIS Section: G.2 PDF Page: 270 Comment: Please clarify how measure NS-1 differs from the applicant proposed measure: "To minimize potential impacts on zooplankton from impingement and entrainment the northernmost HVDC converter OSP will be located outside of a 10 kilometer buffer of the 30-meter isobath from Nantucket Shoals."	SouthCoast Wind added the measure referenced in the comment to the COP based on its coordination with BOEM regarding the NS-1 mitigation measure. The measure is similar, except that NS-1 applies to the enhanced mitigation measure as mapped in Appendix G.
BOEM-2023-0011-0185-0305	EIS Section: G.2 PDF Page: 270 Comment: Please clarify if measure NS-3 is suggesting that PAM detections would be shared with NMFS in near real time. If that is not the case then please revise the sentence for clarity.	Agency-proposed measure NS-3 states that “The PAM system must operate in the enhanced mitigation area 24 hours per day. The system must be capable of detection of NARW vocalizations, report the detections to a PAM operator in near-real time, and share all detections with NMFS.” To rephrase the statement for clarity, it is to the PAM operator that the NARW detections will be reported in near-real time.

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		All detections will then be shared to NMFS following Section 11.1.7 of the MMPA ITA: “Any NARW sightings will be reported as soon as feasible and no later than within 24 hours to the NMFS Right Whale Sighting Advisory System (RWSAS) hotline (866-755-6622) or via the Whale Alert Application.”
BOEM-2023-0011-0185-0306	EIS Section: G.2 PDF Page: 271 Comment: Please revise measure NS-3 to correctly state that NARW occurrence around Nantucket Shoals is highest in winter and spring.	BOEM has reviewed the information and does not believe the information is incorrect. NMFS has not provided any data to support this statement. BOEM has accurately characterized the months with the greatest densities of NARWs. Highest densities are not intended to capture the seasons of NARWs occurrence, only the months of greatest density. In terms of defining the enhanced mitigation area, this is a critically important distinction to conservatively predict the greatest occurrence of NARWs anywhere in the lease area. Based on Roberts et al. density models, highest densities do not occur evenly throughout the months or seasons. The BA has been revised to reflect that NARW occurrence, not greatest densities, is expected from late fall through spring based on Roberts et al. However, the enhanced mitigation area is still based on the greatest density; thus, this change is not global throughout the document.
BOEM-2023-0011-0185-0307	EIS Section: G.2 PDF Page: 291 Comment: Measure BA-15 states that pile driving can only commence 1 hour after civil sunrise and may not be initiated later than 1.5 hrs. prior to sunset. In addition the measure states that: "Pile driving may continue after dark only when the installation of the same pile began during daylight (1.5 hours before (civil) sunset) when clearance zones were fully visible for at least 30 minutes and must proceed for human safety or installation feasibility reasons." This is inconsistent with previous measures that address monitoring during nighttime pile driving. BOEM's position on nighttime pile driving is unclear; please specify whether or not BOEM is authorizing nighttime	BOEM confirms that nighttime pile driving is part of the Proposed Action. BOEM revised mitigation measure BA-15, which would require SouthCoast Wind submit a Nighttime Pile Driving Plan (NPDP) as part of the Alternative Monitoring Plan (AMP) to BOEM and NMFS for approval.

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	pile driving and present mitigation and monitoring measures that are consistent with BOEM's determination.	
BOEM-2023-0011-0185-0308	EIS Section: G.2 PDF Page: 294 Comment: Please verify that BOEM would require submission of the SFV and PDM plans 90 days prior to start of pile-driving activities. It is NMFS' understanding that these plans must be submitted 180 days prior to the start of pile driving.	BOEM revised BA-17 to state that SouthCoast Wind must submit a Pile-Driving Monitoring for review to BOEM and NMFS 180 calendar days, but no later than 120 days, before beginning the first pile-driving activities for the Project.
BOEM-2023-0011-0185-0309	EIS Section: G.2 PDF Page: 297 Comment: Any reduction in the size of the clearance and shutdown zones for each foundation type must be based on at least 3 measurements submitted to BOEM and NMFS for review. Please add "and NMFS" to this measure.	NMFS has been added as an enforcing agency to measure BA-21 in Appendix G, Table G-2.
BOEM-2023-0011-0185-0310	EIS Section: G.2 PDF Page: 299 Comment: Please consider requiring that PAM operators must review detections to verify if a NARW has been detected within 5 minutes rather than 15 minutes. If a NARW is detected within the shutdown zone an additional 10 minute delay in shutdown would lead to increased exposure time of NARWs to pile driving noise.	BOEM acknowledges this request.
BOEM-2023-0011-0185-0311	Appendix J: References Sited EIS Section: J.1 PDF Page: 477 Comment: There are references cited in the Executive Summary. Please add a new section J.1.1 for the Executive Summary and renumber the other sections.	References cited in the Executive Summary have been added to Appendix J, *References Cited*, in the Final EIS.
BOEM-2023-0011-0185-0312	Attachment B – North Atlantic Right Whale Habitat Use Data As part of our negligible impact determination analyses NMFS Office of Protected Resources evaluated North Atlantic right whale (NARW) densities (Roberts and Halpin 2022) and Dynamic Management Area (DMA) data to assess the potential impacts on NARWs from pile driving during the SouthCoast project. Using the complement of both datasets allowed us assess both NARW presence and infer behavioral state (e.g. foraging). We suggest that when developing proposed time/area closures BOEM utilize additional data (e.g. DMA or sightings data) beyond density to better define how NARWs are utilizing Southern New England and the	BOEM does not agree with using Dynamic Management Area (DMA) data as a predictor of NARW occurrence. NARW occurrences in DMAs in this area are associated with foraging and localized occurrence of prey that cannot be expected to predict the future aggregations of whales and should only be used retrospectively. The Duke density estimates provide the most robust and accepted data source to predict expected NARW occurrence.

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	SouthCoast Wind project area (i.e. what they are doing while they are there). This approach should be taken for all offshore wind projects in Southern New England.	
BOEM-2023-0011-0185-0313	Density We mapped the vibratory ensonified zone (for summer) assuming 1) full buildout (i.e the entire lease area) 2) a 10-km setback from the 30-m isobath and 3) a 20-km setback from the 30-m isobath (Figure 1). [Footnote 1: The difference in the area (km2) between full build out and the 10-km setback is less than the difference in area (km2) between the 10-km and 20-km set back due to the configuration of WTG positions on the northeast edge of the lease area as shown in Figure 1 (i.e. the blue and green lines are closer together than the green and red lines).] These latter two setback distances align with an alternative recommended by NMFS and an alternative considered by BOEM staff to reduce potential effects to NARW.We calculated monthly (May-Dec) average NARW densities in the impact and vibratory pile driving ensonified zones assuming full build out which demonstrate that NARW density remains high in May and December (Figure 2).[See original attachment for Figure 1. Density map for May with vibratory pile driving ensonified area overlaid for 1) full buildout (aqua) 1) 10-km setback (green) and 3) 20-km setback (red). The white WTG locations align with the 10-km setback. The red and white positions combined align with the 20-km setback.][See original attachment for Figure 2. Average densities within impact (blue line) and vibratory (red line) ensonified zones for full buildout (impact: 7.4 km summer; 8.6 km winter (Dec); vibratory pile driving: 42 km summer; 84.6 km winter (Dec))]	BOEM has not made edits to the FEIS. The proposed ITR is not a proposed alternative under NEPA; the ITR will prescribe mitigation.
BOEM-2023-0011-0185-0314	Dynamic Management Area (DMA) Sighting DataTo assess behavior within the project area specifically foraging we selected DMA sighting data where the DMA area overlaps with the project area that includes the lease area and extends 42-km from the edge of the lease area (representing the	BOEM does not agree with using DMA data as a predictor of NARW occurrence. NARW occurrences in DMAs in this area are associated with foraging and localized occurrence of prey that cannot be expected to predict the future aggregations of whales and should only be used retrospectively. The Duke

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	summer ensonified distance). We used the 2017-2022 data set which identifies date of sighting location and the number of whales in the sighting that triggered each DMA (Figure 3).DMAs in the project area have been established in every month of the year for the past 5 years (although not every month in every year) (Figure 3). A DMA is triggered when 3 or more whales are observed and this clustering of whales can be inferred as a proxy for foraging (Clapham and Pace 2001).Figure 3 and Table 1 provide information about the number of days on which sightings occurred and the number of animals that triggered each DMA in the analyses described above. We analyzed these data to determine which months had the highest and lowest number of days with sightings of three or more whales and to evaluate the associated group sizes for those sightings (recognizing that three is the minimum reported since that is what triggers a DMA).Although densities are lower in late summer/early fall (Figure 2) the number of days on which three or more whales were sighted and the number of animals sighted were higher in August through November and DMAs were recently in place for the entire months of August and September 2019; September October and November 2020 and 2021; and September 2022.[See original attachment for Figure 3. Number of animals/sighting per month (e.g. 5 = May 6 = June etc.) triggering a DMA in the SouthCoast Wind Project area (2017-2022). (Note that there were multiple sightings across years of the same number of animals: blue = 1 sighting; green = 2 sightings; orange = 3 sightings). Figure is not corrected for effort (effort is unknown). Note that because this is DMA data the number of animals/sighting is never less than 3.][See original attachment for Table 1. Number of animals and sightings by month (May-Dec) and year (2017-2022) based on DMA data.]	density estimates provide the most robust and accepted data source to predict expected NARW occurrence.

N.4.1.2 U.S. Environmental Protection Agency

Table N.4.1-2. Responses to comments from U.S. Environmental Protection Agency (BOEM-2023-0011-0056)

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BOEM-2023-0011-0056-0001	Section 3.4.1 Figure 3.4.1-1 of the DEIS indicates that the air quality geographic analysis area includes the airshed within 25 miles of the Lease Area and the airshed within 15.5 miles of onshore construction areas and ports that may be used for the project. EPA notes that according to the scale on Figure 3.4.1-1 and the description in section 3.4.1 it appears that statute miles were used to depict the geographic analysis area. However EPA interprets the regulations at 40 CFR part 55 to use nautical miles for the purposes of determining potential emissions from the source. Recommended Action: EPA understands that for offshore construction and operations emissions estimates many developers are aligning their anticipated emissions between their Construction and Operations Plan and their Clean Air Act (CAA) Outer Continental Shelf (OCS) permit application and within EPA's regulation at 40 CFR part 55 we interpret miles to be measured in nautical miles for the purpose of determining potential emissions from the source. As such EPA's permitting scope extends 25 nautical miles around the offshore wind development area. EPA recommends that the FEIS clarify the metric used the in geographic analysis area and consider expanding the analysis area for offshore construction to correspond with the area analyzed in EPA's permitting action.?	The U.S. Environmental Protection Agency (USEPA) is correct that Figure 3.4.1-1 uses statute miles. However, the emissions analysis in the COP, which supplied the emissions data reported in the EIS, is based on nm consistent with USEPA's interpretation for the purpose of Outer Continental Shelf (OCS) permitting.
BOEM-2023-0011-0056-0002	Section 3.4.1 (page 3.4.1-5) of the DEIS states "The nearest Class I area is the Lye Brook Wilderness Vermont which is approximately 130 miles (210 kilometers) from the nearest Project component (the Brayton Point HVDC Converter Station). This distance is greater than the 100-kilometer distance within which USEPA recommends that the federal land manager of the Class I area be notified about a project that requires a federal air quality permit." On page 3.4.1-16	The requested clarification has been added to the Final EIS.

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	of the DEIS states "As shown in Table 3.4.1-7 the estimated impacts due to the Mayflower Wind Project are less than the USEPA Class I significant impact levels (SILs). USEPA considers that no further analysis is necessary for impacts that are less than the SILs." Recommended Action: Please revise the FEIS to clarify what components of the project underwent a Class I SILs analysis. As currently written a reader could be confused by BOEM's statements on pages 3.4.1-5 and 3.4.1-16.	
BOEM-2023-0011-0056-0003	Section 3.4.1.5 (page 3.4.1-17) of the DEIS states "Table 3.4.1-8 summarizes the visibility assessment results. Because short-term emission rates during construction would be less than during O&M visibility impacts during construction would be less than shown in Table 3.4.1-8 and would be less than the Class I impact criteria. USEPA considers that no further analysis is necessary for impacts that are less than the impact criteria." Table 3.4.1-8 indicates the modeled value for Perceptibility (ΔE) is 1.808 compared to the Class I criterion 2 90% of Class I criterion. Recommended Action: Further discussion on the visibility analysis in the FEIS would help clarify the sources of emissions included in the Class I area visibility assessment.	The requested information has been added to the Final EIS.
BOEM-2023-0011-0056-0004	Section 3.4.1.5 (page 3.4.1-13) of the DEIS states "The total estimated construction emissions of each pollutant are summarized in Table 3.4.1-4. BOEM anticipates that air quality impacts from construction of the Proposed Action would be minor." Table 3.4.1-4 indicates total VOC is "11589 tons." Recommended Action: Please correct the error in Table 3.4.1-4 for VOC emissions.	The emission totals for volatile organic compounds (VOCs) in Table 3.4.1-4 have been corrected in the Final EIS.
BOEM-2023-0011-0056-0005	Section 3.4.1.5 (page 3.4.1-13) of the DEIS states "Emissions from vessels used to transport workers supplies and equipment to and from the construction areas would result in additional air quality impacts. The Proposed Action may need emergency generators at times potentially resulting in	BOEM has added to the Final EIS proposed air quality mitigation measures AQ-1 through AQ-8 in Appendix G, *Mitigation and Monitoring*, Table G-2, which include measures to minimize emissions from vessel engines and other measures that would minimize air quality impacts.

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	increased emissions for limited periods. Mayflower Wind has proposed measures to reduce emissions including compliance with applicable fuel-efficiency fuel sulfur content and emissions standards." In past finalized offshore wind projects e.g. Vineyard Wind 1 and South Fork Wind EPA has previously required Tier 3 and 4 engines located on WTGs and offshore substations as well as Tier 4 engines for project vessels operating as OCS sources with allowances for lower tiered engines if those vessels with associated engines are not available at the time of deployment.??? Recommended Action: The FEIS should acknowledge past determinations made by EPA on previously finalized permits for engines operating on offshore substations and WTGs and consider building in conditions that mimic past requirements for the use tier-compliant engine standards. Additionally EPA recommends acknowledging the vessel engine requirements EPA has required in past permits and consider adopting a similar structure into the FEIS.?? Furthermore EPA recommends that as an additional mitigation measure BOEM require SouthCoast Wind to pursue the procurement of the most efficient and lowest emitting vessels available during the vessel-contracting stage of the project. As part of this process the FEIS should provide a discussion of the various options that are available to reduce these emissions. The FEIS should consider options for reducing emissions from offshore activity such as the purchase of lower emitting or electrified crew vessels.??? EPA encourages BOEM to explore options to require alternate power sources such as battery backup or fuel cell technology to provide emergency power during operations. These options should be described in the FEIS.?	These measures are similar to measures that BOEM has analyzed during the NEPA review for other offshore wind projects.
BOEM-2023-0011-0056-0006	Section 3.4.1 (page 3.4.1-4) of the DEIS states "Mayflower Wind is considering a number of ports for project construction the nearest being the Port of New Bedford Massachusetts and the Port of Providence Rhode Island and additional locations in New England. Mayflower Wind is	Please refer to response to comment BOEM-2023-0011-0056-0005.

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	considering the ports of New Bedford and Fall River Massachusetts for project operations and maintenance. More distant ports that could be used include Port of Virginia Virginia. The attainment status of these ports varies. The potential ports in the New England region are in attainment areas except for the Port of New London Connecticut which is in a nonattainment area for the ozone NAAQS." Many port communities are in areas that may have existing air quality issues and/or environmental justice concerns. Recommended Action: EPA recommends that the DEIS evaluate requiring emission reduction best practices for ports such as vessel speed reduction requirements sulfur restrictions in fuel the use of marine shore power systems and the use of Tier 4 Final EPA certified equipment.More information regarding air emissions reduction methods at ports can be accessed at https://www.epa.gov/ports-initiative.??	
BOEM-2023-0011-0056-0007	Section 3.4.1-4 of the DEIS states: "All of southeastern Massachusetts is currently designated as unclassifiable or in attainment for all criteria pollutants except for Dukes County on Martha's Vineyard which is designated as marginally in nonattainment for the 2008 ozone NAAQS of 75 parts per billion (ppb). Though the 2008 NAAQS are still technically in effect Dukes County was designated in attainment in August 2018 against the current more stringent 2015 ozone NAAQS of 70 ppb. Thus though the 2008 designation has not yet been changed monitored values in Dukes County have significantly improved since 2011. Dukes County is in attainment with the 2015 ozone NAAQS standard; however its official designation is as a "marginal nonattainment area" based on the 2008 ozone standard.? Administratively USEPA must change this designation to attainment but has not yet done so." Recommended Action: EPA recommends that BOEM clarify the language in Section 3.4.1-4 of the DEIS to accurately reflect the Clean Air Act redesignation process.? Though the	The language regarding the attainment status of Dukes County has been clarified.

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	Dukes County area was designated unclassifiable/attainment for the more stringent 2015 ozone NAAQS the area remains designated as nonattainment for the 2008 ozone NAAQS.? The CAA does not grant EPA the authority to "administratively" redesignate a nonattainment area to attainment.? For an area to be redesignated to attainment the State must submit a request for redesignation accompanied by an approved maintenance plan that meets the requirements of section 175A of the CAA.? See CAA 107 (d)(3)(e) for further information on the redesignation process.	
BOEM-2023-0011-0056-0008	These comments and recommendations focus on Section 3.6.4 of the DEIS. The DEIS acknowledges that the preferred and alternative locations for the Falmouth MA onshore substation converter station and their landfalls are adjacent to neighborhoods that meet EJ criteria and that land use around the Falmouth onshore project area includes residential recreational and commercial uses. According to the DEIS BOEM anticipates that the Proposed Action and all alternatives would have overall negligible to minor impacts on communities with EJ concerns. In addition Fall River a community with a range of EJ concerns is adjacent to the proposed onshore substation converter station and their landfalls at the Brayton Point site. The DEIS also states that Mayflower Wind has committed to measures to minimize impacts on EJ communities which include but are not limited to maintaining a stakeholder engagement plan encouraging the hiring of skilled and unskilled labor in the Project region and developing a Traffic Management Plan to minimize disruptions to the communities in the vicinity of construction as well as committing to making at least 75% of the O&M workforce procurement and services local. Recommended Action: BOEM should develop a stakeholder outreach/EJ public engagement plan for areas that may be impacted by the proposed action and provide an opportunity for affected communities to inform the project's mitigation	BOEM has facilitated effective public outreach throughout the EIS process as demonstrated through broad participation in scoping meetings and public hearings and substantial public input received through comments submitted on regulations.gov or through verbal testimony at public meetings during scoping and the public review period for the Draft EIS. In addition, as noted in COP Volume I, Section 1.6, SouthCoast Wind executed targeted outreach to the communities and environmental justice populations that could be affected by the Proposed Action, including local Tribes, neighborhood associations, and environmental groups, many of which represent environmental justice communities. BOEM has not identified disproportionately high and adverse effects on environmental justice populations except for major disproportionate impacts related to Tribally important Traditional Cultural Places (TCPs). Targeted environmental justice outreach outside of the public involvement process undertaken for NEPA is not planned. Over the duration of BOEM's environmental review of the Project, BOEM has engaged with federally recognized Tribes through government-to-government and Section 106 of the National Historic Preservation Act (NHPA) consultations to identify and assess effects, mitigate impacts, and resolve adverse effects on TCPs (refer to Final EIS Section 3.6.2, *Cultural Resources,* and Appendix I, *Finding of Adverse*

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	measures. An effective stakeholder outreach and public engagement plan for areas that may be impacted by the proposed action including Falmouth MA Fall River MA and communities located near ports in the communities listed in the comment below should be incorporated in the FEIS and should include: • Identification of a single point of contact at BOEM to serve as a community liaison for communities affected by project construction and operation • detailed information on planned engagement milestones and commitments to meetings with potentially impacted communities and community organizations • communications written in plain language that can be understood by all affected community members • assessment of translation and interpretation needs through screening tools such as EPA's EJ Screen and outreach to people who live in impacted communities including local government officials and community-based non-governmental organizations public meetings accessible to all and scheduled at times that accommodate the greatest number of participants	*Effect for the SouthCoast Wind Construction and Operations Plan*). Adverse effects on historic properties, including TCPs that are listed or eligible for listing in the National Register of Historic Places (NRHP), will be resolved through the Memorandum of Agreement (MOA) developed through Section 106 consultations with Tribes and consulting parties (refer to Final EIS Appendix I, Attachment A for the MOA). As of the November 2022 release of Massachusetts Executive Office of Energy and Environmental Affairs environmental justice data, there are no environmental justice census blocks within 1 mile of the proposed Brayton Point area and one environmental justice census block intersected by the Falmouth onshore Project areas (refer to Figure 3.6.4-3 and Figure 3.6.4-4 of the Final EIS). Environmental justice communities at ports that would be used by the Project are also identified in Section 3.6.4, *Environmental Justice*.
BOEM-2023-0011-0056-0009	The DEIS states that this project may utilize ports in New London Connecticut Providence, Rhode Island, New Bedford and Salem, Massachusetts, Newport News and Portsmouth, Virginia and ports in Canada for berthing staging and loadout to support the construction and installation of offshore facilities. The DEIS also states that ports in New Bedford and Fall River Massachusetts would be the most likely ports for O&M activity. Recommended Action: Localized EJ impacts at the ports being considered for usage should be fully identified in the FEIS for the selected alternative and that affected communities including port communities be given an appropriate opportunity to comment based on targeted outreach from BOEM. Additionally port expansion and modifications to	Final EIS Section 3.6.4, *Environmental Justice*, describes potential impacts on environmental justice stemming from port utilization, including noise and temporarily increased air emissions. BOEM has not identified disproportionately high and adverse effects on environmental justice populations except for major disproportionate impacts related to Tribally important TCPs. BOEM has facilitated effective public outreach throughout the EIS process as demonstrated through broad participation in scoping meetings and public hearings and substantial public input received through comments submitted on regulations.gov or through verbal testimony at public meetings during scoping and the public review period for the Draft EIS.

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	support the development of offshore wind infrastructure that may lead to increased port utilization constitute a reasonably foreseeable indirect effect of the Proposed Action. Impacts to communities with EJ concerns adjacent to such ports should be considered and disclosed.	Potential impacts on environmental justice due to port expansion or modification associated with the offshore wind industry are identified under the No Action Alternative *port utilization* IPF. The Final EIS has been updated to include additional information about specific ports that are being modified to accommodate offshore wind activity that are near environmental justice communities. As stated in Section 3.6.4, *Environmental Justice,* in the *port utilization* IPF discussion, there are no port expansions or modifications included as part of the Proposed Action. Utilization of ports by SouthCoast Wind is analyzed in the EIS.
BOEM-2023-0011-0056-0010	While the DEIS analyzes other ongoing and reasonably foreseeable future activities as currently written BOEM's EJ analysis does not consider these cumulative impacts in the determination of disproportionately high and adverse impacts. In accordance with the Promising Practices for EJ Methodologies in NEPA Reviews "agencies may wish to consider factors that can amplify identified impacts (e.g. the unique exposure pathways prior exposures social determinants of health) to ensure a comprehensive review of potential disproportionately high and adverse impacts to minority populations and low- income populations." [Footnote 2: Interagency Working Group on Environmental Justice Promising Practices for Environmental Justice Methodologies in NEPA Reviews (2016) p. 39.] CEQ's guidance Environmental Justice: Guidance Under the National Environmental Policy Act (1997) also encourages agencies to consider relevant public health and industry data concerning the potential for multiple or cumulative exposures to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards to the extent such information is reasonably available. . . even if certain effects are not within the control or subject to the discretion of the agency proposing the action." [Footnote 3: Council on Environmental	The commenter is correct that the determination of disproportionately high and adverse impacts is made for the Proposed Action alone and not for cumulative impacts of the Proposed Action in combination with the planned activities scenario described in Appendix D, *Planned Activities Scenario*. However, BOEM's environmental justice analysis does consider the contribution of other environmental stressors in establishing the baseline condition in the affected environment, including analyzing the National Ambient Air Quality Standards (NAAQS) attainment status of the communities within the environmental justice geographic analysis area. BOEM's analysis found that all environmental justice communities within the Project area are in attainment for all NAAQS, except for the Port of New London and Dukes County, which are in nonattainment for one NAAQS, and Port of Sparrows Point, which is in nonattainment for two NAAQS. See Final EIS Section 3.6.4, *Environmental Justice*, and Section 3.4.1, *Air Quality*, for discussion of pollutants and their impacts on environmental justice. BOEM reviewed the Environmental Justice Screening and Mapping Tool (EJSCREEN) and has updated the No Action Alternative analysis in Final EIS Section 3.6.4 to include greater discussion of the baseline air quality conditions at each of the proposed onshore components and proposed ports using information on air quality indices from EJSCREEN.

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	Quality Environmental Justice: Guidance Under the National Environmental Policy Act (1997) p. 2.] Recommended Action: The FEIS should consider how relevant existing conditions in communities with EJ concerns across cumulative environmental health, socioeconomic, and climate stressors may ultimately lead to impacts that are disproportionately high and adverse. Please refer to a number of tools such as EPA's EJ Screen (https://www.epa.gov/ejscreen) and the Center for Disease Control and Prevention's Environmental Justice Index (https://www.atsdr.cdc.gov/placeandhealth/eji/index.html) to obtain information on pre-existing pollutant and health burdens that may inform the cumulative impacts analysis.	In addition, BOEM added a new subsection, *Pre-Existing Health Condition Considerations*, in Section 3.6.4.1, which describes pre-existing public health conditions in the geographic analysis area based on the Centers for Disease Control and Prevention Environmental Justice Index. BOEM has reviewed the environmental justice conclusions presented in the Draft EIS and additional context and confirms the earlier determination that impacts of the Proposed Action on environmental justice populations would not be disproportionately high and adverse.
BOEM-2023-0011-0056-0011	Communities with EJ concerns are often disproportionately burdened by environmental hazards and stressors unhealthy land uses psychosocial stressors and historical traumas all of which drive environmental health disparities. Recommended Action: The FEIS should consider whether communities impacted by this project may already be experiencing existing pollution and social/health burdens. Additionally, the FEIS should further describe the health effects of impacts.	BOEM's environmental justice analysis considers the contribution of environmental stressors in establishing the baseline condition in the affected environment. Final EIS Section 3.6.4.6 discusses the health benefits that environmental justice communities may experience due to the Project, including long-term effects such as decreased air emissions due to a decreased dependency on fossil fuels. Section 3.4.1, *Air Quality*, describes baseline air quality conditions across the geographic analysis area for environmental justice. According to Section 3.4.1, all areas within the environmental justice geographic analysis area are in attainment of NAAQS, except for the Port of New London and Dukes County, which are in nonattainment for one NAAQS, and Port of Sparrows Point, which is in nonattainment for two NAAQS.
BOEM-2023-0011-0056-0012	EPA relies upon BOEM as the lead federal agency to consult on our behalf with the National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). These consultations support our air water and ocean dumping permitting responsibilities for the project. Correspondence from the NMFS during the development of the DEIS noted the	BOEM determined an appropriate way to further address this issue was to seek input from NASEM. Specifically, to ensure offshore wind energy installations are being planned, constructed, and developed in an environmentally responsible way, BOEM asked NASEM to evaluate the potential for offshore wind farms in the Nantucket Shoals region to affect oceanic physical processes, and, in turn, how

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	potential for a jeopardy determination under the ESA and concerns whether a negligible impact determination could be reached under the MMPA for the proposed action. NMFS recommended evaluation of a habitat minimization alternative designed to avoid significant impacts to the critically endangered North Atlantic right whale (NARW). [Footnote 4: 10/27/22 letter from M. Pentony (NMFS) to K. Baker (BOEM)] Our comments on the PDEIS encouraged BOEM to provide information in the DEIS to address those concerns. The DEIS considers but eliminates two alternatives focused on this objective—one partially responsive to a specific request by the NMFS and one developed by BOEM as an alternate way to partially address the NMFS recommendations. The DEIS does not however consider in detail a viable project alternative (as suggested by NMFS and others) designed specifically to avoid impacts to the NARW. Such an alternative would provide a more meaningful contrast to the proposed action than Alternative D (which considers the removal of up to 6 WTGS) with respect to the potential to reduce impacts to the NARW. The DEIS states that alternatives more protective of NARWs are not economically viable but the analysis fails to fully contextualize the significance of MMPA and ESA issues that face the remaining alternatives. Recommended Action: We recommend that the FEIS include a roadmap to explain when and how outstanding MMPA and ESA issues will be addressed for the project. As part of this effort we encourage BOEM to provide a more meaningful	those hydrodynamic alterations might affect local to regional ecosystems. In light of the resulting Consensus Study Report and based on best available science, BOEM believes there is a lack of conclusive evidence that the proposed WTG locations in the Lease Area have the potential to result in hydrodynamic effects on NARW foraging in the vicinity of Nantucket Shoals.[2] The best available science suggests that effects are most likely to be localized to the immediate vicinity of the turbine array and to not extend to Nantucket Shoals. Primary studies supporting this position include modeling of the full build-out of the southern New England lease areas (Johnson et al. 2021), hydrodynamic studies of wind facilities in the North Sea (Christiansen et al. 2022), and recent comprehensive literature reviews (NASEM 2024). In particular, the NASEM study was commissioned to "evaluate the potential for offshore wind farms in the Nantucket Shoals region to affect oceanic physical processes, and, in turn, how those hydrodynamic alterations might affect local regional ecosystems." The study, titled *Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales,* concluded that "the impacts of offshore wind projects on the NARW and the availability of their prey in the Nantucket Shoals will likely be difficult to distinguish from the significant impacts of climate change and other influences on the ecosystem" (NASEM 2023). Furthermore, the key recommendation from the study is "while wind energy planning and development progresses, BOEM, NOAA, and

[2] Two of the primary conclusions from the NASEM report *Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales* (2024) demonstrate that it is not reasonable to conclude eliminating a large number of WTGs from SouthCoast Wind would have a significant beneficial effect. Specifically, "**Conclusion:** The paucity of observations and uncertainty of the modeled hydrodynamic effects of wind energy development at the turbine, wind farm, and regional scales make potential ecological impacts of turbines difficult to predict and/or detect." and "**Conclusion:** The hydrodynamic impacts from offshore wind development in the Nantucket Shoals region on zooplankton will be difficult to isolate from the much larger magnitude of variability introduced by natural and other anthropogenic sources (including climate change) in this dynamic and evolving oceanographic and ecological system."

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	consideration of suggested conservation actions (including project reconfiguration) to help the project meet the requirements of the ESA and the MMPA and avoid the need for additional analysis (and resulting schedule delays) to address outstanding questions or concerns after the close of the NEPA process. We continue to encourage BOEM to work closely with NMFS in advance of the publication of the FEIS to expand the analysis to address these issues.	others should promote observational studies and modeling that will advance understanding of potential hydrodynamic effects and their consequent impacts on ecology in the Nantucket Shoals region during all phases of wind energy development." BOEM is supporting additional research on this topic, in accordance with the NASEM recommendations. During the process of identifying the Massachusetts lease areas BOEM excluded certain areas identified as important habitats that could be affected if ultimately developed with the installation of WTGs. Nantucket Shoals was among the areas excluded from the subsequent commercial leasing. BOEM does not assert there are no effects from wind turbine wake and corresponding wind speed and clarifies that the effects will not likely have a detectable effect on foraging and will not have population-level impacts on important species including NARW. Without impacts on foraging and a reasonable causal connection to population impacts, NMFS's reasoning for this alternative is not justifiable or persuasive. NMFS has not demonstrated its 12-mile (20-kilometer) buffer alternative is warranted or provided any new information to support it, and current available peer-reviewed studies and data constituting best available science do not conclude that there will be a reasonable expectation of population-level impacts.
BOEM-2023-0011-0056-0013	The BOEM standard screening criteria for alternatives were established to support the development of project alternatives. The criteria are a helpful resource and the basis for our recommendation above that BOEM work to develop and consider an additional alternative as the NEPA process continues. For example the detailed consideration of a new alternative (in addition to Alternative D--which includes the removal of up to 6 WTGs) would provide BOEM the opportunity to more directly addresses substantive concerns documented by the NMFS to date. This alternative would differ from Alternative D in that it would not be "substantially similar" to the proposed action and would provide greater	Under NEPA, as amended by the Fiscal Responsibility Act, BOEM is obligated to analyze "a reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal." Consequently, BOEM takes the technical and economic feasibility of a potential alternative into account when determining which alternatives to analyze in detail in an EIS.BOEM's detailed rationale for dismissing alternatives through application of the screening criteria is provided in

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	contrast with respect to significant environmental impacts than Alternative D. Such an alternative would be developed to meet screening criteria 2.b so that it meets the applicant's current contract obligations (PPAs)--as opposed to potential future obligations; and screening criteria 4 which is focused on a substantial reduction of a significant environmental impact. Recommended Action: The analysis would benefit from a fresh look at the criteria to address the concerns documented above.	Chapter 2, Table 2-3. The rationale for dismissing multiple alternatives under the subcategory of Wind Turbine Array Layout directly addresses the issues raised by this comment.
BOEM-2023-0011-0056-0014	Appendix E (E.1.2.2 Benthic Resources (p. E-2)): The DEIS acknowledges that "Surveys have not been completed for any of the alternative offshore export cable routes (Alternatives C-1 and C-2) where they diverge from the Proposed Action cable corridors. BOEM is relying on general information and the surveys of the Proposed Action cable corridors which are in close proximity to the alternative cable routes to characterize benthic habitat impacts." Recommended Action: According to the DEIS it is difficult to assess differences in impacts to benthic resources along two cable route options and recommend a preferred option without site- specific seafloor information including the possible presence of boulders and other complex habitat that is known to exist in Rhode Island waters. We agree. While the un-surveyed portions of the route alternatives are not extensive compared to the entire length of the cable corridor they nevertheless represent incomplete information needed for making an informed decision on which route is preferable for minimizing benthic impacts. EPA recommends this information be collected and made available in the FEIS.	Following the release of the Draft EIS, SouthCoast Wind, at BOEM's request, commissioned two desktop studies using existing site-specific and regional data to inform BOEM's assessment of the Alternative C cable routes: *SouthCoast Wind BOEM Alternative C Geohazard Desktop Study* (TetraTech 2023) and *SouthCoast Wind BOEM Alternative C-1 Benthic Desktop Study* (INSPIRE 2023). The findings from these desktop studies have been incorporated into the Final EIS (principally Section 3.5.2, *Benthic Resources,* and Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*) and support BOEM's analysis of the cable routes. BOEM believes the information contained in these desktop studies, along with existing information that BOEM and SouthCoast Wind have already gathered (including a terrestrial archaeological desktop study [PAL 2022] and a marine archaeological desktop study [Christopher Goodwin & Associates 2022]; refer to Section 3.6.2, *Cultural Resource*s) provides adequate information for BOEM to make an informed decision regarding the alternatives.
BOEM-2023-0011-0056-0015	According to the DEIS (p. 3.5.2-8 (Section 3.5.2.3) nonnative or invasive species can be accidentally released through the discharge of ballast water and bilge water. The risk of accidental releases of invasive species could increase as vessel traffic increases throughout the construction phase of	Text has been added in Section 3.5.2.3 to address this comment. A reference to a study (De Mesel et al. 2015) of invasive species that have become established on European wind farm foundations has been added. This reference also adds documentation of range expansion of invasive species

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	offshore wind projects especially from foreign vessels. The DEIS points to state and federal regulations that are intended to prevent the introduction of nonnative species from ballast waters discharges and that all vessels involved with offshore wind-related activities are required to adhere to these regulations. The DEIS concludes that the risk of nonnative or invasives becoming established from offshore wind-related activities is low. The risk of nonnative or invasives becoming "established" is based on more than just the potential for this industry to introduce these organisms. It must also consider how these organisms will adapt to their new environment. While the risk of introduction from wind- related activities may be low the DEIS acknowledges that the impacts of invasive species could be "strongly adverse widespread and permanent if the species were to become established and out-compete native fauna." The DEIS further states "[i]ndirect impacts could result from competition with invasive species for food or habitat and/or loss of foraging opportunities if preferred prey is no longer available due to competition with invasive species. Such an outcome however is considered highly unlikely." Given that this new hard structure habitat will undoubtably be populated by fouling organisms including nonnative or invasives it's unclear how such a definitive conclusion can be reached. Recommended Action: BOEM should review the available literature for documented effects of invasives in other areas of the country or in other countries where these structures have been sited and provide additional information in the FEIS on the effects of invasives. Additionally BOEM should consider funding a study to look at such effects from sites being developed in New England given its expressed concern that impacts could potentially be strongly adverse widespread and permanent.	from this wind farm in the North Sea. Additionally, the text "Such an outcome however is considered highly unlikely" has been removed when discussing competition with native species. Further discussion on invasive species specific to offshore wind development in New England (i.e., Block Island Wind Farm) is provided in the Presence of Structures subsection in Section 3.5.2.5. Results from benthic monitoring at Block Island Wind Farm are provided along with information on nonnative benthic invertebrate species that colonize introduced hard substrates. Additionally, an ongoing study funded by BOEM is evaluating the positive and negative habitat promotion outcomes of offshore wind infrastructure materials being used in the United States. Furthermore, this study is also evaluating the use of various materials by non-native species (e.g., *Didemnum vexillum*) which are commonly found on the northeast shelf to better understand trade-offs of promoting habitat utilization. Results from this study will be incorporated into the Final EIS once available. Link to description of ongoing study: https://www.boem.gov/sites/default/files/documents/environment/environmental-studies/Evaluating%20Effectiveness%20of%20Nature%20Inclusive%20Design%20Materials.pdf.
BOEM-2023-0011-0056-0016	The DEIS continues to point to the paucity of research on impacts of EMF (including heat emission) to benthic organisms especially non-commercial species while acknowledging that "Effects of EMF may include interference	Information presented in the EIS indicates that there is a lack of evidence of effects and impacts from EMFs. Effects of EMFs are not specific to SouthCoast, and the burial of the

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	with navigation that relies on natural magnetic fields predator/prey interactions avoidance or attraction behaviors and physiological and developmental effects." (p. 3.5.2-21). With this project and others like it nearby and along the East Coast hundreds of miles of electric cable will be placed on the seafloor without a clear understanding of its effects on the biological community that will be within the influence of EMF effects. Recommended Action: Given the thousands of miles of cable that will be carrying either AC or DC currents throughout various habitats and water depths on the seafloor in New England and Mid-Atlantic waters EPA recommends that BOEM address this concerning lack of understanding of EMF effects on both commercial and non-commercial marine and estuarine species through the support of peer-reviewed studies. EPA recommends that the BOEM FEIS include a specific plan for addressing the research needs for this important issue.	majority of cables is expected to significantly reduce or eliminate risks to benthic species. Recent studies on EMF have shown that effects can be significantly minimized when BMPs such as cable burial and the use of cable protection are employed. A list of BOEM-funded EMF studies on both commercial and non-commercial marine species can be found here: https://esp-boem.hub.arcgis.com/apps/electro-magnetic-fields-emf-studies/explore.
BOEM-2023-0011-0056-0017	The DEIS (Page: 304 Section 3.5.5.5 Impacts of Alternative B – Proposed Action on Finfish Invertebrates and Essential Fish Habitat - Cable emplacement and maintenance) states that the proponent "…is considering benthic imagery surveys to monitor benthic habitats and invertebrate impacts and recovery during the construction O&M and decommissioning phases (COP Volume 2 Table 11-20; Mayflower Wind 2022). Such surveys would aid in evaluating the impacts from cable installation and maintenance." Recommended Action: We recommend that these benthic surveys be required by BOEM.	SouthCoast Wind has developed a benthic habitat monitoring plan that describes surveys and monitoring measures that will be conducted to quantify changes in benthic community composition from Project operations. Fisheries and benthic habitat monitoring surveys are included in agency proposed mitigation measure BA-3 in Appendix G, Table G-2.
BOEM-2023-0011-0056-0018	Noise Impact Mitigation EPA supports the use of bubble curtains and other mitigation measures such as soft starts (DEIS 3.5.5-47 and elsewhere) or other measures to reduce noise impacts associated with pile driving.	SouthCoast Wind has proposed various sound-attenuation measures including bubble curtains and soft starts to mitigate impacts from pile driving (refer to Appendix G, Table G-1 and Attachment G-1).
BOEM-2023-0011-0056-0019	The DEIS discusses the potential need to "lift and shift" unexploded ordinance (UXO) if it is found to be in the path of the subsea cables and cannot be avoided. The "lift and shift" process would involve lifting the UXO and transporting it to	"Lift and shift" of unexploded ordnance/munitions and explosives of concern is permitted through the Rivers and Harbors Act of 1899, which is under U.S. Army Corps of Engineers (USACE) jurisdictional authority and not through

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	another location on the sea floor. Should this become necessary the applicant would need to obtain an ocean dumping permit from EPA under the Marine Protection Research and Sanctuaries Act for the transportation and dumping of the UXO onto the sea floor. Recommended Action: Please revise the list of required permits in Appendix A (Table A-1. Required environmental permits and consultations for the proposed Project) to reflect that an EPA Ocean Dumping Permit could be indicated if the UXO is addressed through a "lift and shift" procedure.	USEPA. An Ocean Dumping Permit from USEPA is not required.
BOEM-2023-0011-0056-0020	The DEIS (Page: 153 Table 3.4.2-9. Results from thermal plume modeling conducted for Mayflower Wind HVDC OSP) states that four thermal plume scenarios were modeled to provide the expected maximum extent of the plume (maximum tidal velocities) and maximum concentrations of the plume (minimum tidal velocities). Recommended Action: We recommend that the FEIS explain the greater dilutions at edge of the near-field region (NFR) under the low velocity ambient conditions presented in the Table. Also the FEIS should explain the greater distance to edge of NFR under low velocity ambient conditions presented in the Table.	Section 3.4.2, *Water Quality,* of the Final EIS has been updated to reflect the revised NPDES permit application results and provide explanation of dilution ratios at the edge of the near-field region and distance to the edge of the near-field region under minimum current conditions.
BOEM-2023-0011-0056-0021	EPA is concerned that the DEIS generalizes project impacts with broad general metrics to compare impacts across alternatives (negligible minor moderate or major impacts). The broad metrics often result in differing alternatives being characterized as having similar impacts when they are not. Recommended Action: The NEPA analysis would benefit from less focus on the presentation of generalized impacts and more on the clear tradeoffs between alternatives as measured by impacts. Such an approach would provide greater emphasis on the design of the alternatives that are intended to result in lowered impacts to benthic finfish and EFH habitats. We recommend that BOEM continue to work to expand upon the discussion of the differences in impact across alternatives rather than focus on categorizing the	BOEM believes the analysis in the Draft EIS provided appropriate level of detail and comparative analysis among alternatives in order for the public and decision maker to distinguish the impacts between alternatives. The level of analysis and detail by alternatives is commensurate with other BOEM offshore wind EISs. However, to improve the discussion and understanding of the differences between alternatives, BOEM has added a Comparison of Alternatives section to each Chapter 3 resource section that compares the impacts among alternatives. Additionally, BOEM added additional detail to various Chapter 3 sections where site specific information about the impact of an alternative was available.

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	impacts with broad metrics. These changes will benefit both the NEPA process and BOEM decision-making regarding alternatives.	
BOEM-2023-0011-0056-0022	EPA recognizes the long-term potential benefits of the proposed large-scale offshore wind renewable energy project with respect to reductions in the emissions of air pollutants. EPA acknowledges the importance of the project for meeting Massachusetts' Rhode Island's and Connecticut's renewable energy goals under their respective climate change and resiliency plans and policies as highlighted in Section 3.4.1: Cumulative Impacts of the No Action Alternative and Appendix D Table D-4 & D-5. Recommended Action: To better convey the potential GHG reduction benefits associated with the project EPA recommends that BOEM consider the specific contribution of the project towards meeting individual state emission reduction and clean energy goals. In COP Appendix G Table 6-1 BOEM provides the project's avoided emission factors for CO2 NOx and SO2 in New England. EPA recommends integrating this analysis into the FEIS to include the multi pollutant analysis for the project as compared to each affected state's emission reduction goals and policies. This analysis would better emphasize how and why the project is beneficial to the state and regional goals and standards. Furthermore EPA recommends that BOEM expand the discussion of avoided emissions to include an analysis of the avoided emissions benefits over the lifetime of the project as compared to the emissions generated during the construction phase. A comparison of the lifetime avoided CO2 NOx SO2 and PM emissions to those generated during the construction phase would better portray the long-term emissions benefits of the project. Additionally EPA recommends that BOEM consider a more robust consideration of climate change risks to the proposed action. This discussion should include the potential vulnerability of the project to future climate change scenarios	Information on the contribution of the Project toward meeting individual state goals has been added to the Final EIS. Avoided emissions are discussed in Section 3.4.1.5 of the EIS. Because the energy generated by the Project could displace energy from multiple fossil-fueled power plants in multiple states, but the specific plants that would be affected are not known, it would not be meaningful to assign a specific level of emission reduction to a specific state. Any level of avoided emissions would support state emission reduction goals and policies. A table of net carbon dioxide equivalent (CO_2e) emissions over the Project lifetime has been added to the EIS. Presentation of lifetime avoided nitrogen oxides (NO_X), sulfur dioxide (SO_2), and particulate matter emissions would not be meaningful because states do not plan on the basis of aggregated emissions totals of criteria pollutants over periods comparable to the Project lifetime. Rather, states plan for achieving and maintaining attainment with the NAAQS, which are defined in terms of time periods of a year or less (some with 3-year averaging). The U.S. Global Change Research Program's Fourth National Climate Assessment provides regional assessments of predicted climate impacts for 10 different geographic areas of the United States. Focusing on the existing and potential climate change risks that potentially could affect the Project, the Fourth National Climate Assessment notes the following climate-related impacts in the Northeast region of the United States: • Average annual temperatures in the Northeast are projected to rise between 4.0 degrees Fahrenheit (°F) and 5.1°F by 2050 relative to the near-present average, with

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	(including rising global temperatures more frequent and intense storm events storm surge changes in coastal currents and sea level rise). The design features of the facility must be able to withstand the long-term impacts of climate change to ensure the reliability of the project to deliver the expected energy output over its lifetime. In addition to assessing the potential vulnerabilities the analysis should include potential adaptation measures that could potentially be taken to mitigate those vulnerabilities.	an increase in the number and intensity of extreme heat events, especially in highly urbanized areas. • Rainfall intensity has increased, with monthly precipitation projected to be about 1 inch greater during December through April by the end of the century. • Sea level rise along the mid-Atlantic coast (from Cape Hatteras to Cape Cod) is occurring at three to four times the global average rate, due to land subsidence caused by rebound effects from the melting of glaciers after the last ice age, as well as shorter-term effects such as the recent slowing of the Gulf Stream current. • Average storm surge heights caused by hurricanes in the New York City area have increased by more than 3.9 feet over the last 1,000 years, which has coupled with sea level rise to contribute to storm surges that reach farther inland, as demonstrated by recent events such as Superstorm Sandy. • Many infrastructure systems in the Northeast, particularly drainage and sewer systems, flood and storm protection systems, transportation, and power supply systems, are either nearing their planned life expectancy or were not designed for projected climate variability, leading to increased risk of disruptions. Based on the regional climate-related impacts described above, the following potential impacts on Project infrastructure have been identified: • Project-related infrastructure at the O&M support facilities, onshore Points of Interconnection (POIs), onshore substations, and related facilities could be vulnerable to inundation during significant storm surge events. • Regional climate-related vulnerabilities in the electric transmission system potentially could have indirect impacts on the Project's ability to deliver electric power during system disruptions.

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		• Regional climate-related vulnerabilities in the transportation system could potentially have indirect impacts on the Project's ability to perform O&M tasks at either its onshore or offshore facilities. The Project itself has been designed to accommodate future climate risks. For example, the stormwater management system is being designed for extreme storm events considering climate trends. According to the COP Volume 2, Section 5.2.3, extreme storm effects and other climate effects are not anticipated to negatively affect the Project infrastructure or activities.
BOEM-2023-0011-0056-0023	Both the federal Clean Water Act (CWA) and the National Environmental Policy Act (NEPA) direct federal agencies to fully evaluate the impacts of a reasonable range of alternatives to meet the basic project purpose/purpose and need and to disclose those impacts to the public. When EPA evaluates the SouthCoast Wind application to the U.S. Army Corps of Engineers (USACE) for a federal permit under Section 404 of the Clean Water Act EPA focuses primarily on the aquatic environment subject to federal jurisdiction under the CWA that would be affected by the proposed project alternatives. Regulated activities in jurisdictional waters include cable installation work that occurs within three miles of the coastline. The USACE and EPA have a legal obligation to ensure that only the least environmentally damaging practicable alternative (LEDPA) be permitted and that no project be permitted that would result in significant adverse impacts to the aquatic environment. Appendix F of the DEIS provides information in support of the analysis of project compliance with EPA's Section 404(b)(1) guidelines (40 CFR 230)—guidelines which set forth the environmental standards which must be satisfied for a Section 404 permit to issue. Recommended Action: EPA recommends that the FEIS analysis of alternatives contain a more focused discussion of	Text in Appendix F was provided by SouthCoast Wind.

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	how the selected alternative is consistent with the CWA Section 404(b)(1) Guidelines to support permitting by the USACE. Such a discussion would demonstrate how the proposed/selected alternative qualifies as the LEDPA.	
BOEM-2023-0011-0056-0024	Page: 2 F.1 Falmouth Alternatives - Preferred Offshore Export Cable Route. We recommend that the discussion clarify the statement here and elsewhere in the analysis that there are "no anticipated impacts on tidal waters non-tidal waters wetlands or other protected resource areas anticipated." In other locations the DEIS describes anticipated impacts to tidal waters from cable installation.	Text in Appendix F, *Analysis of Alternatives,* was provided by SouthCoast Wind.
BOEM-2023-0011-0056-0025	Page: 6 Table F-1. Clean Water Act Section 404(b)(1) alternatives analysis table – Falmouth. We note that Table F-1 indicates that there is no fill associated with the alternatives. However as noted in the USACE public notice fill is placed when material is backfilled into trenches after cable installation. Because the cable installation area generally recovers over time the impacts associated with the backfill are generally considered to be temporary but it is not accurate to indicate that there is no fill being placed. We recommend that the narrative be revised to reflect this fill.	Change made. Table F-1 has been updated to include the amount of fill material associated with the alternatives, which is organized by total quantity (entire route), amount of fill material (state waters), seabed preparation (entire route) and seabed preparation (state waters).
BOEM-2023-0011-0056-0026	Page: 6 Table F-1. Clean Water Act Section 404(b)(1) alternatives analysis table – Falmouth. Table F-1 does not address cable protection. We recommend that the discussion describe the extent of cable protection that will be required for the Falmouth export cable. Any required protection should be indicated on table and included in the analysis.	Change made. Quantities for cable protection has been added to Table F-1 and the narrative of the appendix where appropriate.
BOEM-2023-0011-0056-0027	Page: 7 Proposed Action over Aquidneck Island via the Lee River (Western Route) with Point of Interest at Brayton Point with Portsmouth Route Options 1 2 2B and 3. The analysis states that under the proposed action “four onshore route variants are being considered.” The FEIS should clarify which Route Option is being incorporated into the preferred alternative.	A specific route will not be identified in the preferred alternative.

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BOEM-2023-0011-0056-0028	Page: 17 Table F-2. Clean Water Act Section 404(b)(1) alternatives analysis table – Brayton Point. As specified in the USACE public notice backfill of trenches during cable laying is considered a direct impact similar to the trench backfill in freshwater stream crossings. Because recovery of the resource is anticipated trench backfill impacts are generally considered temporary but the activity is still considered fill. Indicating the backfill amounts would better describe the temporary impacts to Sakonnet River that are avoided by upland routes.	Text in Appendix F, *Analysis of Alternatives,* was provided by SouthCoast Wind.
BOEM-2023-0011-0056-0029	Page: 17 Table F-2. Clean Water Act Section 404(b)(1) alternatives analysis table – Brayton Point. There is an asterisk in the Table heading Amount of Fill in Tidal Waters (Cable Protection). It is not clear what the asterisk references.	Change made. The asterisk has been deleted and notes to the table have been updated.
BOEM-2023-0011-0056-0031	ES-9 and 2-18: "Based on best available science BOEM believes there is a lack of conclusive evidence that the removal of proposed turbine locations in the northeastern portion of the Lease Area would measurably lessen these minor impacts on the hydrodynamic features." Recommended Action: Please provide a footnote with citations to document the best available science.	The reference to the best available science in Section 2.2.4 is referring to the study prepared by Johnson et al. (2021), which is cited immediately above the best available science reference. Furthermore, BOEM augmented the discussion in Final EIS Section 2.2.4 to describe the findings from the NASEM 2024 study on hydrodynamic impacts in the Nantucket Shoals region.
BOEM-2023-0011-0056-0032	3.4.2-15: "During decommissioning Mayflower Wind would drain all fluid chemicals from the WTGs and OSPs and dismantle and remove them. BOEM anticipates decommissioning to have temporary impacts on water quality with a return to baseline conditions." Recommended Action: The DEIS seems to suggest that fluid chemicals will be discharged to the ocean. The FEIS should describe whether this is the case and whether the need for any future discharge permits.	Final EIS Section 3.4.2 has been revised to clarify that no discharge of fluid chemicals is anticipated during decommissioning of offshore wind structures.
BOEM-2023-0011-0056-0033	3.4.2-22: "The WTGs and OSPs are generally self-contained and do not generate discharges under normal operating conditions." Recommended Action: The text in the FEIS should be revised to correct this statement as it is partially	Final EIS Section 3.4.2, *Water Quality,* has been revised to clarify that WTGs and OSPs do not generate "chemical" discharges under normal operating conditions.

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	incorrect. EPA has received a NPDES permit application for the continuous withdrawal and discharge from an OSP to be used as a HVDC converter station. We also recommend that the FEIS provide clarification of the number of and proposed use of each of the five proposed platforms.	As described in Chapter 2, *Alternatives,* SouthCoast Wind is proposing up to five OSPs, which could use HVAC) or HVDC technology. SouthCoast Wind has submitted an NPDES permit application for one HVDC converter OSP for Project 1. At this time, SouthCoast Wind has not selected the design or number of other OSPs. However, if HVDC is selected for Project 2, SouthCoast Wind anticipates one additional HVDC converter OSP would be installed in the southern portion of the Lease Area. Any future HVDC OSPs would require submittal of additional NPDES applications. Additional discussion of the potential for an additional HVDC converter OSP has been added to the discharges/intakes IPF discussion.
BOEM-2023-0011-0056-0035	3.5.2-20 "Based on the modeling results however the effluent discharges were found to be minimal. The maximum size of the thermal plume in winter and summer (defined as a 0.3°F water temperature differential from ambient) will have a near field release ranging from 272 to 306 feet (83 to 93 meters) respectively (TetraTech and Normandeau Associates Inc. 2022)."Recommended Action: This statement should be modified to reflect that the impact conclusions are based on time periods during maximum current speeds. In other parts of the discussion the DEIS reaches conclusions based on minimum current speeds.	The statement in the Final EIS was modified to represent that the modeling performed for the NPDES permit application for one HVDC converter OSP was under maximum current speeds. The values in the Final EIS were updated to reflect the updated 2023 NPDES permit application.
BOEM-2023-0011-0056-0036	3.4.2-24 "These generators are designed to achieve a hypochlorite solution flow rate of sufficient concentration corresponding with a 0 to 2 parts per million equivalent free chlorine concentration in the seawater intake lines … The impact on water quality from the discharge of warm seawater with small concentrations of bleach would be negligible. Impacts would be localized to the area immediately surrounding the outlet pipe." Recommended Action: The FEIS should explain the basis for this conclusion. Also we note that there is no mention of the concentration of total residual chlorine (TRC) at the discharge outfall. EPA's National Recommended Water Quality Criteria for aquatic life	The basis for this conclusion is stated that hypochlorite concentration are expected to be small (0.0002 percent per unit volume). Total residual chlorine is not identified in the NPDES permit application.

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	in saltwater for TRC are 7.5 micrograms per liter (µg/L) (0.0075 mg/L) (chronic) and 13 µg/L (0.013 mg/L) (acute).	
BOEM-2023-0011-0056-0039	It is very important that detailed maps indicating the various routes analyzed be included in the 404(b)(1) alternatives analysis for all routes under consideration. We recommend that these detailed maps include depictions of all resource areas considered in the analysis.	Change made. Figures have been updated and replaced in Appendix F, *Analysis of Alternatives,* to depicts all cable routes analyzed (Figures F-1, F-2, F-3, and F-4).

N.4.1.3 U.S. Coast Guard

Table N.4.1-3. Responses to comments from U.S. Coast Guard (BOEM-2023-0011-0062)

Comment No.	Comment	Response
BOEM-2023-0011-0062-0001	The DEIS resulted in an assessment ranging from negligible to moderate adverse impacts to Navigation and Vessel Traffic characteristics and moderate adverse impacts to Search and Rescue (SAR) activities. However previous DEIS's published for Massachusetts/Rhode Island (MA/RI) Wind Energy Area (WEA) projects adjacent to SouthCoast have resulted in assessments ranging from "minor to moderate." The USCG requests BOEM reexamine "negligible" adverse impacts to Navigation and Vessel Traffic and assess whether the negligible impacts identified should be considered as minor to align with similar studies conducted within adjacent WEA projects.	In the Draft EISs for the New England Wind Project and Sunrise Wind Project, both of which were released in December 2022 and are within the Massachusetts/Rhode Island WEA, BOEM concluded negligible to moderate impacts on navigation and vessel traffic from the Proposed Action. BOEM reexamined the impact conclusion for the SouthCoast Wind Project and determined the impact conclusion of negligible to moderate is appropriate and is consistent with other projects in the region.
BOEM-2023-0011-0062-0002	The USCG does not oppose either Alternative C-1 or C-2 which addresses the Project's export cable routing impacts to complex fisheries habitat. Alternative C-2 results in three routes across the Fall River Federal Channel increasing short-term and long-term navigation impacts. Approved cable routes must be coordinated with the USCG to mitigate impacts to Federal and Private Aids to Navigation (PATON) and to facilitate USCG asset operational support. The USCG recommends the Project coordinate approved cable routes with the First Coast Guard District and USCG Sector	BOEM acknowledges that USCG does not oppose either Alternative C-1 or C-2. BOEM has proposed a mitigation measure NAV-1 (refer to Appendix G, Table G-2), which would require SouthCoast Wind to consult with USCG regarding potential impacts on federal aids to navigation from cable installation and maintenance.

Comment No.	Comment	Response
	Southeastern New England to identify and mitigate potential conflicts to any Aid to Navigation.	
BOEM-2023-0011-0062-0003	The USCG recommends all Applicant-Proposed Measures (Table G-1) and Other Potential Mitigation Measures (Table G-2) of Appendix G be made mandatory especially measures that address impacts to USCG missions	Comment acknowledged. BOEM's proposed mitigation is identified in Final EIS Appendix G. USCG would be provided with an opportunity to review the measures in BOEM's ROD and Conditions of COP Approval.
BOEM-2023-0011-0062-0004	Any references to Local Notice to Mariners (LNM) and PATON should list the USCG as the anticipated enforcing agency.	USCG was listed as an enforcing agency for some mitigation measures referencing Local Notices to Mariners and private aids to navigation in the Draft EIS. BOEM has updated the Final EIS to list USCG as the enforcing agency for all other measures referencing Local Notices to Mariners and private aids to navigation.
BOEM-2023-0011-0062-0005	On page G-33 provide supplementary explanation for what is meant by coordinating directly with the USCG in response to search and rescue cases specifically as it relates to blade rotation and rotor shutdown.	A SouthCoast Wind Project WTG can be controlled and placed into a safe operational state by stopping the WTG from automatic operation and isolating the rotor to remain in a fixed position. This fixed position would allow a USCG helicopter to safely approach the WTG to assist and evacuate a person(s). A communication protocol would be established and practiced between SouthCoast Wind and USCG, as necessary.
BOEM-2023-0011-0062-0006	On page G-36 remove USCG from the anticipated enforcing agency for obstruction to air navigation and interference with radar systems and replace with the appropriate agency.	USCG was removed as the enforcing agency.
BOEM-2023-0011-0062-0007	On page G-51 provide supplementary explanation for NAV-2 of what is meant by direct communications with the USCG specifically during the use of cameras for monitoring the Project.	NAV-2 (see Appendix G, Table G-2, of the Draft EIS) would require SouthCoast Wind to operate a 24-hour operations center and be in communication with USCG. This measure is intended to ensure communication between SouthCoast Wind and USCG for purposes of navigational safety; the measure is not proposing to require the use of cameras. It should be noted that SouthCoast Wind has committed to operating an onshore control center that will monitor the Project 24 hours per day as noted in the COP NSRA (COP Appendix X). NAV-2 would provide the assurance that communication occurs with USCG as appropriate.

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BOEM-2023-0011-0062-0008	At the bottom of page 2-12 request the last sentence regarding reflective paint and lettering materials be changed from "would be used" to "may be used".	Final EIS Section 2.1.2.1 was revised to indicate reflective paint and lettering materials may be used.
BOEM-2023-0011-0062-0009	On page 3.6.1-44 request the second sentence in "Traffic" subheading be amended to reflect that off shore wind energy projects would request the establishment of safety zones around construction areas.	Section 3.6.1.3 was revised to state that offshore wind projects would request the establishment of safety zones around construction areas.
BOEM-2023-0011-0062-0010	On page 3.6.6-9 "First" is missing between USCG and District in the first paragraph.	“First” has been added between USCG and District.
BOEM-2023-0011-0062-0011	Safety Zones: The Commander First Coast Guard District may consider the establishment of limited access areas to include safety zones for Project construction on a case-by-case basis. Safety zones are not granted for the purpose of keeping construction on schedule and the authority should not be used as the primary mitigation measure for Project risks and impacts.	Draft EIS Section 3.6.6.5 acknowledges that safety zones may be established during construction and installation of the Project. BOEM recognizes the purpose of safety zones is not to maintain construction schedule and that safety zones should not be the only mitigation measure to minimize Project safety impacts. In addition to coordinating with USCG regarding the establishment of safety zones, SouthCoast Wind has committed to communicating with local mariners regarding upcoming and ongoing construction activities, to post Local Notices to Mariners on SouthCoast Wind’s website, to submit Local Notices to Mariners to USCG and Fleet Command prior to the commencement of offshore construction activities, and to coordinate directly with USCG in response to distress/SAR events (Appendix G, Table G-1).
BOEM-2023-0011-0062-0012	Amending Mitigations: The USCG requests the opportunity to suggest amendments to approved mitigations and terms and conditions at any time before during or after installation of the wind farm should material facts or circumstances come to light that were either unforeseen or were not reasonably available at the time these conditions were issued.	BOEM acknowledges USCG’s request regarding amending mitigation measures and will continue to coordinate with USCG in this regard.
BOEM-2023-0011-0062-0013	Re-Evaluation: The USCG requests the opportunity to re-evaluate any future mitigation analyses required by the Department of Interior especially related to Navigation and Vessel Traffic USCG missions and Other Uses such as National	BOEM acknowledges USCG’s request to reevaluate mitigation for the Project and will continue to coordinate with USCG in this regard.

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	Security and Military Activities Aviation and Air Traffic and Radar Systems	
BOEM-2023-0011-0062-0014	Post Record of Decision Involvement: The USCG requests timely access to construction plans such as Facility Design reports and/or Fabrication Installation Reports for the purpose of identifying activities impacting Navigation and Vessel Traffic and USCG missions on the Marine Transportation System especially Cable Burial Plans and their associated risk and feasibility assessments. Early access to these documents may prevent delays with planned activities.	The request for access to detailed construction plans is noted; BOEM would work with USCG and other cooperating agencies accordingly.
BOEM-2023-0011-0062-0015	The USCG does not oppose Alternative D - Nantucket Shoals. Although the intent is primarily to address potential impacts on protected species in the northeastern portion of the Project, eliminating up to six turbines could reduce the impact on navigation safety and USCG missions with proper lighting and marking.	BOEM acknowledges that USCG does not oppose Alternative D. Draft EIS Section 3.6.6.7 analyzes the impacts of Alternative D on navigation and vessel traffic and acknowledges that this alternative would incrementally decrease impacts on the resource.
BOEM-2023-0011-0062-0016	Alternative E - Foundation Structures and Alternative F - Muskegat Channel Cable Modification do not impact USCG authority and therefore the agency has no comment on the proposed actions.	Comment acknowledged.
BOEM-2023-0011-0062-0017	The USCG does not oppose the Proposed Action Alternative noting the Project would maintain an east west and north-south 1 x 1 nautical mile spacing between wind turbines and alignment with proposed adjacent wind farms. As concluded in the USCG's MA/RI Port Access Route Study a key means to mitigate adverse impacts to Navigation Vessel Traffic and USCG missions is for each wind farm across the entire MA/RI WEA to be organized in straight rows and columns creating a grid pattern consisting of at least three lines orientation. Common turbine spacing and layout help facilitate navigation safety consistent and continuous marking and lighting search and rescue and other uses such as commercial and recreational fishing.	Comment acknowledged.

N.4.1.4 U.S. Army Corps of Engineers

Table N.4.1-4. Responses to comments from U.S. Army Corps of Engineers (BOEM-2023-0011-0184)

Comment No.	Comment	Response
BOEM-2023-0011-0184-0001	The wetland impact amounts listed in the narrative and in the table do not match what is in Appendix F nor what is in the USACE public notice. In a meeting with SouthCoast Wind today the applicant stated that the numbers in the DEIS might no longer be accurate. USACE would like to set up a working group with BOEM and the applicant to go through the wetlands (and waters) impacts together to make sure they are accurate. USACE may need to do an updated public notice.	Pending information from SouthCoast Wind on EIS Appendix F, *Analysis of Alternatives to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0002	Page 3.5.8-6:Text: "Wetlands have very specific water elevation tolerances and if water is not deep enough it is no longer a wetland." Comment: This is true but it is in a paragraph talking about wetlands becoming excessively inundated and being converted to open water. Suggest removal.	Final EIS Section 3.5.8 has been revised and this sentence has been deleted.
BOEM-2023-0011-0184-0003	Page 3.5.8-8:Text: "If impacts would not be avoided or minimized mitigation would be anticipated for projects to compensate for lost wetlands. Overall impacts from land disturbance on wetlands are anticipated to be moderate." Comment: Change "would" to "could".	Final EIS Section 3.5.8 has been revised and this edit has been made.
BOEM-2023-0011-0184-0004	Page 3.5.8-10:Text: "One isolated open water area is located in the Lawrence Lynch onshore substation site for Falmouth; this open water area would not be considered wetland due to lack of vegetation." Comment: Suggest not mentioning this waterbody as none of the other waters impacts from the project are mentioned nor are they listed in table 3.5.8-3.	Final EIS Section 3.5.8 has been revised and reference to this feature removed.
BOEM-2023-0011-0184-0005	Text: "As shown in Table 3.5.8-3 and Figure 3.5.8-2 Route Option 2a would result in the greatest amount of wetland impact (2.48 acres) followed by Route Option 2b and Route Option 3 (both 0.34 acre) with Route Option 1 having the least impact (0.15 acre). In addition, 2.1 acres of wetland impact would be avoided along Route Option 2a by using HDD and	Text has been clarified in Final EIS Section 3.5.8 to state that the acreages were calculated showing impacts assuming the use of HDD and the additional numbers about avoidance using HDD was to provide additional context. The numbers in the Draft EIS are correct.

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	0.1 acre of wetland would be avoided along Route Option 1 and Route Option 3 by using HDD. Approximately 0.3 acre of wetland would be avoided along Route Option 2b by using HDD. No permanent (e.g. permanent fill) or long-term wetland impacts are anticipated on affected wetlands on Aquidneck Island." Comment: If HDD is definitely going to be used which the applicant has indicated then shouldn't the wetland impacts in Table 3.5.8-3 for the Aquidneck Island routes be adjusted down to the lower numbers?	
BOEM-2023-0011-0184-0006	Table 3.5.8-3 Footnote b:Text: "Mayflower Wind could use one of the three route options with the Landing to Options Split segment common to all three. In addition any wetland area along the cable corridor after the cable enters the HDD site is not considered an impact because the cable would be installed underneath any wetlands that may be along the cable corridor."Comment: Based on this footnote the wetland impacts for the Aquidneck Island options should be lowered so that they reflect the wetland impacts with HDD being used.	Pending information from SCW on EIS Appendix F, *Analysis of Alternatives to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0007	Figure 3.5.8-2:Suggest having applicant adjust the map to show where HDD will occur so you can put in the lower wetland impact numbers.	Pending information from SCW on EIS Appendix F, *Analysis of Alternatives to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0008	Page 3.5.8-14:Text: "The types of impacts under Alternative C-1 and Alternative C-2 would be similar to those described for the Proposed Action but slightly greater due to the larger area of land disturbance. Alternative C-1 east variant and C-1 west variant could each result in an additional 1 acre of wetland impact compared to the Proposed Action. Alternative C-2 which does not go through Aquidneck Island would potentially result in 0.24 acre of wetland impact which would be slightly less than the Proposed Action for Route Option 2a Route Option 2b and Route Option 3 but a slightly greater wetland impact than the Proposed Action for Route Option 1 (Table 3.5.8-3). These impact estimates are based on wetland mapping within the onshore export cable corridor (using a 40-foot-wide corridor) and includes some small area (<0.1 acre	Pending information from SCW on EIS Appendix F, *Analysis of Alternatives to Inform the USACE's 404(b)(1) Alternatives Analysis*.

Comment No.	Comment	Response
	total) of forested/shrub wetland impacts along Alternative C-1 west variant and Alternative C-2 which would be considered a long-term impact if the wetlands needed to be cleared."Comment: The additional wetland impacts listed here for the C-1 alternatives (1 acre) and the C-2 alternative (0.24 acre) do not match up with the information in Table F-2 for those alternatives. We need a meeting with BOEM USACE and the applicant to make sure these numbers are clarified and accurate.	
BOEM-2023-0011-0184-0009	Appendix F: USACE 404(b)(1) Analysis Overall comments:• The wetlands and waters impact amounts in the tables do not match what is Chapter 3.5.8 of the DEIS nor what is in the USACE public notice. In a meeting with SouthCoast Wind today the applicant stated that some of the numbers in the DEIS might no longer be accurate. USACE would like to set up a working group with BOEM and the applicant to go through the wetlands and waters impacts together to make sure they are accurate as USACE may need to do an updated public notice.	Chapter 3.5.8, *Wetlands*, of the FEIS was revised to match Appendix F, Analysis of Alternatives *to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0009	Appendix F: USACE 404(b)(1) Analysis Overall comments:• The wetlands and waters impact amounts in the tables do not match what is Chapter 3.5.8 of the DEIS nor what is in the USACE public notice. In a meeting with SouthCoast Wind today the applicant stated that some of the numbers in the DEIS might no longer be accurate. USACE would like to set up a working group with BOEM and the applicant to go through the wetlands and waters impacts together to make sure they are accurate as USACE may need to do an updated public notice.	Chapter 3.5.8, *Wetlands*, of the FEIS was revised to match Appendix F, Analysis of Alternatives *to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0010	There needs to be a figure showing all of the Falmouth alternatives considered and a figure showing all of the Brayton Point alternatives considered.	Appendix F has been updated to depict all alternatives for Falmouth and Brayton Point ECCs (Figures F-1, F-2, F-3, and F-4).
BOEM-2023-0011-0184-0011	We may need to break out the alternatives differently. The Brayton Point ones are a bit confusing.	Appendix F has been revised per USACE's requested edits.

Comment No.	Comment	Response
BOEM-2023-0011-0184-0012	Parts of the analysis are currently written from the applicant's perspective. In order for USACE to use it to complete the 404(b)(1) analysis it needs to be written from USACE's perspective.	Appendix F has been revised per USACE's requested edits.
BOEM-2023-0011-0184-0013	This is currently written as if the proposed action will be chosen in the FEIS. If one of the habitat minimization alternatives is deemed the LEDPA/chosen alternative then this would change.	Appendix F has been revised per USACE's requested edits.
BOEM-2023-0011-0184-0014	Page F-2:Text: "This route would be 309,028 linear feet and there are no anticipated impacts on tidal waters non-tidal waters wetlands or other protected resource areas anticipated (Table F-1)."Comment: This is inaccurate and needs to be changed. I think we discussed this during the preliminary DEIS review but it was too late to get it into the DEIS. Need to count impacts in tidal waters from HDD pits cable protection disposal from sand wave dredging etc. Text: "This route would be 301027 linear feet and there are no impacts on tidal waters non-tidal waters wetlands or other protected resource areas anticipated (Table F-1)."Comment: Same as above. Page F-3:Text: "This route would be 308338 linear feet and there are no impacts on tidal waters non-tidal waters wetlands or other protected resource areas anticipated (Table F-1)."Comment: Same as above. Text: "This route would be 321925 linear feet and there are no impacts on tidal waters non-tidal waters wetlands or other protected resource areas anticipated (Table F-1)."Comment: Same as above.	Text has been revised.
BOEM-2023-0011-0184-0015	Text: "The preferred landfall would have no impacts on tidal waters. Due to HDD drilling activities there is 0.22 acre of anticipated wetland impacts. There are no anticipated impacts on non-tidal waters or other special aquatic sites. "Comment: There are impacts on tidal waters from the HDD pits. Not sure where the 0.22 acre of estimated wetland impact from HDD drilling is coming from? This wetland impact	This text and Table F-1 have been revised to remove this impact estimate to wetlands as USACE would not consider the coastal beach habitat a wetland.

Comment No.	Comment	Response
	was not listed in Table 3.5.8-3 in the Wetlands section of the main body of the DEIS.	
BOEM-2023-0011-0184-0016	Page F-4:Text: "The Central Park landing and onshore cable route to the substation would have no impacts on tidal waters non-tidal waters wetlands or other special aquatic sites (Table F-1)."Comment: This is inaccurate and needs to be changed. I think we discussed this during the preliminary DEIS review but it was too late to get it into the DEIS. Need to count impacts in tidal waters from HDD pits cable protection disposal from sand wave dredging etc.	Text has been revised.
BOEM-2023-0011-0184-0017	Text: "Mayflower Wind will utilize HDD for the sea-to-shore transition of export cables between the ocean and the land; therefore there are no anticipated impacts to tidal waters. Due to HDD drilling activities there is 0.26 acre of anticipated wetland impacts. There is 0.01 acre of potential impacts on non-tidal waters due to a small stream crossing. There are no anticipated impacts on other special aquatic sites."Comment: There are impacts to tidal waters because of cable protection etc. within state waters associated with the export cables. Not sure why the HDD drilling would cause wetland impacts? This is not reflected in Chapter 3.5.8 of the DEIS.	Chapter 3.5.8, *Wetlands*, of the FEIS was revised to match Appendix F, Analysis of Alternatives *to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0018	Page F-6:Table F-1 needs to be updated to reflect tidal waters impacts. Need to double check on impact numbers so that the table in Chapter 3.5.8 this table and the USACE PN show the same amount of impacts. USACE would like to to set up a working group with BOEM and the applicant on this.	Chapter 3.5.8, *Wetlands*, of the FEIS was revised to match Appendix F, Analysis of Alternatives *to Inform the USACE's 404(b)(1) Alternatives Analysis*.
BOEM-2023-0011-0184-0019	Page F-7:Text: "Proposed Action over Aquidneck Island via the Lee River (Western Route) with Point of Interest at Brayton Point with Portsmouth Route Options 1 2 2B and 3"Comment: Should "Interest" be "Intersection"? This also occurs on page F-8 to F- 15	Change made to POI.
BOEM-2023-0011-0184-0020	Route Option 1 Text: "Because the route in its entirety would be HDD there are no impacts on tidal waters non-tidal waters wetlands or other protected resource areas anticipated (Table	Appendix F has been revised per USACE's requested edits.

Comment No.	Comment	Response
	F-2).”Comment: This doesn’t appear to match up with the impacts from other sources. USACE suggests forming a working group with BOEM and SouthCoast to iron these things out. This same occurrence is found on future pages of Appendix F when mentioning Route Option 1.	
BOEM-2023-0011-0184-0021	Route Option 2 Text: “There is 0.07 acre of impact anticipated due to a stream crossing along the route. There are also 1.12 acres of fill in wetlands anticipated due to construction and HDD activities through the Aquidneck Land Trust. There are no other anticipated impacts on protected resources. See Table F-2 for an impact summary. ”Comment: This doesn’t appear to match up with the impacts from other sources. USACE suggests forming a working group with BOEM and SouthCoast to iron these things out. This same occurrence is found on future pages of Appendix F when mentioning Route Option 2.	Appendix F has been revised per USACE’s requested edits.
BOEM-2023-0011-0184-0022	Route Option 2B Text: “There is 0.07 acre of impacts anticipated due to a stream crossing along the route. There is also 0.03 acre of fill in wetlands anticipated due to construction and HDD activities on the Roger Williams University property. There are no other anticipated impacts on protected resources. See Table F-2 for an impact summary. ”Comment: This doesn’t appear to match up with the impacts from other sources. USACE suggests forming a working group with BOEM and SouthCoast to iron these things out. This same occurrence is found on future pages of Appendix F when mentioning Route Option 2B.	Appendix F has been revised per USACE’s requested edits.
BOEM-2023-0011-0184-0023	Page F-8:Route Option 3 Text: “There is 0.07 acre of impacts anticipated due to a stream crossing along the route. There is also 0.03 acre of fill in wetlands anticipated due to construction and HDD activities on the Montaup Country Club property. There are no other anticipated impacts on protected resources. ”Comment: This doesn’t appear to match up with the impacts from other sources. USACE suggests forming a working group with BOEM and SouthCoast	Appendix F has been revised per USACE’s requested edits.

Comment No.	Comment	Response
	to iron these things out. This same occurrence is found on future pages of Appendix F when mentioning Route Option 3.	
BOEM-2023-0011-0184-0024	Page F-10:Text: “Mayflower Wind does not prefer this route due to the additional length and impacts on sensitive environmental resources. ”Comment: Analysis should not be from applicant’s point of view as this is a USACE analysis. Change to: “This route was not chosen due to the additional length and impacts on sensitive environmental resources.” This happens similarly on pages F- 11 F-12 F-14 and F-15 and should be changed.	Appendix F has been revised per USACE’s requested edits.
BOEM-2023-0011-0184-0025	Page F-14 and F-15:When talking about the issues with Habitat Alternative C-2 wording should be inserted about the route needing to cross the Fall River Harbor FNP three times and the logistical and permitting challenges this would pose.	Appendix F has been revised per USACE’s requested edits.

N.4.2 Cooperating State Agencies

N.4.2.1 The Massachusetts Office of Coastal Zone Management

Table N.4.2-1. Responses to comments from the Massachusetts Office of Coastal Zone Management (BOEM-2023-0011-0070)

Comment No.	Comment	Response
BOEM-2023-0011-0070-0006	The FEIS should include a calculation of equivalent adult losses of commercially important finfish species expected from this unavoidable entrainment. To ensure that these losses are and remain small through the operational lifetime of the project a monitoring plan should be developed and described in the FEIS. This should include a description of regular operational procedures to inspect the cooling water intake system its screens and other entrainment prevention apparatus and remediation measures that will be taken if intake velocity is found to be in excess of 0.5 fps or if impacts to target species are observed.	Entrainment estimates from the operation of an HVDC converter station presented in the EIS were based on calculations done in the NPDES permit application. The ichthyoplankton data used for the NPDES permitting process made use of available NOAA plankton survey data within a 10-mile (16-kilometer) radius of the potential converter station location in the Lease Area. Plankton survey data were taken from various depths, whereas the CWIS intake will withdraw water from a discrete depth in the water column: 81 feet (24.7 meters) above the seafloor and 74 feet (22.6 meters) below the surface. This would result in an overestimation of plankton entrainment estimates, as

Comment No.	Comment	Response
		individuals settling in demersal habitats or floating on the surface may not be susceptible to the CWIS intake flow. Based on CWIS design parameters outlined in the NPDES permit application Section 6.2, the calculated intake velocity is 0.458 feet/second, which is within the USEPA's 0.5 foot/second velocity requirement. Several design features such as single pump operation, circulating pumps with variable frequency drives, and the depth of withdrawal will be used to reduce mortality associated with entrainment. The NPDES permitting process is still underway, and a commitment to develop an impingement/entrainment monitoring plan for larvae of commercial fish species or other ichthyoplankton has not yet been determined.
BOEM-2023-0011-0070-0008	CZM is supportive of the enhanced mitigation area in the northeast portion of the lease that would impose additional mitigation measures to protect habitat in and adjacent to the highly productive Nantucket Shoals. As this area is a core habitat for NARW enhanced mitigation measures include longer time-of-year restrictions on pile-driving (November 1-May 31) and enhanced (e.g. 24- hr real-time) monitoring for pile-driving shutdowns and vessel-strike avoidance measures. As this is also an area of high productivity that supports commercially important fish species (and other consumers of zooplankton including NARW) other enhanced mitigation measures include limiting benthic disturbance area by requiring pile-driven foundations and limiting zooplankton entrainment by requiring open-loop cooling facilities be located outside of the enhanced mitigation area.	BOEM acknowledges the Massachusetts Office of Coastal Zone Management's support of the enhanced mitigation area.
BOEM-2023-0011-0070-0009	CZM is supportive of the mitigation measures described in Appendix G of the DEIS and recommends all measures be required in the ROD. As construction plans are finalized SCW should pursue the best available NAS technology including single or double bubble curtains or other technologies to minimize impacts on sensitive marine species. SCW should	BOEM acknowledges the Massachusetts Office of Coastal Zone Management's support of the mitigation measures proposed in Appendix G. As described in Attachment G-1, SouthCoast Wind is considering the use of various noise-attenuation measures, including single and double bubble curtains.

Comment No.	Comment	Response
	also assess the use of NAS during the controlled detonation of unexploded ordnance.	
BOEM-2023-0011-0070-0010	The DEIS and COP refer to several monitoring plans that will be (or may be) required during the permitting process. However only the Marine Mammal and Sea Turtle Monitoring and Mitigation plan was included as part of the COP and available for review. For the FEIS BOEM and SCW should make available all relevant monitoring plans so that CZM and other agencies can ensure monitoring efforts are sufficient to assess environmental impacts during all phases of the project. Specifically the FEIS should add at minimum a benthic habitat monitoring plan, a fisheries monitoring plan, plans to monitor piping plovers and other sensitive avian species, a plan to report boulder relocations, and a plan to ensure cables remain buried at the target depth.	SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework has been included as Attachment G-2 in Appendix G of the Final EIS. SouthCoast Wind's Boulder Relocation Plan is still in development and is not available to be included in the Final EIS. The Benthic Habitat Monitoring Plan has been developed and will included in Appendix G of the Final EIS. SouthCoast Wind has developed a Rhode Island Fisheries Monitoring Plan, which has been submitted to the Rhode Island Department of Environmental Management (RIDEM) as part of SouthCoast Wind's Water Quality Certificate application. A Fisheries Monitoring Plan for Massachusetts and federal waters is included in Appendix G of the Final EIS. SouthCoast Wind's Boulder Relocation Plan is still in development and is not available to be included in the Final EIS. The final target burial depth(s) of the cables will be within the ranges presented (between 3.2 feet [1.0 meter] and 8.2 feet [2.5 meters] for interarray cables; between 3.2 feet [1.0 meter] and 13.1 feet [4.0 meters] for export cables). The Cable Burial Risk Assessment study to date has confirmed that this burial depth range is suitable for the Lease Area and both ECCs.
BOEM-2023-0011-0070-0011	As monitoring plans are developed, the proponents should continue to work with ROSA RWSC and other research groups and offshore wind developers to coordinate reporting of data generated. In particular SCW should share data publicly in streamlined and standardized formats that include metadata such as coordinates, depths measurement units, method and instruments used, and other details needed to understand and replicate the data and analyses. When relevant data should be shared in a standardized format appropriate for	BOEM acknowledges the Massachusetts Office of Coastal Zone Management's comment on data coordination and data sharing. This request has been shared with SouthCoast Wind. Regarding adaptive mitigation for bats and avifauna, SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework has been included as Final EIS Appendix G, Attachment G-2. The monitoring framework includes approaches for adaptive monitoring. In addition,

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	spatial data such as shapefiles. Data recording protocols should also conform to accepted standards of practice for the data type e.g., Coastal and Marine Ecological Classification Standard (CMECS) for benthic data. CZM is supportive of the use of adaptive mitigation plans for bats and avifauna.	BOEM is proposing adaptive mitigation measure BRT-1 (Appendix G, Table G-2), which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if bird and bat impacts deviate substantially from the impact analysis included in the EIS.
BOEM-2023-0011-0070-0012	As the lead agency for the administration of the Massachusetts Ocean Management Plan (OMP) and it's implementing regulations (301 CMR 28) CZM's review of filings in state waters includes the proposed project's conformance with the plan's siting and performance standards in the ocean planning area. Under the OMP the siting standard for a cable infrastructure project requires the proponent to demonstrate that no less environmentally damaging alternative is practicable or that the project will cause no significant alteration of Special Sensitive or Unique (SSU) resources. Cable projects in the planning area must avoid certain SSU areas including the North Atlantic right whale core habitat areas of hard/complex seafloor intertidal flats and eelgrass. The performance standard in the OMP requires that the proponent demonstrate that the public benefits of the project outweigh the potential detriments posed by impacts to SSU resources that all practicable steps have been taken to avoid damage to the SSU resources and that there will be no significant alteration of the SSU resource values or interests. For the proposed SCW project potentially impacted SSU resources include areas of eelgrass and hard/complex seafloor particularly in the Muskeget Channel close to Martha's Vineyard and off Falmouth within the Falmouth ECC. Areas of hard/complex seafloor are defined as 1) areas of exposed bedrock or concentrations of boulder cobble or other similar hard bottom distinguished from surrounding unconsolidated sediments; 2) a morphologically rugged seafloor characterized by high variability in bathymetric aspect and gradient; or 3) man-made structures such as artificial reefs wrecks or other functionally equivalent	The comment (from the Massachusetts Office of Coastal Zone Management) refers to its requirement and process for a Coastal Zone Management Act consistency determination. This determination is separate from the NEPA process and will entail further coordination between the Project developer and the state. The developer has applied to the Massachusetts Office of Coastal Zone Management to initiate the consistency determination process. Please refer to Appendix A of the EIS and COP Volume 1 for more information on this permitting requirement. The EIS includes analysis of coastal impacts throughout subsections of Chapter 3.

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	structures that provide additional suitable substrate for the development of hard bottom biological communities. Maps of hard/complex seafloor were developed for the OMP using the best available data at the time. The resulting map "…is based upon the highest resolution data available and a specific project may obtain higher resolution data for project planning purposes." Additional data collected by a project proponent may be required to confirm the presence or absence of an SSU resource. SCW should consult with CZM regarding the conformance of the project with the siting and performance standards of the OMP.	
BOEM-2023-0011-0070-0013	Although not within the OMP Planning area the SCW lease area overlaps the NARW core habitat at its northeastern corner. Considering this as discussed above CZM supports 1) removing from consideration 6 WTG positions close to the Nantucket shoals as described for Alternative D and 2) applying enhanced mitigation measures in the northeast portion of the lease as described in Appendix G.	Comment acknowledged.
BOEM-2023-0011-0070-0014	This project plans to use DC cables for Brayton Point and may also use DC cables for Falmouth as described in Alternative F. While the safety of DC cables for human health and marine species is established they are likely not equivalent to AC cables in their environmental impact especially with respect to commercial fish species because DC cables create magnetic fields (MFs) that are static rather than alternating at 60 Hz like AC cables. The Earth's MF is static so animals attuned to using the Earth's MF to navigate will also be able to detect the static MFs created by DC cables while MFs from AC cables are largely undetectable or unremarkable to them. The magnitude of the MFs above buried DC cables can meet or exceed the magnitude of the Earth's MF creating the possibility for confusion for magneto-sensitive species during migration or other activities. Therefore statements in Table 2.4; column "Alternative F"; row "3.5.5 Finfish Invertebrates and Essential Fish Habitat" and rows "3.5.6 Marine Mammals"	Final EIS Section 3.5.5.5 (Proposed Action) and Section 3.5.5.9 (Alternative F) have been revised with additional discussion and references to studies regarding the differences in AC and DC cable EMFs and their effects on finfish and invertebrates. For example, Wyman et al. (2018) studied the impact that a DC cable had on migrating juvenile salmonids. The cable under study in Wyman et al. (2018) is applicable to the cable used for Southcoast Wind, with an achieved burial depth of ~6 feet (~2 meters), and the cable studied was DC, however with less load than the proposed cables for Southcoast Wind 200 kv versus 320 kv. While cables did appear to affect juvenile salmonid migration, these effects were minor and did not greatly reduce the ability of Juvenile salmonids to migrate along the cable route out into the Pacific Ocean. Other environmental factors further confound the ability to accurately predict the impact the cable had on migrating smolt, such as discharge,

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	and "3.5.7 Sea Turtles" and elsewhere in the DEIS which state EMF effects would be reduced compared to the Proposed Action are not correct. The nature of the MF impact of five AC vs three DC cables cannot be compared directly; five cables having little or no effect on magneto-sensitive species would be replaced by three that potentially do. The effects of DC cables on fishes at the population level are not well understood yet however there is sufficient evidence to indicate they cannot be assumed to be equal to the negligible effects of AC cables.	temperature, depth, and release location of tagged salmonids. Salmonids showed an attraction to the cable in all array locations, but this did not lead to an overall decrease in the ability of salmonids to migrate to the open ocean, compared to the two previous years when the cable was inactive.
BOEM-2023-0011-0070-0015	Appendix P2 of the COP addresses the EMF exposure from DC cables and acknowledges the difference in impacts associated with AC and DC cables. Notably BOEM commissioned a report in 2019 about the effects of EMF from offshore wind cables on commercial fish species. The conclusion of this report cited in Appendix P2 was that EMF was not likely to be harmful but a great many of the findings of no harm in this report hinged on the fact that as of 2019 nearly all offshore wind was using AC. This report concludes that AC undersea cables have negligible harm to commercially important species; this report did not adequately address the question of DC undersea cable impact and should not be cited in Appendix P2 as showing evidence of no harm from DC cables. BOEM should consider commissioning a report or an addendum to the 2019 report that addresses DC EMF effects since HVDC cables are expected to become more common especially as floating wind and other technological advancements allow offshore wind development further from shore.	Appendix P2 is part of the COP that was prepared by SouthCoast Wind. In the Final EIS, BOEM revised Section 3.5.5.5 (Proposed Action) and Section 3.5.5.9 (Alternative F) with additional discussion and references to studies regarding the differences in AC and DC cable EMFs and their effects on finfish and invertebrates. Refer also to response to comment BOEM-2023-0011-0070-0014. The EMF subsection of Section 3.5.5.3 introduces known impacts of DC cables from studies funded by BOEM (e.g., Hutchison et al. 2018) while the EMF subsection in Section 3.5.5.5 has been revised to include more information on the effects of DC cables on fish and invertebrates from recent studies.
BOEM-2023-0011-0070-0016	The FEIS should detail how SCW intends to monitor to minimize impacts from the entrainment of zooplankton (eggs and larval organisms) in the HVDC converter station cooling system(s). Due to the distance from the Lease area to the Points of Interconnection onshore SCW is proposing to transmit power via DC cables to Brayton Point and possibly to Falmouth as well. Transmission via HVDC requires the	Entrainment estimates from the operation of an HVDC converter station presented in the EIS were based on calculations done in the NPDES permit application. The ichthyoplankton data used for the NPDES permitting process made use of available NOAA plankton survey data within a 10-mile (16-kilometer) radius of the potential converter station location in the Lease Area. Plankton survey data was

Comment No.	Comment	Response
	construction and operation of a converter station within the lease area. The DEIS identifies that up to 10 million gallons per day of seawater would be withdrawn from the lease area to cool the converter station. The DEIS further describes how the intake velocity for the seawater cooling system will be kept below 0.5 feet per second (fps) to avoid impingement of juvenile and adult fish. However low flow rates do not avoid entrainment and mortality of eggs and larvae in the cooling system since these planktonic life stages cannot swim away. The DEIS lists the species with the highest expected larval entrainment and classifies the overall impact as long-term and moderate for finfish and invertebrates and long-term and minor for benthic resources and marine mammals.	taken from various depths, whereas the CWIS intake would withdraw water from a discrete depth in the water column: 81 feet (24.7 meters) above the seafloor and 74 feet (22.6 meters) below the surface. This would result in an overestimation of plankton entrainment estimates, as individuals settling in demersal habitats or floating on the surface may not be susceptible to the CWIS intake flow. Based on CWIS design parameters outlined in the NPDES permit application Section 6.2, the calculated intake velocity is 0.458 foot/second which is within the USEPA's 0.5 foot/second velocity requirement. Several design features such as single pump operation, circulating pumps with variable frequency drives, and the depth of withdrawal will be used to reduce mortality associated with entrainment. The NPDES permitting process is still underway, and a commitment to develop an impingement / entrainment monitoring plan for zooplankton has not yet been determined.

N.5 Responses to Lessee Comments on the Draft EIS

Table N.4.2-1. Responses to comments from the SouthCoast Wind Energy LLC (BOEM-2023-0011-0139)

Comment No.	Comment	Response
BOEM-2023-0011-0139-0009	Alternative C-1 presents a series of technical financial and legal challenges to the SouthCoast Wind Project. The route presented in Alternative C-1 would make landfall at a dynamic beach system with mobile sediments surrounded by wetlands parks and natural heritage areas. The Second Beach landfall site and routing from the landfall abuts the Norman Bird Sanctuary a 325-acre bird sanctuary nature preserve environmental education center and museum. To the east is Sachuest Point National Wildlife Refuge another nature preserve occupying 242 acres which serves as an important stopover and wintering area for migratory birds as well as a	

Comment No.	Comment	Response
	popular tourist destination for more than 65000 annual visitors. To the west is Newport a popular year-round tourist destination and a designated Rhode Island historic district. As BOEM correctly states in the DEIS the Alternative C-1 route would require export cable installation along predominately local two-lane roads without paved shoulders to get to Route 138 in Portsmouth RI. Once on Route 138 the onshore cable route would need to be installed along a four-lane road without paved shoulders which is abutted by commercial properties and residences. The roads are frequently abutted by old stone walls large trees with canopies overhanging the road and overhead utility poles and they pass through multiple residential areas. In a memo that was submitted to BOEM on September 28 2022 the Public Archaeology Laboratory Inc. (PAL) summarized the results of a cultural resource due diligence assessment that determined that a total of 71 cultural resources were identified within the Alternative C-1 proposed area of potential effect (PAPE); consisting of 15 aboveground resources (6 that are listed on the National Register) 6 historical cemeteries and 50 archaeological resources. Additional sensitive receptors abut the routes associated with Alternative C-1 including High Value / High Vulnerability Habitat and Natural Heritage Areas 216 and 209 according to RIDEM and Rhode Island Geographic Information System (RIGIS) wetlands parks reserves emergency and rescue service facilities churches schools and government facilities.	
BOEM-2023-0011-0139-0010	As previously stated Alternative C-1 would increase the total onshore export cable route by 9 miles (14 km). Limiting the onshore routing to a minimal distance is preferred as underground construction within public roadways can be disruptive and time consuming and underground construction and materials are very costly. Alternative C-1 would require a longer construction schedule due to the complexity of working in developed areas with local abutters traffic and existing infrastructure to navigate. The estimated	Please refer to response to comment BOEM-2023-0011-0139-0009.

Comment No.	Comment	Response
	rate of installation for the onshore export cable duct bank is approximately 50 - 100 ft per day depending on the number of active crews available workspace and the extent of existing underground utility congestion. Offshore cable installation would progress substantially faster at a rate of up to 1 mile per day for installation of one cable bundle under typical conditions. Additionally the multiple landowners along the route would create a legal patchwork with dozens of single points of failure that would create high risk and likely render the Project not investible. Alternative C-1 passes through coastal communities that are popular tourist destinations particularly in the summer months. Constructing exclusively in the off-season (Labor Day to Memorial Day) could be a requirement of any community agreement. In-water construction will also have seasonal construction limitations due to use conflicts and environmental considerations but because of the quicker progression of cable installation in water multiple construction seasons are likely not required. The combination of slower rate of progress and seasonal restrictions would result in a significantly longer construction period for onshore cable runs by additional years potentially resulting in increased environmental impacts negatively affecting the host communities and delaying delivery of much-needed renewable energy to the region.	
BOEM-2023-0011-0139-0011	Alternative C-2 presents a list of technical financial and legal challenges to the Project. The technical feasibility of the Alternative C-2 route through Little Compton and Tiverton is even lower than that of Alternative C-1. As BOEM pointed out in the DEIS the proposed landfall area on the ocean facing side of Breakwater Point is constrained with the parking lot separated from water by only a narrow strip of riprap coast. The surface grades may not allow for sufficient HDD burial depth in the approach to the onshore entry pit. Due to proximity to the marina and harbor vessel traffic in this area is expected to be high. After making landfall the onshore	Please refer to response to comment BOEM-2023-0011-0139-0009.

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	route would immediately pass by and temporarily restrict access to the public boat ramp. It also abuts the Haffenreffer Wildlife refuge which is a destination for birding. The onshore route would travel along busy two-lane roads with minimal paved shoulders and would pass a very high prevalence of protected natural historical and agricultural areas. In Tiverton Route 77 passes within 500 feet of Nonquit Pond and through the Tiverton Four Corners Historic District. The memo prepared by PAL which summarized the results of a cultural resource due diligence assessment determined that a total of 66 cultural resources were identified within the Alternative C-2 PAPE; consisting of 15 aboveground resources (4 of which are located on the National Register) 8 historical cemeteries and 43 archaeological resources.	
BOEM-2023-0011-0139-0012	Once on Schooner Drive for the HDD exit into Mount Hope Bay the route would impact the commercial operations of the Boat House Waterfront Dining Restaurant and the residential Village at Mount Hope Bay. Other sensitive receptors that would be impacted by Alternative C-2 include wetlands parks reserves emergency and rescue services facilities churches a yacht club a golf course schools and government facilities. Lastly once the export cables enter into Mount Hope Bay from the HDD area in Tiverton they would be forced to overlap with the U.S. Army Corps of Engineers (USACE) Fall River Harbor Channel Federal Navigation Project. As mentioned above Alternative C-2 would increase the total onshore export cable route by 13 miles (21 kilometers). Similar to Alternative C-1 the combination of slower rate of progress and seasonal restrictions for Alternative C-2 (less technically feasible than Alternative C-1) would result in a significantly longer construction period for onshore cable runs by additional years potentially resulting in increased environmental impacts negatively affecting the host communities and delaying delivery of much-needed renewable energy to the region. Also similar to Alternative C-1 the multiple landowners along the C-2 route would create a	Please refer to response to comment BOEM-2023-0011-0139-0009.

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	legal patchwork with dozens of single points of failure that would create high risk and likely render the Project not investible.	
BOEM-2023-0011-0139-0013	SouthCoast Wind evaluated multiple alternatives for both offshore and onshore components of the Project. Longer onshore crossings of Rhode Island (through Middletown Little Compton and Tiverton) are less feasible due to a variety of engineering construction environmental and other concerns and impacts. Based on the analysis performed SouthCoast Wind undertook a thorough route selection process for both offshore and onshore components of the Project to evaluate the environmental impacts social impacts costs and long-term maintainability to deliver renewable clean energy from the Lease Area to the regional transmission system. SouthCoast Wind determined that Alternative B (Proposed Action) would result in the least impacts to the social and natural environment and would allow for safe practical and long-term cable installation maintenance and operation as compared to both Alternative C-1 and Alternative C-2. The onshore routes of Alternative C-1 and Alternative C-2 would pass through sensitive environmental resources (multiple residential areas cultural resource areas and conservation areas) increase traffic congestion over a greater length of onshore routing and cost significantly more than equivalent distances of offshore cabling. Construction of Alternative B (Proposed Action) will cost-effectively provide access to a major renewable clean energy resource and will not cause unacceptable schedule delays of additional years and harm to the environment compared to Alternative C-1 and Alternative C-2.	Please refer to response to comment BOEM-2023-0011-0139-0009.
BOEM-2023-0011-0139-0014	Under Alternative D SouthCoast Wind would lose six WTGs in the northern portion of the Lease Area. Since SouthCoast Wind with the other MA/RI wind developers have committed to a fixed uniform grid layout across the Lease Area to allow commercial fishing vessels to traverse from their port(s)	BOEM acknowledges SouthCoast Wind's comment that removal of up to six WTG positions under Alternative D would not be recoverable elsewhere.

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	through the lease areas to fishing grounds all in a predictable and safe manner those six WTGs would not be recoverable elsewhere in the Lease Area.	
BOEM-2023-0011-0139-0015	SouthCoast Wind agrees with BOEM's statement in the DEIS that based on best available science there is a lack of conclusive evidence that the removal of the proposed WTGs in the Lease Area would measurably lessen the minor impacts on hydrodynamic features. Nonetheless SouthCoast Wind will continue to work collaboratively with BOEM NMFS and other relevant stakeholders to find ways to reduce potential impacts on NARW and other marine mammals that forage in the waters south of Nantucket Shoals. SouthCoast Wind has committed to additional mitigations measures in the northernmost portion of the Lease Area to reduce potential impacts to the NARW and other marine mammals during construction. SouthCoast Wind has committed to the following mitigation measures regardless of which NEPA Alternative is selected by BOEM: • No pile driving will be conducted within the Lease Area between January 1 - April 30 • Pile driving within the Enhanced Mitigation Area will occur only between June 1 to October 31 when NARW presence is at its lowest [Footnote 4: The Enhanced Mitigation Area as identified by BOEM in the DEIS in Appendix G Figure G-1 includes the first ~23 WTG positions in the northern portion of the Lease Area.] • To minimize potential impacts on zooplankton from impingement and entrainment no open-loop HVDC converter stations will be located within the Enhanced Mitigation Area of the Lease Area • Only monopile or piled jacket foundations will be installed within the Enhanced Mitigation Area which will minimize the overall structure impact on benthic prey species	BOEM acknowledges SouthCoast Wind's comment. These measures are included in Appendix G, Table G-1 and/or Table G-2 of Appendix G and are analyzed in Chapter 3.
BOEM-2023-0011-0139-0017	SouthCoast Wind included the less typically used substructure types of suction bucket jackets and GBS to	BOEM acknowledges SouthCoast Wind's comment regarding foundation selection.

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	ensure permitting was developed in the event there was an opportunity to utilize such foundation types from a technically and commercially beneficial prospective. As it currently stands implementation of suction bucket jackets and GBS foundations would have significantly higher technical risk as well as commercial and schedule impacts to the Project. All foundation types within the SouthCoast Wind PDE could be technically delivered for the Project. Under installation scenarios for suction buckets and GBS foundations however some grid locations would be at a very high risk of being lost due to soil conditions and there would be significant risk to the schedule and overall cost impacts to the Project. It is therefore recommended that the selection of foundation type between monopile piled jacket suction bucket jacket and GBS should be the decision of SouthCoast Wind.	
BOEM-2023-0011-0139-0018	SouthCoast Wind is currently on the fourth consecutive year of geotechnical investigations within the Lease Area to sample and analyze the soil properties at every WTG and OSP location within the 1X1 nm grid layout. The SouthCoast Wind Lease Area has a significant variability in soil properties within the depth of interest for a suction bucket foundation which leads to a highly variable risk of suitability of suction bucket jackets with some sites potentially being favorable while others are incredibly challenging and potentially not possible at all. The jacket lattice structure between a piled jacket and suction bucket jacket is relatively similar above and below water with the fundamental difference occurring at seabed where either piles or suction buckets are utilized. Preliminary design work has shown that the total mass of the suction buckets is between 50 - 100 percent heavier than the alternative required piles. In addition the fabrication complexity of the suction buckets is much greater than piles leading to cost per tonnage of more than double leading to an overall financial difference from the buckets to piles of 3-6 times the cost for supply.	BOEM acknowledges SouthCoast Wind's comment regarding foundation selection.

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BOEM-2023-0011-0139-0022	SouthCoast Wind conducted a market sounding for GBS compared to monopiles and piled jackets. The difference in cost showed up to 70 percent higher than traditional steel foundations. The primary driver of the increase in cost is due to the extensive materials and fabrication cost required to deliver the substructures. Additionally the GBS options also contain a very high-risk profile due to limited experience from fabricators executing such projects. One of the benefits of a GBS solution is the ability to have local fabrication however this comes with critical logistical and environmental challenges that must be addressed. With most typical GBS foundations having an integrated foundation up to interface the total height of such foundation is up to ~80 m. For GBS foundations that are transported by barges this results in only locations without bridge restrictions as being suitable. For ports that have deep channels and no air gap restrictions a significantly large port site is needed to complete the local fabrication. To effectively execute such a project 50 - 100 acres would be required. Combining all three requirements there are significant challenges in securing such a location to execute GBS foundations from. In addition geotechnical variability in the upper soil layers makes several locations unsuitable for GBS foundations. It would require significant dredging and seabed preparation for the GBS to be installed at these locations which would impact benthic habitat.	BOEM acknowledges SouthCoast Wind's comment regarding foundation selection.
BOEM-2023-0011-0139-0023	Under Alternative F only up to three export cables would be allowed in the Falmouth ECC in order to reduce environmental impacts in Muskeget Channel. SouthCoast Wind has assessed the ability to deliver up to 1200 MW of power to the Falmouth POI and would likely be able to do so in less than the required five export cables within the maximum case scenario in the COP PDE. Therefore, SouthCoast Wind is willing to work with BOEM on Alternative F and its implications to the overall Project and associated environmental impacts.	BOEM acknowledges SouthCoast Wind's comment regarding Alternative F.

Comment No.	Comment	Response
BOEM-2023-0011-0139-0037	Additionally with respect to Project's onshore infrastructure shown in mapped areas where environmental justice populations have been identified the EJ Mapper used in the DEIS was subsequently updated in November 2022 by the Massachusetts Executive Office of Energy and Environmental Affairs. The updated EJ Mapper based on the latest data made available by the U.S. Census Bureau shows that the Project mapping has materially changed because Edgartown and Swansea no longer contain any block groups that meet the EJ criteria although they did previously. Accordingly, SouthCoast Wind requests that BOEM reflect these updates in the FEIS.	BOEM has updated the discussion and maps of Massachusetts in Final EIS Section 3.6.4 with the November 2022 Massachusetts Executive Office of Energy and Environmental Affairs data and figures.
BOEM-2023-0011-0139-0039	Page 2-33 within Section 2.2 Table 2-3 states that "neither the Falmouth Tap nor the Brayton Point POIs have the capacity even after planned upgrades to receive all power generated from the Project at a single POI". Please note that new proposals for upgrades to the regional transmission system and normal turnover in the ISO-NE interconnection queue have made it possible for Brayton Point to handle the full generating capacity of the Lease Area as long as the capacity is interconnected in accordance with the ISO-NE "single-source contingency" reliability requirement. ISO-NE enforces this requirement so that the loss of a single piece of equipment does not result in a net loss of more than 1200 MW of energy resources from the regional system.	BOEM acknowledges SouthCoast Wind's comment regarding the ability of the Brayton Point POI to handle the full energy-generating capacity of the Project. Following the release of the Draft EIS, SouthCoast Wind revised its COP to identify Brayton Point as the preferred POI for both Project 1 and Project 2 and Falmouth as the variant POI for Project 2. As stated in the COP, due to uncertainty around ISO-NE grid capacity and the extent and timing of necessary grid upgrades on Cape Cod where the Falmouth POI is located, SouthCoast Wind's preferred POI for both Project 1 and Project 2 is Brayton Point. In the event that technical, logistical, grid interconnection, or other unforeseen challenges arise during the design and engineering phase that prevent Project 2 from making interconnection at Brayton Point, Project 2 will make landfall and interconnect in Falmouth, Massachusetts, under the Falmouth variant scenario. This change is reflected in the Final EIS.
BOEM-2023-0011-0139-0040	Page 2-34 within Section 2.2 Table 2-3 has a footnote stating "To distinguish between the portions of the Project interconnecting at the two POIs which would have different offtake agreements and associated timelines BOEM is using the terms Phase 1 and Phase 2. Phase 1 refers to development of the offshore portion of the Project	The table note under Final EIS Chapter 2, Table 2-3 in Chapter 2 has been removed. BOEM has incorporated a description of Project 1 and Project 2 based on the revised COP in the body of Chapter 2 in Section 2.1.2, which precedes Table 2-3.

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	connecting to the Falmouth POI. Phase 2 refers to development of the offshore portion of the Project connecting to the Brayton Point POI." Please note that as specified in Section 3.2 of the SouthCoast Wind COP Project 1 refers to Project components associated with the Brayton Point POI and will be built first and Project 2 refers to Project components associated with the Falmouth POI and will be built last. Based on this characterization SouthCoast Wind requests that BOEM swap the definition of "Phase 1" and "Phase 2" in the DEIS so Phase 1 aligns with SouthCoast Wind's Project 1 (Brayton Point) and Phase 2 aligns with SouthCoast Wind's Project 2 (Falmouth).	
BOEM-2023-0011-0139-0041	Page 3.4.1-13 within Section 3.4.1.5 Table 3.4.1-4 shows construction emissions starting in 2023. Please note that as shown in SouthCoast Wind indicative construction schedule (Section 3.2 of the COP) construction will commence no earlier than 2024.	The analysis in the Final EIS has been revised to reflect the new construction schedule for the Project based on SouthCoast Wind's revised COP.

N.6 Responses to Other Agency, Stakeholder, and Public Comments on the Draft EIS

N.6.1 Purpose and Need

Table N.6.1-1. Responses to comments on the purpose and need (Draft EIS Chapter 1)

Comment No.	Comment	Response
BOEM-2023-0011-0076-0003	This project has neither purpose or need to combat the climate crisis and will not increase resilience to the impacts of climate change; protect public health; conserve our lands waters and biodiversity or deliver environmental justice. It will in fact do the opposite of those requirements in Executive Order (EO) 14008 Tackling the Climate Crisis at Home and Abroad issued January 27 2021. The shared goals of the federal agencies to deploy 30 gigawatts (GW) of offshore wind energy capacity in the United States by 2030 is incompatible	As stated in Draft EIS Section 1.2, the project purpose is grounded in BOEM's authority under the Outer Continental Shelf Lands Act (OCSLA) to authorize renewable energy activities on the OCS, EO 14008, the shared goals of the federal agencies to deploy 30 gigawatts (GW) of offshore wind energy capacity in the United States by 2030 while protecting biodiversity and promoting ocean co-use, and consideration of the goals of the Project applicant.

Comment No.	Comment	Response
	with protecting biodiversity and promoting ocean co-use and in consideration of the goals of the Applicant the purpose of BOEM's action should be to disapprove Mayflower Wind's COP. This is self evident in the request received by NMFS for authorization under the MMPA to take marine mammals incidental to construction activities related to the Project. This is also problematic because there is no way to prove that the developer is responsible for marine mammal deaths or harm. Until such time as there is to make such a determination no authorization should be allow. As in the current UME blame is shifted because of plausible deniability.	The comment that BOEM should disapprove the Project on the basis of potential take of marine mammals during Project construction is noted. Please refer to Draft EIS Appendix G, which identifies numerous mitigation measures that would avoid/minimize impacts on marine mammals during construction and operation.
BOEM-2023-0011-0088-0004	ISO-New England has said the grid in its current form cannot accept the power that would be generated by all the wind farms planned for the offshore lease areas. Massachusetts Gov. Maura Healey has recognized the haphazard approach of each offshore wind developer targeting their own landfall for onshoring is untenable and has called for a timeout to develop a more coordinated approach with other New England states. The outcome of this work would likely result in significant changes to Mayflower's plans, making the current plans moot. That is if the serious environmental concerns raised above allow any plan at all.	The comment is noted; however, BOEM has received no information from SouthCoast Wind that its proposed POIs, combined, are incapable of receiving the power that would be produced by the Project. However, due to uncertainty around ISO-NE grid capacity and the extent and timing of necessary grid upgrades on Cape Cod where the Falmouth POI is located, SouthCoast Wind revised its COP following the release of the Draft EIS to identify Brayton Point as the preferred POI for both Project 1 and Project 2 and Falmouth as the variant POI for Project 2. In the event that technical, logistical, grid interconnection, or other unforeseen challenges arise during the design and engineering phase that prevent Project 2 from making interconnection at Brayton Point, Project 2 would make landfall and interconnect in Falmouth, Massachusetts, under the Falmouth variant scenario. This change is reflected in the Final EIS. It should also be noted that in August 2023, the Massachusetts Department of Energy Resources and electric distribution companies issued a new request for proposal for 3,600 MW of offshore wind production.
BOEM-2023-0011-0089-0004	Massachusetts Governor Healey recently spoke about the New England grid infrastructure's lack of capacity to accept the proposed generated power as well as the lack of internal	Following the release of the Draft EIS, SouthCoast Wind revised its COP to identify Brayton Point as the preferred POI for both Project 1 and Project 2 and Falmouth as the

Comment No.	Comment	Response
	New England cooperation for transmission and distribution. When we look at the Brayton Point electric plant ability to accept merely one half of the power from one of possibly eight lease generators this is a huge limiting factor. The Brayton Point site choice is the safest appropriately suited site and it can accept one-sixteenth of the generated power. All the remaining landfalls must find suitable sites impacting residential and public spaces. A comprehensive multi –State offshore generator and inshore distribution integration plan needs to exist before any approvals are given	variant POI for Project 2. As stated in the COP, due to uncertainty around ISO-NE grid capacity and the extent and timing of necessary grid upgrades on Cape Cod where the Falmouth POI is located, SouthCoast Wind's preferred POI for both Project 1 and Project 2 is Brayton Point. In the event that technical, logistical, grid interconnection, or other unforeseen challenges arise during the design and engineering phase that prevent Project 2 from making interconnection at Brayton Point, Project 2 would make landfall and interconnect in Falmouth, Massachusetts, under the Falmouth variant scenario. This change is reflected in the Final EIS. Regarding the need for an offshore generator and inshore distribution integration plan, development of such a plan would need to be coordinated amongst state governments and is outside BOEM's purview and jurisdiction. It should also be noted that in August 2023, the Massachusetts Department of Energy Resources and electric distribution companies issued a new request for proposal for 3,600 MW of offshore wind production.
BOEM-2023-0011-0091-0012	This fact is further supported by the ISO-New England Power Grid which has stated recently that the existing grid cannot handle any significant addition of new power from the offshore sources. Therefore, they are holding any further additions in order to properly assess the multi-state regions grid modernization needs etc. Therefore, new wind projects and their elements need to be re-evaluated as to their design. This situation in turn means the basis contained represented and evaluated in this DEIS is will likely be subject to major changes and particularly so for the delineation of the best paths from the ocean windfarm location to the actual grid in its new form.	Please refer to response to comment BOEM-2023-0011-0089-0004.
BOEM-2023-0011-0091-0013	The prior paragraph's statements are emphasized by the recent action by the Governor of Massachusetts to pause and develop a New England statewide approach to new energy	Please refer to response to comment BOEM-2023-0011-0088-0004.

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	sources. She has created a new position in her administration to work with the US DOE and the representatives from other New England States in this effort. All of which indicate changes to the grid system from where it stands today are necessary and unavoidable. Therefore, the BOEM would be acting prematurely to accept and consider the proposed DEIS at this time.	
BOEM-2023-0011-0112-0004	Massachusetts has agreed to purchase a total of 1204 MW from this project through two procurements. However, the lease area could generate a total of 2400 MW and SouthCoast Wind is actively exploring additional offtake opportunities including upcoming state solicitations as well as contracts with private entities (page 1-5). We are concerned that SouthCoast Wind may pursue opportunities for offtake agreements with private entities. It is unclear how this process would differ from the state process and any terms and conditions and mitigation measures that can be required as part of the PPAs. The FEIS should provide more details about these types of contracts.	Prospective private offtake agreements were, as noted, acknowledged in the Draft EIS. Consistent with BOEM Guidance, a PDE concept has been proposed using a "maximum-case scenario." In the event a private or public offtake agreement should require substantial changes to the PDE concept that trigger adverse environmental effects, supplemental environmental review under NEPA could be required. Until any differences are identified, they would be considered speculative.
BOEM-2023-0011-0112-0006	The National Environmental Policy Act requires consideration of a range of alternatives which could meet the defined purpose and need for the action. The purpose and need section of the SouthCoast Wind DEIS (i.e. Section 1.2) is very ambiguous and does not provide clear criteria for determining which specific configurations of the project may meet the purpose and need of the action. Relevant criteria are listed in a subsequent section (i.e. Section 2.2: Alternatives Considered but Not Analyzed in Detail) which is not referenced in Section 1.2. This is confusing for readers of the DEIS and should be corrected in the FEIS.	Draft EIS Section 2.2 identifies the screening criteria that BOEM used in selecting the alternatives to be analyzed in the EIS. These screening criteria are consistent with BOEM's guidance, *Process for Identifying Alternatives for Environmental Reviews of Offshore Wind Construction and Operations Plans pursuant to the National Environmental Policy Act,* published June 22, 2022, and available at: https://www.boem.gov/sites/default/files/documents/renewable-energy/BOEM%20COP%20EIS%20Alternatives-2022-06-22.pdf. These criteria include meeting the purpose and need as identified in Section 1.2. Consistent with BOEM's screening criteria, an alternative would be considered but not analyzed in detail if it would not meet the primary goals of the applicant, including not satisfying existing contractual offtake obligations and not meeting a project's nameplate capacity required to be

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		eligible for future offtake award. Configurations of the Project that meet the purpose and need and the screening criteria have been analyzed as alternatives in the EIS.
BOEM-2023-0011-0112-0007	As we have stated in previous comment letters for other wind projects the implication that BOEM will not consider approval of projects smaller than proposed by the developer or necessary to meet existing procurements is very concerning as it limits BOEM's ability to consider ways to reduce the potential negative impacts including "protecting biodiversity and ocean co-use." The SouthCoast Wind FEIS and future DEIS and FEIS documents for other projects should indicate that "approve with modifications" could mean approving a smaller project than what is proposed in the COP or than would be necessary to meet existing procurements. We also suggest expanding on the terms biodiversity and ocean co-use to make it clear that the project will avoid risks to the health of marine ecosystems ecologically and economically sustainable fisheries and ocean habitats. BOEM should clearly acknowledge that if these risks cannot be avoided they should be minimized mitigated and compensated for.	BOEM's alternatives screening criteria for COP EISs are outlined in BOEM's *Process for Identifying Alternatives for Environmental Reviews of Offshore Wind Construction and Operations Plans pursuant to the National Environmental Policy Act,* published June 22, 2022, and available at: https://www.boem.gov/sites/default/files/documents/renewable-energy/BOEM%20COP%20EIS%20Alternatives-2022-06-22.pdf. Consistent with BOEM's screening criteria, an alternative would be considered but not analyzed in detail if it would not meet the primary goals of the applicant, including not satisfying existing contractual offtake obligations and not meeting a project's nameplate capacity required to be eligible for future offtake award. BOEM has analyzed several alternatives designed to minimize potential environmental impacts, including Alternative D, which would reduce the number of WTGs SouthCoast Wind could develop. The terms *biodiversity* and *ocean co-use* are used in reference to the Administration's goals for deploying 30 GW of offshore wind and are appropriate as referenced.
BOEM-2023-0011-0117-0002	Statement of Purpose: In the statement of purpose the DEIS justifies the project based on its ability "to address the needs identified by the Massachusetts EDCs for new sources of power generation that are cost-effective and reliable as well as to contribute to the Section 83C offshore wind mandate." Given that Massachusetts has mandated an energy transformation comparing the project to a "no-action" alternative is capricious and invalid.	NEPA analysis requires that an EIS include a no-action or no-build alternative as a basis for comparison with one or more action alternatives. To meet NEPA requirements, the Draft EIS includes a No Action Alternative.
BOEM-2023-0011-0136-0010	BOEM must clarify what is driving the purpose and need for the proposed action and consequently the framing of the NEPA analysis. For the SouthCoast Wind project the DEIS	As stated in Draft EIS Section 1.2, the Project purpose is grounded in BOEM's authority under the OCSLA to authorize renewable energy activities on the OCS, Executive

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	analyzes the entire project area despite the PPAs in place for only part of the anticipated energy offtake. As stated in previous RODA letters the purpose and need of the proposed action should be to fulfill the agency's purpose and need not solely that of a project applicant's objectives - including PPAs. [Footnote 12: RODA comments on Revolution Wind DEIS available at http://rodafisheries.org/wp-content/uploads/2022/11/221017-DEIS_Revolution_Wind.pdf] Yet the DEIS fails to provide a clear justification to develop the full 2400 MW project. [Bold: At a minimum BOEM must provide clear consistent and data-driven rationale for the purpose and need for offshore energy projects.] It is a disservice to the marine environment and industries reliant on the ocean to permit development without addressing this fundamental question. [Footnote 13: Again this reiterates the need for a cumulative and holistic approach to offshore energy development.]	Order 14008, the shared goals of the federal agencies to deploy 30 GW) of offshore wind energy capacity in the United States by 2030 while protecting biodiversity and promoting ocean co-use, and consideration of the goals of the Project applicant. BOEM's action is needed to fulfill its duties under the lease, which require BOEM to make a decision on the lessee's plans to construct and operate commercial-scale offshore wind energy facilities within the Lease Area (the Proposed Action) (30 CFR 585.628). Since the Draft EIS was released, the status of SouthCoast Wind's offtake agreements has changed, as acknowledged in SouthCoast Wind's revised COP and the Final EIS, Chapter 1, *Purpose and Need*. A project is not required to have PPAs established in order for BOEM to proceed with its environmental analysis. BOEM reviewed SouthCoast Wind's COP and determined the information was adequate to evaluate the Project under NEPA.

N.6.2 Proposed Action and Alternatives

Comment No.	Comment	Response
BOEM-2023-0011-0004-0005	The Falmouth Select Board has suggested the wind company find another alternate location to land its cables like the old Pilgrim Nuclear Power Plant.	BOEM considered alternatives to the Proposed Action that were identified through coordination with cooperating and participating agencies and through public comment received during the public scoping period for the EIS. Based on the criteria outlined in Section 2.2, *Alternatives Considered but Not Analyzed in Detail*, the old Pilgrim Nuclear Power Plant was not analyzed as an alternative. Making landfall in Plymouth, Massachusetts would require a longer combined offshore and onshore export cable route and the offshore cables would need to be routed northeast around Cape Cod before crossing through the Cape Cod Ocean Sanctuary and potentially through Stellwagen Bank National Marine Sanctuary to reach landfall. This is a highly sensitive environmental area. Environmental impacts would

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		be increased due to the increased length of the route and the sensitivity of the offshore route. This suggested route would not result in lesser impacts compared to the current proposed Falmouth export cable route. Should these and other proposed alternatives (see other yellow highlights below) also be added to the alternatives considered but dismissed in Table 2-3?
BOEM-2023-0011-0007-0002	Rather than each project laying their own offshore export cable the government should support efforts to lay a central trunk cable that each of the projects could tie into. Under the current cabling setup once all the leased projects become operational there may be close to 10 separate cables in MA waters. That is not efficient poses a cumulative impact on the seafloor and causes continuous disruption over a 10-15 year period.	BOEM considered but did not analyze in detail an alternative for a common cable corridor for nearby offshore wind projects. As further detailed in Chapter 2, Table 2-3, BOEM dismissed this alternative from detailed analysis as it cannot limit a lessee's right to a project easement when a shared cable corridor does not yet exist and there is no way of determining if the use of a future shared cable corridor would be a technically and economically practical and feasible. In addition, BOEM determined it would be impracticable for SouthCoast Wind to share a cable corridor with known corridors of other nearby projects because they would connect to the power grid via different onshore interconnection points. Cumulative impacts from cable installation of the Proposed Action and other offshore wind projects are analyzed in relevant sections of Chapter 3.
BOEM-2023-0011-0025-0002	The push back on this project is due to the onshore site selection for the wind power cables and substation. The site is one of the most heavily used recreational and beach areas in Falmouth and densely populated. I don't understand why the undersea cables cannot continue up Falmouth Harbor or the Cape Cod Canal to a substation resulting in a more efficient and delivery and less construction. Most area residents are in favor of wind and solar power; the request is to consider less disruptive and probably more efficient alternatives to the current site selection.	BOEM considered alternatives to the Proposed Action that were identified through coordination with cooperating and participating agencies and through public comment received during the public scoping period for the EIS. Based on the criteria outlined in Section 2.2, *Alternatives Considered but Not Analyzed in Detail*, the Falmouth Harbor and the Cape Cod Canal were not analyzed as an alternative. Falmouth Harbor is not a feasible alternative because the landfall sites would be space-constrained with the available area for HDD construction. Cape Cod Canal is not considered a feasible alternative from a safety, spatial, and burial risk point of view. The canal is a narrow channel (approximately 480 foot-wide corridor) and

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		would present a spatial constraint for cable installation, maintenance, and repair (if needed). This would introduce additional safety risks during the Project installation, and potential impact to marine navigation during construction.
BOEM-2023-0011-0029-0003	Clean Energy is a worthwhile pursuit but not at any cost. It's clear that Southcoast Wind (AKA Shell Oil which has approximately $400B in assets and $40B in cash) has chosen the lowest cost route that will maximize their return regardless of the impact on the Town of Falmouth and its residents. The health of all the Falmouth residents their children grandchildren and tourists who utilize the beach and park area and the preservation and quiet enjoyment of these recreational areas should be the overriding concerns. I would expect state and town officials who are elected to serve the best interests of their constituents to apply much broader and stricter criteria that would not "roll the dice" on these unfavorable consequences and would require Southcoast Wind to identify a commercial/industrial site like Brayton Point for this industrial size project. I understand the benefits of clean energy and the political momentum behind these efforts but it is critical to do it right and find a more appropriate site to onshore these cables. Let's preserve our current natural resources and green space in the pursuit of clean energy. Given the size of the planned offshore wind farm there should be a more thoughtful approach to the various onshore locations and transmission strategies.	BOEM evaluated and disclosed the impacts of the Falmouth landfall locations on the Town of Falmouth and its residents in various sections of Chapter 3, including Section 3.6.3, *Demographics, Employment, and Economics*, and Section 3.6.5, *Land Use and Coastal Infrastructure*. As described in responses to comments submitted by other commenters, including comments BOEM-2023-0011-0004-0005 and BOEM-2023-0011-0025-0002, BOEM evaluated additional alternative landfall locations suggested by comments on the Draft EIS and dismissed them from consideration as they were not feasible and did not meet BOEM's screening criteria. Following the release of the Draft EIS, SouthCoast Wind revised its COP to identify Brayton Point as the preferred POI for both Project 1 and Project 2 and Falmouth as the variant POI for Project 2. As stated in the COP, due to uncertainty around ISO-NE grid capacity and the extent and timing of necessary grid upgrades on Cape Cod where the Falmouth POI is located, SouthCoast Wind's preferred POI for both Project 1 and Project 2 is Brayton Point. In the event that technical, logistical, grid interconnection, or other unforeseen challenges arise during the design and engineering phase that prevent Project 2 from making interconnection at Brayton Point, Project 2 would make landfall and interconnect in Falmouth, Massachusetts, under the Falmouth variant scenario. This change is reflected in the Final EIS.
BOEM-2023-0011-0033-0001	Southcoast (Mayflower) has submitted a plan to make landfall of high voltage cables from their offshore windfarm through our residential neighborhood. The area is zoned residential and not industrial which their plan indicates based on size and	BOEM evaluated and disclosed the impacts of the Falmouth landfall locations on the Town of Falmouth and its residents in various sections of Chapter 3, including Section 3.6.3, *Demographics, Employment, and Economics*, and Section

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	complexity. Southcoast has gone to the state for exemption of zone laws and even Article 97 of the Massachusetts Constitution without the approval of residents and or Town Meeting. Furthermore Southcoast has been less than open in their communications to residents and our Selectmen. These cables are industrial and not an application through a densely populated residential area. The current plan is to traverse our public parks and ball fields too where children play. There are concerns of safety pollution substation noise and light pollution health related impacts loss of home values and the general right to our peaceful enjoyment. We request the BOEM to have Southcoast find a more reasonable alternatives that use industrial routes versus residential zoned areas for their onboard cables.	3.6.5, *Land Use and Coastal Infrastructure*. Section 3.6.5 acknowledges that SouthCoast Wind is seeking a comprehensive exemption from the operation of the zoning bylaws of the Town of Falmouth. If the SouthCoast Wind COP is approved, BOEM will include a condition that requires the developer to have all state and local permits in place before commencing operations. As described in responses to comments submitted by other commenters, including comments BOEM-2023-0011-0004-0005 and BOEM-2023-0011-0025-0002, BOEM evaluated additional alternative landfall locations suggested by comments on the Draft EIS and dismissed them from consideration as they were not feasible and did not meet BOEM's screening criteria.
BOEM-2023-0011-0034-0001	At the Falmouth Selectboard meeting in December several alternatives were mentioned that the developer has not considered including the existing power plant in Sandwich on the Cape Cod Canal which has new owners interested in working with wind farm companies. The Pilgrim plant and Waquoit Bay were also suggested. The Bay has some interesting potential as cables could follow Rt. 28 and when they are being installed a sewer line could be placed to accommodate the eventual sewer construction to serve impaired bay area. It would be also possible to come ashore near Trunk River and follow the bike path to Jones Road near the Hospital lights.	BOEM considered alternatives to the Proposed Action that were identified through coordination with cooperating and participating agencies and through public comment received during the public scoping period for the EIS. Based on the criteria outlined in Section 2.2, *Alternatives Considered but Not Analyzed in Detail*, the Cape Cod Canal, the Pilgrim plant, Waquoit Bay, and Trunk River were not analyzed as an alternative. Cape Cod Canal and Trunk River landfall locations are not considered a feasible alternative from a safety, spatial, and burial risk point of view. The canal is a narrow channel (approximately 480 foot-wide corridor) and would present a spatial constraint for cable installation, maintenance, and repair (if needed). This would introduce additional safety risks during the Project installation, and potential impact to marine navigation during construction. Making landfall at the Pilgrim plant would require a longer combined offshore and onshore export cable route and the offshore cables would need to be routed northeast around Cape Cod before crossing through the Cape Cod Ocean Sanctuary and potentially through Stellwagen Bank National Marine Sanctuary to reach landfall. This is a highly sensitive

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		environmental area. Environmental impacts would be increased due to the increased length of the route and the sensitivity of the offshore route. This suggested route would not result in lesser impacts compared to the current proposed Falmouth export cable route. Making landfall at Waquoit Bay would require interconnecting at the West Barnstable Substation in Hyannis, Massachusetts, that would be used as the interconnection for the Park City Wind project and the Commonwealth Wind project. Therefore, the POI was eliminated for further consideration.
BOEM-2023-0011-0043-0001	In particular I think the Canal Substation in Sandwich should be considered as an alternative to the Falmouth substation. A 2014 report entitled "Offshore Wind Transmission Study" was commissioned by the Massachusetts Clean Energy Center (www.masscec.com). Its evaluation identifies the Canal Substation as one of three best connection points along the south shore. Brayton Point is another of the three but not the Falmouth substation. I suspect the choice of Falmouth substation was influenced by an initial intention to use HVAC cable. With a change to now use HVDC cable a longer undersea route becomes more viable.A cable from the wind farm to the Canal Substation could take the following possible route. From the wind farm to the mouth of Buzzards Bay the cable would share a corridor with the cable for Brayton Point. The cable would then branch off through the middle of Buzzards Bay to the canal at the head of the bay. At that point one option would be for the cable to leave the seabed and be housed in a covered culvert along the eastern bank of the canal until reaching the Canal Substation. I suspect the BOEM jurisdiction would be mostly restricted to evaluating the tradeoff between having a cable traverse Buzzards Bay instead of passing to the east of Martha's Vineyard. But if the total environmental impact on both land and sea for the two alternative routes were to be compared I believe the route to the Canal Substation would prove to be far preferable.	BOEM considered alternatives to the Proposed Action that were identified through coordination with cooperating and participating agencies and through public comment received during the public scoping period for the EIS. Based on the criteria outlined in Section 2.2, *Alternatives Considered but Not Analyzed in Detail*, the Cape Cod Canal, the Pilgrim plant, Waquoit Bay, and Trunk River were not analyzed as an alternative. The Cape Cod Canal landfall location is not considered a feasible alternative from a safety, spatial, and burial risk point of view. The canal is a narrow channel (approximately 480 foot-wide corridor) and would present a spatial constraint for cable installation, maintenance, and repair (if needed). This would introduce additional safety risks during the Project installation, and potential impact on marine navigation during construction.

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BOEM-2023-0011-0043-0002	I don't think that delaying the project altogether is warranted. If possible I think it would be a good idea to separate the project into stages. If Stage 1 were to be defined as all of the wind farm plus the route and grid connection at Brayton Point an approval of that would allow SouthCoast Wind to proceed without delaying revenue from the first half of the installation. And work on Stage 1 should allow sufficient time for a Stage 2 further evaluation of alternatives for the second route.	As described in Final EIS, Section 2.1.2, *Alternative B – Proposed Action*, SouthCoast Wind would develop the Project in two parts, referred to as Project 1 and Project 2. SouthCoast Wind proposed developing the entirety of Lease Area (including positions for Project 1 and Project 2) in its COP because the financing strategy depends on using economies of scale for major supplies and services; and the validity and competitiveness of their bid into the New England multi-state solicitation depends on being able to develop two projects. An alternative that only considered the construction and operations of Project 1 would be economically infeasible and equivalent to the No Action Alternative.
BOEM-2023-0011-0053-0001	We at the Town Dock support alternative 1: No Action. While reading through the different alternative's impacts I noticed that the "No Action" alternative also includes "cumulative impacts of the no action alternative" where it assumes that all other offshore wind farms will be built out. The "No Action" alternative including a cumulative one in all DEIS's should be a true no action as in no offshore wind construction is approved and carried out and construction is compared to the current non-developed state.	Under the No Action Alternative, BOEM would not approve the COP and the SouthCoast Wind Project would not be built. Ongoing activities that would contribute to baseline conditions, excluding the Proposed Action, are also described under the No Action Alternative. Offshore wind activities that have already been constructed or that have an approved COP are considered ongoing activities that have been included in the No Action Alternative. These offshore wind activities have completed the environmental review process and the public has had the opportunity to comment on them. The No Action Alternative does not include reasonably foreseeable planned activities, such as the build-out of other offshore wind projects within the region. The No Action Alternative acts as the baseline to evaluate potential impacts of the Proposed Action within the geographic analysis area for each Chapter 3 resource topic. The CEQ NEPA Implementing Regulations require a NEPA impact analysis to include cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to other past, present, and reasonably foreseeable actions. The cumulative impact analysis for the No Action Alternative considers the impacts of ongoing activities and other reasonably foreseeable

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		planned activities, excluding the Proposed Action, as described in Appendix D, *Planned Activities Scenario*. The cumulative impact analysis of the Proposed Action considers approval of the SouthCoast Wind Project in combination with other reasonably foreseeable planned activities within the geographic analysis area for each Chapter 3 resource topic.
BOEM-2023-0011-0065-0003	We continue to object to BOEM's conflation of a true No Action Alternative with a Cumulative Impacts Analysis. We continue to object to a cumulative impacts scenario being used as a baseline against which action alternatives are measured. This is not a baseline. It is a cumulative impacts scenario. They are not the same. Conflating the two downgrades impacts of the action alternatives. BOEM cannot deliberately and artificially minimize the impacts of its actions by essentially gerrymandering the parameters of its analysis.	Please refer to response to comment BOEM-2023-0011-0053-0001.
BOEM-2023-0011-0065-0007	Alternative D: The DEIS states that "Alternative D was developed through the scoping process" because "a commenter speculated" that turbines in the northeastern portion of the lease would alter the foraging habitat for critically endangered North Atlantic Right Whales. That was not a "commenter". It was a cooperating federal governmental agency namely NOAA the federal agency charged with protection of our nation's marine resources including marine mammals. The "comment" was from the Chief of NOAA's Northeast Fisheries Science Center's Protected Species Branch. We have attached that letter along with our comments.	Comment acknowledged. Please refer to responses to comments BOEM-2023-0011-0065-0008 through BOEM-2023-0011-0065-0015 regarding how BOEM considered alternatives to minimize impacts on wildlife near Nantucket Shoals, including NARW.
BOEM-2023-0011-0065-0008	BOEM asserts that "Based on best available science BOEM believes there is a lack of conclusive evidence that the removal of proposed turbine locations in the northeastern portion of the Lease Area would measurably lessen these minor impacts on the hydrodynamic features." First we do not agree that BOEM has the expertise to override a NOAA Chief of Protected Species when it comes to science impacting not	BOEM determined an appropriate way to further address this issue was to seek input from NASEM. Specifically, to ensure offshore wind energy installations are being planned, constructed, and developed in an environmentally responsible way, BOEM asked NASEM to evaluate the potential for offshore wind farms in the Nantucket Shoals region to affect oceanic physical processes, and, in turn, how

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	only protected species but in fact critically endangered species that NOAA is legislatively charged with protecting under the Endangered Species Act. BOEM alleges that the impacts noted by NOAA are not consistent with hydrodynamic studies of wind facilities in the North Sea. This is incorrect.	those hydrodynamic alterations might affect local to regional ecosystems. In light of the resulting Consensus Study Report and based on best available science, BOEM believes there is a lack of conclusive evidence that the proposed WTG locations in the Lease Area have the potential to result in hydrodynamic effects on NARW foraging in the vicinity of Nantucket Shoals.[3] The best available science suggests that effects are most likely to be localized to the immediate vicinity of the turbine array and to not extend to Nantucket Shoals. Primary studies supporting this position include modeling of the full build-out of the southern New England lease areas (Johnson et al. 2021), hydrodynamic studies of wind facilities in the North Sea (Christiansen et al. 2022), and recent comprehensive literature reviews (NASEM 2024). In particular, NASEM study was commissioned to "evaluate the potential for offshore wind farms in the Nantucket Shoals region to affect oceanic physical processes, and, in turn, how those hydrodynamic alterations might affect local regional ecosystems." The study, titled *Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales,* concluded that "the impacts of offshore wind projects on the NARW and the availability of their prey in the Nantucket Shoals will likely be difficult to distinguish from the significant impacts of climate change and other influences on the ecosystem" (NASEM 2023). Furthermore, the key recommendation from the study is "while wind energy planning and development progresses, the BOEM, NOAA,

[3] Two of the primary conclusions from the NASEM report *Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales* (2024) demonstrate that it is not reasonable to conclude eliminating a large number of WTGs from Beacon Wind would have a significant beneficial effect. Specifically, "**Conclusion:** The paucity of observations and uncertainty of the modeled hydrodynamic effects of wind energy development at the turbine, wind farm, and regional scales make potential ecological impacts of turbines difficult to predict and/or detect." and "**Conclusion:** The hydrodynamic impacts from offshore wind development in the Nantucket Shoals region on zooplankton will be difficult to isolate from the much larger magnitude of variability introduced by natural and other anthropogenic sources (including climate change) in this dynamic and evolving oceanographic and ecological system."

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		and others should promote observational studies and modeling that will advance understanding of potential hydrodynamic effects and their consequent impacts on ecology in the Nantucket Shoals region during all phases of wind energy development." BOEM is also supporting additional research on this topic, in accordance with the NASEM recommendations. During the process of identifying the Massachusetts lease areas BOEM excluded certain areas identified as important habitats that could be affected if ultimately developed with the installation of WTGs. Nantucket Shoals was among the areas excluded from the subsequent commercial leasing. BOEM does not assert there are no effects from wind turbine wake and corresponding wind speed and clarifies that the effects will not likely have a detectable effect on foraging and will not have population-level impacts on important species including NARW. Without impacts on foraging and a reasonable causal connection to population impacts, NMFS's reasoning for this alternative is not justifiable or persuasive. NMFS has not demonstrated its 12-4-mile (20-kilometer) buffer alternative is warranted or provided any new information to support it, and current available peer-reviewed studies and data constituting best available science do not conclude that there would be a reasonable expectation of population-level impacts.
BOEM-2023-0011-0065-0009	One European study "Accelerating deployment of offshore wind energy alter wind climate and reduce future power generation potentials" from 2021 notes the wind wake effect from large scale wind farms to extend 35-40 km downwind during prevailing wind. [Footnote 6: See Akhtar Naveed et. al. "Accelerating deployment of offshore wind energy alter wind climate and reduce future power generation potentials" Nature/Scientific Reports 2021 https://doi.org/10.1038/s41598-021-91283- 3.]This study noted that "the simulated wake affects of the wind turbine can be underestimated and thus the wake effects of wind	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	farms can be underestimated" and that "the development of massive clustered OWFs significantly impacts the wind climate". [Footnote 7: Ibid p. 5.] Mayflower/South Coast Wind is part of such a cluster namely the MA WEA which is over 1400 square miles of planned offshore wind turbines.A 2022 study "Emergence of Large-Scale Hydrodynamic Structures Due to Atmospheric Offshore Wind Farm Wakes" states that "simulations show the emergence of large-scale attenuation in the wind forcing and associated alterations in the local hydro- and thermodynamics" and that "[i]nduced changes in the vertical and lateral flow are sufficiently strong to influence the residual currents and entail alterations of the temperature and salinity distribution in areas of wind farm operation". [Footnote 8: Christiansen et al. "Emergence of Large-Scale Hydrodynamic Structures Due to Atmospheric Offshore Wind Farm Wakes" Frontiers in Marine Science 2022 doi: 10.3389/fmars.2022.818501.] This study demonstrated approximately 30 km of wake; however it was based off of estimates taken at hub height for existing offshore wind farms in the North Sea which have smaller turbines than the 1066 foot high turbines being planned for the Mayflower/South Coast project. [Footnote 9: Ibid p. 4.] [Footnote 10: Ibid p. 5.] [Footnote 11: See DEIS p. ES-7.] Therefore it is reasonable to assume that the wind wakes for the Mayflower/South Coast project will extend further than their European counterparts. This study concluded that the wake effects "indicate potential impact on marine ecosystem processes."This is not a new concept. In 2018 a study conducted for the Netherlands entitled "Assessment of system effects of large-scale implementation of offshore wind in the southern North Sea" identified that "impact of wakes (wind shadows) on wave generation may be significant and impact may still be present near the coast e.g. with respect to density driven transport of suspended matter and nutrients in coastal areas directly influenced" "Tidal current blockage may have repercussions for tidal dynamics in the southern North Sea" "Enhanced	

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	vertical mixing of the water column may lead to (local/regional and/or temporal) destratification and resuspension of SPM and nutrients and concurrent shifts in light climate" and "Feeding activities from epistructural fauna on the OWF foundations may significantly decrease phytoplankton densities around wind farms affecting in turn zooplankton densities." [Footnote 12: Boon et al. "Assessment of system effects of large-scale implementation of offshore wind in the southern North Sea" Wageningen University and Research Deltares 2018.] Zooplankton is what critically endangered North Atlantic right whales feed upon.	
BOEM-2023-0011-0065-0010	In 2022 a new study entitled "Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea" stated "that the associated wind wakes in the North Sea provoke large-scale changes in annual primary production with local changes of up to ±10% not only at the offshore wind farm clusters but also distributed over a wider region. The model also projects an increase in sediment carbon in deeper areas of the southern North Sea due to reduced current velocities and decreased dissolved oxygen inside an area with already low oxygen concentration. Our results provide evidence that the ongoing offshore wind farm developments can have a substantial impact on the structuring of coastal marine ecosystems on basin scales." [Footnote 13: Daewel et al. "Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea" Communications Earth and Environment 2022 https://doi.org/10.1038/s43247- 022-00625-0 | www.nature.com/commsenv. Emphasis ours.] The decrease in primary productivity including zooplankton can have an impact on ecosystems on basin scales well outside of the actual wind farm itself.This is larger area is consistent with data quoted by BOEM in its own documents such as those for the New York Bight leases. A report by ArcVera Renewables entitled "Estimating Long-Range External Wake Losses in Energy Yield and Operational Performance Assessments Using	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	the WRF Wind Farm Parameterization" specifically analyzed the potential for large project to project wake impacts for the NY Bight lease areas resulting in simulations depicting wind speed deficits of 7% up to 100 km away from the wind facility with a 28.9% loss of wind at the wind farm itself. [Footnote 14: Stoelinga et. al. "Estimating Long-Range External Wake Losses in Energy Yield and Operational Performance Assessments Using the WRF Wind Farm Parameterization" ArcVera Renewables 2022.] Larger projects and larger conglomerate lease areas such as the New York Bight and MA WEA leases will generate larger impacts than a single project on its own. If such conglomerate lease areas can create wind wake effects up to 100 km away then BOEM must seriously consider that cumulative impacts of the Mayflower/South Coast project along with the other RI/MA and MA WEA projects could extend to cover the entirety of Nantucket Shoals.	
BOEM-2023-0011-0065-0012	We disagree with and contest BOEM's conclusion that "there is a lack of conclusive evidence" of these impacts. Peer reviewed science and developer documents utilized by BOEM itself contradict this conclusion. In fact the expert analysis of NOAA's Chief of Protected Species Branch which recommended a 20 km or more "conservation buffer" from the 30 meter isobath of Nantucket Shoals that would be a no build zone for the project is likely on the lower end of impact estimates given the larger size of the Mayflower/South Coast turbines compared to their European counterparts. This is even acknowledged by NOAA: "A conservation buffer of 20 km also corresponds to the extent of the strongest impacts to depth-averaged velocity salinity and sea-surface elevation changes as observed in the North Sea where the largest impacts extended 20-30 km and where turbines both height and number were much smaller than planned development in southern New England (Christiansen et al. 2022)." [Footnote 15: See NOAA letter May 13 2022 attached.] Notably NOAA states that there are no mitigation measures that can change	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	or lessen the impact from building in this area: “unlike vessel traffic and noise which can be mitigated to some extent oceanographic impacts from installed and operating turbines cannot be mitigated for the 30- year lifespan of the project unless they are decommissioned.” The only way to avoid impacts is not to build.	
BOEM-2023-0011-0065-0013	This particular area is “a prime portion of their only winter foraging grounds” of the critically endangered North Atlantic right whale. [Footnote 16: Ibid and see density chart on attached NOAA GOM presentation.] “Disturbance to right whale foraging could have population-level effects on an already endangered and stressed species” and “[r]ight whales need dense aggregations of prey to make foraging energetically worthwhile and disruptions to prey aggregations in the only known winter foraging area for right whales could have significant energetic and population consequences.” [Footnote 17: Ibid.] For a species whose coastwide including Canada PBR is 0.7 this level of impact is unacceptable. [Footnote 18: See https://www.narwc.org/uploads/1/1/6/6/116623219/2021report_cardfinal.pdf.] BOEM must prevent threats to endangered species; it has a legislative mandate to do so. Any activity that cannot be mitigated which would have a potential population level impact on an endangered species simply must not be taken.And this impact does not even account for the entrainment of zooplankton the North Atlantic right whale’s only food source from the proposed project’s offshore open ocean cooling substations. NOAA also acknowledges this threat: “Additionally offshore substations pose an unknown risk related to water withdrawals and impingement/entrainment of zooplankton and other prey species.” [Footnote 19: See NOAA letter May 13 2022 attached.]	Please refer to response to comment BOEM-2023-0011-0056-0012.
BOEM-2023-0011-0065-0014	Interestingly BOEM acknowledged conflicts with this particular areas and North Atlantic right whales over a decade	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	ago. In both its 2012 and 2014 EAs for the MA WEA BOEM included an "Alternative B- North Atlantic Right Whale Area Exclusion" based on density estimates from that time which were lower than they are now as right whale use of the area has increased in recent years. This alternative was created "To reduce the likelihood of impacts on North Atlantic right whales" and "would exclude areas of the WEA (Alternative A) from leasing and site assessment activities where right whales are most likely to occur." [Footnote 20: BOEM 2014 MA WEA EA https://www.boem.gov/sites/default/files/renewable-energy-program/State- Activities/MA/Revised-MA-EA-2014.pdf p. 16 also attached.] We have reproduced the chart of Alternative B below which unsurprisingly seems to correspond significantly to NOAA's recommended conservation buffer zone for North Atlantic right whales:[See original attachment for Figure 2-2. Alternative B lease area]We request that BOEM provide a chart of Alternative D and that a side by side comparison of the DEIS Alternative D chart and the 2014 EA Alternative B chart be made publicly available for comment.	
BOEM-2023-0011-0065-0015	BOEM in 2014 decided to lease the entire WEA including the Alternative B lease area so as to collect more information and analysis over time. That time has come. Not only have North Atlantic right whales increased their presence in and reliance on that area but peer reviewed science showing the wind wake effects and associated hydrodynamic impacts and effects on primary productivity have been published and provided to BOEM. "Residency demographics and movement patterns of North Atlantic right whales Eubalaena glacialis in an offshore wind energy development area in southern New England USA" by Quintana-Rizzo et al published July 29 2021 in Endangered Species Research demonstrated that since 2017 North Atlantic right whales have significantly increased their reliance on and time spent in this area. BOEM cannot ignore these combinations of facts in order to move forward with offshore wind development regardless of the cost to	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	endangered species. BOEM must either choose Alternative D or Alternative A- No Action- as its preferred Alternative for this proposed Project.	
BOEM-2023-0011-0079-0004	According to the National Oceanic and Atmospheric Administration (NOAA) scientists investigating the impacts of offshore wind energy development on marine life found that construction and operation of wind turbines can change the behavior of aquatic species and alter existing habitats. Some of these specific impacts include increased ocean noise, introduced electro-magnetic fields, creation of a "reef-effect" impacting organism, life cycle stages altering species survival, and release of contaminants that can be consumed by aquatic life (NOAA Fisheries). We suggest that you perform more research into how much each of the impacts described by the NOAA would affect marine mammals in the area where you will build your wind farm. Then you must use this information to prepare a new alternative allowing for minimum effect on marine mammals.	Section 3.5.6, *Marine Mammals*, analyzes impacts from the Proposed Action and alternatives on marine mammals, including impacts from noise caused by pile driving and other sources, EMF exposure, presence of structures resulting in a reef-effect that aggregates prey species, effects on species at various life stages, and impacts from accidental releases of fuels, trash, and other contaminants from Project vessels and other equipment. As described in Chapter 2, BOEM analyzed a range of reasonable alternatives in the EIS to the Proposed Action, including several alternatives identified by NMFS with the purpose of minimizing impacts on marine mammals and other marine species. These include Alternative D, which would remove turbine positions near Nantucket Shoals, an important foraging area for marine mammals, and Alternative E, which analyzed installation of foundations without pile driving. In addition to these alternatives, BOEM identified several mitigation measures to avoid or minimize impacts on marine mammals, such as real-time detection and reporting PAM system and limiting the time of year pile driving can occur; these and other mitigation measures are listed in Appendix G.
BOEM-2023-0011-0079-0005	Even amongst the alternatives you have prepared we have concerns that the preferred alternative may not be the best alternative for marine mammals. Of the alternatives explored we believe that Alternative D: Nantucket Shoals is the best alternative for protecting marine mammals. In Table 2-4 section 3.5.6 you state that Alternative D has the potential to lessen the impact of offshore cables on the foraging habitats of marine mammals. You also state that the impacts from noise EMF and vessel traffic would be reduced by laying cables further from Nantucket Shoals. You claim these	BOEM analyzed impacts of Alternative D based on best available science and the professional judgment of BOEM subject matter experts. BOEM has reviewed its analysis and has confirmed that while impacts on marine mammals would be reduced, the difference in impacts would not be significant and would not be enough to result in a change in impact levels. Regarding the statement about BOEM's admittance that there is a lack of information about impacts on marine mammals, it is not clear what information the comment is referring to. Appendix E, *Analysis of Incomplete*

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	impacts are not large enough to be significant. However combined with your admittance that there is a lack of information regarding the effects of these impacts on marine mammals we are skeptical of your conclusion that the reduced impacts are not significant.	*and Unavailable Information*, identifies information that was incomplete or unavailable for the evaluation of reasonably foreseeable impacts in the Final EIS.
BOEM-2023-0011-0079-0006	We suggest that Alternative D be further considered since it is the best alternative for marine mammals according to your report. Most importantly you must further investigate and document the potential severe behavioral impacts on marine organisms in order to fully comply with the NEPA process and move forward.	BOEM acknowledges the commenters preference for Alternative D. BOEM has conducted an extensive analysis of impacts on marine species and has revised the analysis in the Final EIS in response to public comments received on the Draft EIS where appropriate.
BOEM-2023-0011-0080-0003	The proposed cable routing at sea and on land is premature in light of ISO New England's stated need to study potential grid connection points as the infrastructure on Cape Cod cannot support all the planned windfarm outputs. The Massachusetts government has started a state and regional review of how to consolidate all planned offshore power supplies to utilize existing grid and industrial sites to eliminate adverse impacts on residential areas. This basic planning must be completed before proceeding with approval of a project that will likely need a new point of connection on-shore.	Please refer to response to comment BOEM-2023-0011-0007-0002 regarding the consideration of consolidated offshore wind infrastructure. Regarding the need for a state and regional review of interconnection points, BOEM is in support of such efforts to occur at the state government level, but such planning efforts do not change BOEM's obligation to review and respond to the proposal submitted by SouthCoast Wind in its COP. BOEM cannot delay its review of the SouthCoast Wind COP because of ongoing state planning efforts as doing so may jeopardize SouthCoast Wind's ability compete in offtake agreements (refer to Final EIS Chapter 2, Table 2-3 for more information). In addition, BOEM has received no information from SouthCoast Wind that its proposed POIs are incapable of receiving the power that would be produced by the Project, nor has SouthCoast Wind proposed changes to its onshore interconnections.
BOEM-2023-0011-0091-0001	First it is our strong belief that a commercial industrial application such as these 320KV cables does not belong in a densely populated residentially zoned historic community. In conversing with multiple public utilities we have been informed that they would endeavor to avoid such communities. Under the circumstance that there are other	As described in responses to comments submitted by other commenters, including comments BOEM-2023-0011-0004-0005 and BOEM-2023-0011-0025-0002, BOEM evaluated additional alternative landfall locations suggested by comments on the Draft EIS and dismissed them from

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	industrial sites suitable for this project we have encouraged SouthCoast to make use of same.	consideration as they were not feasible and did not meet BOEM's screening criteria.
BOEM-2023-0011-0091-0004	We have on many occasions called for a regional planned approach to the routing of the export cables from the numerous wind farm lease areas. Numerous studies have cited the benefits of such a planned approach which would reduce the number of export cables needed reduce the environmental impact reduce the number of landing sites and would be more efficient and cost effective. As BOEM is no doubt aware four New England states with two others in support have filed a Joint State Innovative Partnership proposal to the Dept. of Energy which would exactly address this issue and coordinate the interconnection to the NE electric grid.	Please refer to response to comment BOEM-2023-0011-0080-0003.
BOEM-2023-0011-0091-0005	The DEIS and the COP conflict on numerous occasions as to the voltage of the export cables Intended for Falmouth "Alternative F" states five cables would be reduced to three at a voltage of +/-525kV HVDC whereas the COP states +/-320kV HVDC why the inconsistency and which is correct?	Alternative F in the EIS is a BOEM-proposed alternative and, therefore, represents a change from SouthCoast Wind's Proposed Action as described in the COP. However, Alternative F is within the range of parameters outlined in SouthCoast Wind's PDE. The reference to ±320 kV refers to the nominal cable voltage for the Brayton Point ECC and is not applicable to Alternative F. Alternative F addresses the change in the number of cables and voltage for the Falmouth ECC. The nominal cable voltage for Falmouth for Alternative F, and in the event HVDC is chosen under the Proposed Action's PDE is ±525 kV.
BOEM-2023-0011-0091-0014	In my experiences in developing and evaluating ambient monitoring data for use and evaluation in public proceedings for EIS's the DEIS also does not have sufficient baseline monitoring data on key resources that are directly going to be affected by this project. The first requirement for an EIS is to perform sufficient baseline monitoring activities for the EIS environment. In this case the lease area is located roughly 20 to 30 miles south of Nantucket and Martha's Vineyard - so baseline conditions are not sufficiently represented by other	SouthCoast Wind conducted cultural, biological, geophysical, and geotechnical site assessment surveys of the offshore export cable corridors and Lease Area beginning in October 2019 as described in its Site Assessment Plan. The information gathered as part of this baseline data collection was used to inform the COP and was included in COP appendices (for example, COP Appendix M, *Benthic and Shellfish Resources Characterization Report*). The analysis of resource specific impacts in the Final EIS incorporated

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	sources of representative data. Therefore, a sampling and analysis plan should have been developed and approved whose implementation and results would be a separate section of the EIS. This information is not included in the DEIS. So there are some basic issues in addition to the fact that significant elements of the proposed wind farm are under question.	baseline survey data from the COP to complement data found from other sources.
BOEM-2023-0011-0091-0017	An excellent example of the interconnection of these factors can be found in the Brattle Group's May 12, 2021 Presentation at the NYSERDA Offshore Wind Webinar on Transmission Options of Offshore Wind Generation (by Johannes Pfeifenberger). In this presentation the flaws and implied excessive environmental impacts are shown for the continued use of the existing grid tie-in approach (represented in the SouthCoast DEIS) versus a Planned Grid Approach. Indeed this is why the Southcoast/Mayflower project proposal includes the unnecessary impingement on local culture and social economic issues (required to be identified/mitigated in an EIS) with the spreading out of connection corridors through highly populated pristine beach locations like Falmouth Heights. The Southcoast/Mayflower Team has offensively identified their proposed access point of Worcester Avenue as a "previously disturbed off-road grassy median strip" known as "Worcester Park" on Page -2.5 of the DEIS. The Brattle Group's "Planned Approach" entirely avoids the Vineyard and Nantucket Sound areas and provides full access while reducing the offshore cable disturbances in New England by 50%! The Planned Approach is also more rational in its efficiency and directness to the larger population areas (i.e. target for largest electric needs). Perhaps more importantly it also exposes Southcoast/ Mayflower's obvious self-serving need to move their own project's timeline to positive-cashflow return time window as short as possible. This desire tries to utilize the negligible reduction relative to world-wide CO2 emissions of this project and the political (not	Please refer to response to comment BOEM-2023-0011-0080-0003.

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	scientific) Climate Change support regardless of guaranteed negative impacts to the long-term health of the grid and sea-ecosystem.	
BOEM-2023-0011-0091-0022	Lastly I feel it is incumbent on the New England states to develop a region planned approach in coordination with ISO/NE to be able to accept the export cables from the multiple offshore windfarm developers. It would lessen the environmental impact be more financially economical and reduce the number of cables and landing locations needed. Others have cited studies conducted by the Boston based Brattle Group on the need for such a coordinated planned approach which I support completely.	Please refer to response to comment BOEM-2023-0011-0080-0003.
BOEM-2023-0011-0110-0002	Additionally I did not see any discussion in the EIS to other potential POI's (other than the three identified) whether in Falmouth or anywhere else on Cape Cod or the South Coast of MA. SCW has the entire South Coast of MA and the entire south side of Cape Cod as well as Buzzard's Bay/Cape Cod canal to locate its second POI rather than running it under an extremely popular beach and park in a heavily residential community. Why was this not considered and why doesn't BOEM or the USACE insist that SCW reconsider all alternatives especially in light of the significant impact to the Falmouth community if the POI is located there? To the extent that SCW has chosen Falmouth Heights beach as its "preferred" POI due strictly to economic concerns giving no regard to the potential harm to the town is inexcusable.	BOEM considered alternatives to the Proposed Action that were identified through coordination with cooperating and participating agencies and through public comment received during the public scoping period for the EIS. Based on the criteria outlined in Section 2.2, *Alternatives Considered but Not Analyzed in Detail*, the Cape Cod Canal, the Pilgrim plant, Waquoit Bay, and Trunk River were not analyzed as an alternative. The Cape Cod Canal landfall location is not considered a feasible alternative from a safety, spatial, and burial risk point of view. The canal is a narrow channel (approximately 480 foot-wide corridor) and would present a spatial constraint for cable installation, maintenance, and repair (if needed). This would introduce additional safety risks during the Project installation, and potential impact to marine navigation during construction.
BOEM-2023-0011-0112-0005	We are also concerned that this DEIS was published before key information regarding the project has been collected and made available. For example the rationale provided on pages 2-30 and 2-31 for not analyzing an alternative to “preclude the development of WTG within a 20-km buffer of the Nantucket Shoals 30-m isobath” provides many examples of why BOEM’s approach to environmental analysis of this	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	project is problematic. This alternative was suggested by NMFS to reduce potential impacts on an important foraging area for the critically endangered North Atlantic right whale as well as other species such as sea ducks. The DEIS states that this alternative would allow SouthCoast to meet its existing procurements if most remaining turbine locations could be used; however this cannot be determined given that full geotechnical data has been analyzed for only about two thirds of the potential turbine locations throughout the lease area. In addition this alternative would only leave 162 MW of remaining nameplate capacity (assuming an 18 MW turbine) for future solicitations considering the 1204 MW already procured. This is described as economically infeasible and is presumed to be too low for upcoming state procurements and is therefore stated to be equivalent to a no action alternative for the entire project. However this capacity combined with procurements to date totals 1366 MW which is in the size range of other projects undergoing review. It is unfair to ask the public to comment on preferred alternatives when information is not available to determine which specific turbine locations are feasible and when the project must meet requirements for energy solicitations which have not yet occurred and are not clearly defined. Note that NEPA regulations do not say that incomplete information is justification for not analyzing a reasonable alternative; rather they say that the missing or incomplete information should be noted in the analyses (40 CFR 1502.21). This is a clear example of why BOEM should not release DEIS documents for public comment until all potentially relevant information can be provided for the public to make informed comments.	
BOEM-2023-0011-0112-0008	The DEIS indicates that the action alternatives are not mutually exclusive and BOEM may select a combination of alternatives that meet the purpose and need of the proposed project. We assume that any combination of Alternatives B-F would meet the purpose and need. If this is not the case the FEIS should clarify.	The statement in the comment is accurate. As indicated in Draft EIS Section 2.1, *Alternatives*, "BOEM may 'mix and match' multiple listed Draft EIS alternatives to result in a preferred alternative." The preferred alternative must meet the purpose and need in order for it to be selected by BOEM.

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BOEM-2023-0011-0112-0011	Other projects along the Atlantic coast have used a phased approach for impacts analysis. It is unclear why the developer and BOEM did not take this approach here given the large size of the project and uncertainties regarding future procurements. To date procurements for SouthCoast Wind only amount to half the capacity of the proposed project (804 MW and 400 MW both to Massachusetts). In various sections of the EIS future procurements are described as essential to the success of the project. Different considerations including different mitigation measures may be relevant for different phases of the project. Therefore it is problematic to analyze the entire lease area as if it is one project. We recommend that the FEIS analyze the existing procurements as a single phase (or two phases given that there are two procurements) with future procurements analyzed as a separate phase. Additional supplemental analysis may be needed after additional details about future procurements are known. Note that project phasing is referred to in the context of the two offtake locations in a footnote to the alternatives considered but not analyzed in detail (page 2-35) but this phasing is not referenced under Alternative B.	Based on updates that SouthCoast Wind has made to its COP, BOEM has revised Final EIS, Section 2.1.2, *Alternative B – Proposed Action*, to further explain that SouthCoast Wind would develop the Project in two parts, referred to as Project 1 and Project 2. SouthCoast Wind proposed developing the entirety of Lease Area (including positions for Project 1 and Project 2) in its COP because their financing strategy depends on using economies of scale for major supplies and services; and the validity and competitiveness of their bid into the New England multi-state solicitation depends on being able to develop two projects. An alternative that only considered the construction and operations of Project 1 would be economically infeasible and equivalent to the No Action Alternative. The Draft EIS analyzed the entirety of the Project, including Project 1 and Project 2, and supplemental environmental analysis is not required. Since the Draft EIS was released, the status of SouthCoast Wind's offtake agreements have changed, as acknowledged in SouthCoast Wind's revised COP and the Final EIS, Chapter 1, *Purpose and Need*. A project is not required to have PPAs established for BOEM to conduct its environmental analysis. The change in offtake agreement status does not negate or substantively change the environmental analysis presented in the Draft EIS. Minor explanatory changes were made in the Final EIS to reflect the change in offtake agreement status and other changes in the COP since the Draft EIS was released.
BOEM-2023-0011-0112-0015	Alternative E indicates that "one or more foundation types" could be utilized (page 2-21). We recommend clarifying whether all four types could be combined or if one type would be used for turbines and another for substations or if foundations might vary with depth. It is difficult to estimate impacts at the scale of the project without this information since there are tradeoffs associated with each foundation type. BOEM's response to our question during the March 22	Alternative E analyzes the maximum use of each foundation type under separate sub-alternatives to determine the impacts from each foundation type. As it was analyzed in the Draft EIS, if Alternative E was selected, any one sub-alternative could be selected, which would have meant only one foundation type used in the Lease Area, or a combination of sub-alternatives could be selected, which would have meant multiple foundation types.

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	public meeting indicated that up to two types could be combined but this is not clear in the DEIS.	
BOEM-2023-0011-0112-0016	Appendix G states that only monopiles and piled jackets can be used in the "enhanced mitigation area" to minimize benthic impacts. This mitigation area and its relationship to Alternative E should be explained in the body of the FEIS. This choice of foundation type is in conflict with Alternative D which would remove turbines in that same part of the lease in part to reduce impacts on species including the North Atlantic Right Whale. Acoustic impacts are a major concern for this species and suction-bucket or gravity foundations would be much quieter to install; however these foundation types have larger footprints than piled foundations which would increase the impacts for other species and habitats.	The commenter is referring to the agency-proposed mitigation measure NS-1 (Appendix G, Table G-2), which would allow only monopiles and piled jackets in the enhanced mitigation area. BOEM may apply agency-proposed mitigation measures to any of the action alternatives. If BOEM selects NS-1 in the ROD, monopiles and piled jackets would not be allowed in the enhanced mitigation area regardless of alternative. BOEM has analyzed the impact of agency-proposed mitigation measures in each Chapter 3 section.
BOEM-2023-0011-0112-0020	Alternative F uses HVDC cables instead of HVAC cables for the Falmouth offtake. Section 3.4.2 notes that SouthCoast Wind developed a National Pollutant Discharge Elimination System (NPDES) permit application for one offshore HVDC conversion station. Would more than one converter station be needed if additional export cables are HVDC under Alternative F?	As described in Chapter 2, Section 2.1.6, there would be two HVDC converter OSPs under Alternative F: one HVDC converter OSP for Project 1 and one HVDC converter OSP for Project 2 if Falmouth is selected as the POI for Project 2. For the Proposed Action, SouthCoast Wind has applied for a NPDES permit application for one HVDC converter OSP for Project 1. SouthCoast Wind has not yet decided on a design for the OSP(s) for Project 2. If SouthCoast Wind selects an HVDC converter OSP design for Project 2 for the Proposed Action, or if Alternative F is selected, SouthCoast Wind would be required to apply for additional NPDES permit(s).
BOEM-2023-0011-0112-0021	Overall, the DEIS doesn't provide enough information for us to make more specific recommendations on the choice of foundation types foundation locations and other specific parameters. The size and number of turbines associated with the proposed action will influence the spatial extent of the project overall and therefore will affect the magnitude of impacts. We recommend working with NOAA Fisheries habitat staff to optimize the final number type and locations of turbines cables and offshore substations to minimize impacts to habitat and fisheries.	The EIS analyzes the full impacts of the SouthCoast Wind Project, which includes multiple WTG and OSP designs and foundation options, in Chapter 3. Impacts from each of the foundation options is analyzed in the EIS. The locations of the WTG positions are known, and the indicative location of one OSP site has been identified and analyzed in the EIS. BOEM has and will continue to coordinate with NOAA Fisheries in its capacity as a cooperating agency and as part of ESA Section 7 and EFH consultations.

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BOEM-2023-0011-0117-0003	Inadequate Alternatives Assessment: With respect to the DEIS's discussion of alternatives, BOEM must examine alternatives that also help meet the clean energy goals of Massachusetts. Without meaningful alternatives the document becomes meaningless and capricious. The comparison should include an alternative that avoids complex hard-bottom habitat and other renewable energy options such as small-scale nuclear and solar. Without such alternatives the DEIS does not offer a meaningful analysis.	As stated in Chapter 1, Section 1.2, *Purpose and Need of the Proposed Action*, the Project was developed to support federal and state clean energy goals by providing up to 2,400 MW of clean, renewable wind energy to the northeast United States, including Massachusetts, Connecticut, and/or Rhode Island, which each have existing state offshore wind procurement laws in place as well as decarbonization goals and targets. As described in Chapter 2, BOEM analyzed a range of alternatives based on issues that emerged from scoping, interagency coordination, and internal BOEM deliberations. BOEM evaluated all proposed alternatives using the screening criteria identified in Section 2.3. BOEM excluded alternatives from further consideration that did not meet the purpose and need or the screening criteria. An alternative that considers other renewable energy options such as small-scale nuclear and solar does not meet the purpose and need of the Proposed Action, as described in Chapter 1. BOEM considered but dismissed an alternative from detailed analysis (refer to Section 2.3) that would have evaluated other renewable offshore energy alternatives, including offshore floating solar and hydrokinetic energy. This alternative was dismissed because it did not meet the purpose and need and because the terms of SouthCoast Wind's lease only allow submission of a COP for offshore wind development. Alternative F analyzed in the EIS would reduce the number of cables proposed for the Falmouth interconnection in order to minimize impacts in the Muskeget Channel, which contains complex hardbottom habitats. Furthermore, during installation, cables would be micro-routed to avoid complex habitats.
BOEM-2023-0011-0123-0002	As presented it seems the 'No Action' Alternative assumes a scenario where this project does not move forward but that all others in the Planned Activities Scenario would. As stated in RIDEM's previous projects' DEIS comments this seems	Please refer to response to comment BOEM-2023-0011-0053-0001.

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	unrealistic and may distort one's interpretation of potential impacts from this individual project. As a result such a scenario may imply that the impacts of this project specifically could be negligible which would not be accurate.	
BOEM-2023-0011-0123-0024	The turbine foundations may increase hard substrate for recruitment following any disturbance during the construction phase (Petersen and Malm 2006). The reef effect can increase food availability (Degraer et al. 2020) and biodiversity and biomass (Inger et al. 2009; Gill 2005; Linley et al. 2007). However new habitat created by the turbine foundations may not benefit all species that utilized the local habitat prior to construction and may serve to attract biomass as opposed to result in increased ecosystem productivity. As such it is important that these elements be evaluated as possible throughout the project to best understand the long-term effects of the region.	Text has been added in Section 3.5.2.3 to address this comment based on review of Bray et al. 2017; Wilding et al. 2017; Adams et al. 2014; Causon and Gill 2018.
BOEM-2023-0011-0124-0005	The mitigation measures in the COP and DEIS are largely intended to minimize and mitigate effects of the project but the NEFSC letter raised concerns that show that the DEIS ignored the first and most important stage of the mitigation hierarchy: consider and avoid environmental effects. This is unacceptable and contrary to the text and purpose of the National Environmental Policy Act (NEPA) the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA).The NEFSC letter represents the scientific opinion of the agency charged with conservation and management of marine species protected by the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) and contained important information about the possible adverse effects of wind development in the region. BOEM has failed to meaningfully consider this advice and opinion with an inadequate explanation as to why the conclusions of the studies NEFSC relied on were rejected. BOEM must instead take the "hard look" required by NEPA at this science monitor the status of the upcoming NAS study and supplement the EIS	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	if necessary and include an analysis of the 20-km conservation buffer zone around Nantucket Shoals as an alternative that addresses the concerns and conservation recommendations raised by the NEFSC.Congress made clear through both the ESA and MMPA that agencies are to take a precautionary approach with endangered marine mammals like the NARW. In implementing a precautionary approach BOEM must not only consider the NEFSC letter and the science it relied on but must also adopt the recommendation of a 20-km conservation buffer as the preferred alternative.	
BOEM-2023-0011-0124-0010	Importantly the NEFSC notes that "unlike vessel traffic and noise which can be mitigated to some extent oceanographic impacts from installed and operating turbines cannot be mitigated for the 30- year lifespan of the project unless they are decommissioned." [Footnote 27: Id.]To preclude these effects that cannot be mitigated the NEFSC describes an avoidance management strategy that uses a conservation buffer zone around Nantucket Shoals where offshore wind installation would be prohibited (Figure 1):We propose the buffer zone begin at the 30 m isobath which corresponds with the predicted location of tidal mixing fronts in this region (Simpson and Hunter 1974 Wilkin 2006). A conservation buffer of 20 km also corresponds to the extent of the strongest impacts to depth- averaged velocity salinity and sea-surface elevation changes as observed in the North Sea where the largest impacts extended 20-30 km and where turbines both height and number were much smaller than planned development in southern New England (Christiansen et al. 2022). [Footnote 28: Id.]The NEFSC letter supported this strategy by stating that "[c]oncentrating development to the southwest and creating a conservation buffer adjacent to the Shoals is expected to reduce risk by reducing overlap between high species distribution and concentrated areas of construction operations and maintenance activities including associated vessel traffic and potential changes in commercial and recreational fishing activity." [Footnote 29: May 5 2022	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	Letter from Sean Hayes Ph. D. Chief of Protected Resources Branch of the Resource Evaluation and Assessment Division at the Northeast Fisheries Science Center to Brian Hooker Lead Biologist at Bureau of Ocean Energy Management (attached)]	
BOEM-2023-0011-0124-0012	The SouthCoast Wind DEIS suffers from a number of weaknesses in its assessment and management of risks to critically endangered NARWs including failing to adequately analyze the leading science on oceanographic impacts from offshore wind turbines failing to consider the letter sent to BOEM by the NEFSC failing to fully analyze alternatives that include conservation buffer zones as recommended by the NEFSC and failing to select a conservation buffer zone as the preferred alternative despite being required to afford species the highest of protections under the ESA and MMPA.Without remedying its failure to comply with NEPA the ESA and the MMPA BOEM cannot use the SouthCoast Wind DEIS to authorize or permit the construction or operation of the proposed project.	Please refer to response to comment BOEM-2023-0011-0056-0012.
BOEM-2023-0011-0124-0026	According to BOEM the Fisheries Service "requested that BOEM consider an alternative that would prohibit installation of turbines within a 20-km buffer of the Nantucket Shoals 30-meter isobath to reduce potential impacts on this important foraging area for aquatic species such as the NARW and sea ducks." [Footnote 67: DEIS at 2-30.] Despite the role of the Fisheries Service to conserve protected species like the NARW the DEIS declined to even evaluate or analyze the use of conservation buffer zones to account for the environmental effects of WTG presence on oceanographic and hydrographic processes or the value of the area as NARW habitat.Instead of rigorously evaluating this management strategy BOEM dismissed the alternative stating without meaningful economic analysis that "(t)his alternative is not reasonable under NEPA because it is not consistent with the purpose and need nor Mayflower Wind's primary goals and is not economically feasible or practicable and would therefore be	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	equivalent to the No Action Alternative."68 Instead BOEM offered an alternative (Alternative D) that removed just 6 WTGs at the Northeast edge of the lease and "additional mitigation measures to reduce potential impacts on protected species" that are focused on mitigating effects of construction and noise rather than avoidance.BOEM is correct that a reasonable range of alternatives only needs to include alternatives that are technically or economically feasible but BOEM's dismissal of the 20-km conservation buffer is irrational because BOEM does not even state with certainty that the project would be economically infeasible if SouthCoast could not construct Phase 2. BOEM states that Phase 2 would be economically infeasible and that increased costs "may also render [Phase 1] infeasible." [Footnote 69: Id.] But if there is still the possibility that the project could be economically feasible with only Phase 1 then BOEM must include the conservation buffer zone within the reasonable range of alternatives. Even if BOEM were correct that the 20-km conservation buffer would render the project economically infeasible BOEM still has the discretion to include analysis of alternatives even when it does not consider them technically or economically feasible. Particularly in this case even if BOEM does believe as it states that the 20-km conservation buffer is not economically feasible it should still include it within the range of alternatives.	
BOEM-2023-0011-0124-0027	First including the conservation buffer zone as an alternative will allow BOEM to assess the impacts of the action more meaningfully in light of the concerns raised by NEFSC. This is particularly important for BOEM and SouthCoast since BOEM characterized the conservation buffer zone as being recommended by the Fisheries Service. Since the Fisheries Service has the authority and possibly duty to include the 20-km conservation buffer as a reasonable and prudent measure under the ESA it would be wise for BOEM to analyze the alternative in the DEIS.Second including the conservation	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	buffer zone as an alternative will allow the public to see a more robust consideration of the economics of the project which will increase its ability to comment on the EIS. Contrary to what BOEM seems to imply in the DEIS it is not required to approve the project simply because the developer has a Power Purchase Agreement. BOEM has other duties and responsibilities under OCSLA the ESA and the MMPA that demand a more meaningful consideration of an alternative that would avoid possible adverse effects on NARWs.BOEM failed to even fully explain why this alternative would not satisfy the goals of the project. BOEM does not detail the terms of the Power Purchase Agreement and whether those terms could be delayed or modified without or with limited penalty. Instead the DEIS simply states that the southern third of the lease area would not be ready for timely execution of the PPA.	
BOEM-2023-0011-0124-0029	Additionally BOEM's statement that the alternative is not consistent with the purpose and need of the action is not consistent with its statement in the "Purpose and Need for the Proposed Action." BOEM mistakes the economic goals of the developer for its own purpose in approving the project. As noted in the Purpose and Need section of the DEIS BOEM stated that the purpose of its action was to "determine whether to approve approve with modifications or disapprove Mayflower Wind's COP." [Footnote 70: DEIS at ES-2.] This purpose comes from the Biden Administration's goal of achieving 30 GW of offshore wind by 2030 while protecting biodiversity. [Footnote 71: Id.] BOEM makes clear that even with the conservation buffer SouthCoast would have sufficient turbine positions to meet its goal of 1275 MW in Phase 1 of the project. [Footnote 72: DEIS at 2-30.] As noted in the Appendix current offshore wind leases have a generating capacity of over 39 GW. [Footnote 73: DEIS at D-75 to D-77.] Even if a 20-km conservation buffer were used in all of the projects adjacent to Nantucket Shoals it is likely that there would still be sufficient generating capacity nationwide	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	to reach the 30 GW goal using modern turbine technology of up to 14MW per turbine. [Footnote 74: General Electric Haliade-X (https://www.ge.com/renewableenergy/wind-energy/offshore-wind/haliade-x-offshore- turbine) Last visited March 23 2023)]	
BOEM-2023-0011-0124-0030	The conservation buffer zone alternative also meets the piece of the Biden Administration's goals: meeting the 30 GW while protecting biodiversity. The conservation buffer zone is rooted in the clear advice of the NEFSC and its marine mammal conservation experts who have devoted their careers to this discipline many of whom are dedicated to the science supporting preventing NARW extinction. The NEFSC letter and the science underlying it expressed concerns with the ability to protect the NARW and therefore biodiversity if offshore wind is built out within the conservation buffer zone. Prematurely rejecting this concept without rigorously analyzing its merits and effects discounts this clear advice.The conservation buffer zone concept is not an extreme approach nor is it likely to have the disastrous effects on the project that are loosely discussed in the dismissed alternatives section. BOEM discusses the conservation buffer zone alternative as if it has no discretion to impose such a requirement but BOEM is not required to approve the Construction and Operations Plan as is. The lease notes that BOEM "retains the right to disapprove a SAP or COP based on [BOEM's] determination that the proposed activities would have unacceptable environmental consequences" among other reasons and that BOEM retains the right to approve a COP with modifications. [Footnote 75: Bureau of Ocean Energy Management Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A 0521) (Feb. 19 2019) https://www.boem.gov/sites/default/files/renewable-energy-p rogram/State-Activities/MA/Lease-OCS-A-0521.pdf.] Therefore BOEM cannot absolve itself of the need to analyze a reasonable alternative under NEPA and BOEM must	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	continue to meet its requirements under the ESA and the MMPA at every stage of the process.	
BOEM-2023-0011-0124-0031	BOEM's assertion that this strategy is "not reasonable under NEPA because it is not consistent with the purpose and need nor Mayflower (SouthCoast) Wind's primary goals" clearly shows BOEM's preference for meeting the desires of the developers regardless of the cost to the affect environment or a critically endangered species. By giving priority to the developer's economic interests BOEM entirely fails to meet its duty under OCSLA to ensure that activities carried out provide for "conservation of natural resources" or the goal of Biden Administration to deploy 30 GW of offshore wind "while protecting biodiversity." [Footnote 76: 43 U.S.C. § 1337(p)(4).] [Footnote 77: Tackling the Climate Crisis at Home and Abroad Exec. Order 14008 (Jan. 27 2021).] To meet its requirements under NEPA OCSLA and Executive Order 14008 BOEM must fully consider the 20-km conservation buffer zone as a reasonable alternative to the action.	Please refer to response to comment BOEM-2023-0011-0056-0012.
BOEM-2023-0011-0124-0034	Installation of utility scale offshore wind projects are likely to have local and broad oceanographic effects that may disrupt NARW zooplankton prey putting additional pressure on an already critically endangered species that uses the area near SouthCoast Wind as year round core feeding habitats. It is the responsibility of BOEM to heed the advice of the NEFSC relating to science and conservation of NARWs. For these reasons the FEIS for SouthCoast Wind must include the recommended conservation buffer zone proposed by the NEFSC in its preferred alternative. As discussed above including the conservation buffer zone will not impede on the economic viability of SouthCoast wind nor the 30 GW offshore wind goal set by the Biden Administration in Executive Order 14008. Including a conservation buffer zone will allow this project to achieve its goals fulfill its existing commitments and allow the Biden administration to move toward its renewable energy goals in a responsible way. To ignore the clear	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	scientific advice of marine mammal experts by failing to set a conservation buffer zone as the preferred alternative is illogical and contrary to BOEM's mandates under the ESA and OCSLA and the science-based management policies of the Biden administration.	
BOEM-2023-0011-0125-0001	Regarding the Alternatives outlined by BOEM in the DEIS, OW NA shares SouthCoast Wind's concerns with Alternative C-1 and Alternative C-2 and we agree that these two alternatives will not be feasible options for this project. We are particularly concerned that Alternative C-1 and Alternative C-2 will cause unnecessary and damaging impacts to local natural resources and historical sites while also creating significant technical and financial challenges for the SouthCoast Wind project impeding SouthCoast Wind's ability to provide substantial amounts of clean energy and the ensuing environmental benefits.	BOEM acknowledges Ocean Winds North America's comments regarding the concerns with Alternative C. BOEM has considered the information provided in the comment in the selection of the preferred alternative.
BOEM-2023-0011-0127-0005	Alternative F: Running an export cable through the Muskeget channel brings up concerns related to the fact that Vineyard Wind/Avangrid also has proposed export cable location in the same channel. We commend the developers for coordinating well to make a potential shared cable corridor work, but our concern is that if cable issues occur in a corridor that serves multiple projects the impact for clean energy production and delivery across the region could be substantial. Therefore, we encourage BOEM to reject alternative F.	As stated, SouthCoast Wind has worked extensively with other cable operators, including for the Vineyard Wind 1 and New England Wind projects, to site and design the cable layouts in the Muskeget Channel to minimize conflicts between existing and proposed cables in the area and reduce environmental effects. Various Chapter 3 resource sections in the EIS describe the impacts from installation of the Falmouth ECC cables, including Section 3.5.2, *Benthic Resources*, and Section 3.6.7, *Other Uses*. Alternative F proposes reducing the number of cables for the Falmouth ECC from five to three to reduce impacts in the area around Muskeget Channel. The analysis of Alternative F in Chapter 3 demonstrates that reducing the number of cables in the Falmouth ECC corridor would minimize impacts on seabed disturbance, navigation and vessel traffic, and other impacts in this area.
BOEM-2023-0011-0129-0004	In the interim while the NASEM conducts its evaluation of the hydrodynamic models being used by BOEM the Commission recommends that BOEM consider expanding Alternative D or	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	adding a new alternative to delay or avoid the installation of wind turbines in the eastern portion of the SouthCoast lease area until the NASEM study is completed and BOEM has updated its analyses and models regarding the cumulative effects of large-scale wind farms on the hydrodynamics of Nantucket Shoals and its implications for seasonal foraging habitat for North Atlantic right whales.	
BOEM-2023-0011-0132-0002	Section ES.4.1 States [Text in Blue: "Over the life of the proposed Project other reasonably foreseeable future impact-producing offshore wind and non-offshore wind activities are expected to occur which would cause changes to the existing baseline conditions even in the absence of the Proposed Action. The continuation of all other existing and reasonably foreseeable future activities described in Appendix D Planned Activities Scenario without the Proposed Action serves as the future baseline for the evaluation of cumulative impacts of all alternatives."] A future baseline is not that same as the current ocean condition. Current conditions should be considered the baseline and future conditions considered separately. Therefore the proposed action alternative fails to analyze the impact of this project on the current ocean environment and the cumulative impacts are also not analyzed based on the current ocean environment. This is procedurally incorrect under NEPA. The public is not being given the opportunity to analyze the impacts of the project against a realistic baseline.	Please refer to response to comment BOEM-2023-0011-0053-0001.
BOEM-2023-0011-0132-0009	Section ES.4.4 Alternative D – Nantucket Shoals – That statement shows a complete disregard for the concerns of BOEM 's consulting agency the NMFS by dismissing the many concerns raised in the May 13, 2022 letter from Sean Hayes the Chief of Protected Species to Brian Hooker of BOEM. The "commenter" mentioned in the section of Alternative D appears to be a reference to this letter which lays out serious environmental concerns and impacts to NARWs There is no scientific data presented in the DEIS to support that the	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	impacts mentioned in the Hayes letter will not be realized. Mr. Hayes references 29 scientific studies to back up his concerns yet these concerns are dismissed in favor of "computer modeling" showing minor changes to the ecosystem from the full build out of the Mass/RI lease area. The model assumptions must be provided in a Draft EIS Supplement for the public to review and determine their reasonableness. This is too important of an ecological area especially as it pertains to NARW feeding and survival to leave out the details about the computer model and how it refutes the actual scientific concerns laid out by Hayes.	
BOEM-2023-0011-0132-0010	Restricting WTG development within 20-kilometer of the Nantucket Shoals 30-meter isobath was not carried forward. It is unacceptable under NEPA to dismiss alternatives that safeguard a federally endangered species. The reasons given for not considering these alternatives were due to timing power contracts and economic feasibility. This is unacceptable when the impacts on NARW could be mitigated.	Please refer to response to comment BOEM-2023-0011-0056-0012.
BOEM-2023-0011-0132-0011	Alternative D "Nantucket Shoals" shows no benefit in any area and should be discarded. Removing just 6 turbines does not address any concerns. The alternatives providing more of a buffer for NARW should be carried forward especially those providing a 20KM buffer from this important ecological area described by Hayes.- Clearly - the other alternatives that were dismissed should have been considered.- BOEM "believes" but no data regarding the computer model inputs are presented.- Hayes's concerns needs to be considered and addressed. BOEM should not dismiss these concerns and has not provided the "model" inputs to substantiate their assumptions- This combined with the rational for dismissing the other alternatives shows BOEM is not taking the concerns of NMFS seriously.	Please refer to response to comment BOEM-2023-0011-0056-0012.
BOEM-2023-0011-0132-0012	In dismissing the alternatives that could protect the important Nantucket Shoals ecosystem and in turn the NARW BOEM gives the rationale that they would not allow the developer to	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	satisfy contractual offtake obligations. Under the CEQ NEPA rules instituted by President Biden an applicant's interest is no longer paramount. In this case the approval should be denied. If the alternative that protects the environment cannot be considered….then don't do it. Another reason given is "It is environmentally infeasible meaning implementation of the alternative would not be allowed by another agency from which a permit or approval is required or implementation results in an obvious and substantial increase in impacts on the human environment that outweighs potential benefits". This should be applied to all Wind Lease Areas in NARW habitat.E. 84 turbines were adequate for the Vineyard Wind 1 project so there is precedent that a smaller scale project is actually feasible	
BOEM-2023-0011-0132-0013	The DEIS states [Text in Blue: "First Mayflower Wind has collected and analyzed full geotechnical data on about two-thirds of their WTG positions all within the shallower northeast portion of the Lease Area to support the design and engineering of foundations and other components of their Phase I Project while meeting the schedule for power delivery under their PPAs with Massachusetts. If one-third of their WTG positions were not available for timely development and 53 out of approximately 100 WTG positions were eliminated by the alternative far fewer (around 50) WTG positions than the 85 WTG positions needed to produce 1200 MW would remain for the timely execution of the Massachusetts PPAs. While Mayflower Wind is currently finishing collecting the remaining geotechnical data for the other positions in the lease Mayflower Wind is not able to analyze and design foundations in time to meet the deadlines in their Massachusetts PPAs. Thus this alternative is unreasonable because it would be incompatible with the Massachusetts offtake awards which are integral to both the purpose and need for the Project and Mayflower Wind's primary goals"]. In this instance it appears the rationale is that there is no time to protect NARWs because MA contracted for the energy sooner	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	than whale protection would allow. This is un-acceptable under NEPA MMA and ESA. There is no basis under our federal system for federal decisions to be bound by state agreements.	
BOEM-2023-0011-0132-0014	Even eliminating 17 turbines was not carried forward with only economic reasons given. However other projects are proceeding with fewer turbines so it simply does makes sense that these alternatives were not carried forward. This is unacceptable under NEPA as the NARW would be afforded greater protections.	Please refer to response to comment BOEM-2023-0011-0056-0012.
BOEM-2023-0011-0132-0015	Common export cables were also not a considered alternative. This is problematic as greater protections would be given to sensitive marine environments especially the Muskegat Channel. The fact that the various projects are technically unable to share export cables makes it apparent that "the grid" is simply not ready for offshore wind.	As described in Table 2-3 of the Draft EIS, BOEM considered but did not analyze in detail an alternative that would use common cable corridors for adjacent offshore wind projects. BOEM dismissed the alternative as it cannot dictate that a lessee use a shared cable corridor and it would be impractical to share corridors with projects that have different interconnection points as further detailed in Table 2-3. BOEM did analyze in detail Alternative F, which would reduce the number of cables in the Falmouth ECC to minimize impacts in the Muskeget Channel.
BOEM-2023-0011-0132-0062	On page 3.5.2-14 it states that noise from G&G surveys will rarely overlap. This is simply false and this exact situation is currently happening in the NY/NJ area. No historical data for timing of surveys and whale deaths has been provided for the MA/RI lease area.	The text explains that detectable impacts of G&G noise on benthic resources would rarely, if ever, overlap from multiple sources. While G&G surveys from multiple projects could occur concurrently, detectable impacts within the geographic analysis area are not expected to occur. As explained in Section 3.5.2.3, should surveys overlap, multiple sound sources do not produce overall louder noises. The loudest one would prevail making the less intense harder to hear (see Section 3.5.2.3 *noise* IPF). Please refer to Section 3.5.6, *Marine Mammals*, regarding impacts on whales.
BOEM-2023-0011-0132-0070	This paragraph on page 3.4.2-14 is especially problematic: [Text in Blue: "Results from a recent Johnson et al. (2021) hydrodynamic model of four different WTG build-out scenarios of the offshore Rhode Island and Massachusetts	While the analysis notes that there may be alterations, the study referenced in this paragraph noted that the scale of change is approximately +-11% or less in the modeling domain (the vast majority is far less than 11%). This scale is

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	lease areas found that offshore wind projects have the potential to alter local and regional physical oceanic processes (e.g. currents temperature stratification) via their influence on currents from WTG foundations and by extracting energy from the wind. The results of the hydrodynamic model study show that introduction of the offshore wind structures into the offshore WEA modifies the oceanic responses of current magnitude temperature and wave heights by (1) reducing the current magnitude through added flow resistance (2) influencing the temperature stratification by introducing additional mixing and (3) reducing current magnitude and wave height by extracting of energy from the wind by the offshore wind turbines. Alterations in currents and mixing would affect water quality parameters such as temperature DO and salinity but would vary seasonally and regionally. WTGs and the OSPs associated with reasonably foreseeable offshore wind projects would be placed in average water depths of 100 to 200 feet (30 to 60 meters) where current speeds are relatively low and offshore cables would be buried where possible. Cable armoring would be used where burial is not possible such as in hard-bottomed areas. BOEM anticipates that developers would implement BMPs to minimize seabed disturbance from foundations scour and cable installation. Adverse impacts on offshore water quality would be localized short term and minor. Presence of structures would not be expected to appreciably contribute to overall impacts on water quality."] After acknowledging impacts to currents water temperature wave heights and mixing the conclusion is simply made that these impacts will be minor with no data to support that. These are in fact significant issues that will impact the water quality and food sources for the critically endangered NARW and have the potential to have ecosystem wide impacts including the water around Nantucket and Nantucket Harbor. More information is clearly needed here.	not anticipated to affect water quality parameters to an extent greater than natural variability ("vary seasonally and regionally"). The impact on food sources is not analyzed in the water quality section.

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BOEM-2023-0011-0132-0092	The no action alternative is described as [Text in Blue: "Development of future offshore wind projects would increase the amount of offshore anthropogenic light from vessels area lighting during construction and decommissioning of projects (to the degree that construction occurs at night) and use of aircraft and vessel hazard/warning lighting on WTGs and OSPs during operation. Up to 901 WTGs associated with other offshore wind projects excluding the Proposed Action with a maximum blade tip height of 1171 feet (357 meters) would be added within the geographic analysis area for cumulative visual effects on historic properties between 2023 and 2030 (Appendix D Table D2-1)."] Again these projects have for the most part not been approved. This is not an accurate picture of a "no action alternative".	Please refer to response to comment BOEM-2023-0011-0053-0001.
BOEM-2023-0011-0136-0011	In the DEIS the No Action Alternative assumes only the Proposed Action will not occur. "[O]ther reasonably foreseeable future impact-producing offshore wind and non-offshore wind activities would be implemented." [Footnote 14: See DEIS p. 2-3] This assumes full buildout of existing and foreseeable future activities - including other energy developments - without also providing information or comparison of alternatives against an undeveloped (no construction) region. As presented the DEIS presupposes the approval of future OSW projects that have not even begun an environmental assessment nor have the public had the opportunity to provide input to. This results in multiple issues:- The DEIS provides the public with misleading information as it presumes construction of OSW in all the leases in the region. Project approval must not be expected preemptively.- The public cannot reasonably differentiate and assess if a specific project and regional OSW development are worth the impacts they will cause; both known and unknown.- The impacts of these projects are diluted and obscured as they are only compared against regional buildout rather than no development.- Contribution of each project to cumulative	Please refer to response to comment BOEM-2023-0011-0053-0001.

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	impacts is minimized. One project may not seem "that bad" in comparison to the potential buildout of all leases and WEAs in the region but the cumulative impacts of all these projects will be the most harmful to the marine environment and ocean users.	
BOEM-2023-0011-0136-0012	At a minimum an additional alternative should be analyzed and compared against the design envelope of the project for which the DEIS has been prepared: a [Bold: No Development Alternative]. The No Action Alternative as presented should still be included in the DEIS but a complimentary No Development Alternative should also be provided. Again, this demonstrates the need for a robust cumulative impact assessment and mitigation measures aimed to address cumulative impacts to understand the true impacts of OSW in the Atlantic.	Please refer to response to comment BOEM-2023-0011-0053-0001.
BOEM-2023-0011-0136-0013	The DEIS should explicitly include alternatives for analysis that serve to mitigate the project's impacts to fishing including the specific requests above those raised during scoping and in previous comment letters and those listed on RODA's website. [Footnote 15: See https://rodafisheries.org/offshore-wind/] The SouthCoast DEIS includes alternatives intended to minimize fisheries habitat impacts (Alternative C) foraging habitats associated with hydrodynamic features (Alternative D) and complex habitats from export cables through the Muskeget Channel (Alternative F). While inclusion of these alternatives is appreciated and we agree minimizing impacts to important habitat features is important; these do very little to protect the dependent recreational and commercial fishing communities. We recommend other habitat features important to fisheries in the lease area be afforded similar protection as well. This would ensure that disruptions to our nation's food security is minimized and reduce the potential for negative impacts to shoreside business dependent upon the seafood harvested in the lease area.	BOEM reviewed all comments received during the scoping period for the SouthCoast Wind Project and evaluated potential alternatives that were identified during scoping, interagency coordination, and internal BOEM deliberations as described in Section 2.1. BOEM reviewed potential alternatives using BOEM's screening criteria presented in Section 2.2 and carried forward (described in Section 2.1) or dismissed from detailed analysis (described in Section 2.2) alternatives based on that review. This includes dismissing an alternative from detailed analysis to establish transit lanes across the Lease Area to fishing grounds. BOEM analyzed Alternative C in detail, with the specific purpose of minimizing impacts on fisheries from the Project's offshore export cables. In addition to these alternatives, BOEM has also identified several mitigation measures to minimize impacts on commercial and for-hire recreational fishing, which are identified in Appendix G, Table G-2. These include measures to compensate for lost income for commercial and recreational fishermen and other eligible fishing interests

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		and ensuring that cable protection measures should reflect the pre-existing conditions of the site.
BOEM-2023-0011-0136-0015	Since the scoping period for the DEIS, BOEM issued a new policy that has the effect of excluding alternatives from environmental review that would in fact reduce or mitigate fisheries impacts. The "Process for Identifying Alternatives for Environmental Reviews of Offshore Wind Construction and Operations Plans pursuant to the NEPA" [Footnote 16: See https://www.boem.gov/sites/default/files/documents/renewableenergy/BOEM%20COP%20EIS%20Alternatives- 2022-06-22.pdf] released in June 2022 standardizes the alternatives BOEM will consider during the NEPA process and clarifies BOEM's policy of considering only a narrow range of alternatives consistent with a developer's preferred project plans. [Footnote 17: This document was issued without any opportunity for the public to participate in or provide input on its development thus to our knowledge has not been the subject of any public comment.] Indeed it affords the terms of cost-competitive procurement agreements "more deference than a typical contract between two private for-profit entities" although such contracts are nearly entirely driven by profit and energy maximization and without environmental review. The document only references mitigation in the context of what should not be considered as a NEPA alternative; that is it suggests actions with "substantially similar effects" to other options should be considered outside of the range of alternatives. [Footnote 18: This statement contradicts NEPA's implementing regulations which specify the alternatives of an Environmental Analysis or Environmental Impact Statement must "include appropriate mitigation measures not already included in the proposed action or alternatives." 40 C.F.R. § 1502.14(e).][Bold: We urge BOEM to reconsider this policy. Specifically for these projects and all other proposed OSW projects the agency should include alternatives for analysis in each of its environmental review documents describing specific fisheries mitigation	Comments on BOEM's "Process for Identifying Alternatives for Environmental Reviews of Offshore Wind Construction and Operations Plans pursuant to the NEPA" are outside the scope of the SouthCoast Wind Project review. However, it should be noted for the SouthCoast Wind Project that the selection of alternatives for analysis in the EIS was a collaborative process done in coordination with cooperating agencies. The screening criteria were used to determine if an alternative was feasible and should be carried forward for analysis in the EIS. The results of BOEM's evaluation of alternatives resulted in a range of reasonable alternatives that were analyzed in the EIS in compliance with NEPA and CEQ implementing regulations. Please refer to response to comment BOEM-2023-0011-0136-0013 regarding alternatives and mitigation that BOEM analyzed for the SouthCoast Wind Project.

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	solutions and afford these full neutral consideration.] Stand-alone alternatives will more clearly inform public comment and allow better evaluation of potential mutual benefits or tradeoffs. As a public agency BOEM's consideration of alternatives should include those that reasonably mitigate impacts to fishing and businesses dependent upon fishing whether or not a developer has voluntarily proposed to incorporate them in its Construction and Operations Plan (COP) and whether or not they could require reasonable modifications to private contracts.	
BOEM-2023-0011-0136-0016	It is imperative the public is able to differentiate impacts from the various alternatives presented in the DEIS to understand the suitability of prospective project alternatives. The Summary and comparison of impacts among alternatives with no mitigation measures (Table ES-2) provides limited information on how the alternatives differ and provides no information on how impacts sub-alternatives differ. For example the Alternatives with a habitat minimization intention (Alternatives C D and F) have no difference of impacts to the Benthic Resources Coastal Habitats or Essential Fish Habitat from the Proposed Action (Alternative B). It is unclear in the documents how impacts from the various alternatives differ from each other. Instead the impact analysis compares the collective back to the Proposed Action which the DEIS assumes would be the most likely "Alternative." BOEM does not provide a comparison of alternatives for commercial fisheries which would provide some information about the differences between the various alternatives. This should be informative and describe what fisheries would be more or less impacted.	Table ES-2 provides a high-level summary of the impact levels for each resource topic by alternative and is not intended to provide a detailed discussion of the differences between alternatives. A more detailed summary of impacts and comparison between alternatives is provided in Chapter 2, Table 2-4. The complete analysis of alternatives is included in each Chapter 3 resource section. To improve the discussion and understanding of the differences between alternatives, BOEM has added a Comparison of Alternatives section to each Chapter 3 resource section that compares the impacts among alternatives. Additionally, BOEM added additional detail to various Chapter 3 sections where site specific information about the impact of an alternative was available. The action alternatives are appropriately compared to the Proposed Action as the action alternatives were devised to reduce specific environmental impacts of the Proposed Action. Alternatives C through F address different aspects of the Project and comparing the impacts is not always appropriate as the impacts may not be comparable. For example, Alternative C was proposed to minimize habitat impacts in the Sakonnet River from cable installation while Alternative D was proposed to minimize impacts from foundations near Nantucket Shoals. A direct comparison of acreages of impacts or other effects is not appropriate as the alternatives deal with completely different geographies

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		(Sakonnet River versus Nantucket Shoals) and effects (cable installation versus foundation installation) and a direct comparison about the relative value of each alternative could therefore be misleading. As noted in Chapter 2, Section 2-1, *Alternatives*, BOEM can mix and match aspects of multiple alternatives to derive its Preferred Alternative. Impacts on commercial fisheries from each of the alternatives are disclosed in Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*, where the action alternatives vary from the Proposed Action. BOEM has revised Section 3.6.1 to include additional information about fishery impacts from Alternative C in the Final EIS.
BOEM-2023-0011-0136-0017	Some of the information on alternatives are poorly presented in the DEIS. For example under the Proposed Action (Alternative B) there are 3 options for OSP design: Option A - Modular Option B - Integrated Option C - HVDC Converter. These variations of the Proposed Action are all analyzed inclusively and yet the variation of substation design will likely have differing impacts.	The EIS assesses the impacts of the SouthCoast Wind PDE that are described in the COP using the "maximum-case scenario" process, which analyzes the aspects of each design parameter that would result in the greatest impact. As described in the COP Volume 1 and Draft EIS Chapter 2, Option A – Modular and Option B – Integrated would support AC design while Option C – HVDC Converter would support a DC design. The primary difference between the OSP designs that would affect environmental impacts is the amount of seabed disturbance, foundation types that would support them, and open loop cooling. The maximum seabed disturbance and impacts from foundation types (e.g., monopile and piled jacket) are analyzed as part of the presence of structures IPF in Chapter 3. The DC design would include the intake and discharge of ocean water required to cool the HVDC converter station. These impacts are described in the *discharges/intakes* IPF in relevant Chapter 3 sections.
BOEM-2023-0011-0136-0018	The DEIS provides an alternative aimed to address potential impact on protected species - Alternative D. And yet the DEIS states there is " a lack of conclusive evidence that removal of proposed turbine location… would measurably lessen these minor impacts on the hydrodynamic features." [Footnote 19:	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	See DEIS p. 2-18] It is unclear why BOEM does not fully analyze the alternative proposed by NMFS to "preclude the development of WTGs within a 20-km buffer of the Nantucket Shoals 30-meter isobath" the only rationale providing being "that it is inconsistent with Mayflower Wind's primary goals and the alternative is not economically feasible of practicable." [Footnote 20: See DEIS p. 2-31.] As stated above deference to the project applicant's needs should not supersede sound environmental analysis especially considering there is no clear directive or need for full buildout of the SouthCoast project. We urge BOEM to conduct a full analysis of an alternative that would protect the important high productivity and foraging grounds for North Atlantic Right Whale that is Nantucket Shoals. [Footnote 21: RODA submits by reference comments submitted by Seafreeze Ltd. on the SouthCoast DEIS for further explanation of hydrodynamic studies of wind facilities and importance of Nantucket Shoals as foraging habitat for endangered North Atlantic right whales.]	
BOEM-2023-0011-0136-0019	Confusion is further compounded as the different alternatives can be combined for the Final EIS. The alternatives listed in the DEIS are not mutually exclusive. BOEM may "mix and match" multiple listed Draft EIS alternatives to result in a preferred alternative that will be identified in the Final EIS provided that: (1) the design parameters are compatible; and (2) and the preferred alternative still meets the purpose and need." This is concerning in the sense that the public cannot effectively understand what is the preferred alternative. It is setting up an opportunity for a bait- and-switch when the preferred alternative will not be revealed until the publication of the Final EIS. Principles of transparency and informed decision-making should never be undermined and the public should be fully informed throughout the process.	Based on public input on the Draft EIS and the analysis of impacts of the alternatives, BOEM selected the Preferred Alternative, which is identified in the Final EIS. BOEM did not identify the preferred alternative in the Draft EIS, consistent with other offshore wind EISs BOEM has and is preparing and as allowed by NEPA implementing regulations, so that its selection could be informed by public input.
BOEM-2023-0011-0136-0022	BOEM's draft analyses recognize the potentially major impacts to fishing, marine mammals, and navigation of the	BOEM's Draft EIS identified negligible to major and minor beneficial impacts for marine mammals, negligible to

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	proposed projects and their respective alternatives. Yet, not all mitigation proposals offered by the fishing industry were evaluated as alternatives in the DEIS. These are summarized below; a full discussion is included in prior RODA's scoping comments on these and other projects.	moderate impacts on navigation, and minor to major impacts on commercial fishing depending on the fishery. The commenter is correct that not all mitigation proposals offered by the fishing industry were analyzed as EIS alternatives as the proposals may have been more appropriately considered as mitigation as opposed to an EIS alternative. NEPA alternatives that were identified through public comments during the EIS scoping process and that were not carried forward for detailed analysis in the EIS are identified in Chapter 2, Table 2-3. BOEM has proposed in the Final EIS mitigation to address impacts on commercial and for-hire recreational fishing and other resource conflicts as described in Chapter 3 resource sections and Appendix G.
	• Modifications in the project areas to preserve fishing access;	BOEM considered but dismissed an alternative from detailed analysis to establish transit lanes across the Lease Area to fishing grounds (Chapter 2, Table 2-3).
	• 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;	SouthCoast Wind has proposed a bird and bat monitoring plan, available in Appendix G, Attachment G-2, and has developed fisheries and benthic monitoring plans to be implemented during implementation of the Proposed Action.
	• Safe transit areas through the lease areas under consideration and those reasonably foreseeable analyzed and implemented using a cumulative effects approach;	Alternatives that would affect the layout of the turbine array in other offshore wind lease areas are outside the scope of the SouthCoast Wind COP EIS. BOEM's decision based on the findings of the SouthCoast Wind EIS would be to approve, approve with modifications, or disapprove SouthCoast Wind's COP, and the SouthCoast Wind EIS does not support decision-making related to COPs for other offshore wind leases.
	• Direct and transparent collaboration with the fishing industry on shoreside considerations including port infrastructure dock usage and economic impacts or opportunities; • Adequate independent processes for gear loss claims;	As described in Final EIS Section 3.6.1, mitigation measures analyzed for commercial fisheries and for-hire recreational fishing include compensation for gear loss or damage, compensation for lost fishing income (including related to shoreside services), and development of fisheries and benthic habitat monitoring plans.

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	• Adhere to a holistic approach to determining and awarding compensation from economic loss to fishing and fishing businesses; • Monitor fisheries impacts for the life of projects and utilize adaptive management;	
	• Improved federal environmental review analysis and clear identification of scientific unknowns;	BOEM's analysis of incomplete and unavailable information is included as EIS Appendix E.
	• Require deicing technology and practices;	Based on historical and site specific weather data, ice formation at the Project site is expected to be very limited and of brief duration. SouthCoast Wind will employ weather monitoring to assess the risk of icing and spray down iced surfaces that may need immediate access with water and/or de-icing fluids. In the event of ice accumulation on the WTG blades, the WTG has the capability to adapt its operation to these conditions. Therefore, no special measures are required or recommended to prevent icing.
	• Perform "micrositing" of turbines and cables with fishermen who know the areas and surrounding ecosystem; • Prohibit turbines foundations and cables in sensitive habitat including spawning areas and important fishing grounds;	BOEM considered specific recommendations for WTG and cable siting that were provided during public comment periods for scoping and the notice of availability of the Draft EIS, or that arose through interagency coordination with cooperating agencies, or through consultations with NMFS for EFH and the ESA. The Preferred Alternative reflects the alternative that BOEM believes would best accomplish the purpose and need of the Proposed Action while fulfilling its statutory mission and responsibilities, given consideration of economic, environmental, technical, and other factors.
	• Resolve impacts to National Marine Fisheries Service (NMFS) fishery-independent survey;	NOAA and BOEM developed a federal survey mitigation strategy that was published in December 2022 as NOAA Technical Memorandum NMFS-NE-292. The purpose of this strategy is to describe the approach NOAA Fisheries and BOEM will use to mitigate the impacts of offshore wind energy development on NOAA Fisheries surveys, with specific application to the Northeast U.S. Region (Maine to

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		North Carolina). This strategy calls for the development of a Northeast Federal Survey Mitigation Program as a specific action. The Mitigation Program will include Survey-Specific Mitigation Plans for each affected survey including both vessel and aerial surveys. This strategy is intended to guide implementation of the Mitigation Program through the duration of wind energy development in the Northeast United States.
	• Ensure that any economic benefits of offshore wind accrue to the U.S.—not at some undetermined point in the future but now.	The purpose of the EIS is to disclose the impact of approving SouthCoast Wind's COP. Directing the economic benefits of offshore wind to specific entities is outside the scope of the SouthCoast Wind EIS.
BOEM-2023-0011-0137-0001	BOEM's lease of this areas in this block [Footnote 10: block comprised of the OCS-A-0520 (Beacon) OCS-A-0521 (Mayflower/SouthCoast) OCS-A-0522 (Liberty) OCS-A-0487 (Sunrise) and OCS-A-0500 (Bay State) planned power plants]—without an Environmental Impact Statement (EIS) is based on the notion promulgated in case law [Fisheries Survival Fund v. Bernhardt Case No. 16-cv-2409 (TSC) 5 (D.D.C. Feb. 14 2020)] that the connection between the lease of such ocean areas and harm to marine life is too tenuous to require a full environmental review because BOEM still "retains authority to preclude construction". Indeed BOEM went ahead and leased this area and authorized SAP[Footnote 11: Site Assessment Plan] activities to be carried out in the lease area all without an EIS but now claims in environmental review of the COP plan to build the entire Mayflower lease area that it cannot preclude construction because the developer-lessee has already committed the area to Power Purchase and or Offtake agreements[Footnote 12: In the DEIS BOEM states that not building out the entire lease area was among the "Alternatives Considered but Not Analyzed in Detail" indicating it cannot preclude construction in any substantial part of the lease area because it can only select among	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	options that meet the developers needs to be able to fulfill power purchase agreements the developer had entered into]. This is in blatant contradiction to its assertion that the basis for not requiring an EIS for sale of lease (reasonably expected to lead to construction activity) is it can later upon environmental review of the COP preclude construction.	
BOEM-2023-0011-0137-0023	Putting all foundation type alternatives as one alternative "Alternative E" and having qualitative and superficial discussions about impacts is not helpful to fulfilling the mandate of NEPA that the impacts of projects on the environment be understood and that ways to mitigate of harm be reasonably fully considered.	As described in Chapter 2, Alternative E was developed through the scoping process in response to comments received from multiple commenters on construction noise related to foundation installation. Under Alternative E, BOEM analyzes three sub-alternatives, one for each foundation type (piled, suction-bucket, and GBS) that was originally included in SouthCoast Wind's PDE (including in the COP Version E, posted to BOEM's website on March 23, 2023, which was analyzed in the Draft EIS), two of which (suction-bucket and GBS) do not include pile driving noise impacts. In the analysis of resource impacts in Chapter 3, BOEM described the differences in impacts between these foundation types. Where appropriate, impacts based on seabed disturbance totals and noise impacts are discussed. Because many of the impacts are similar to the Proposed Action, BOEM has only identified where impacts between Alternative E and the Proposed Action differ substantively. BOEM has given equal consideration of each alternative in its analysis in the EIS based on available information.
BOEM-2023-0011-0137-0026	The estimated quantitative effect of the SouthWind power plant's contribution to a reduction in productivity via this "trophic footprint" of fouling heterotrophs when taken together with that of other wind-turbine power plant projects planned on the outer continental shelf (some of which are floating wind farms in which each turbine sits on a 2- acre shade-casting tethered platform) has not been estimated by BOEM in the DEIS with respect to mass quantity (tonnage) of excess dissolved carbon compounds that will result from the U.S. Atlantic Offshore wind program's impairment of primary	BOEM has considered primary production related to the addition of structures in more detail in Sections 3.5.5.3 and 3.5.5.5, including a reference to Dannheim et al. 2020 which considers that higher densities of filter feeders could consume much of the increased primary productivity around offshore wind turbines. Modeling in the North Sea has shown that only small changes to primary productivity around offshore wind farms changes are expected to occur, and overall trophic response difficult to project (Daewel et

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	productivity on the Outer Continental Shelf. These dissolved carbon compounds impair the ability of the ocean to serve as a carbon buffer to atmospheric carbon and contribute to ocean acidification. The authors conclude that "[e]very square meter of artificial structure cancels out the primary production of up to 130 square meters" of water "essentially robbing marine ecosystems of their productivity" [M.E. Malerba C.R. White and D.J. Marshall 2019. Frontiers in Ecology and the Environment Vol. 17 Issue7 September 2019 pp.400-406. https://doi.org/10.1002/fee.2074] a conservative estimate according to the researchers with the trophic footprint (net effect of alteration of the natural trophic pyramid) potentially having double that effect. Estimates by other researchers show a 1:8 ratio of square area of marine urbanization to area of primary production cancelled by its existence. SEE ORIGINAL ATTACHMENT FOR IMAGE OF Figure 13. Fouling on hard-surfaces that accompanies marine urbanization (construction in marine environments). Dense communities of filter-feeding sessile heterotrophs appear that reduce density of photosynthetic plankton responsible for removing dissolved inorganic carbon from ocean water and turning it into organic life forms. Knowing these "trophic footprint" effects of marine construction the conclusions of the Bureau in the DEIS—that concrete bottom scour pads surrounding wind energy structures and other structures that comprise the ocean power plants will be "beneficial" on account of the fact that they will serve as substrate that fosters growth of new communities of organisms built around sessile heterotroph organisms—is a conclusion that is very difficult to make rational sense of the DEIS does not attempt to quantify the effect of this marine urbanization on the trophic footprint (population explosion of sessile invertebrates causing decline in autotroph density and consequential reduction in ability of the waters over the outer continental shelf to reduce dissolved carbon thus reducing the ocean's ability to serve as a carbon buffer). Because this	al. 2022) even in much larger than planned wind farm development.

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	power plant cumulatively with the larger U.S. Offshore Wind Program contributes to marine urbanization which can have such an impact the DEIS is insufficient at fulfilling the requirements of NEPA to estimate impacts reasonably expected to occur.	
BOEM-2023-0011-0137-0030	In a letter dated May 13 2022 signed by Sean A. Hayes PhD Chief of Protected Species NOAA NEFSC Addressed to Brian R. Hooker Lead Biologist of the Bureau of Ocean Energy Management at the Office of Renewable Energy Management[Footnote 57: With cc to: CC: Diane Borggaard NOAA; Genevieve Brune BOEM Nicole Cabana NOAA; Julie Crocker NOAA ; Jaclyn Daly NOAA; Carter Esch NOAA; Jon Hare NOAA; Jill Lewandowski BOEM; Andrew Lipsky NOAA; Chris Orphanides NOAA; Desray Reeb BOEM; Nick Sisson NOAA; NOAA; Katie Varghese BOEM] the scientists at NOAA Fisheries (a.k.a. National Marine Fisheries Service or NMFS) and BOEM stated in part “Disturbance to [endangered] right whale foraging could have population- level effects on an already endangered and stressed species. The right whale population is food resource-limited … Right whales are chronically stressed from food limitations entanglement sub-lethal vessel strikes and noise. Displacement from a prime portion of their only winter foraging grounds due to disruptions in forage availability/distribution and/or exposure to other stressors (e.g. increased vessel traffic) could have extremely detrimental energetic effects resulting in reduced calving success … Additional noise vessel traffic and habitat modifications due to offshore wind development will likely cause added stress that could result in additional population consequences …”The letter went on “We anticipate that incremental [Underline: movement [by] 20 km or more from the edge of Nantucket Shoals 30 meter isobath for initial proposed development] inclusive of WTGs and DC-convertor OSSs [Underline: would reduce the potential for negative consequences to right whale prey and the NARW population.]”The letter recommended increasing turbine	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	density in the southwestern portions of the lease areas to spare the northeast areas where NARW feed.BOEM dismisses the federal government's own scientists' recommendation for the protection of an endangered species deciding not to evaluate it as a viable alternative because "this alternative [would have] a total of … 94 [turbines] and 2 [offshore platforms] …" short of what "would be needed for Phase 1…." Adding "Mayflower Wind needs the 85 [turbines] for Phase 1 to achieve the 1275 MW in existing offtake agreements that Mayflower Wind has."BOEM flatly admits that the reason this biodiversity-preserving proposition was rejected is because [[Underline: irretrievable commitments were already made in the form of Power Purchase Agreements or Offtake agreements for use of that area of OCS for power production]. This is in clear violation of Both NEPA and the ESA. The regulations implementing the Endangered Species Act (ESA). "Irreversible or irretrievable commitment of resources: After initiation or reinitiation of consultation required under section 7(a)(2) of the Act the Federal agency and any applicant shall make no irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives which would avoid violating section 7(a)(2). [50 CFR § 402.09 (emphasis added)]. Under Section 7(a)(2) of the ESA Federal agencies are required to ensure in consultation with the Services any actions authorized funded or carried out are not likely to jeopardize species or destroy or adversely modify critical habitat.This is also in violation of regulations implementing Section 101 of NEPA at 42 U.S.C. 4331(a) and (b). Numerous judicial decisions have made clear that environmental impact statements to satisfy requirements for NEPA analyses must occur prior to [Bold: not following] irretrievable commitment of resources.	
BOEM-2023-0011-0137-0033	The DEIS defines "Alternative D" as an alternative as removing out of 147 turbines only a handful of turbines: only four	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	turbines on the outer (east) periphery and two at the north of the bottom lip of the “cannoli shell”. This so-called mitigating alternative is so similar to the proposed action that it can hardly be called an alternative at all. Indeed it appears to differ so little from the proposed action as if it was specifically designed to be rejected for being ineffectual at mitigating any adverse impact of the proposed project. This is not the meaning of designing alternatives to the proposed action within the National Environmental Policy Act and therefore does not satisfy the requirements of the act that alternatives be considered.	
BOEM-2023-0011-0137-0034	Given the documented grave expected consequence to North Atlantic Right Whale feeding and of consequence to foraging commute of several species of waterfowl (see e.g. Fig. 24 Long-Tailed Duck Foraging Commute) and concomitant risks [Bold: an alternative which actually significantly lessens the expected harm must be formulated so that the environmental harm spared by the alternative proposal can be weighed against the differential between expected realized power generation between the harm-sparing alternative and the proposed action.] This is the purpose of the requirement for an alternative to the proposed action. The DEIS states that the purpose of making Alternative D is so that turbines “in the northeastern portion of the Lease Area would be [excluded] to reduce potential impacts on foraging habitat and potential displacement of wildlife from this habitat adjacent to Nantucket Shoals” yet chosen for exclusion are so few turbines as to have no practical effect. Electing to make [Bold: this] the impact-reducing alternative and then handily rejecting it for not reducing impact is an absurdity. BOEM must evaluate alternatives [40 CFR § 1502.14] to the proposed action. If alternatives do not differ in environmental consequences then it cannot be the case that “The environmental consequences section forms the scientific and analytic basis for the comparisons under § 1502.14”[Embedded hyperlink	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	https://www.ecfr.gov/current/title-40/section-1502.14] [See 40 CFR § 1502.16] and the requirements of NEPA are not satisfied by the DEIS.	
BOEM-2023-0011-0137-0038	The only "No-Action alternative" evaluated was energy production from the burning of fossil fuel to produce the energy that the Mayflower power plant would otherwise supply. There weren't any "No Action Alternatives" that involved the use of carbon capture implementation of energy conservation policy or other low-carbon forms of producing energy (either within[Footnote 61: BOEM does not in the DEIS consider purpose-satisfying alternatives within its statutory authority to implemenent for cumulative effects. For example Net average electrical power production from Ocean Thermal Energy Conversion exceeding 100 MW is calculated to be achievable off the southern coast of Florida per OTEC facility.	The No Action Alternative assumes that BOEM would not approve the SouthCoast Wind COP and that the SouthCoast Wind Project would not be built. Ongoing activities that contribute to existing baseline conditions are also described under the No Acton Alternative. Ongoing and reasonably foreseeable planned activities that could contribute to cumulative impacts of the No Action Alternative and cumulative impacts of the action alternatives are described in Appendix D, *Planned Activities Scenario*. Alternate technologies for energy generation or conservation would not meet BOEM's screening criteria for alternatives to be analyzed in detail[4] because it would not meet BOEM's purpose and need or the goal's of the applicant as described in EIS Chapter 1, Section 1.2, *Purpose of and Need of the Proposed Action*.
BOEM-2023-0011-0137-0048	Two DEIS statements first"[R]esults of benthic monitoring at European wind facilities and the Block Island Wind Farm in the United States provide general knowledge of the overall impacts of these IPFs combined if not individually. Therefore the analysis provided in this EIS is sufficient."and second the comment within the DEIS that assesses the project both individually and cumulatively to be of net benefit to the benthos are not supported and are contradicted by the available scientific data. Of the few studies were conducted at the Block Island Wind Farm to look for effects and cited some were commissioned by wind developers and written by their employees [Footnote 74: E.g. https://www.int-res.com/articles/meps_oa/m683p123.pdf]. We reiterate to	Cited article does not investigate impacts of EMF or noise at offshore wind farms. The commenter's cited article investigates the impact of prey availability and foraging habitat by flounder and Gadid fishes, which found that besides these fish incorporating some of the epibionts (mussels and mysid shrimps which are associated with mussel beds) into their diets the quality of foraging habitat was deemed similar at the wind farm and reference sites (without offshore wind farm). EMF and noise IPFs listed in both Section 3.5.2, *Benthic Resources,* and Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, include the best available data and scientific literature for offshore wind and is consistent with

[4] See BOEM's *Process for Identifying Alternatives for Environmental Reviews of Offshore Wind Construction and Operations Plans pursuant to the National Environmental Policy Act* published June 22, 2022, and available at https://www.boem.gov/sites/default/files/documents/renewable-energy/BOEM%20COP%20EIS%20Alternatives-2022-06-22.pdf.

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	the Bureau of Ocean Energy Management that there is a wealth of scientific information about how both noise and magnetic fields (that wind-turbine power plants and their transmission infrastructure expected to produce respectively) affects marine life including effects on the benthos in ways that has not received adequate consideration.	other offshore wind EIS documents including Ocean Wind 1 and Revolution Wind.
BOEM-2023-0011-0137-0049	Anticipated effects of the proposed activities on invertebrates are large potentially very large or are unknown (See Appendix A) [Footnote 75: The following were given less than due consideration in the DEIS or impacts to populations were downplayed or underestimated: Change in prey density or availability; modified feeding behavior; increased energetic expenditure (traversing extra distances to avoid areas of activity; increasing communication volume circuitous migratory paths); physiological effect of stress damage to ciliated structures (and the consequences for the organism); behavioral response to sound exposure interferes with necessary life functions; direct physiologic effect of exposure to sound; impairment of habitat selection capability based on sound cues habitat alteration from behavioral changes in animals that are ordinarily habitat manipulators; delayed or abnormal physiology or behavior in development; decreased sediment mixing (reduced locomotion increased recession); damage to statocysts and harm outcomes such as impacts to reproductive energy budgets brood success; missed mating opportunity impairment of ability to select mates from masking mating sounds and calls; changes to plankton (spatial distribution planktonic species composition); immunosuppression of coelomates depletion of antioxidant resources impaired gravitaxis shell dissolution (related to increased anaerobic metabolism from time spent with valves shut) reduced predator defenses (reduced predator detection impaired shoaling in fish inability to locomote and thus regulate internal conditions impaired escape from reduced condition postural and positional changes from physiological damage to “righting” organs) impaired migration and change	Text has been added to Section 3.5.2.3, *Cumulative Impacts of the No Action Alternative,* under the *noise* IPF that directly addresses some of the physiological impacts listed here. Additional physiological impacts are addressed in the Final EIS under the *EMFs* and *cable emplacement and maintenance* IPF discussions in Section 3.5.2.3. Invertebrate physiological sensitivities to sound are also described in the finfish, invertebrate, and EFH analysis, in Section 3.5.5.3.

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	in community structure and the ecological services communities and their component species provide.].	
BOEM-2023-0011-0137-0084	100-200 kHz sound elicited physiological stress response in echinoderm A. lixula and increased the cytotoxicity[Footnote 18: Vazzanaa Mauroa Ceraulob Dioguardia Papalec Mazzolab Arizzaa Beltramed Ingugliaa Buscainob 2020. Underwater high frequency noise: Biological responses in sea urchin Arbacia Lixula. J of Comparative Biochemistry and Physiology Part A. 2020. Comp Biochem Physiol A Mol Integr Physiol. 2020 Apr; 242:110650.] of its coelemic fluid confirming the vulnerability of this species to acoustic exposure. This is the frequency of sound emitted by the echosounders and side-scan sonar equipment expected to be used in site characterization. Impact on Echinoderms of operational noise was not given adequate treatment. The brown sea urchin Arbacia punctulate as well as remaining populations of sea stars of noise has not been assessed.	Due to the BOEM resolution requirements for the COP surveys, SouthCoast Wind was required to utilize side-scans and multibeam systems with higher frequency than 100–200 kHz. The following frequencies were used for the 2019, 2020, 2021, and 2023 G&G surveys. • Side-scan sonar frequency - 300kHz and 600 kHz • Multibeam echo sounder was above 200kHz (2020 and 2021 it was 400kHz, and 388 kHz in 2019, and the plan for 2023 is 350kHz to 360kHz) Therefore, no impacts are anticipated to echinoderms based on the mentioned study. Additional text has been incorporated into Final EIS Sections 3.5.2.3 and 3.5.5.3 addressing noise and vibration impacts on invertebrate species, including a citation from the Vazzana et al. (2020) paper cited in the comment.
BOEM-2023-0011-0137-0107	The DEIS concludes sediment disturbance will be easy to recover from. However studies in Europe have shown benthic communities simply do not appear to be as resilient as that and also show cable laying to have long term adverse impacts on biodiversity[Footnote 48: Haploop areas are rich benthic ecosystems and allow for the development of a benthic macrofauna and an interdependent pelagic fauna. French researchers showed that an electrical cable buried in 2012 adversely affected a Haploop field within the vicinity of the cable. The Haploops mud is characterized by a higher biodiversity in living benthic foraminifera in Haploop mats and by a good balance between major species of foraminifera. Two transects were sampled one close to and one far from the cable. Samples were also taken in between. A decreasing gradient of ecological health status (as measured by biodiversity) can be observed going from the bank to the midline of the electrical cable[Bold Underline: emphasizing that the area remains an adversely impacted environment	While the New England Mudpatch (NEM) has similar geological features (pockmarks) as the habitat described in the cited example, no evidence of extensive amphipod mats exists in the NEM. Goff (2019) states that calcareous deposits were found in the NEM from acoustic mapping which were indicative of biological origin as calcareous deposits would not be present from geological processes since the NEM is devoid of methane seeps. Foraminifera deposits, a calcifying planktonic species have been found in the NEM (Chaytor et al. 2021) but these Haploop amphipod mat are not likely present because Champilou et al. (2019) draws an association of these amphipod mats with the methane seeps and the nutrients that are dispelled from them. The NEM pockmarks are created from groundwater discharge and therefore the biological communities would vastly differ from those in this French study. From a literature search it was not clear that any biodiversity research has been done on the benthic and infaunal

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	even after 5 years from the cable installation.] Nearer the cable a dense unbalanced species assemblage was highly dominated by a single species. [Bold Underline: Biodiversity increased with distance away from the cable]. ["HOOPLA" case study on Haploops fields by WAMEC (West Atlantic Marine Energy Community); internet reference https://www.weamec.fr/en/publications/2018-champilou-j-b-foraminiferal-faunas- associated-to-haploops-spp-mats-on-the-atlantic-french-coast-and-effects-of-a-wind-farm-installation- on-the-area-weamec-project-hoopla/].] in the studied benthic animals which are substrate modifiers and which benefit other organisms.	communities. Therefore, please refer to Section 3.5.2.1 for reference on what the soft sediment biological communities could look like since the NEM and the Lease Area are somewhat close in proximity. Section 3.5.2.5 provides impacts assessments for soft sediment habitat in the Lease Area as well as outlines the likelihood of recovery.
BOEM-2023-0011-0137-0109	The DEIS does not give adequate treatment to Horseshoe Crabs magnetosensitive species which may be significantly affected by undersea cables within the lease areas once the sold lease areas are developed and within the cable routes to shore. Horseshoe crabs are ecologically important as some species of migratory birds depend on their eggs to fuel their flights and are important in human medicine. They are under immense harvest pressure for their blood which is sold for use in medicine. Formerly ubiquitous they are disappearing rapidly. The Bureau has been stating and restating the need to study the effects of undersea interturbine and high-voltage export cables on Horseshoe crabs since at least 2011. In a decade that has gone by the Bureau should state what it has learned or if no further effort was undertaken. If no commission sought to study them the Bureau must not continue to conclude no potential or potential for only negligible effects from absence of demonstrated harm (which is dissimilar to demonstrated absence of harm following study).	No EMF studies specifically on horseshoe crabs were found based on a review of the scientific literature. However, impacts of other magneto sensitive arthropods like the American Lobster and other bottom-dwelling invertebrates are outlined in Final EIS Section 3.5.2.3 and Section 3.5.5.5 under the *EMF*s IPF paragraph. The analysis of these species provides information on effects to magneto sensitive like horseshoe crabs.
BOEM-2023-0011-0137-0117	High density conditions foster the evolution of higher pathogenicity (parasites bacteria protozoa and viruses that cause rapid serious disease) because such restraints are absent. [New York State Department of Environmental	While the reef effect may attract fishes and invertebrates in high densities, these organisms are not confined in spaces or artificially fed like aquaculture where parasites and diseases are more prevalent. Additionally, the species that typically

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	Conservation Artificial Reef DEIS Attachment J page 20 Comment #23; https://www.dec.ny.gov/docs/fish_marine_pdf/dmrreeffinalappc.pdf]. In a wind turbine power plant the wind turbine foundation itself and the hard-surface scour pad[Footnote 60: A scour pad is a large hard-surface area usually made of concrete intended to prevent the flow of water current diverting around the mast from scraping large troughs into the ocean floor. Rip rap stones can also be used.] around the footprint can aggregate fish and other animals and once colonized is characterized by high densities of the organisms that inhabit them. High density means animals are in close proximity to one another and transmission is more likely. This poses the threat of relaxing natural selection against high pathogenicity and fosters evolution of more severe disease-causing organisms in the inhabiting species. In high density there is less consequence to the pathogenic organism of killing its host rapidly since the host is likely exposed to many others whom your offspring or replicates can infect even if the host deteriorates rapidly. Since there are many turbines each with associated high density area at its base the opportunity for evolution of pathogens that cause higher severity of disease is greatly increased. In absence of natural selection against them severe-disease-causing pathogens can evolve in rapid timescales spread and have population-level effects.	colonize these hard bottom substrates on the scour protection and WTGs are typically found in reef communities where high densities and competitive pressures are prevalent, but these species are adapted to be in close aggregation with one another compared to the sandy benthic habitat that would surround the WTGs in the Lease Area. For hydrodynamic impacts of scour protection and wind turbines please refer to the *presence of structures* IPF discussions in Section 3.5.5.3 () and Section 3.5.2.3.
BOEM-2023-0011-0140-0019	We note changes to hydrographic impacts are unlikely from the removal of only six turbines and urge BOEM to include additional analyses indicating what level of turbine removal would maximize environmental benefits to North Atlantic right whales without compromising project viability. BOEM should also present a significantly more robust discussion of the 20-km buffer area recommended by the NEFSC to reduce the potential for negative consequences for right whale prey and the population.[Footnote 25: Id.]	Please refer to response to comment BOEM-2023-0011-0056-0012.

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BOEM-2023-0011-0140-0020	We are encouraged that the DEIS and COP consider foundation alternatives that mitigate potential noise and urge the agency to also consider them as alternatives in projects going forward. We request BOEM choose an alternative with a quiet foundation – either Alternative E-2 or E-3 – to significantly lessen construction impacts on marine wildlife and habitats and particularly the North Atlantic right whale for all or as much of the Project as is feasible. Pending the findings of the aforementioned National Academies committee on the hydrodynamic effects of fixed foundation turbines one potential exception to this recommendation may be for the area within the 20-km buffer (beginning at the 30 meter isobath) for Nantucket Shoals identified by the NEFSC as particularly important foraging habitat for North Atlantic right whales and other species. [Footnote 26: May: 13 2022 letter from Sean Hayes to Brian Hooker available at https://drive.google.com/file/d/1V8RDtdVAAMWGjPMqb2s98C5HWppLkNEO/view?usp=sharing.] Given the elevated concern regarding potential hydrographic impacts near Nantucket Shoals we recommend BOEM undertake an analysis of the different hydrodynamic effects produced by different foundation types (i.e. monopile vs. gravity-based vs. suction jacket) and consider selecting the foundation type(s) with the least potential for hydrographic effects within the buffer area. If the outcome of this analysis indicates that monopiles have the least potential effect BOEM should adopt this technology but require the developer to make additional investments in noise reduction and attenuation technologies including low energy hammer technologies to minimize the impact of pile driving noise on foraging right whales.	BOEM acknowledges the commenter's preference for a quiet foundation and its support for Alternative E-2 and Alternative E-3. BOEM has added additional information to the Final EIS (including Section 3.4.2, *Water Quality*, Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, Section 3.5.6, *Marine Mammals*, and Section 3.5.7, *Sea Turtles*), to describe the findings from the 2024 NASEM study on hydrodynamic impacts in the Nantucket Shoals region. Regarding the request for BOEM to undertake an analysis of the different hydrodynamic effects produced by different foundation types (i.e. monopile vs. gravity-based versus suction jacket), to date there are no empirical studies that quantify differences in hydrodynamic impacts based on foundation types at the turbine scale. As noted in the 2024 NASEM study, "More hydrodynamic observations are available at the regional scale than at the wind farm and turbine scales." The study notes that "there are expected to be differences between monopile foundations and other foundation types in momentum extraction and turbulence production. These effects will enter through the changed frontal area of the structure. To properly account for these effects, specifically designed experiments or simulations must be performed." While differences can be expected at the turbine scale from different foundation types, the broader conclusion of the NASEM study is that the impacts on ecosystems from development and operation of offshore wind may be difficult to distinguish from natural and other anthropogenic variability (including climate change) in the Nantucket Shoals region. Based on this, the lack of existing observational data on effects of different turbine types, and the time and cost to conduct studies at this time given that no GBS or suction bucket foundations have been installed to date in U.S. waters, BOEM believes the information contained in the Final EIS is appropriate to support informed decision-making on the SouthCoast Wind Project. BOEM acknowledges the NASEM study's recommendations to

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		conduct observational studies at the relevant turbine to wind farm scales to isolate, quantify, and characterize the hydrodynamic effects, including based on foundation type, as offshore wind projects are installed on the OCS. BOEM agrees and will continue to work with partners to monitor and conduct further studies on this important topic.
BOEM-2023-0011-0140-0088	The conclusions in the SouthCoast Wind Farm Draft EIS that the overall impact to benthic resources from the Proposed Action would range from negligible to moderate and the long-term impact on benthic communities from construction and installation of the Proposed Action is expected to be minor as the resources would "likely recover naturally over time" is inconsistent with the findings in the Draft EIS that offshore wind activities may result in long-term or permanent impacts. [Footnote 321: SCW DEIS at 3.5.5-29.] Because both the Block Island Study and the SouthCoast Wind Draft EIS itself find the potential for long-term to permanent impacts on sensitive benthic habitats including complex and eelgrass habitats from offshore wind development BOEM should include more justification in the SouthCoast Wind Final EIS for why it expects that these potential impacts to sensitive benthic habitats will only be minor and not result in any population-level impacts to the species that rely on them and particularly to overfished species like Atlantic cod. More specifically because the export cable corridors will traverse juvenile Atlantic cod HAPC as well as possible cod spawning grounds in the complex habitats of Muskeget Channel the Sakonnet River and Mount Hope Bay BOEM should analyze whether the potential long- term to permanent impacts from cable emplacement and anchoring activities in the export cable corridors could lead to population-level impacts on Atlantic cod in those areas.	Section 3.5.5.3 details how Atlantic Cod are among the fish species that are attracted to structures and have been found in higher concentrations around offshore wind farms than in surrounding habitat. COP Appendix K provides map of SAVs including eelgrass beds located in the nearshore environment for Brayton and Falmouth cable corridors (Figures 4-1, 4-2, 4-3, and 4-4). Section 5.2.3.1 Construction and Decommissioning in COP Appendix K also details the impact of cable emplacement on eelgrass beds which is nonexistent to indirect effects since there are no eelgrass beds on the Brayton Point and Aquidneck Island landfalls and the planned landfall of Falmouth are outside the mapped area of eelgrass habitat.
BOEM-2023-0011-0140-0092	In the Final EIS BOEM should provide a more detailed explanation for its conclusion that a closed loop cooling system is not commercially available. In particular given that	BOEM believes the justification for dismissing an alternative that would require the use of a closed loop cooling system for HVDC converter OSPs in Section 2.3 is still appropriate.

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	the second phase of the SouthCoast Wind Project may not be fully operational until 2030 BOEM should explain why it does not anticipate a closed loop cooling system becoming commercially available by then.	For Project 1, SouthCoast Wind has already selected an HVDC converter OSP design that would use open loop cooling and has applied for a NPDES permit for the system. The design of OSP(s) for Project 2 has not yet been selected. However, as stated in Section 2.3, based on BOEM's independent market research, a closed-loop cooling system for an offshore wind HVDC converter station has not been implemented in any operational projects to date and the technology is too speculative for BOEM to require. Delaying approval of the Project for the technology to allow closed loop cooling could jeopardize SouthCoast Wind's ability to compete for offtake agreements and make the Project uneconomical. BOEM's 2022 white paper, *Supporting National Environmental Policy Act Documentation for Offshore Wind Energy Development Related to High Voltage Direct Current Cooling System*, describes alternatives to open loop cooling, noting that the most common closed loop systems use air to cool the systems or require the use of freshwater, which would not be available at an offshore system. For the air-cooling systems, fans are used which require a large amount energy and are space and cost prohibitive for offshore platform facilities. BOEM is analyzing as part of the Proposed Action and other alternatives the use of HVAC technology, which do not require cooling systems that involve the intake and discharge of water.
BOEM-2023-0011-0140-0093	An alternative that eliminates additional WTG positions in the vicinity of Nantucket Shoals would likely reduce impacts to Nantucket Shoals even further and in contrast to Alternative D could potentially reduce the overall impact magnitude of the Project when compared to the Proposed Action.In the DEIS BOEM acknowledges that it considered and dismissed another alternative that would eliminate up to 17 WTGs in the northeastern portion of the lease area. This alternative would eliminate 17 WTGs to further reduce potential impacts to the 20-km buffer of the Nantucket Shoals 30-meter isobath. BOEM states that it concluded this alternative is unreasonable	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	"because it is inconsistent with [SouthCoast] Wind's primary goals and the alternative is not economically feasible or practicable and would be equivalent to the No Action Alternative." [Footnote 368: Id. at 2-31-32. BOEM states that removing 17 turbines would prevent SouthCoast Wind from developing Phase 2 of the Project so that it has a minimum capacity of 1000 MW which BOEM deems is essential to project viability. Id. We note however that (1) BOEM also recognizes that SouthCoast Wind could bid on individual projects in either Massachusetts or Rhode Island that are under 1000 MW; (2) the two PPAs that SouthCoast Wind has been awarded to date were each 800 MW or less; and (3) several other PPAs awarded in New England to date have totaled approximately 800 MW or less (See e.g. Vineyard Wind 1 Revolution Wind Park City Wind). Therefore additional information about why this is not a viable option should be provided by BOEM.]BOEM has provided several cogent reasons to explain its conclusion that a potential alternative that would eliminate up to 17 WTG positions is infeasible. [Footnote 369: See id.] Nevertheless we urge BOEM to reconsider whether it is feasible to remove more than the six WTG positions that would be eliminated under Alternative D– without compromising project viability–given the significant environmental benefits that could result from such an alternative.	
BOEM-2023-0011-0151-0001	I have to say quite frankly that the design of the program coming through our Falmouth Heights beach and canvassing down our Boulevard which was leased to our town for family enjoyment is very very disturbing and I get the importance of renewable energy and I get the importance of economic development but what is interesting to me is again as a resident in a densely populated area how they can drive the cable 87 miles worth of cable that they are only going to you know lay underground under three feet and we have trees here that will not be allowed to be within 100 feet of the cable. Again I -- alternatives have been raised to SouthCoast	BOEM considered alternatives to the Proposed Action that were identified through coordination with cooperating and participating agencies and through public comment received during the public scoping period for the EIS. Based on the criteria outlined in Section 2.2, *Alternatives Considered but Not Analyzed in Detail*, feasible alternatives were carried forward for analysis in the EIS.

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	by engineers in different locations and unfortunately it doesn't seem to be under consideration for them. So I have been keeping a tally I am noticing all the pros but I have to say that this is an absolute con and I am asking you to really reconsider redirecting the scope and the location of this project.	
BOEM-2023-0011-0156-0003	we support the process that is getting underway across the New England states on transmission planning which hopefully will include an offshore grid. We recognize that the timing to deploy this and other projects that are already in the pipeline will not provide for actual integration offshore of their transition but we hope that these projects can be designed in such a way that future interconnections between them may be possible. This will improve reliability and efficiency as well as reducing the amount of impact of new transition needed both offshore and on land.	Please refer to response to comment BOEM-2023-0011-0080-0003.
BOEM-2023-0011-0157-0001	But I guess one thing that I am struggling with that I would have as a concern that hopefully could be improved in the FEIS would be just explaining some of the details of the project especially for the alternatives that are different from the proposed action which is I think pretty well explained in the COP but some of the other ones thinking for example the alternative that talks about having you know fewer cables going through Muskeget Channel to reduce impacts to that area and then that would I think require HVDC cabling so it wasn't clear you know to me whether there was going to be another substation converter station required for that or if there would only be one used and where that would be located. I also think that as I understand it where the offshore substations and converter stations occur is going to determine the inner array layout cable layout and I wasn't seeing that anywhere in the draft EIS maybe it's in there and I just missed it so specifying those details are important to understand where benthic sea floor impacts might occur within the array.	As stated in Section 2.2.6, *Alternative F – Muskeget Channel Cable Modification*, Alternative F would result in the use of HVDC cables and the use of an HVDC converter OSP in the Lease Area. Alternative F is within SouthCoast Wind's PDE in its COP, meaning that the Proposed Action also includes the possibility of using HVDC cables and a HVDC converter OSP interconnecting at Falmouth, the difference being that Alternative F would require HVDC and fewer numbers of cables. Under both Alternative F and the Proposed Action, the location of the OSP(s) that would be used to interconnect at Falmouth for Project 2 (if Falmouth is selected as the POI for Project 2) is not yet known, nor is the final interarray cable layout. Final selection would be determined based on future offtake agreements and through SouthCoast Wind's supplier/equipment contracting process.

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BOEM-2023-0011-0157-0002	Also we sort of were wondering and I don't know if it's too late to add something like this to the FEIS in planning for that but a lot of the other projects that are and this is quite a large project and other projects that are of this size seem to use a phased approach to development in describing the development in both how the construction would be done and in describing the impacts so I was kind of interested to know why a phased approach wasn't considered here especially because the full size of the project capacity of the project hasn't been procured yet.	Please refer to response to comment BOEM-2023-0011-0112-0011.
BOEM-2023-0011-0160-0002	And one of the alternatives that was not in the original Mayflower Wind proposal was to go up to the Cape Cod power plant that has the industrial facility to terminate this kind of cable and there was recent discussion after three years SouthCoast Wind said they were in discussion with the new owners of that power plant who JERA who specifically are looking to make that power plant a termination point for offshore wind cables. So my concern is why not go to that industrial location versus a densely populated residential location and I wasn't sure how the U.S. Army Corps of Engineers or BOEM gets involved with that and has any overview or ability to intercede in that to try to facilitate the discussion between Mayflower Wind or SouthCoast Wind and the new owners of that plant JERA to make that happen.	Please see the response to comment BOEM-2023-0011-0043-0001.
BOEM-2023-0011-0163-0001	I want to mention that I read a report from the Brattle Group called A Better Planned Grid and in that report it suggested that rather than individual cables running from each of the potential wind farms to various undisclosed locations maybe a better approach would be to have a hub out in the ocean similar to maybe like an oil rig or something where the cables would all be combined and collectively brought to shore in maybe a few locations that were prime industrial sites.	Please refer to response to comment BOEM-2023-0011-0080-0003.
BOEM-2023-0011-0163-0002	And the second question is regarding the canal electric plant I read quite a long time ago that the canal plant was one of the top three sites including Somerset which would be prime	Please see the response to comment BOEM-2023-0011-0043-0001.

Comment No.	Comment	Response
	locations for cable landing and I wonder why that wasn't produced in the report by SouthCoast Wind and I'd like to see those negotiations more clearly defined.	
BOEM-2023-0011-0163-0006	I would suggest the Pilgram nuclear power plant as a landing site as well	Please see the response to comment BOEM-2023-0011-0004-0005.
BOEM-2023-0011-0166-0002	Especially since there are other sites as previous speakers have mentioned such as the canal power plant as long as these other industrial commercial sites exist we feel they should be employed before you impose it on a residential community.	Please see the response to comment BOEM-2023-0011-0043-0001.
BOEM-2023-0011-0166-0003	One of the other speakers Mr. Brown also mentioned the Brattle Group study which extolled the virtues of a coordinated planned approach to routing of the cables which would allow wind developers to perhaps share cable routing and reduce the number of landing sites needed which would be more economical and have less environmental impact.	Please refer to response to comment BOEM-2023-0011-0080-0003.
BOEM-2023-0011-0180-0001	I noticed in the DEIS that alternative D the exclusion zone for turbines adjacent to Nantucket Shoals it says that a commentor speculated that the presence of wind turbine generators in the northeastern portion of the lease area may alter the foraging habitat associated with et cetera et cetera et cetera with protected species essentially. That commentor is not a commentor. It is a cooperating agency in the BOEM process namely NOAA Office of Protected Resources. The allegations in the DEIS that the claims are unfounded that the hydrodynamic effects are not what that particular "commentor" alleged are incorrect. NOAA is the federal agency tasked by the Federal Government and Congress with managing and protecting our marine mammal protected resources. I would submit that BOEM does not have the expertise to override that agency on this issue which it does not and the allegations that the effects mentioned by NOAA are absolutely incorrect those are based on peer reviewed	Please refer to response to comment BOEM-2023-0011-0056-0012.

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	studies coming out of Europe. On May 13, 2022, NOAA's Office of Protected Resources sent BOEM a letter requesting a conservation buffer zone for a critically endangered species namely the North Atlantic Right Whale whose only known winter foraging habitat occurs on Nantucket Shoals adjacent to the project as well as in the project quite frankly. And the hydrodynamic effects that will happen as a result of the project will have negative effects on the food source of that animal again it is a critically endangered species and this is the only known winter foraging habitat of that animal. I do not believe that BOEM has the expertise to override a cooperating agency particularly an agency with the expertise in the subject matter	

N.6.3 Air Quality

Comment No.	Comment	Response
BOEM-2023-0011-0081-0001	This DEIS fails to consider emissions from the manufacturing, transportation, concrete production and mining that will occur outside of the local region for the project. The DEIS cannot ignore the emissions from these operations or the environmental costs of these activities.	A discussion regarding potential emissions from raw material extraction, materials processing, and manufacturing of components (i.e., full life-cycle analysis) has been added to Final EIS Section 3.4.1.5.
BOEM-2023-0011-0081-0002	The DEIS assumes the wind energy generated over the lifespan of the project will "likely" offset the carbon emissions resulting from construction installation maintenance and operations. Analysis of real-world data does not support this assumption. Studies demonstrate that wind-generated energy replaces less than one-tenth the amount of fossil-fuel-generated electricity (Jorgensen 2012; York 2012). If BOEM uses a 10% or less replacement value and includes foreign as well as domestic carbon emissions and environmental damage the project would likely add more to the climate problem than detract from it.	The emissions estimates in the EIS are based on the best available information, scientific and engineering data, and USEPA-approved models.

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BOEM-2023-0011-0081-0003	The project area is right smack in the middle of the Gulf Stream a MAJOR contributor to GLOBAL weather and wildlife. It is now a delicate and balanced ecosystem of it's own. Any decrease or change in the Gulfstream can have dramatic effects on temperatures in other countries especially the UK. This project will likely change water and air temperatures redistribute humidity and alter atmospheric flow thereby modifying local weather patterns regional climate ocean currents and vegetation.	Appendix B, Section B.2.6, provides information on potential impacts of offshore wind facilities on meteorological conditions.
BOEM-2023-0011-0081-0014	Assuming that climate change will do worse is not a valid justification for known and significant impacts. The entire DEIS justifies these adverse impacts based on broad and unproven anticipated future effects of climate change. Moreover the most recent literature does not support the projections in planetary temperature used by the DEIS. The impact assessments are not reasonable legal or scientifically defensible. Besides there will be significant UNKNOWN impacts as we have seen whenever an entity thinks they can mitigate their effects on Mother Nature as they go along. Science 101: for every action there is an equal and opposite reaction.	The impact assessments in the EIS are based on the best available scientific information and predictions, including recent reports by the Intergovernmental Panel on Climate Change and NOAA.
BOEM-2023-0011-0085-0007	Effects on weather. It has been shown that wind turbines affect wind speed and direction and hence weather systems. The effects of thousands of offshore towers cannot be known in advance.	Appendix B, Section B.2.6, provides information on potential impacts of offshore wind facilities on meteorological conditions.
BOEM-2023-0011-0086-0002	Has or will BOEM be determining that the DEIS shows that the wind energy generated over the useful life of this project will Absolutely offset the carbon emissions resulting from the construction installation O & M and decommissioning of this project? It seems that much of BOEM's research dates to the 2012 time period. Does analysis of real-world data (European installations) support this data?	Section 3.4.1.5 of the EIS discusses the emissions avoided with the Project and shows that the estimated net greenhouse gas (GHG) emissions over the Project lifetime are negative (i.e., net beneficial impact).
BOEM-2023-0011-0091-0018	Southcoast's DEIS even claims that the subject area for the windfarm will have negative air quality impacts if their project	The air quality impact rating of "moderate" for the No Action Alternative reflects existing and expected future activities

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	does not get approved (See DEIS Table ES-2). This is absolutely absurd and completely without any science-based foundation for the lease area ambient air quality. They further go on to make light of the nonattainment area on Nantucket Island even though these windfarms bring extensive activity and air emissions to a region just to the South of the Island. In the DEIS Air Quality section discussion of relevant regulatory decisions they completely leave out (perhaps they don't know) that Nantucket's ambient air quality issues with ozone are due to emissions in a region defined as the Ozone Transport Region and it has taken the combined efforts of the Northeast States and mid-Atlantic States to develop and implement control strategies to reduce these long-range transport emission sources to improve downstream air quality levels to meet NAAQS.	that produce emissions (e.g., industrial, commercial, residential, and transportation sources) and does not imply that existing air quality will decline if the Project is not approved. The discussion of the Dukes County nonattainment area in Final EIS Section 3.4.1.1 has been clarified. As noted in this section, ozone concentrations in the Dukes County nonattainment area have not violated the NAAQS since before 2018.
BOEM-2023-0011-0117-0008	Anticipated Unknown Impacts to Justify Known Project-specific Adverse Impacts: Without a rigorous scientific model poorly defined imagined adverse impacts cannot justify known impacts. The entire DEIS justifies their adverse impacts based on broad unproven anticipated future effects of climate change and increased development. Moreover the most recent literature does not support the projections in planetary temperature used by the DEIS. The impact assessments are not reasonable legal or scientifically defensible.	The impact assessments in the EIS are based on the best available scientific information and predictions, including recent reports by the Intergovernmental Panel on Climate Change and NOAA.
BOEM-2023-0011-0117-0031	Local Climate: Wind farms can increase local water and air temperatures redistribute humidity and alter atmospheric flow thereby modifying local weather patterns and regional climate (Miller 2018). Raising ambient water temperatures affects fish larvae (Moyano 2017) ocean currents (Christiansen 2022) and vegetation (Diffendorfer 2022). The BOEM DEIS fails to consider the latest scientific findings or to adequately address this issue. Restating the assumption that climate change will do worse damage is not a valid justification and examination of known and significant adverse environmental impacts.	Appendix B, Section B.2.6, provides information on potential impacts of offshore wind facilities on meteorological conditions.

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BOEM-2023-0011-0117-0032	Global Effects: Appendix G: Air Emissions Report is CONFIDENTIAL and not open to the public's perusal. Under no circumstances should BOEM grant any approvals until the public has the chance to evaluate these documents. The DEIS cites the Executive Order 14008 to justify the purpose and need for the project. This order specifically includes the necessity to tackle the climate crisis both at home and abroad. The DEIS does not comply with this executive order because it fails to consider the global (abroad) ramifications of the project.	Information on potential global (abroad) impacts (in the life-cycle analysis context) has been added to Final EIS Section 3.4.1.5. Regarding the redacted portions of documents received from applicants, BOEM would withhold trade secrets and commercial or financial information identified as privileged or confidential from public disclosure by the lessee in accordance with the terms of 30 CFR 585.113. Per 30 CFR 585.113, and subject to the limitations of the Freedom of Information Act (FOIA). Information about the relevant FOIA provision is also available on a U.S. Department of Justice (DOJ) website: https://www.justice.gov/oip/step-step-guide-determining-if-commercial-or-financial-information-obtained-person-confidential.
BOEM-2023-0011-0117-0033	Climate change is a global not a local problem. No DEIS should ignore the global environmental costs of a project. This DEIS fails to consider emissions from abroad including the manufacturing transportation concrete production (Miller 2020) and mining that will occur outside of the local region for the project. Given the executive order's specific inclusion of "abroad" the DEIS cannot ignore the emissions from these operations or the environmental costs of these activities.	Information on potential global (abroad) (in the life-cycle analysis context) has been added to the EIS.
BOEM-2023-0011-0117-0034	The DEIS assumes the wind energy generated over the lifespan of the project will "likely" offset the carbon emissions resulting from construction installation maintenance and operations. Analysis of real-world data does not support this assumption. Studies demonstrate that wind-generated energy replaces less than one-tenth the amount of fossil-fuel-generated electricity (Jorgensen 2012; York 2012). The real-world replacement value of wind energy for fossil-fuel-generated electricity undermines the assumption that this project will mitigate climate change.	The emissions estimates in the EIS are based on the best available information, scientific and engineering data, and USEPA-approved models.
BOEM-2023-0011-0117-0035	If BOEM uses a 10% or less replacement value and includes foreign as well as domestic carbon emissions and environmental damage the project would likely add more to	The emissions estimates in the EIS are based on the best available information, scientific and engineering data, and USEPA-approved models.

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	the climate problem than detract from it. This lack of climate change mitigation invalidates all of DEIS's subsequent environmental assessments that assume a net positive effect on GHG emissions.	
BOEM-2023-0011-0117-0036	Decommissioning: The DEIS claims to evaluate the impact of decommissioning and yet none of the studies do this. Please provide a full examination of the carbon emissions for decommissioning the cost and the environmental impacts. As stated in 30 CFR 585 decommissioning is a requirement. BOEM cannot approve a project state that it insists on decommissioning and then not include this in the DEIS. Because decommissioning might harm the environment and will cost an extraordinary amount of money it is crucial to include the specifics in the DEIS. Given that the impact assessments depend on decommissioning unless BOEM understands the environmental impact and is certain that decommissioning will take place from both a financial and environmental standpoint it cannot legally approve a project based on this DEIS.	As documented in the EIS, emissions from decommissioning were not quantified as part of the COP or the OCS air permit application. SouthCoast Wind anticipates pursuing a separate OCS air permit for decommissioning activities because it is assumed that marine vessels, equipment, and construction technology would change substantially in the next 35 years and in the future would have lower emissions than current vessels and equipment.
BOEM-2023-0011-0117-0037	Sulfur Hexafluoride (SF6): The COP (Volume 1 Table 3-26) indicates that significant amounts of SF6 will be housed in the gas-insulated equipment (over 16.5 tons) and that SF6 leaks during operations. Given that every molecule of SF6 contributes 23500 x more than CO2 to greenhouse warming and Scotland's disastrous leak of SF6 (Mavrokefaledis 2022) we should not tolerate the risk of contributing to GHG emissions in our effort to mitigate climate change particularly in the harsh ocean environment that increases the risk of accidental leakage. BOEM should insist that the developer eliminate all components with SF6.	BOEM has added mitigation measure AQ-8 to Final EIS Appendix G, Table G-2, which would require SouthCoast Wind to use sulfur hexafluoride (SF_6)-free switchgear to the extent feasible.
BOEM-2023-0011-0132-0016	The public has simply not been educated about the trade-offs and has been mis-led about the project(s) potential benefits regarding climate change. The Vineyard Wind Final EIS and the Ocean Wind Draft EIS say accurately that these projects will have no or negligible effect on climate change. Yet BOEM	An individual offshore wind project may appear to have no or negligible effect on climate change when its GHG emission reduction is compared to a much larger baseline (e.g., national GHG emissions). However, the 2023 Council on Environmental Quality (CEQ) guidance on GHGs under NEPA

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	continues to purport publicly that offshore wind is necessary to prevent damage from climate change. The public is being misled as none of the project documents to date support the claim.	specifically discourages this type of comparison because it implies that GHG benefits from an individual project are not worth achieving. In fact, just as global GHG emissions are the sum of the emissions from a myriad of sources, none of which is by itself large enough to affect climate change discernibly, so the GHG reductions needed to slow climate change must come from individual projects that in the aggregate can have a significant beneficial impact.
BOEM-2023-0011-0132-0018	Air emission data in the SouthCoast COP is redacted and no data is provided to prove a beneficial impact to net air emissions from the project.	Section 3.4.1.5 provides the estimated avoided emissions and net emissions associated with the Project. Regarding the redacted portions of documents received from applicants, BOEM would withhold trade secrets and commercial or financial information identified as privileged or confidential from public disclosure by the lessee in accordance with the terms of 30 CFR 585.113. Per 30 CFR 585.113, and subject to the limitations of the FOIA. Information about the relevant FOIA provision is also available on a DOJ website: https://www.justice.gov/oip/step-step-guide-determining-if-commercial-or-financial-information-obtained-person-confidential.
BOEM-2023-0011-0132-0019	The statement [Text in Blue: "1200 MW of electricity generated satisfies the need for cost effective and reliable energy in MA"] is not supported by any data pertaining to costs or reliability. In fact offshore wind has been widely shown to be more expensive and less reliable than natural gas.	NEPA does not require analysis of cost or reliability. The EIS does not analyze an alternative that would develop natural gas generation in place of the Project, as such an alternative would not meet BOEM's purpose and need as described in Chapter 1. Cost and reliability of generation sources would be considered in energy planning at the state level or by the relevant Independent System Operator.
BOEM-2023-0011-0132-0022	The following statement raises concerns about the validity of the emissions analysis " Some impacts of the Proposed Action may not be measurable at the project level such as the beneficial impacts on benthic resources due to artificial habitat or climate change due to a reduction in greenhouse gas emissions." This appears to state that there are no measurable project level benefits to GHG emissions. Given the	Climate impacts are the cumulative result of aggregate global emissions of GHGs. Therefore, project-level benefits of a specific action (such as the Proposed Action) may be too small to be measurable. However, the benefits of global GHG emissions reductions could, over time, slow the rate of climate change to a degree that could be measurable in the Project region.

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	overall increase in NOx and SF6 from the project this makes sense. What is being said here?	
BOEM-2023-0011-0132-0023	On page 3.4.1-6 there is no data to support this statement [Text in Blue: "Impacts from fossil-fueled power facilities are expected to be mitigated partially by implementation of other offshore wind projects near the geographic analysis area including in the regions off New England New York New Jersey Delaware Maryland and Virginia to the extent that these wind projects would result in a reduction in emissions from fossil-fueled power facilities" or this one "As wind energy projects come online power-generation emissions overall could decrease and the region as a whole could realize a net benefit to air quality."] In fact regional emissions could increase if wind peaking power is not available to share with another ISO and that ISO needs to crank up fossil fuel sources.	Section 3.4.1.5 discusses the avoided emissions and the assumptions used in the analysis. The estimated avoided emissions, as with any prediction, are subject to uncertainty. Accordingly, the statements commented on are stated conditionally, e.g., "to the extent that" or "could."
BOEM-2023-0011-0132-0025	3.4.1.8 This statement regarding air emissions is misleading [Text in Blue: "Offshore wind energy development could help displace emissions from fossil fuels potentially improving regional air quality and reducing GHG emissions. An analysis by Katzenstein and Apt (2009) for example estimates that CO2 emissions can be reduced by up to 80 percent and NOX emissions can be reduced up to 50 percent by implementing wind energy projects.2"]The previous statement should read that CO2 emissions can be reduced by up to 80 percent and NOX emissions can be reduced by up to 50 percent [Highlighted text: of the emissions generated by a natural gas plant]. The way the document states it the implication is up to 80 percent and up to 50 percent of regional emissions can be reduced. This is not the case especially since the wind energy projects will only produce a low percentage of the electricity needed in the region.The foot note (2) indicates [Text in Blue: "Katzenstein and Apt (2009) modeled a system of two types of natural gas generators four wind farms and one solar farm. The power output of wind and solar facilities can vary relatively rapidly as meteorological conditions change and the	Upon review of the Katzenstein and Apt (2009) reference, BOEM has determined that the commenter is correct. The Final EIS has been revised to correct the misleading passage.

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	natural gas generators vary their power output accordingly to meet electrical demand. When gas generators change their power output their emissions rates may increase above their steady-state levels. As a result the net emissions reductions realized from gas generators reducing their output in response to wind and solar power can be less than the reduction that would be expected based solely on the amount of wind and solar power. The study found that reductions in CO2 emissions would be about 80 percent and in NOX emissions about 30 to 50 percent of the emissions reductions expected if the power fluctuations caused no additional emissions."] It is not that CO2 and NOx are reduced by 80% and 50% by implementing wind; rather the expected reduction in emissions is lower due to the need for balancing power fluctuations with by natural gas.	
BOEM-2023-0011-0132-0026	In the conclusion on page 3.4.1.10 it states that [Text in Blue: "additional higher-emitting fossil-fueled power facilities could be built or could be kept in service to meet future power demand fired by natural gas oil or coal."] That is simply not the case as the region has easy access to natural gas and clean cycle natural gas is the only type of power plant that would likely be built in the short term. Nuclear is not discussed and if sufficient resources were allocated to this power source then GHG reductions would actually be significant enough to terminate fossil fuel burning facilities. It is concerning that the underlying analysis is not provided and that the air emissions section of the SouthCoast COP continues to be redacted.	The statement commented on is a general summary based on the potential grid mix under the No Action Alternative and is not a prediction that any specific combination of energy sources would be developed. As discussed in EIS Section 3.4.1.5, the analysis of avoided emissions used the USEPA Avoided Emissions and Generation Tool (AVERT) model, which assumed the 2018 grid mix for all alternatives. Regarding the redacted portions of documents received from applicants, BOEM would withhold trade secrets and commercial or financial information identified as privileged or confidential from public disclosure by the lessee in accordance with the terms of 30 CFR 585.113. Per 30 CFR 585.113, and subject to the limitations of the FOIA. Information about the relevant FOIA provision is also available on a DOJ website: https://www.justice.gov/oip/step-step-guide-determining-if-commercial-or-financial-information-obtained-person-confidential.
BOEM-2023-0011-0132-0027	On page 3.4.1.10-11 the document states: [Text in Blue: "Overall BOEM anticipates the cumulative impacts of the No	As discussed in EIS Section 3.4.1.5, the estimates of emissions from the grid are relative to the 2018 grid

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	Action Alternative on air quality from ongoing and planned activities would be moderate largely driven by emissions from fossil-fueled power facilities other ongoing and planned non-offshore wind emissions and emissions from construction and decommissioning of offshore wind projects. Because offshore wind projects likely would lead to reduced emissions from fossil-fueled power facilities BOEM also anticipates the cumulative impacts of the No Action Alternative would result in minor to moderate beneficial impacts on regional air quality".] First there is no data used to support these statements and second the emissions from fossil fuels in the New England Area ISO has been steadily declining as more electricity is sourced from clean cycle natural gas.	configuration, but the actual annual quantity of avoided emissions attributable to the Project (as well as the grid emissions under the No Action Alternative) is expected to diminish over time if the electric grid becomes lower-emitting due to the addition of other renewable energy facilities and retirement of high-emitting generators.
BOEM-2023-0011-0132-0028	Page 3.4.1-23 states [Text in Blue: "The Proposed Action would incrementally contribute to the cumulative air quality impacts from ongoing and planned activities associated with offshore construction which would be moderate during construction. The Proposed Action would add an average of approximately 22 percent of the total offshore wind project emissions that may generate impacts depending on pollutant due to construction activities occurring in the geographic analysis area. This suggests that most of the air quality impacts resulting from offshore wind development would not be due to the Proposed Action and the addition of the Proposed Action would yield a relatively small contribution to the total air quality impacts."] This statement is completely erroneous as no other projects have commenced building and 22% of project emissions is not a [Text in Blue: "relatively small contribution"]. It is almost of quarter of all the emissions from all the wind farms proposed in the area. That is significant.	The statement commented on is based on the sum of emissions from ongoing and planned offshore construction, aggregated over the entire period during which the construction would occur. The phrase "relatively small contribution" in the EIS has been replaced with a more specific description.
BOEM-2023-0011-0132-0029	Another erroneous statement can be found on page 3.4.1-24. It states [Text in Blue: "A net improvement in air quality is expected on a regional scale as wind projects begin operation and displace emissions from fossil-fueled sources"]. There is	As discussed in EIS Section 3.4.1.5, the analysis of avoided emissions used the USEPA AVERT model, which assumed the 2018 grid mix for all alternatives. The model assumes a grid-wide reduction in electrical output by power plants in

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	no back-up data given for this statement. The Air Emissions data in the COP remains redacted. Specifically what fossil fuel sources will be displaced. There are no plans in the New England ISO to remove gas fired plants from the grid. The wind power will continue to need to be balanced with the single combustion gas process which is less "clean" than dual combustion which is less responsive to power fluctuations and therefore cannot be used. No evidence is provided to support the claim made. This follows with a statement on page 3.4.1-25 [Text in Blue: "The Proposed Action would result in a net decrease in overall emissions over the region compared to the installation of a traditional fossil-fueled power facility."] There is no support for this statement. The only fair comparison would be from a new dual cycle natural gas facility – however this analysis is not provided. On the same page this statement is also not supported with any facts: [Text in Blue: "Considering all of the IPFs together minor air quality impacts would be anticipated for a limited time during construction maintenance and decommissioning but there would be a minor beneficial impact on air quality near the Wind Farm Area and the surrounding region overall to the extent that energy produced by the Proposed Action would displace energy produced by fossil- fueled power facilities"]. The what where and when for displacing fossil-fueled power are simply not shown in the DEIS or the COP.	response to the introduction of wind energy and does not make assumptions about the closure of any specific power plant. Similarly, the analysis does not make assumptions about potential plans by independent system operators to close power plants. Regarding the redacted portions of documents received from applicants, BOEM would withhold trade secrets and commercial or financial information identified as privileged or confidential from public disclosure by the lessee in accordance with the terms of 30 CFR 585.113. Per 30 CFR 585.113, and subject to the limitations of the FOIA. Information about the relevant FOIA provision is also available on a DOJ website: https://www.justice.gov/oip/step-step-guide-determining-if-commercial-or-financial-information-obtained-person-confidential.
BOEM-2023-0011-0132-0123	This statement is never backed up with data [Text in Blue: "To the extent that the Proposed Action displaces fossil-fuel energy generation overall improvement of air quality would be expected."] Specifically which forms of fossil-fuel burning will be displaced? Are there any planned shutdowns of fossil fuel plants in the New England ISO?	As discussed in EIS Section 3.4.1.5, the analysis of avoided emissions used the USEPA AVERT model, which assumed the 2018 grid mix for all alternatives. The model assumes a grid-wide reduction in electrical output by power plants in response to the introduction of wind energy and does not make assumptions about the closure of any specific power plant. Similarly, the analysis does not make assumptions about potential plans by independent system operators to close power plants.

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BOEM-2023-0011-0137-0051	There needs to be a transparent accounting of the total project GHG (greenhouse gasses) expected to be emitted by the project including not only(1) construction but also (2) transport of both materials and prefabricated parts to the shore including intercontinental transportation if any (3) fabrication of parts (4) refinement of steel (with transparently-stated estimates of total weight of steel needed for the projectwith detail about per mast and per converter or other stations) (5) mining of ore to make the steel(6) methane release and diesel use during mining of coal that is needed for steel production. A large amount of material is required to make a wind turbine power plant. Indeed more material is required to build a wind- turbine power plant than most forms of power generation. The mining refinement and manufacture of raw materials and transport of raw materials and assembled parts should all be accounted for.Reduction in ocean productivityand consequential aqueous C02 rise must also be accounted for as an offset of any Carbon Dioxide emissions that has been spared by the plant's operations.	Information on impacts from activities that occur before on-site Project construction and operation has been added to the EIS.
BOEM-2023-0011-0137-0052	THERE APPEARS INSUFFICIENT DATA TO SUPPORT THE STATED CONCLUSION ABOUT TONS OF CARBON EMISSIONS SPAREDIn estimating tons of emissions spared by the proposed action the DEIS unreasonably compares the proposed action against equivalent power production from fossil fuel burning alone instead of against that produced by the extant weighted mix of energy sources used today. Given that the United States is making the much-needed move to low-carbon means of energy production a more reasonable way of quantifying the amount of emissions spared by the proposed project would be to compare the GHG resulting from the project undertaking to other low-carbon ways of producing energy most of which do not rely on fossil fuel burning to meet annual daily or seasonal peak demand. The occurrences during which wind power plants are unable to meet peak demand are greater than for types of low-carbon power plants other than wind. High levels of renewable	As discussed in EIS Section 3.4.1.5, the analysis of avoided emissions used the USEPA AVERT model, which assumed the 2018 grid mix for all alternatives. The model assumes a grid-wide reduction in electrical output by power plants in response to the introduction of wind energy. There are no energy storage facilities proposed in the COP. If energy storage were used, it would be developed by another party and would be subject to applicable federal, state, and local review and permitting.

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	penetration can impair grid reliability so grid operators are expected to need to rely on energy storage to shift energy to peak demand hours. For renewable energy to meaningfully displace baseload fossil fuel generation it must be deployed alongside storage. To our knowledge there is currently no solution for energy storage that can accommodate all the power that is expected to be produced by the power plants of the planned U.S. Offshore Wind Program. This means much of it will not be able to be stored and very much will be wasted if it is not used in real time.	
BOEM-2023-0011-0137-0053	If the power produced by wind turbine power plants cannot be stored fossil fuels will need to be burned to meet electricity demand. If they can be stored it is reasonable to incorporate the environmental harms and carbon emissions required to source materials for and install such systems in the energy grid and divide such impacts among the projects that require their installation. Unfortunately the carbon footprint of such large battery systems (which are required to utilize wind-derived power to avoid burning fossil fuels to meet peak electricity demand) have been ignored in almost all carbon footprint analyses of wind power projects and programs. We respectfully request that such footprint be accounted for or if and to the extent to which the energy storage systems are not yet in an implementable stage that any anticipated reliance on fossil fuels to meet peak be factored in so that the true effects of the proposed project and the cumulative effects of the program can realistically be estimated. Because climate change is a serious pressing issue there must be disclosure of whether or not the program anchors us to fossil fuel use as compared to other forms of low carbon energy production which do not rely on the burning of fossil fuels to for baseload generation stabilization.	There are no energy storage facilities proposed in the COP. If energy storage were used, it would be developed by another party and would be subject to applicable federal, state, and local review and permitting.
BOEM-2023-0011-0137-0054	The land required for storage facilities and proposed locations for these facilities should be disclosed in the COP and environmental impacts of the building of such facilities	There are no energy storage facilities proposed in the COP. If energy storage were used, it would be developed by another

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	analyzed in the EIS.SEE ORIGINAL ATTACHMENT FOR PICTURES OF Figure 26. Pillswood Battery facility in UK will help store part of the energy acquired from Dogger Bank Power PlantWe respectfully request to know what systems will be used to store energy acquired by the Mayflower Wind Project/ SouthCoast Power Plant where the systems will be located the cumulative land area they utilize and a very basic description of the materials expected to be used or alternatively if fossil fuels are expected to be relied upon so the environmental impact of the project can be stated in the EIS.	party and would be subject to applicable federal, state, and local review and permitting.
BOEM-2023-0011-0137-0056	Upon our review the DEIS does not quantitatively demonstrate the extent to which (or even whether) the proposed action or its alternatives serves the project purpose of mitigating climate change because:(1) the GHG emissions or carbon footprint of the proposed project as disclosed in the DEIS omitted GHG emissions during entire portions the lifecycle (resource extraction mining steel refinement and other materials formation estimates of trans-oceanic transportation of materials and assemblies assembly) and only accounted for construction operation/maintenance and decommissioning. Very much unlike other types of power plants wind turbine power plants require vast quantities of materials relative to power plants that utilize sources of energy other than wind. The emissions caused by the mining refinement and other processing and transport of these materials was left out of the DEIS.	Information on impacts from activities that occur before on-site Project construction and operation has been added to the EIS.
BOEM-2023-0011-0137-0058	The project's footprint is not limited to the lease area staging areas or U.S. ports likely to service the wind power plant during construction and operations. The air quality geographic analysis area (as shown on Figure 3.4.1-1 i.e. the airshed within 25 miles of the Lease Area and the airshed within 15.5 miles of onshore construction areas / main staging and in-state manufacture ports) is limited in the environmental analysis to the radius required by the Clean Air Act which	Information on impacts from activities that occur before on-site Project construction and operation has been added to the EIS.

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	leaves key information out of the EIS – information that is required to be tabulated in order to know whether the proposed action does or does not fulfill the purpose of the project. An 11 meter diameter monopole mast that is 150 mm thick requires approximately 2400 tons of steel [Source: Steelwind Nordenham FHI Corporation]. If there are 149 turbines this is 715 million pounds of steel. Turbines also require neodymium a rare earth metal. Rare earth metals are named such for a reason. To obtain the ore needed to produce 1 ton of rare earth mineral approximately 120-160 tons of earth need to be dug up and grinded. This requires burning diesel fuel. Refinement needs to occur which requires burning coal. Trans-oceanic transport which requires burning more diesel. Each of these contribute to GHG emissions which should be accounted for in the DEIS analysis.	
BOEM-2023-0011-0137-0060	Section 5.1.3.2 of the Construction and Operations Plan shows how greenhouse gas emissions (C02 CH4 N20) were estimated from commercial marine vessels and how carbon dioxide equivalent of greenhouse gas emissions were calculated. The developer did this for aviation use and for marine vessels cranes excavators generators and rigs involved in construction but left out steel production rare earth mining and refinement and other processes needed to supply and transport the materials essential for building the project's massive infrastructure. We review and estimate here the Carbon Emissions equivalent for this necessary mining and manufacture which is a necessary requisite to the project (without which it could not occur) is not insubstantial and is expected to be based upon the description of the proposed action in the COP and DEIS. We welcome any additional information by which the public and BOEM can gain transparency into the contribution of this project and cumulatively of the offshore wind program to atmospheric carbon dioxide and other GHGs.	Information on impacts from activities that occur before on-site Project construction and operation has been added to the EIS.

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BOEM-2023-0011-0139-0041	Page 3.4.1-13 within Section 3.4.1.5 Table 3.4.1-4 shows construction emissions starting in 2023. Please note that as shown in SouthCoast Wind indicative construction schedule (Section 3.2 of the COP) construction will commence no earlier than 2024.	The analysis in the Final EIS has been revised to reflect the new construction schedule for the Project based on SouthCoast Wind's revised COP.
BOEM-2023-0011-0158-0007	Finally the EIS does not really address in its calculations exactly how many fossil fuel plants are going to be eliminated because of this project. You can say that there is going to be X amount of greenhouse gases that are reduced if you just do a one for one substitution based on megawatt electricity generation but the fact is with any wind farm or solar battery you have to have a fossil fuel plant running in the background to cover periods of time when those things are not generating power. Those aren't adequately covered.	As discussed in EIS Section 3.4.1.5, the analysis of avoided emissions used the USEPA AVERT model, which assumed the 2018 grid mix for all alternatives. The model assumes a grid-wide reduction in electrical output by power plants in response to the introduction of wind energy, and does not make assumptions about the closure of any specific power plant.

N.6.4 Water Quality

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BOEM-2023-0011-0117-0012	Algal Bloom Alteration: Invasive species on the monopiles can decrease water oxygenation levels as demonstrated in the North Sea (Daewel 2022). Deoxygenation can cause fish die-offs and harmful algal blooms. The North Sea has experienced an increase in harmful and costly algal blooms in recent years. The timing coincides with offshore wind installations. Harmful algal blooms carry an approximate financial burden to the economy of over $8 billion per year (Brown 2019). A toxic algal bloom caused an unusual and "catastrophic" die-off of crabs and lobsters in the late fall/early winter of 2021 along England's North Sea coast (Beament 2022) soon after the construction of the largest offshore wind farm in the world Hornsea 1 and 2. Similarly in the year after the Block Island wind farm construction a harmful algal bloom contaminated shellfish in Narragansett Bay with the deadly neurotoxin domoic acid. Changes in nutrient levels correlated with toxicity (Sterling 2022). Although an association with the Block	Daewel et al. (2022) does not specifically relate low oxygen levels to invasive species on offshore wind monopiles. The largest decrease in oxygen level predicted by the model was within Oyster Grounds and attributed to the fact that it is a bathymetric depression. Bathymetric depressions limit the exchange with the surrounding water and allow the accumulation of organic material, resulting in higher rates of oxygen consumption. There has been no definitive correlation made between the construction of offshore wind facilities and increases in harmful algal blooms. There is evidence that the decrease in oceanic oxygen levels and increase in harmful algal blooms is likely a result of ocean warming caused by climate change (Mahaffey et al. 2020; Dai et al. 2023). Additionally, Sterling et al. (2022) suggest that a particularly toxic species of diatom (*Pseudo-nitzschia australis*) is not a resident species and was likely introduced from offshore in 2016. The same study (Sterling et al. 2022)

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	Island Wind Farm was not considered the timing and geographic pattern of the bloom suggest invasive filter feeders on the "artificial reefs" of the wind farm may have diminished the nutrients and prompted this harmful bloom. As a result of harmful algal blooms this project may violate the Seafood Safety Regulations (21 C.F.R. § 123). BOEM does not adequately consider the cost both financial and from a public health concern of the project's propensity to induce harmful algal blooms.	indicates that the likely introduction of *P. australis* may have been driven by climate change along the Northwest Atlantic Shelf. Additional text has been included in Final EIS Section 3.4.2.5 summarizing this information.
BOEM-2023-0011-0117-0014	Sediment Plumes Toxic Compounds and Heavy Metals: During construction and installation jet plows impact pile driving and currents flowing across the underwater and benthic portion of the wind turbines resuspend toxic heavy metals (Chen 2022) re-introducing them into the food supply chain and threatening marine mammals (Huang 2022). Since the time of the industrial revolution toxic compounds and heavy metals have settled in the lease areas off Rhode Island and the West Passage where the cables will run to shore. Bioaccumulation and biomagnification can increase the potential harm these compounds can cause. As a result SouthCoast Wind May violate the Clean Water Act (33 U.S.C §§ 1251 et seq.) and Seafood Safety Regulations (21 C.F.R. § 123). The BOEM DEIS fails to adequately consider the implications or the significant health consequences of resuspending toxic compounds in this area or to incorporate the latest scientific findings.	SouthCoast Wind conducted sediment plume modeling (COP Appendices F1 and F3) from cable-laying activity, but no specific analysis was done regarding contaminated sediment. While there is the potential that sediment suspended during construction activities could contain toxic compounds and heavy metals, the sediment plume modeling indicates that any resuspension of contaminated sediment would be temporary and no long-term effects on water quality are expected. The modeling showed that maximum total suspended solid (TSS) levels dropped below 10 milligrams per liter (mg/L) (0.00008 pound per gallon [lb/gal]) in 2 hours and below 1 mg/L (0.000008 lb/gal) in 4 hours. In-water work for cable emplacement would require a USACE Department of the Army permit and a Rhode Island and Massachusetts 401 Water Quality Certification to ensure the in-water work complies with state water quality standards. The terms and conditions of the 401 Water Quality Certification would also include any requirements to comply with Total Maximum Daily Load plans, which is a water quality improvement plan for impaired 303(d)-listed surface waters; this would ensure all appropriate measure are taken for potential impacts on 303(d) impaired waters.
BOEM-2023-0011-0117-0015	Water Pollution: In addition to failing to consider the impacts of the resuspension of sediment toxic compounds and heavy metals the DEIS also does not consider the cumulative impact of other interactions between aspects of the project that may	Section 3.4.2.3 and Section 3.4.2.5 under the *presence of structures* IPF describes the potential impacts associated with corrosion of offshore wind infrastructure.

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	degrade water quality. The anti- corrosive coating on the wind turbines may leach significant levels of toxic heavy metals (lead and cadmium) (Reese 2020) into the water. Leading edge erosion emits microplastics containing Bisphenol A (BPA) and per- and polyfluoroalkyl substances (PFAS) known as "forever chemicals" into the water which can then contaminate the marine food chain. Contaminating water in an area essential to fishing may violate the Clean Water Act (33 U.S.C§§ 1251 et seq.) and Seafood Safety Regulations (21 C.F.R. § 123). The BOEM DEIS does not adequately address this significant impact on the marine environment and on human health.(https://docs.wind-watch.org/Leading-Edge-erosion-and-pollution-from-wind-turbine-blades_5_july_English.pdf)	BOEM is not currently aware of any study related to turbine erosion and forever chemicals. BOEM recognizes that the subject of forever chemical being emitted by wind turbines needs further study and analysis. USEPA is currently addressing polyfluoroalkyl substances (PFAS) through proposing and implementing numerous actions related to PFAS. A National PFAS Testing Strategy is being developed that will require PFAS manufacturers to provide toxicity data on PFAS to inform future regulations. USEPA is currently in the process of developing a rule that would designate PFAS as hazardous substances. Additionally, the creation of a new USEPA "Council on PFAS" will help to better understand and reduce the potential risks caused by these chemicals. Text has been added to Final EIS Section 3.4.2.5 summarizing this information.
BOEM-2023-0011-0117-0030	Ocean Currents: As mentioned above considering the Executive Order's dictum to tackle the climate crisis both at home and abroad the DEIS and COP does not adequately consider the global implications of the project's effect on ocean currents wave height and temperature stratification. BOEM knows that these offshore wind projects will decrease wave height diminish current strength and alter temperature stratification from its hydrodynamic modeling study (HDM BOEM_2021-049). These changes could alter both the Atlantic Meridional Overturning Circulation (AMOC) and the Gulfstream. Because any decrease in the Gulfstream or the AMOC can have dramatic effects on sea-level rises (Goddard 2015) and global weather patterns (Carrington 2021) BOEM should not accept the DEIS until these hydrodynamic changes are considered in a global context as the executive order implies.	Ocean temperature stratification at the local level is increased by rising atmospheric temperatures but decreased by wind-driven wave action. As discussed in Section 3.4.2.3, *Impacts of Alternative A – No Action on Water Quality*, hydrodynamic effects are mostly localized. Moreover, the Mid-Atlantic Bight is a region that is not directly connected to the major Gulf Stream flow, which separates off of North Carolina fairly distinctly and is roughly 200–300 miles offshore where it passes the Mid-Atlantic Bight. Wave heights should not affect the Gulf Stream flow given that it is more of a deeper geostrophic circulation. The strength of the Gulf Stream and Atlantic Meridional Overturning Circulation varies naturally over time and is continuing to be affected by climate trends. It is unlikely that any effects of wind energy development would be discernable from either this natural climate signal or the anthropogenic (GHG emissions) forcing signal.
BOEM-2023-0011-0118-0001	The sediment plume transport modeling is not adequate. It does not use the right modeling tools and does not resolve the right physical processes like the turbidity currents	COP Appendix F1 (Sediment Plume Impacts from Construction Activities) contains the results of sediment plume dispersion modeling from construction activities. The

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	expected during the cable laying operations. Additionally, the used model is not adequately resolved leading to unphysical results like the presence of isolated sediment particles which indicates that not enough Lagrangian tracers were input in the model. But the main problem is the fact that the relevant buoyancy-driven processes are not being properly modeled. The first stage of the model is not properly defined and does not correspond to what happens during the cable installation process.	modeling was conducted following established modeling methods used across various offshore industries such as dredging, and was calibrated and validated using data collected in the modeling areas (COP Appendix F1, Section 3.1). BOEM reviewed the modeling report and determined it was appropriate to support BOEM's environmental analysis.
BOEM-2023-0011-0118-0002	The second issue is the absence of a study (to the best of my knowledge) properly considering the dissolution of heavy metals from the anti-corrosion anodes installed underwater in the turbines. Zinc and Aluminum anodes are used at large quantities to prevent corrosion issues. However these anodes result in dissolved metals in the wake of the foundations that may have long-term impacts in the local ecosystems.	Section 3.4.2.3 under the *presence of structures* IPF describes the potential impacts associated with corrosion of offshore wind infrastructure.
BOEM-2023-0011-0118-0003	There is no proper consideration of the potential resuspension of sediment in the wake of the turbine foundation due to the increased turbulence levels. The increased turbulence levels may generate shear that can result in the long term resuspension of sediment (and scouring issues). The submitted report (Appendix H of the COP) does not attempt to quantify the sediment resuspension nor proposes monitoring of any kind.	COP Appendix F-2 (Scour Potential Impacts from Operational Phase and Post-Construction Infrastructure) contains analytical modeling and a qualitative assessment regarding the scour potential for the foundation types proposed in SouthCoast Wind's PDE. Section 4 of the appendix describes the potential for sediment mobility within the Lease Area. Section 5 of the appendix describes the quantitative modeling results for scour potential around foundations. In general, the study found that background sediment mobility potential across the Lease Area is very small but that there is the potential for scour, and resulting suspension of sediment, from all foundations. Scour protection is proposed around all foundations, which would minimize effects of sediment suspension due to the placement of structures in the seabed. SouthCoast Wind has committed to designing the scour protection system around foundations to reduce and minimize scour and sedimentation to the extent practicable (Appendix G, Table G-1). As described in COP Volume 1, Section 3.3.1.6, SouthCoast Wind will also

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		perform periodic inspections of the foundations, which would include inspection for seabed scour.
BOEM-2023-0011-0132-0064	The document describes using ocean water to cool the massive electric substations (OSP). This project will have up to 5 OSPs and other lease areas will have similar numbers. Yet 10 million gallons per day of ocean water from just one OSP that has been warmed to 90-degrees is dismissed as negligible. There is no analysis for the multitude of additional substations that are sure to be built for the various projects. The impacts from cooling water from the OSPs is not explained in a clear manner and does not account for all the OSPs in the lease area. How many total gallons of warm water are we to expect. How do we know this will not impact overall water temperature around Nantucket and through tidal activity in Nantucket Harbor. There is no analysis of the cumulative impact of this.	As described in Chapter 2, SouthCoast Wind is proposing up to five OSPs, which could use HVAC or HVDC technology. SouthCoast Wind has submitted an NPDES permit application for one HVDC converter OSP for Project 1. At this time, SouthCoast Wind has not selected the design or number of other OSPs. However, if HVDC is selected for Project 2, SouthCoast Wind anticipates one additional HVDC converter OSP would be installed in the southern portion of the Lease Area. SouthCoast Wind has informed BOEM that the parameters and modeling results from the NPDES permit application for Project 1 would be representative of a second HVDC converter OSP for Project 2 in the Lease Area. Additional discussion regarding the potential for multiple HVDC converter OSPs has been incorporated in Section 3.4.2.5 of the Final EIS. Based on the results of thermal plume modeling prepared for the NPDES permit application and summarized in the Final EIS, because the impacts from each OSP would be localized and minimal, the combined impacts from thermal plume discharges from multiple HVDC converter OSPs under the Proposed Action are anticipated to be minor.
BOEM-2023-0011-0132-0067	In section 3.4.2.1 the impacts on water quality are discussed. However there is no mention of the tidal nature of the water. The water in the Nantucket Shoals areas is transferred readily with each tide cycle through Nantucket Sound and through the Muskegat Channel. This tidal flow directly impacts the water in Nantucket Harbor. Yet there is not mention of how the changes to the stratifications of the water column and disbursement of phytoplankton and other microorganisms and nutrients will impact the waters around Nantucket especially Nantucket Harbor.	In Section 3.4.2.3, the Cumulative Impacts of the No Action Alternative section contains results of a recent hydrodynamic model conducted of four WTG build scenarios that describes how offshore wind projects have the potential to alter oceanic processes (e.g., currents, stratification). While the models are not specific to Nantucket Sound or Muskeget Channel, they represent best available science on the impacts of hydrodynamic changes from the presence of offshore wind structures. As described in the analysis, the observed changes in current speed and direction of 984 to 3,281 feet (300 to 1,000 meters) from monopiles demonstrate that effects would be largely localized to the

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		Lease Area and immediate surrounding area, and impacts are not expected to extend to the Muskeget Channel or Nantucket Sound. The effects on prey productivity are described in other sections of the EIS, including Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, and Section 3.5.6, *Marine Mammals*. Those sections also indicate that hydrodynamic changes would result in mostly minor impacts on marine wildlife. Furthermore, under the intakes/discharges IPF in Section 3.4.2.5, BOEM has summarized the thermal plume modeling results from one proposed HVDC converter OSP, which consider tidal currents at different times of year.
BOEM-2023-0011-0132-0068	In Figure 3.4.2-1. [Text in Blue: "Water Quality geographic analysis area"] the full area around Nantucket Shoals does not appear to be included. The full 20km buffer area suggested by Sean Hayes of NMFS should be considered. This figure also makes it clear that the tidal patterns around Nantucket have not been considered. In a 2005 report on the water movements in the area the Center for Coastal Studies provided a clear analysis that this DEIS should take into consideration.	BOEM identified the extent of the water quality geographic analysis area as a 10-mile (16-kilometer) buffer around the Offshore Project area, which was defined to account for transport of water masses due to ocean currents and includes portions of Nantucket Shoals. Refer also to response to comment BOEM-2023-0011-0132-0067, which describes the anticipated geographic extent of hydrodynamic impacts of offshore wind activities on oceanic processes based on recent modeling results. The 2005 Center for Coastal Studies report mentioned in the comment is not fully cited so it could not be located for review.
BOEM-2023-0011-0132-0069	On page 3.4.2-13 the impacts from the thousands of structures are dealt with. However the analysis is incomplete and favors computer modeling for which no inputs are explained over real world examples. Data from Europe is mentioned however there are not windfarms in Europe on the scale of what is being proposed here as these will be the largest and highest capacity turbines ever installed. This section does acknowledge the tidally dominant currents underscoring the fact that these currents were left out of the geographic analysis area.	The analysis uses computer modeling because there have not been any field measurement campaigns to collect this level of information at an offshore wind facility (the United States does not currently have any facilities to measure these impacts). All models used go through rigorous calibration and validation using data collected in the modeling areas. The EIS uses the best available science for this topic.

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BOEM-2023-0011-0132-0072	One maintenance trip per year per turbine is not enough to know if turbines are leaking oil in enough time to cure the situation.	Chapter 2 of the EIS describes that routine maintenance would serve to identify any signs of wear and tear, damage to the substructure, cracks at welds, excessive marine growth, and signs of corrosion that could lead to potential leaks during normal operations. Additionally, SouthCoast Wind would maintain an Oil Spill Response Plan (OSRP), an Incident Management Plan, and a Safety Management System. Section 3.4.2.5 of the Draft EIS under the Accidental Releases IPF details how accidental releases from structures would be minimized.
BOEM-2023-0011-0136-0042	Based on modeling the DEIS forecasts "impacts from the discharge are expected to be localized and minimal…". [Footnote 37: See SouthCoast DEIS p. 3.4.2-23] Without much analysis the DEIS concludes that impacts from the thermal plume (heated effluent) are expected to be minor. We recommend additional analysis and justifications for BOEM's finding of minor impacts from the thermal plume.	Section 3.4.2.5 of the Final EIS has been updated to reflect the revised NPDES permit application for one of SouthCoast Wind's HVDC converter OSPs. Additional discussion regarding the potential for multiple HVDC converter OSPs has also been added. Based on the results of thermal plume modeling prepared for the NPDES permit application as summarized in the Final EIS, because the impacts from each OSP would be localized and minimal, the combined impacts from thermal plume discharges from multiple HVDC converter OSPs under the Proposed Action are anticipated to be minor.
BOEM-2023-0011-0136-0043	DEIS glosses over the role bleach will play in the cooling process. "[T]he discharge of warm seawater with small concentrations of bleach would be negligible." [Footnote 38: See SouthCoast DEIS p. 3.4.2-24] This appears to be the only reference to bleach included in the DEIS and COP. If SouthCoast intends to mix bleach in the cooling water more details are necessary to effectively comment. For example: what levels of bleach are expected? What safeguards will be in place to contain bleach should it not dissipate prior to discharge?	Section 3.4.2.5 under the *discharges/intakes* IPF, which has been updated in the Final EIS to reflect the revised NPDES permit application for SouthCoast Wind's HVDC converter OSP, describes how sodium hypochlorite (bleach) would be generated and used in the OSP. Based on the low concentrations (between 0–2 parts per million or 0.0002% per unit volume), BOEM concluded impacts on water quality would be negligible.
BOEM-2023-0011-0137-0025	In table 2-4 titled Summary and comparison of impacts with no mitigation measures in row 2.4 titled Water Quality BOEM makes no distinction or even evaluation of E1-piled-mono versus E1-piled-jacket even though BOEM has recognized in	Section 3.4.2.6 has been revised in the Final EIS to include a discussion on the differing sedimentation effects by foundation type under Alternative E, citing the OCS Study BOEM 2020-041 *Comparison of Environmental Effects from*

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	the past that "[Underline: Compared to monopiles] tripod tri-pile and jack-up foundations are expected to have less suspended sediment and fewer effects from sediment deposition due to their relatively lower scour potential. [Underline: Jacket foundations are expected to have even fewer sediment effects due to lower scour potential and smaller wake effects"] [Footnote 53: OCS Study BOEM 2020-041 Comparison of Environmental Effects from Different Offshore Wind Turbine Foundations August 2020 Authors: Sarah Horwath Jason Hassrick Ralph Grismala Elizabeth Diller. Prepared under Contract 140M0118A0004 by ICF Incorporated L.L.C. 9300 Lee Highway Fairfax VA 22031 USA. Internet Source: https://www.boem.gov/sites/default/files/documents/environment/Wind-Turbine-Foundations- White%20Paper-Final-White-Paper.pdf]	*Different Offshore Wind Turbine Foundations*. Table 2-4 in Chapter 2 presents a high-level summary of impacts by alternative, which BOEM believes is an appropriate level of detail to compare and contrast the relative impacts of different foundation types.
BOEM-2023-0011-0137-0042	Oddly the DEIS concludes that if there is only a localized effect of turbulent wakes the impact will be minimal and that if turbulent wakes extend for tens of kms then reducing the number of turbines won't matter much. This conclusion is irrational since each additional turbine creates an additional wake and causes more cumulative turbulence over the leased area than would a reduced number.	Under the *presence of structures* IPF discussion in Section 3.4.2., BOEM presents a synthesis of the best available science on hydrodynamic and wake effects from the presence of structures. While there is uncertainty regarding these impacts, as there are no large-scale wind farms offshore of the United States from which to observe effects, the available literature and modeling show that hydrodynamic effects of offshore wind farms are largely localized. BOEM has added to the Final EIS a summary of the 2024 NASEM study, which found that the impacts on ecosystems from offshore wind projects may be difficult to distinguish from natural and other anthropogenic variability (including climate change) in the Nantucket Shoals region. Additional information on this topic is included in Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, Section 3.5.6, *Marine Mammals*, and Section 3.5.7, *Sea Turtles*.

N.6.5 Bats

Comment No.	Comment	Response
BOEM-2023-0011-0117-0021	Bats: Wind turbines kill significant numbers of bats (Voigt 2022) particularly during the autumn migratory season. One bat species native to Rhode Island the northern long-eared bat was recently listed as endangered and is now protected under the Endangered Species Act (16 U.S.C. §§1531-1544). In addition it is well-documented that bats control insect populations. Decreasing bat numbers allows mosquito populations to rise thereby increasing the prevalence of mosquito-borne diseases including Zika (Elrefaey 2021) West Nile (Ferraguti 2021) and Eastern Equine Encephalitis (Armstrong 2022) viruses. When nations have pledged to decrease insecticide use (Einhorn 2022) BOEM does not adequately incorporate the latest scientific findings acknowledging bat mortality associated with wind farms nor does it address the public health consequences of decreasing bat populations spread of mosquito-borne illnesses and subsequent rise in insecticide use.	Final EIS Section 3.5.1 analyzes the potential for offshore wind infrastructure to result in collisions with bats. The analysis considers both collisions with operating turbine blades as well as with non-operating structures. As set forth in the impact discussions within Final EIS Section 3.5.1, it is anticipated that the Proposed Action (as well as other nearby wind farms) would have overall minor impacts on bats, owing in part to the distance offshore. Additionally, neither referenced article directly mentions bats and there is no published correlation between the rise in mosquito-borne diseases and increased bat deaths. Based on this, there are no data indicating wind turbines would contribute to an increase in mosquito-borne illnesses. BOEM also notes that the Voight (2022) study looked at wind turbines in the onshore environment where bats are in much higher densities than the offshore environment.
BOEM-2023-0011-0140-0077	[Footnote 234: SCW DEIS and COP are both missing an extensive review of acoustic surveys from other offshore wind developments (see Sunrise Wind Revolution Wind and Empire Wind for more comprehensive reviews of acoustic data) including acoustic surveys in support of nearby South Fork Wind which detected northern long-eared bat calls offshore including in the Lease Area.]	Final EIS Section 3.5.1 includes the best available data regarding acoustic surveys for offshore wind and is consistent with other similar offshore wind EIS documents, including South Fork Wind.
BOEM-2023-0011-0140-0078	Although the COP acknowledges that "little is known about bat migration and movements over marine habitats" and notes that "[t]here is a growing body of evidence to indicate that bat migration and foraging over marine environments is a relatively common phenomenon and that certain behaviors may increase the risk of collision with turbine blades[]" the DEIS and COP nonetheless point to low bat detections (despite low survey effort) in the offshore environment to support a finding of minor impacts to bats. [Footnote 245:	The Final EIS uses the best available relevant information on bat presence. BOEM would continue to collect information on bat presence in the offshore environment to help inform the assessment of potential impacts on bats from construction and operation of offshore wind farms. As described in Final EIS Section 3.5.1, current information indicates that bat presence in the offshore environment is relatively low.

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	SCW COP Volume II at 6-58.] [Footnote 246: SCW COP Appendix I2 at 3-4.] [Footnote 247: E.g. SCW COP Appendix I2 at 5-7 ("…due to the relative infrequency of bat occurrence offshore the intensity of the effect and sensitivity to this hazard are likely to be low for bat populations both overall and locally.") SCW DEIS Appendix D at D-34 ("Bat use of offshore areas is very limited…Very few bats would be expected to encounter structures on the OCS") SCW DEIS at 3.5.1-8 ("these impacts are highly unlikely to occur as little use of the OCS [by bats] is expected") SCW DEIS at 3.5.1-11 ("Given the infrequent and limited anticipated use of the OCS by migrating tree bats during spring and fall migration and given that cave bats do not typically occur on the OCS ongoing offshore wind activities would not appreciably contribute to impacts to bats.") SCW DEIS at 3.5.1-15 ("The cumulative impacts on bats would likely be minor because the occurrence of bats offshore is low").]The limited data analyzed to support BOEM's impact analysis were predominantly collected in the offshore environment in the absence of offshore wind turbine structures; these data are not appropriate for assessing bats' behavior in the presence of structures like wind turbines. The research presented in the COP supports this inadequacy noting that bats have a "pattern of attraction to novel anthropogenic structures" and that this pattern "has been observed in nearby offshore areas[.]"[Footnote 248: SCW COP Appendix I2 at 3-3.] [Footnote 249: Id.] The COP explains that the construction of new novel structures in the offshore environment can change bat behavior and plainly states that "[t]he Lease Area consists of open ocean and post-construction will contain WTGs and OSPs." [Footnote 250: SCW COP Appendix I2 at 3-4.] [Footnote 251: SCW COP Appendix I2 at 4-1.] Despite this the DEIS states that "relatively little bat activity has been documented over open water habitat similar to the conditions in the Project Wind Farm Area" and thus assumes minor impacts to bats even though the addition of "structures resulting from the	To support the advancement of the understanding of bat interactions with offshore wind farms, SouthCoast Wind has proposed an Avian and Bat Post-Construction Monitoring Framework (included in Final EIS Appendix G) that outlines an approach to post-construction monitoring. The scope of monitoring is designed to meet federal requirements (30 CFR 585.626(b)(15) and 585.622(b)) and is scaled to the size and risk profile of the SouthCoast Wind Project. Moreover, as noted in Final EIS Section 3.5.1.9, results of these monitoring efforts would form the basis of adaptive mitigation.

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	proposed Project where few currently exist." [Footnote 252: SCW DEIS at 3.5.1-9 (emphasis added).] [Footnote 253: SCW DEIS at 3.5.1-13.] This means that this open water pre-construction data is unlikely to inform impacts post-construction.It is inappropriate to use information on bat presence in the absence of structures to determine post-construction fatality risk because bats are attracted to wind turbines a fact repeatedly acknowledged in the COP and DEIS yet largely ignored in BOEM's impact conclusions. [Footnote 254: 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.] [Footnote 255: SCW COP Appendix I2 at 3-3 Appendix at 3-4 Volume II at 6-61 and SCW DEIS at 3.5.1-9 and 3.5.1-10.] The COP plainly states that "there is sufficient evidence from onshore and offshore facilities to suggest that bats may be attracted to WTGs and frequently interact with turbine blades in the RSZ [rotor-swept zone]." [Footnote 256: SCW COP Appendix I2 at 3-4. Emphasis added internal citations omitted.]At land-based wind facilities pre-construction bat activity does not correlate with post-construction fatalities likely due to bats' attraction to turbine structures. [Footnote 257: Donald Solick et al. Bat activity rates do not predict bat fatality rates at wind energy facilities Acta Chiroptera (June 2020); Cris D. Hein et al. Relating pre-construction bat activity and post-construction bat fatality to predict risk at wind energy facilities: A synthesis Nat'l Renewable Energy Lab. (NREL) (Mar. 2013)] [Footnote 258: Additionally low levels of bat calls in acoustic surveys do not necessarily indicate that bats are not present. Aaron J. Corcoran et al. Inconspicuous echolocation in hoary bats (Lasiurus cinereus) Proceedings Royal Soc'y B (May 2 2018).] Furthermore recent research at buoys vessels and the two Coastal Virginia Offshore Wind pilot project wind turbines found considerable differences in	

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	bat activity in the presence of turbines as compared to open water. [Footnote 259: Clerc J. and J.R. Willmott. "Towards Understanding the Potential for Offshore Wind to Impact Bats." Normandeau Associates. Presentation at State of the Science Virtual Session 09/21/2022.] This once again underscores that BOEM should not draw conclusions about SouthCoast Wind's impacts on bats based on sparse offshore acoustic data collected over open water.Given the above and the in-depth discussion of bats' attraction to turbines and other structures in the COP it is particularly concerning that BOEM seems to be assuming that bats will avoid turbines thereby minimizing potential collision. Repeatedly BOEM claims that because SouthCoast Wind's turbines will be widely spaced or because structures are rare in the offshore environment bats can "avoid operating WTGs" or "easily fly around or over these sparsely distributed structures and no strikes would be expected." [Footnote 260: Two references at SCW DEIS at 3.5.1-10 ("With the proposed up to 1-nm (1.9-kilometer) spacing between structures associated with offshore wind development in the Massachusetts and Rhode Island lease areas and the distribution of anticipated projects individual bats migrating over the OCS within the RSZ of project WTGs would likely pass through projects with only slight course corrections if any to avoid operating WTGs" and "Given the rarity of tree bats in the offshore environment WTGs being widely spaced and the patchiness of projects the likelihood of collisions is expected to be low and impacts on bats would be negligible.") and two references at SCW DEIS Appendix D at D-34 ("There may be few structures scattered throughout the offshore bats geographic analysis area such as navigation and weather buoys and light towers. Migrating bats can easily fly around or over these sparsely distributed structures and no migration disturbance would be expected" and "There may be few structures in the offshore bats geographic analysis area such as navigation and weather buoys turbines and light towers. Migrating tree bats can easily	

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	fly around or over these sparsely distributed structures and no strikes would be expected.")] [Footnote 261: SCW DEIS at 3.5.1-10.] [Footnote 262: SCW DEIS at SCW DEIS Appendix D at D-34.] These assertions are starkly at odds with the best available scientific information on bats and wind turbines which indicates that bats will change course not to avoid but to approach wind turbines. [Footnote 263: As mentioned above BOEM is relying on information on collision risk to bats at land-based wind to overcome the lack of data for collision impacts at offshore wind facilities. SCW DEIS Appendix E at E-2 and SCW COP Appendix I2 at 3-1.] [Footnote 264: Cryan et al. 2014.] BOEM must consider the potential that bats could be attracted to offshore wind turbines— which would dramatically increase collision risk—and update the impact assessment accordingly.	
BOEM-2023-0011-0140-0079	A lack of data on offshore movements of cave-hibernating bats such as Myotis bats including the newly endangered northern long-eared bat does not imply a lack of impacts. Despite acknowledging that there is uncertainty around movements and behaviors of bats offshore the DEIS nevertheless concludes that exposure of cave bats to operating WTGs "is expected to be negligible if exposure occurs at all[.]"[Footnote 265: SCW DEIS at 3.5.1-4 3.5.1-13 Appendix E at E-2 SCW COP Appendix I2 at 3-1 and 3-3 SCW COP Volume II at 6-58.] [Footnote 266: SCW DEIS at 3.5.1-9. Other instances of downplaying cave bat exposure can be found at SCW DEIS at 3.5.1-4 ("exposure to the Wind Farm Area is very unlikely") and SCW DEIS at 3.5.1-14 ("given that cave bats do not typically occur on the OCS").] However cave-hibernating bats may be found offshore more frequently and at greater distance than the assessments in the COP and DEIS indicate. Although the DEIS cites a study claiming that Myotis bats have not been detected further offshore than 11.5 km other research cited in the COP and DEIS detected Myotis calls at several Mid-Atlantic sites further offshore than 11 km including at the Chesapeake Light Tower in Virginia 24.8 km	Final EIS Section 3.5.1 reflects additional information relative to the abundance of cave-hibernating bats offshore. The Final EIS uses the best available information, and thus complies with the procedural requirements of NEPA to predict potential impacts on bats from the Proposed Action.

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	from the mainland. [Footnote 267: SCW DEIS at 3.1.1-4 citing Sjollema et al. 2014. Sjollema Angela L. J. Edward Gates Robert H. Hilderbrand and John Sherwell. "Offshore Activity of Bats Along the Mid-Atlantic Coast." Northeastern Naturalist vol. 21 no. 2 (2014): 154–63.] [Footnote 268: Peterson et al. 2016 Appendix A.] Additionally bat calls classified as high frequency unknown species were detected as far as 130 km offshore in the Mid-Atlantic. [Footnote 269: Peterson et al. 2016.] While it is not possible to attribute these unidentified calls to species high frequency unknown species calls can include calls from Myotis species. Furthermore the same study identified Myotis calls at 63 percent of sites surveyed in the Mid-Atlantic and Myotis species were present at 89 percent of sites surveyed across the Gulf of Maine Mid-Atlantic and Great Lakes indicating that cave bats may be more common offshore than characterized by the DEIS. [Footnote 270: Peterson Trevor S Steven K Pelletier and Matt Giovanni. 2016. "Long-Term Bat Monitoring on Islands Offshore Structures and Coastal Sites in the Gulf of Maine Mid-Atlantic and Great Lakes—Final Report." Topsham ME USA. Prepared for the U.S. Department of Energy.]	
BOEM-2023-0011-0140-0080	Although the DEIS and COP both state that the federally endangered Indiana bat is not known to occur in eastern Massachusetts a tagged Indiana bat was detected north of the Project Area as discussed in Section IV.I.3 of our scoping comments. [Footnote 271: SCW COP Appendix I2 at 4-11 and Volume II at 6-56; SCW DEIS at 3.5.1-3.] [Footnote 272: Available at https://www.regulations.gov/comment/BOEM-2021-0062-0035] We refer BOEM back to those scoping comments.	The cited record of an Indiana bat detected on Nantucket is recorded in Motus at the following link: https://motus.org/data/track?tagDeploymentId=2403. It is important to note that the Motus site includes a proviso that "Individual tracks have not been inspected for accuracy." BOEM consulted with USFWS as part of the ESA Section 7 requirements to address federally listed bats, and it was determined that Indiana bat does not occur or potentially occur in the Project area. This is why BOEM's BA and the USFWS Biological Opinion (issued on September 1, 2023) addresses two bats: northern long-eared bat and tricolored bat.
BOEM-2023-0011-0140-0081	Although endangered northern long-eared bats are present onshore near the Project and on Cape Cod Nantucket and	SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework has been added as an attachment to

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	Martha's Vineyard offshore collision impacts are largely dismissed in the DEIS. [Footnote 273: SCW DEIS at 3.5.1-3 and 3.5.1-5.] [Footnote 274: SCW COP Volume II at 6-59.] [Footnote 275: SCW DEIS at 3.5.1-5-2.5.1-6 ("It is not expected that northern long-eared bats would be exposed to the offshore Wind Farm Area.") at 3.5.1-6 ("Given that there is little evidence of use of the offshore environment by northern long-eared bat exposure to the proposed Wind Farm Area if it occurs is anticipated to be minimal.") and at 3.5.1-11 ("northern long-eared bats are not expected to use the OCS in any significant numbers if at all.").] The presence of northern long-eared bats on both Martha's Vineyard and Nantucket indicates that this species can cross open water and the species has been tracked making long distance flights over water in the Gulf of Maine. [Footnote 276: Bird Studies Canada 2018.] Furthermore although this data is not included in the COP or DEIS a northern long-eared bat was acoustically detected northeast of the Lease Area 34 km offshore within the South Fork Wind Farm Project Area. [Footnote 277: Sunrise Wind Farm COP Appendix P1 at 60 and 62 Figure 2-3.] Moreover the lack of confirmed acoustic calls from northern long- eared bats in some offshore wind surveys does not necessarily support the conclusion that northern long-eared bats would not be found in the Lease Area as acoustic surveys often detect high frequency calls that could not be identified to species but could have been produced by northern long-eared bats. [Footnote 278: SouthCoast Wind did not present a compilation of relevant bat acoustic data from the offshore environment but overviews of such surveys can be found at Sunrise Wind Farm COP Appendix P1 at 88 Table 2.15 and Empire Wind COP Appendix R at 12 Table R-2.] [Footnote 279: Id.]Given the potential for the species to use the offshore environment the detection of a northern long- eared bat during South Fork Wind Farm surveys and the lack of survey efforts to provide evidence of absence BOEM should not consider exposure and risk to northern long-eared bats and	Appendix G; also refer to the mitigation measures at Final EIS Section 3.5.1.9. The Final EIS uses the best available information, and thus complies with the procedural requirements of NEPA to predict potential impacts on bats from the Proposed Action. In addition, BOEM concluded its ESA Section 7 obligations on September 1, 2023, when USFWS issued its Biological Opinion for the Project. As stated in USFWS's transmittal letter for the Biological Opinion, USFWS concurred with BOEM's determination of "not likely to adversely affect" for northern long-eared bat and tricolored bat.

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	other cave bats to be negligible. Instead as BOEM prepares its Biological Assessment and consults with the U.S. Fish and Wildlife Service BOEM should note that northern long-eared bats could be present in the offshore Project Area and that insufficient research exists to dismiss potential collision impacts from SouthCoast Wind's operations. [Footnote 280: SCW DEIS at 3.5.1-6.]BOEM should thus require SouthCoast Wind to conduct or support monitoring to better understand the potential presence of and collision risk to northern long-eared bats in the Lease Area.	
BOEM-2023-0011-0140-0082	Because of the significant data gaps that preclude meaningful impact analyses for bats and offshore wind development robust monitoring especially post-construction monitoring will be critical to better understanding potential impacts to bats from SouthCoast Wind's operations. Unfortunately besides annual reporting of carcasses on vessels and structures no monitoring measures are included in either the COP or DEIS. [Footnote 281: SCW DEIS Appendix G at G-49 and G-56. SCW DEIS at 3.5.1-17.] [Footnote 282: The DEIS repeatedly cites SCW COP Volume II Table 16-2 as including monitoring measures (see SCW DEIS Appendix G at G- 48 G-56 and SCW DEIS at 3.5.1-17) no bat monitoring measures are included in SCW COP Volume II Table 16-2.] This deficiency is not present in other recent DEISs and BOEM should have included proposed post-construction monitoring information in SouthCoast Wind's DEIS. [Footnote 283: E.g. New England Wind DEIS at Appendix H Sunrise Wind COP at Appendix P2 Revolution Wind DEIS at Appendix G Coastal Virginia Offshore Wind DEIS at Appendix H.]We appreciate that BOEM included adaptive monitoring and mitigation for bats in the DEIS. [Footnote 284: SCW DEIS Appendix G at G-48 and G-56; SCW DEIS at 3.5.1-17.] We recommend that BOEM strengthen this requirement to require that SouthCoast Wind as new technologies become available for monitoring impacts at offshore wind facilities (e.g. offshore turbine strike detection technology) commit to deploying these technologies. We	Final EIS Sections 3.5.1.9 and 3.5.3.9 each reflect the inclusion of additional bat and bird mitigation measures. Additionally, refer to Final EIS Appendix G, Attachment G2, which includes a related Draft Post-Construction Avian and Bat Monitoring Framework.

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	support BOEM's proposal that if monitoring reveals that impacts to bats are greater than those discussed in the DEIS SouthCoast Wind must develop new mitigation measures. [Footnote 285: Id.]To inform the forthcoming Avian and Bat Post-Construction Monitoring Plan we provide the following monitoring and adaptive management recommendations. [Footnote 286: SCW DEIS Appendix G at G-6 SCW DEIS at 3.5.1-12 SCW COP Appendix I2 at 5-8 and 5-9.]	
BOEM-2023-0011-0140-0083	Because as discussed above pre-construction acoustic activity may not accurately predict post- construction fatalities for bats a commitment to post-construction monitoring is critical to yielding a better understanding about how bats interact with offshore wind turbines. BOEM should require that data from all post-construction monitoring be made promptly accessible to both agencies and the public.	Please refer to Final EIS Section 3.5.1.9 and Appendix G, Attachment Appendix, which state that SouthCoast Wind will submit an annual Monitoring Report to BOEM summarizing post-construction monitoring activities, preliminary results as available, and any proposed changes in the monitoring program. SouthCoast Wind will consult with BOEM and agencies, as necessary, to discuss the report and adaptive changes to the Monitoring Plan.
BOEM-2023-0011-0140-0084	SouthCoast Wind should deploy acoustic monitors post-construction on turbines and install them at nacelle height (rather than on converter stations turbine platforms and/or buoys) so as to detect activity when bats are in the rotor swept zone and more likely at risk for collision. SouthCoast Wind and BOEM should confer with bat researchers to determine how many acoustic detectors should be deployed and how many years of post-construction data should be collected in order to best inform impact analyses. BOEM should require that all acoustic data be reported and submitted to NABat and/or the Bat Acoustic Monitoring Portal BatAMP. [Footnote 287: https://sciencebase.usgs.gov/nabat/][Footnote 288: https://batamp.databasin.org/.]	As reflected in Final EIS Appendix G, Attachment G2, bat flight heights vary according to species and conditions. Similar to other offshore wind project proponents in the area, SouthCoast Wind is considering conducting a 1- to 2-year radar study to record the passage rates of migrants and their flight heights. The methodology would be determined in consultation with USFWS.
BOEM-2023-0011-0140-0085	SouthCoast Wind should install Motus towers in their Lease Area as well as support the upgrading of coastal Motus towers. Additionally we recommend that SouthCoast Wind support the tagging of bats which are underrepresented in Motus to support understanding of bat activity offshore. We	Please refer to Final EIS Appendix G, Attachment G2, which outlines the use and installation of Motus receivers in the Project area.

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	suggest that BOEM require deployment of Motus towers pre-construction in coordination with the U.S. Fish and Wildlife Service's offshore Motus network as BOEM is requiring of new lessees in the New York Bight Carolina Long Bay and California. [Footnote 289: See Final Sale Notices for the New York Bight (86 Fed. Reg. 31524) and Carolina Long Bay (86 Fed. Reg. 60274) and lease stipulations in the New York Bight leases (OCS-A 0537 0538 0539 0541 0542 and 0544) Carolina Long Bay leases (OCS-A 0545 and 0546) and California leases (OCS-P 0561 0562 0563 0564 and 0565).]SouthCoast Wind should keep offshore Motus towers deployed active and maintained for as much of the lifetime of the Project as possible. Data from these towers will not only inform SouthCoast Wind's adaptive management but also as multiple offshore wind projects are developed provide a long-term network of Motus towers in the offshore environment that can shed much needed light on species' movements offshore.	
BOEM-2023-0011-0140-0086	SouthCoast Wind plans to report dead or injured bats found on vessels and project structures. [Footnote 290: SCW DEIS Appendix G at G-49 and G-56.] We note that 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. BOEM should consult with experts to determine what if any inferences about total fatalities can be made from carcasses detected on vessels and project structures. [Footnote 291: 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.]As new technologies become available for monitoring fatalities at offshore wind facilities such as strike detection technology BOEM should require SouthCoast Wind to commit to deploying these and if monitoring reveals that impacts to bats are significant BOEM should require	Final EIS Section 3.5.1.9 and Appendix G detail the mitigation and monitoring measures that would be implemented to avoid, minimize, and mitigate adverse impacts on bats. A framework for an avian and bat post-construction monitoring program would be developed and implemented in coordination with applicable federal and state resource agencies (Appendix G, Attachment G2). Additional mitigation and monitoring measures may arise from consultations and coordination with federal and state resource agencies. These additional mitigation measures could be considered by decision-makers and incorporated into the ROD.

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	SouthCoast Wind to employ minimization strategies and/or technologies.	
BOEM-2023-0011-0140-0087	We strongly support BOEM's proposed measure that SouthCoast Wind recommend new mitigation measures or monitoring measures "[i]f the reported post-construction bird and bat monitoring results…indicate that bird and bat impacts deviate substantially from the impact analysis included in this EIS[.]"[Footnote 292: SCW DEIS Appendix G at G-48 and G-56.] However there is a lack of clarity as to what would trigger this adaptive management. The post-construction monitoring measure for bats included in the COP and DEIS—carcass reports from vessels and structures—will not provide comprehensive information on bat collisions which are likely the greatest cause of bat fatalities from the offshore components of offshore wind development. No research or methods are presented to translate monitoring data from these sources into bat impacts nor are we aware of any methods accepted by subject matter experts to do so. Once again we underscore the need for adaptive monitoring. Because the proposed monitoring method is unlikely to provide estimates of bat collisions from SouthCoast Wind's offshore operations but no collision detection technologies are validated and commercially available for use offshore BOEM should require SouthCoast Wind to commit to deploying collision detection technology once available. Strike detection technology is in development with one technology to be tested on an offshore wind turbine in 2023. [Footnote 293: Stucker J. Prebyl T. Bushey J. Good R. Roadman J. Ivanov H. Rooney S. Verhoef H. Kaandorp F. and Saraswati N. A Multi-Sensor Approach for Measuring Bird and Bat Collisions with Wind Turbines: Validation Results. 2022. Poster presentation for NYSERDA State of the Science.] SouthCoast Wind should work with agency staff and researchers to determine the appropriate duration of post-construction fatality monitoring using their current proposed methods and for after collision detection systems are installed.	BOEM and SouthCoast Wind have used the best available data and technology to draft the Post-Construction Avian and Bat Monitoring Framework (Final EIS Appendix G2). The document outlines triggers for adaptive management and will be determined in coordination with BOEM, USFWS, Massachusetts Division of Fisheries and Wildlife (MassWildlife), RIDEM, and other relevant regulatory agencies to determine the need for adjustments to monitoring approaches.

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BOEM-2023-0011-0140-0022	We note that inconsistencies are also found for the geographic analysis areas for cumulative impacts. For example the geographic analysis areas for birds and bats vary from 0.5 mi inland (Sunrise Wind for birds and bats SouthCoast Wind for birds) 5 mi inland (SouthCoast Wind for bats and several other DEISs for both birds and bats) to 100 mi inland (Vineyard Wind 1 for both birds and bats). [Footnote 35: Sunrise Wind DEIS Appendix D at D-1 and D-2.] [Footnote 36: SCW Wind at Fig. 3.5.3-1 p. 3.5.3-2.] [Footnote 37: Id. at Fig. 3.5.1-2 p. 3.5.3-2.] [Footnote 38: Vineyard Wind Final EIS Table A-1 at A-10.] BOEM should improve their analyses to ensure a high standard and consistency for their cumulative impact analyses for offshore wind projects. We also urge BOEM to also ensure that in evaluating impacts to species the agency considers potential changes in range and seasonal use due to various anticipated levels of warming and climate change.	Geographic analysis areas are based on the geographic extent of potential impacts of the Proposed Action, either direct or interdependent or interrelated activities/effects, rather than the entire range of species that overlap or may overlap with onshore and offshore facilities and activities. The inclusion of all areas where individual species that cross the Proposed Action may migrate would quickly result in large areas that are impractical to incorporate into the geographic analysis. The bat (and bird) geographic analysis area for the Project is consistent with other more recent offshore wind EISs, including Empire Offshore Wind. The Final EIS includes discussions of the impacts of climate change as part of the No Action Alternative analysis of ongoing activities and environmental stressors (refer to Final EIS Chapter 3 resource sections where appropriate). Climate change is a consideration for baseline conditions and for cumulative impacts.
BOEM-2023-0011-0140-0124	Of particular concern for the accuracy of BOEM's cumulative impact analysis for bats is the geographic analysis area. BOEM defines the geographic analysis area as 100 mi offshore and 5 mi inland. [Footnote 236: SCW DEIS at 3.5.1-1.] This is at odds with the geographic analysis area used for bats for Vineyard Wind 1 where the area extended 100 mi inland. [Footnote 237: Vineyard Wind 1 Final EIS at A-10.] BOEM presents no research in the DEIS to support the assumption that bats found offshore exclusively use near-coast habitat on land (i.e. five miles or less from the coasts) to support this limited geographic scope. A survey of available research on bat migration—including research presented in SouthCoast's COP— does not support BOEM's rationale for their limited inland geographic analysis area in SouthCoast Wind's DEIS. [Footnote 238: SCW COP Volume II at 6-67 and 6-68 discussing movements of tri-colored bats and little brown bats in excess of 300 miles and SCW COP Appendix I2 at 3-1 discussing hoary bats and eastern red bats cross-water	Please refer to the response to comment BOEM-2023-0011-0140-0022. The 5-mile inland boundary captures the bats near or in coastal habitats that may be affected by the Project.

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	movements in excess of 620 mi.]Although the migratory movements of bats especially migratory tree bats are poorly understood many species of bats—both long-distance migrants like migratory tree bats but also cave bats—are capable of flights in excess of 100 km (62 mi) indicating that bats found offshore in wind development areas could also be found significant distances inland. Research from Canada found that 20 percent of little brown bat movements exceeded 500 km (311 mi) 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 five miles. [Footnote 239: 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] [Footnote 240: Bird Studies Canada 2018. Note that little brown bat movements in excess of 300 mi are discussed in the COP. SCW COP Volume II at 6-67.] Hoary bats which are capable of long distance flights over water have been recorded traveling over 1000 km (621 mi) and are thought capable of migrations in excess of 2000 km (1243 mi). [Footnote 241: 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] [Footnote 242: 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] [Footnote 243: Cryan P. M. Bogan M. A. Rye R. O. Landis G. P. & Kester C. L. (2004). Stable Hydrogen Isotope Analysis of Bat Hair as Evidence for Seasonal Molt and Long-Distance Migration. In Source:	

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	Journal of Mammalogy (Vol. 85 Issue 5).] 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 between coastal areas on the east coast and areas in excess of 100 mi inland. [Footnote 244: Bird Studies Canada 2018.] These movements do not support a geographic analysis area that extends only five miles inland but rather suggest that bats exposed to offshore wind energy projects could be found far inland (and therefore exposed to land-based wind energy facilities) and that a geographic analysis area that extends 100 mi inland would be 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. This revised boundary will likely require an updated analysis to reflect that bats exposed to offshore wind projects could be exposed to multiple land-based wind energy projects as well as multiple offshore wind energy projects.	

N.6.6 Benthic Resources

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BOEM-2023-0011-0123-0024	The turbine foundations may increase hard substrate for recruitment following any disturbance during the construction phase (Petersen and Malm 2006). The reef effect can increase food availability (Degraer et al. 2020) and biodiversity and biomass (Inger et al. 2009; Gill 2005; Linley et al. 2007). However new habitat created by the turbine foundations may not benefit all species that utilized the local habitat prior to construction and may serve to attract biomass as opposed to result in increased ecosystem productivity. As such it is important that these elements be evaluated as possible throughout the project to best understand the long-term effects of the region.	Text has been added to Final EIS Section 3.5.2.3 to address this comment based on review of Bray et al. (2017), Wilding et al. (2017), Adams et al. (2014), Causon and Gill (2018).

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BOEM-2023-0011-0132-0062	On page 3.5.2-14 it states that noise from G&G surveys will rarely overlap. This is simply false and this exact situation is currently happening in the NY/NJ area. No historical data for timing of surveys and whale deaths has been provided for the MA/RI lease area.	The text explains that detectable impacts of G&G survey noise on benthic resources would rarely, if ever, overlap from multiple sources. While G&G surveys from multiple projects could occur concurrently, detectable impacts in the geographic analysis area are not expected to occur. As explained in Section 3.5.2.3, should surveys overlap, multiple sound sources do not produce overall louder noises. The loudest one would prevail making the less intense harder to hear (see the *noise* IPF discussion in Section 3.5.2.3). Please refer to Section 3.5.6, *Marine Mammals*, regarding impacts on whales.
BOEM-2023-0011-0137-0026	The estimated quantitative effect of the SouthWind power plant's contribution to a reduction in productivity via this "trophic footprint" of fouling heterotrophs when taken together with that of other wind-turbine power plant projects planned on the outer continental shelf (some of which are floating wind farms in which each turbine sits on a 2- acre shade-casting tethered platform) has not been estimated by BOEM in the DEIS with respect to mass quantity (tonnage) of excess dissolved carbon compounds that will result from the U.S. Atlantic Offshore wind program's impairment of primary productivity on the Outer Continental Shelf. These dissolved carbon compounds impair the ability of the ocean to serve as a carbon buffer to atmospheric carbon and contribute to ocean acidification.The authors conclude that "[e]very square meter of artificial structure cancels out the primary production of up to 130 square meters" of water "essentially robbing marine ecosystems of their productivity" [M.E. Malerba C.R. White and D.J. Marshall 2019. Frontiers in Ecology and the Environment Vol. 17 Issue7 September 2019 pp.400-406. https://doi.org/10.1002/fee.2074] a conservative estimate according to the researchers with the trophic footprint (net effect of alteration of the natural trophic pyramid) potentially having double that effect. Estimates by other researchers show a 1:8 ratio of square area of marine urbanization to area of primary production cancelled by its	BOEM has considered primary production related to the addition of structures in more detail in Sections 3.5.5.3 and 3.5.5.5, including a reference to Dannheim et al. (2020), which considers that higher densities of filter feeders could consume much of the increased primary productivity around offshore wind turbines. Modeling in the North Sea has shown that only small changes to primary productivity around offshore wind farms changes are expected to occur, and overall trophic response difficult to project (Daewel et al. 2022) even in much larger than planned wind farm development.

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	existence.SEE ORIGINAL ATTACHMENT FOR IMAGE OF Figure 13. Fouling on hard-surfaces that accompanies marine urbanization (construction in marine environments). Dense communities of filter-feeding sessile heterotrophs appear that reduce density of photosynthetic plankton responsible for removing dissolved inorganic carbon from ocean water and turning it into organic life formsKnowing these "trophic footprint" effects of marine construction the conclusions of the Bureau in the DEIS—that concrete bottom scour pads surrounding wind energy structures and other structures that comprise the ocean power plants will be "beneficial" on account of the fact that they will serve as substrate that fosters growth of new communities of organisms built around sessile heterotroph organisms—is a conclusion that is very difficult to make rational sense of the DEIS does not attempt to quantify the effect of this marine urbanization on the trophic footprint (population explosion of sessile invertebrates causing decline in autotroph density and consequential reduction in ability of the waters over the outer continental shelf to reduce dissolved carbon thus reducing the ocean's ability to serve as a carbon buffer). Because this power plant cumulatively with the larger U.S. Offshore Wind Program contributes to marine urbanization which can have such an impact the DEIS is insufficient at fulfilling the requirements of NEPA to estimate impacts reasonably expected to occur.	
BOEM-2023-0011-0137-0048	Two DEIS statements first"[R]esults of benthic monitoring at European wind facilities and the Block Island Wind Farm in the United States provide general knowledge of the overall impacts of these IPFs combined if not individually. Therefore the analysis provided in this EIS is sufficient."and second the comment within the DEIS that assesses the project both individually and cumulatively to be of net benefit to the benthos are not supported and are contradicted by the available scientific data. Of the few studies were conducted at the Block Island Wind Farm to look for effects and cited some	The cited article does not investigate impacts of EMFs or noise at offshore wind farms. The commenter's cited article investigates the impact of prey availability and foraging habitat by flounder and Gadid fishes, which found that besides these fish incorporating some of the epibionts (mussels and mysid shrimps which are associated with mussel beds) into their diets the quality of foraging habitat was deemed similar at the wind farm and reference sites (without offshore wind farm).

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	were commissioned by wind developers and written by their employees [Footnote 74: E.g. https://www.int-res.com/articles/meps_oa/m683p123.pdf]. We reiterate to the Bureau of Ocean Energy Management that there is a wealth of scientific information about how both noise and magnetic fields (that wind-turbine power plants and their transmission infrastructure expected to produce respectively) affects marine life including effects on the benthos in ways that has not received adequate consideration.	The *EMF* and *noise* IPFs listed in both Section 3.5.2, *Benthic Resources*, and Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat,* includes the best available data and scientific literature for offshore wind and is consistent with other offshore wind EISs including Ocean Wind 1 and Revolution Wind.
BOEM-2023-0011-0137-0049	Anticipated effects of the proposed activities on invertebrates are large potentially very large or are unknown (See Appendix A) [Footnote 75: The following were given less than due consideration in the DEIS or impacts to populations were downplayed or underestimated: Change in prey density or availability; modified feeding behavior; increased energetic expenditure (traversing extra distances to avoid areas of activity; increasing communication volume circuitous migratory paths); physiological effect of stress damage to ciliated structures (and the consequences for the organism); behavioral response to sound exposure interferes with necessary life functions; direct physiologic effect of exposure to sound; impairment of habitat selection capability based on sound cues habitat alteration from behavioral changes in animals that are ordinarily habitat manipulators; delayed or abnormal physiology or behavior in development; decreased sediment mixing (reduced locomotion increased recession); damage to statocysts and harm outcomes such as impacts to reproductive energy budgets brood success; missed mating opportunity impairment of ability to select mates from masking mating sounds and calls; changes to plankton (spatial distribution planktonic species composition); immunosuppression of coelomates depletion of antioxidant resources impaired gravitaxis shell dissolution (related to increased anaerobic metabolism from time spent with valves shut) reduced predator defenses (reduced predator detection impaired shoaling in fish inability to locomote and thus	Text has been added to Final EIS Section 3.5.2.3, *Cumulative Impacts of the No Action Alternative,* under the *noise* IPF paragraph that directly addresses some of the physiological impacts listed here. Additional physiological impacts are addressed in the Final EIS under the *EMFs* and the *cable emplacement and maintenance* IPFs in Section 3.5.2.3. Invertebrate physiological sensitivities to sound are also described in the finfish, invertebrate, and EFH analysis, in Section 3.5.5.3.

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	regulate internal conditions impaired escape from reduced condition postural and positional changes from physiological damage to “righting” organs) impaired migration and change in community structure and the ecological services communities and their component species provide.].	
BOEM-2023-0011-0137-0084	100-200 kHz sound elicited physiological stress response in echinoderm A. lixula and increased the cytotoxicity[Footnote 18: Vazzanaa Mauroa Ceraulob Dioguardia Papalec Mazzolab Arizzaa Beltramed Ingugliaa Buscainob 2020. Underwater high frequency noise: Biological responses in sea urchin Arbacia Lixula. J of Comparative Biochemistry and Physiology Part A. 2020. Comp Biochem Physiol A Mol Integr Physiol. 2020 Apr; 242:110650.] of its coelemic fluid confirming the vulnerability of this species to acoustic exposure. This is the frequency of sound emitted by the echosounders and side-scan sonar equipment expected to be used in site characterization. Impact on Echinoderms of operational noise was not given adequate treatment. The brown sea urchin Arbacia punctulate as well as remaining populations of sea stars of noise has not been assessed.	Due to the BOEM resolution requirements for the COP surveys, SouthCoast Wind was required to use side-scans and multibeam systems with higher frequency than 100 to 200 khz. The following frequencies were used for the 2019, 2020, 2021, and 2023 G&G surveys. • Side-scan sonar frequency – 300 kHz and 600 kHz. • Multibeam echo sounder was above 200 kHz (2020 and 2021 it was 400 kHz, and 388 kHz in 2019, and the plan for 2023 is 350–360 kHz). Therefore, no impacts are anticipated to echinoderms based on the mentioned study. Additional text has been incorporated into the Final EIS Sections 3.5.2.3, and 3.5.5.3 addressing noise and vibration impacts on invertebrate species, including a citation from the Vazzana et al. (2020) paper cited in the comment.
BOEM-2023-0011-0137-0107	The DEIS concludes sediment disturbance will be easy to recover from. However studies in Europe have shown benthic communities simply do not appear to be as resilient as that and also show cable laying to have long term adverse impacts on biodiversity[Footnote 48: Haploop areas are rich benthic ecosystems and allow for the development of a benthic macrofauna and an interdependent pelagic fauna. French researchers showed that an electrical cable buried in 2012 adversely affected a Haploop field within the vicinity of the cable. The Haploops mud is characterized by a higher biodiversity in living benthic foraminifera in Haploop mats and by a good balance between major species of foraminifera. Two transects were sampled one close to and one far from the cable. Samples were also taken in between. A decreasing gradient of ecological health status (as measured by	While the NEM has similar geological features (pockmarks) as the habitat described in the cited example, no evidence of extensive amphipod mats exists in the NEM. Goff (2019) states that calcareous deposits were found in the NEM from acoustic mapping, which were indicative of biological origin as calcareous deposits would not be present from geological processes since the NEM is devoid of methane seeps. Foraminifera deposits, a calcifying planktonic species have been found in the NEM (Chaytor et al. 2021) but these Haploop amphipod mat are not likely present because Champilou et al. (2019) draws an association of these amphipod mats with the methane seeps and the nutrients that are dispelled from them. The NEM pockmarks are created from groundwater discharge and therefore the biological communities would vastly differ from those in this

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	biodiversity) can be observed going from the bank to the midline of the electrical cable[Bold Underline: emphasizing that the area remains an adversely impacted environment even after 5 years from the cable installation.] Nearer the cable a dense unbalanced species assemblage was highly dominated by a single species. [Bold Underline: Biodiversity increased with distance away from the cable]. ["HOOPLA" case study on Haploops fields by WAMEC (West Atlantic Marine Energy Community); internet reference https://www.weamec.fr/en/publications/2018-champilou-j-b-foraminiferal-faunas- associated-to-haploops-spp-mats-on-the-atlantic-french-coast-and-effects-of-a-wind-farm-installation- on-the-area-weamec-project-hoopla/].] in the studied benthic animals which are substrate modifiers and which benefit other organisms.	French study. From a literature search it was not clear that any biodiversity research has been done on the benthic and infaunal communities. Therefore, please refer to Section 3.5.2.1 for reference on what the soft sediment biological communities could look like since the NEM and the Lease Area are somewhat close in proximity. Section 3.5.2.5 provides impacts assessments for soft sediment habitat in the Lease Area, as well as outlines the likelihood of recovery.
BOEM-2023-0011-0137-0109	The DEIS does not give adequate treatment to Horseshoe Crabs magnetosensitive species which may be significantly affected by undersea cables within the lease areas once the sold lease areas are developed and within the cable routes to shore. Horseshoe crabs are ecologically important as some species of migratory birds depend on their eggs to fuel their flights and are important in human medicine. They are under immense harvest pressure for their blood which is sold for use in medicine. Formerly ubiquitous they are disappearing rapidly. The Bureau has been stating and restating the need to study the effects of undersea interturbine and high-voltage export cables on Horseshoe crabs since at least 2011. In a decade that has gone by the Bureau should state what it has learned or if no further effort was undertaken. If no commission sought to study them the Bureau must not continue to conclude no potential or potential for only negligible effects from absence of demonstrated harm (which is dissimilar to demonstrated absence of harm following study).	No EMF studies specifically on horseshoe crabs were found based on a review of the scientific literature. However, impacts of other magneto sensitive arthropods like the American Lobster and other bottom-dwelling invertebrates are outlined in Benthic Resource FEIS Section 3.5.2.3 and Finfish, Invertebrate and EFH FEIS Section 3.5.5.5 under the *EMF* IPF. The analysis of these species provides information on effects on magneto sensitive species like horseshoe crabs.

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BOEM-2023-0011-0137-0117	High density conditions foster the evolution of higher pathogenicity (parasites bacteria protozoa and viruses that cause rapid serious disease) because such restraints are absent. [New York State Department of Environmental Conservation Artificial Reef DEIS Attachment J page 20 Comment #23; https://www.dec.ny.gov/docs/fish_marine_pdf/dmrreeffinalappc.pdf]. In a wind turbine power plant the wind turbine foundation itself and the hard-surface scour pad[Footnote 60: A scour pad is a large hard-surface area usually made of concrete intended to prevent the flow of water current diverting around the mast from scraping large troughs into the ocean floor. Rip rap stones can also be used.] around the footprint can aggregate fish and other animals and once colonized is characterized by high densities of the organisms that inhabit them. High density means animals are in close proximity to one another and transmission is more likely. This poses the threat of relaxing natural selection against high pathogenicity and fosters evolution of more severe disease-causing organisms in the inhabiting species. In high density there is less consequence to the pathogenic organism of killing its host rapidly since the host is likely exposed to many others whom your offspring or replicates can infect even if the host deteriorates rapidly. Since there are many turbines each with associated high density area at its base the opportunity for evolution of pathogens that cause higher severity of disease is greatly increased. In absence of natural selection against them severe-disease-causing pathogens can evolve in rapid timescales spread and have population-level effects.	While the reef effect may attract fishes and invertebrates in high densities, these organisms are not confined in spaces or artificially fed like aquaculture where parasites and diseases are more prevalent. Additionally, the species that typically colonize these hard-bottom substrates on the scour protection and WTGs are typically found in reef communities where high densities and competitive pressures are prevalent, but these species are adapted to be in close aggregation with one another compared to the sandy benthic habitat that would surround the WTGs in the Lease Area. For hydrodynamic impacts of scour protection and wind turbines refer to the *presence of structures* IPF discussions in Sections 3.5.5.3 and 3.5.2.3.
BOEM-2023-0011-0140-0088	The conclusions in the SouthCoast Wind Farm Draft EIS that the overall impact to benthic resources from the Proposed Action would range from negligible to moderate and the long-term impact on benthic communities from construction and installation of the Proposed Action is expected to be minor as the resources would “likely recover naturally over time” is inconsistent with the findings in the Draft EIS that offshore	Section 3.5.5.3 details how Atlantic cod are among the fish species attracted to structures and have been found in higher concentrations around offshore wind farms than in surrounding habitat. COP Appendix K provides map of SAVs including eelgrass beds located in the nearshore environment for Brayton and Falmouth ECCs (Figures 4-1, 4-2, 4-3, and 4-4). Section 5.2.3.1 Construction and

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	wind activities may result in long-term or permanent impacts. [Footnote 321: SCW DEIS at 3.5.5-29.] Because both the Block Island Study and the SouthCoast Wind Draft EIS itself find the potential for long-term to permanent impacts on sensitive benthic habitats including complex and eelgrass habitats from offshore wind development BOEM should include more justification in the SouthCoast Wind Final EIS for why it expects that these potential impacts to sensitive benthic habitats will only be minor and not result in any population-level impacts to the species that rely on them and particularly to overfished species like Atlantic cod. More specifically because the export cable corridors will traverse juvenile Atlantic cod HAPC as well as possible cod spawning grounds in the complex habitats of Muskeget Channel the Sakonnet River and Mount Hope Bay BOEM should analyze whether the potential long- term to permanent impacts from cable emplacement and anchoring activities in the export cable corridors could lead to population-level impacts on Atlantic cod in those areas.	Decommissioning in COP Appendix K also details the impact of cable emplacement on eelgrass beds which is nonexistent to indirect effects since there are no eelgrass beds on the Brayton Point and Aquidneck Island landfalls and the planned landfall of Falmouth are outside the mapped area of eelgrass habitat.

N.6.7 Birds

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BOEM-2023-0011-0132-0006	In Table 2-4 impacts on birds are listed as moderate to major and then dismissed as the document suggests birds could be attracted to the area. Common sense would tell us that birds attracted to wind turbines most likely would end up dead. The document also does not say how this will be studied or mitigated. It just says these things will happen. This is not the full disclosure that the NEPA requires. If mitigation were to happen by turning turbines off at certain times when birds are present (as is the practice for onshore wind) then the air quality numbers are meaningless as less power would be created by the wind turbines and more single cycle natural	Impacts on bird collisions are addressed in Final EIS Section 3.5.3, including assessment of potential bird strikes. Based on the current understanding of bird presence in the offshore environment, BOEM anticipates that bird collisions with offshore wind infrastructure will be lower than with onshore wind infrastructure. This is because bird presence in the offshore environment is much lower than onshore. Within the Atlantic Flyway along the North American Atlantic Coast, much of the bird activity is concentrated along the coastline. Waterbirds use a corridor between the coast and several kilometers out onto the OCS, while land birds tend to use a wider corridor extending from the coastline to tens of

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	gas would need to be burned to balance the turning off the turbines in the presence of various bird species.	kilometers inland. While both groups may occur over land or water within the flyway and may extend considerable distances from shore, the highest diversity and density are centered on the shoreline (Final EIS Figure 3.5.3-1). Also refer to Final EIS Section 3.5.3.9, which includes a number of proposed mitigation measures, including deterrence, reporting, and adaptive mitigation measures.
BOEM-2023-0011-0132-0076	The impact to birds has simply not been laid out. The document makes many statements about potential peril to birds including those listed through the ESA such as Piping Plovers. We read that at nighttime some species use the aircraft lighting to avoid turbines however ADLS is proposed. We read that birds can be attracted to the turbine areas as more prey "may" be available. However collisions seem to be a bigger problem. This statement is particularly egregious [Text in Blue: "It is generally assumed that inclement weather and reduced visibility cause changes to migration altitudes (Ainley et al. 2015) and could potentially lead to large-scale mortality events."] The DEIS promises only to monitor for bird impacts providing very little detail on said monitoring or potential mitigation. Since mitigation procedures involve shutting off turbines when migrating birds are present the greenhouse gas analysis cannot possibly be correct or thorough.	The impacts of the Proposed Action on birds are detailed in the seven IPFs in Draft EIS Section 3.5.3.5, which include lighting and the presence of structures. Details on mitigation for potential bird impacts are described in Final EIS Table 3.5.3-4, and include a number of proposed measures (e.g., deterrence, reporting, adaptive mitigation). Furthermore, to support the advancement of the understanding of bird interactions with offshore wind farms, SouthCoast Wind has developed a Draft Avian and Bat Post-Constructing Monitoring Framework (Final EIS Appendix G, Attachment G-2) that outlines an approach to post-construction monitoring. BOEM addresses piping plover and other federally listed birds in detail in the USFWS BA that BOEM developed for ESA Section 7 compliance. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations.
BOEM-2023-0011-0132-0077	After explaining how the proposed action "B" would impact birds the document states [Text in Blue: "The cumulative impacts on birds would likely be moderate because although bird abundance on the OCS is low there could be unavoidable impacts offshore and onshore; however BOEM does not anticipate the impacts to result in population-level effects or threaten overall habitat function. In the context of reasonably foreseeable environmental trends the Proposed Action would contribute an undetectable increment to the cumulative impacts on birds."] This statement makes no sense. The	Throughout the Final EIS, cumulative and incremental impacts of the Proposed Action are separately addressed. This approach is necessary given the numerous on- and offshore activities that are expected to proceed even if the Proposed Action is not approved. As stated in Final EIS Section 3.5.3.5, BOEM anticipates that the cumulative impacts from the Proposed Action on birds in the geographic analysis area are moderate because, although bird abundance in the OCS is low, there could be unavoidable impacts offshore and onshore; however, BOEM does not anticipate the impacts to result in population-level

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	impact is moderate or undetectable - it can't be both and it seems moderate is the correct answer.	effects or threaten overall habitat function. Therefore, in the context of reasonably foreseeable environmental trends, the Proposed Action would contribute an undetectable increment to the cumulative impacts on birds.
BOEM-2023-0011-0132-0078	As far as birds covered by the ESA the DEIS states that the analysis for impacts to these three species has not yet been conducted. This is unacceptable and is in violation of NEPA and ESA.	BOEM has continually consulted with USFWS throughout the NEPA process to address the Proposed Action's impacts on federally species protected under the ESA. BOEM addresses federally listed birds in detail in the USFWS BA that BOEM developed for ESA Section 7 compliance. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations. BOEM concluded its ESA Section 7 obligations on September 1, 2023, when USFWS issued its Biological Opinion for the Project. As stated in the Biological Opinion, USFWS does not anticipate significant reduction in the reproduction, numbers, or distribution of piping plover and rufa red knot, and concluded that the Project is not likely to jeopardize the continued existence of the species. For roseate tern, USFWS concurred with BOEM's determination of "not likely to adversely affect."
BOEM-2023-0011-0137-0045	Storm cells produce infrasound. Large-size turbines produce high levels of infra sounds. The U.S. Offshore Wind program and the subject project is reasonably expected to interfere with the ability of migratory birds to avoid storms (and storm-caused mortality) and interferes with essential migration. Disruption in migratory bird's ability to use infrasound by operating thousands of large infrasound-generating machines over a vast expanse (millions of acres) of Outer Continental Shelf which serves as the Atlantic Flyway (in layman's terms a bird migration super highway) occurs from the profound disruption of essential behaviors and processes. Such impact of the U.S. Offshore Wind Program goes beyond habitat degradation to whole systems degradation for several orders and families of migratory aves which use infrasound to guide migration.	Noise impacts are covered in Final EIS Section 3.5.1, *Bats*, as well as Section 3.5.3, *Birds*. Best available information on bird presence in the geographic analysis area has been used to prepare the EIS. BOEM would continue to collect information on bird presence in the offshore environment to help inform the assessment of potential impacts on birds from construction and operation of offshore wind farms. Based on current information, bird presence in the offshore environment is relatively low (as described in Final EIS Section 3.5.3). To support the advancement of the understanding of bird interactions with offshore wind farms, SouthCoast Wind has developed a Draft Avian and Bat Post-Constructing Monitoring Framework (Final EIS Appendix G, Attachment G-

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		2) that outlines an approach to post-construction monitoring.
BOEM-2023-0011-0137-0046	Operating thousands of infrasound-generating turbines spanning the entire Outer Continental Shelf will disrupt natural migratory processes of millions of birds and is expected to cause mortality in millions of birds by interfering with their natural ability to detect storms. Large-rotor-diameter wind turbines are substantial infrasound generators. The effect of 147 turbines of the subject project as well as the cumulative effect of the U.S. Atlantic Offshore Wind Program build in the forseeable future constitutes a major systems disruptor for migrating birds.	As described in Draft EIS and Final EIS Section 3.5.3, bird presence in the offshore environment is relatively low. The effects of offshore wind farms on bird movement ultimately depends on bird species, size of the offshore wind farm, spacing of the turbines, and the extent of extra energy cost incurred by the displacement of the flying birds (relative to normal flight costs pre-construction) and their ability to compensate for this degree of added energy expenditure. Little quantitative information seems available on how offshore wind farms may act as a barrier to movement, but a modeling effort by Madsen et al. (2012) looked at bird movement through offshore wind farms based on bird movement data collected at the Nysted offshore wind farm in the western Baltic Sea. A summary of this study is included in Draft EIS Section 3.5.3, *Cumulative Impacts of the No Action Alternative*, under the *presence of structures* IPF. In short, the modeling effort indicates that Project turbine spacing would be wide enough to allow bird movement and would not act as an impediment to migration. BOEM notes that turbine spacing in offshore wind farms in Europe is generally more compressed than what is being proposed on the Atlantic OCS. For example, the distances between turbines for the Nysted and Horns Rev (North Sea) wind farms are shown below, which, based on the Madsen et al. (2012) modeling, indicates they would have some level of impediment to bird migration. These distances are much narrower than distances proposed between turbines on the Atlantic OCS. • Horns Rev 1: turbines are 560 meters (0.3 nm) from each other in both directions. • Horns Rev 2: turbine spacing is 500 meters (0.27 nm) in both directions.

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		• Nysted: turbine spacing 480 meters (0.26 nm) (east/west) and 900 meters (0.48 nm) (north/south). However, BOEM identified a newer study by Vattenfall (2023) that looked at meso- and micro-avoidance movements in an offshore wind farm off Scotland. The study concluded that, together with the recorded high levels of micro-avoidance in all species (>0.96), it is now evident that seabirds will be exposed to very low risks of collision in offshore wind farms during daylight hours. This was substantiated by the fact that no collisions or even narrow escapes were recorded in over 10,000 bird videos during the 2 years of monitoring covering the April–October period. The study's calculated micro-avoidance rate (>0.96) is similar to that of Skov et al. (2018), which is also mentioned in the Draft EIS and Final EIS. The Vattenfall (2023) information has been added to the Final EIS.
BOEM-2023-0011-0139-0024	SouthCoast Wind would like to highlight that to support the Avian Exposure Risk Assessment (Appendix I1 to the COP) SouthCoast Wind conducted Project-specific surveys of the Lease Area. These surveys included aerial high- definition surveys that were completed monthly from November 2019 through October 2020. Sampling effort was increased during the migratory period (e.g. April May and August 2020) for terns and other species of concern in coordination with the MassWildlife Natural Heritage and Endangered Species Program (NHESP).Survey methods consisted of flying an aircraft over the Lease Area and capturing digital still life imagery with a high-resolution camera using a grid-based survey design. A minimum of 40 percent coverage of the Lease Area was attained per survey. Third-party experts analyzed the images to enumerate birds and another third-party reviewer provided quality assurance of the data to identify any missed individuals. Third party experts were in most cases able to discern among tern species (e.g. roseate tern versus common tern) based on tail length wind structure	Thank you for your comment. BOEM has added to Final EIS Section 3.5.3.1 a reference to the Project-specific surveys that were conducted for the SouthCoast Wind Project and that are included in COP Appendix I1, Section 2.2.3.

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	and plumage. Additionally SouthCoast Wind employed an onboard professional avian observer who recorded all birds observed during geophysical and geotechnical surveys completed in the Lease Area between September and November 2019.SouthCoast Wind feels that it is important to highlight these site-specific Project surveys that were completed to support the COP Avian Exposure Risk Assessment and the findings of the impacts to birds in the DEIS in addition to the publicly available datasets listed by BOEM in the DEIS.	
BOEM-2023-0011-0140-0059	Unlike other nearby regional offshore projects (e.g. New England Wind) the SouthCoast COP makes no mention of adding Motus tagging for seabirds or nocturnal passerine migrants nor does the COP indicate that the operator intends to install Motus receivers on turbines as part of its post-construction monitoring plan. [Footnote 172: New England Wind (NEWP) DEIS Appendix H Minimization and Monitoring p. H-3.] We recommend optimizing the number and/or the dispersion of Motus stations at SouthCoast using a design tool being developed under a New York State Energy Research and Development Authority (NYSERDA) project. [Footnote 173: Sunrise Wind Farm COP Appendix P2: Post-construction Avian and Bat Monitoring Framework p. 3.]	SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework Avian and Bat Monitoring Framework has been added to Final EIS Appendix G as Attachment G-2. This plan refers to Motus tracking. SouthCoast Wind plans to install Motus receivers within the Lease Area to determine the present/absence of ESA-listed species.
BOEM-2023-0011-0140-0060	Yet unlike other offshore wind energy projects in the region having robust monitoring protocols SouthCoast has only signaled intent to coordinate with Mass Wildlife RIDEM and USFWS to identify appropriate mitigation measures to avoid noise-related impacts to nesting Piping Plovers from activities such as ground disturbance avoidance and displacement that may occur during the construction phase for the Falmouth and Brayton Point export cable corridors. [Footnote 175: See the following: NEWP COP Volume III Appendix III-R Draft Piping Plover Protection Plan pp. 1–3.] SouthCoast must detail those measures that are to be taken to protect this state-listed species and its habitats during the nesting season (April	Onshore components of the Proposed Action are mostly within existing, highly disturbed industrial areas that are unlikely to provide important bird habitats. As outlined in the USFWS BA Section 4.4.2, piping plovers have been reported in the vicinity of the onshore Action Areas. The summary of the 2021 Massachusetts Piping Plover Census documented breeding piping plovers at 188 sites, with one pair recorded in the vicinity of the Shore Street (Falmouth, Massachusetts) landfall site under consideration for the Proposed Action. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations. In

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	1 – August 31). A contingency plan should be designed and implemented for any problems that arise during horizontal directional drilling cable installation. [Footnote 176: Id.] We strongly endorse plan monitoring by qualified biologists from an accredited organization or an individual with at least one year of experience at an accredited organization conducting shorebird monitoring for Piping Plovers. [Footnote 177: Id. at 2.] Monitoring and mitigation for listed birds should cover all aspects of the project throughout its operational life not just the cable installation near coastal waterbird breeding sites	addition, BOEM concluded its ESA Section 7 obligations on September 1, 2023, when USFWS issued its Biological Opinion for the Project. As stated in the Biological Opinion, "piping plovers are not likely to be adversely affected by onshore portions of the project due to lack of suitable habitat and avoidance of coastal habitat disturbance via HDD methods."
BOEM-2023-0011-0140-0061	We note that to date no bird species including any pelagic marine or ESA-listed species has been identified as the explicit subject in the SouthCoast monitoring framework. [Footnote 178: SCW COP Volume II at 16.4–16.6.] This lack of proposed monitoring measures for bird species around the offshore wind energy infrastructure is a serious deficiency in the DEIS and COP for this project. [Footnote 179: For example and in addition to other measures Dominion Power is sponsoring a study of Whimbrel a non-listed species at that wind energy area. See: CVOW-C COP at 4-202.] Besides better addressing the needs of listed species other species also should be a focus of this project's monitoring plan. Recent tracking studies of White-winged Scoters in southern New England for example have revealed frequent commuting flights between Nantucket Sound and Long Island Sound and medium-high relative use of offshore habitats in the Project Area. [Footnote 180: Figure 4 in Meattey DE McWilliams SR Paton PW et al. 2019. Resource selection and wintering phenology of White-winged Scoters in southern New England: Implications for offshore wind energy development. The Condor: Ornithological Applications 121: duy014.] Other candidates for monitoring purposes can be found among those species designated as having higher annual exposure scores (2-3) or species having higher annual exposure (moderate-high). [Footnote 181: Table 3-1 in SCW COP Appendix I1 at 87–89.]	As stated in Final EIS Section 3.5.3, *Birds*, SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework included in Final EIS Appendix G, Attachment G-2. As part of the framework, SouthCoast Wind is committing to an Adaptive Management approach in which ongoing bird and bat data collection in offshore wind lease areas will be used to inform Project operations and conservation mitigation strategies, as available and applicable. In addition, BOEM has included an adaptive management mitigation measures (Appendix G, Table G-2) to address potential future impacts during offshore operations. Furthermore, the USFWS Biological Opinion on ESA-listed species requires the aforementioned monitoring framework and adaptive management described in the Final EIS to be implemented.

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BOEM-2023-0011-0140-0062	The monitoring framework for SouthCoast does not address how acoustic disturbances from construction and related operations might cause harm to diving marine birds. [Footnote 185: Monitoring and mitigation for diving birds are not even mentioned in conjunction with acoustic disturbances e.g. SCW COP Appendix O. Marine Mammal and Sea Turtle Monitoring and Mitigation Plan.] We refer specifically to lethal or sublethal injury from sound pressure waves caused by high intensity acoustic pulses not to avoidance or temporary displacements that arise solely from avian changes in behavior. Because seabird taxa sensitive to this impact are more prevalent during winter minimization activities like curtailment may be justified to abate harm in this season. Capable of diving to 180 m depths Razorbills especially are already known to flush readily from loud noises they are prevalent during winter in waters of the Project Area and like other alcids they are vulnerable to displacement and macro-avoidance. [Footnote 186: Piatt JF Nettleship DN. 1985. Diving depths of four alcids. The Auk 102:293–297.] [Footnote 187: Lavers J Hipfner JM Chapdelaine G. 2009. Razorbill (Alca torda) version 2.0. In The Birds of North America (P.G. Rodewald editor). Cornell Lab of Ornithology Ithaca New York USA. https://doi.org/10.2173/bna.635.] [Footnote 188: Table 3-3 in SCW COP Appendix I1 at 90.] [Footnote 189: Robinson Willmott JC Forcey G Kent A. 2013. The Relative Vulnerability of Migratory Bird Species to Offshore Wind Energy Projects on the Atlantic Outer Continental Shelf: An Assessment Method and Database. Final Report to the U.S. Department of the Interior Bureau of Ocean Energy Management Office of Renewable Energy Programs. OCS Study BOEM 2013-207. 275 pp.]Densities of diving birds are typically highest during winter months on inner and middle shelf habitats at least in this portion of the Atlantic OCS. [Footnote 190: E.g. see Figure 4–2 p. 39 in Robinson Willmott J Forcey G Vukovich M McGovern S Clerc J Carter J. 2020. Ecological Baseline Studies of the US Outer Continental Shelf: Final Report. Gainesville FL. OCS	Disturbance impacts, including noise impacts, on diving birds from the Proposed Action as well as from other on- and offshore projects are addressed in Final EIS Sections 3.5.3.3 and 3.5.3.5, under the *noise* IPF. As described, noise transmitted through water has the potential to result in temporary displacement of diving birds in a limited space around each pile and can cause short-term stress and behavioral changes ranging from mild annoyance to escape behavior. Because impacts would be temporary and birds would be able to avoid the disturbance, BOEM anticipates negligible impacts. Applicant-proposed measures to minimize impacts on marine life, such as soft-start procedures for pile driving, would also minimize the potential for noise exposure to diving birds, as they can depart the area when noisy activity begins.

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	Study BOEM 2021–079.] Therefore shifting the construction season for pile-driving and other noisy operations may eliminate altogether any underwater acoustic disturbance to diving birds. If time/area closures are not practical other methods for sound abatement may include: (1) establishing safety zones monitored by visual observers or passive acoustics and that trigger shut-down or low-power operations if large diving marine bird flocks enter these zones (2) using noise reduction gear like bubble curtains around pile driving when diving marine birds are present and (3) deploying other noise-source modifications or changes to operational parameters such as soft starts (currently included in the DEIS). [Footnote 191: Erbe C Dunlop R Dolman S. 2018. Effects of noise on marine mammals. Pp. 277–309 in Effects of anthropogenic noise on animals. Springer New York NY.]Noise monitoring and abatement during impulsive pile driving operations for monopile installation has been an established practice in other Atlantic wind energy project areas. [Footnote 192: https://media.fisheries.noaa.gov/2021-01/Dominion_CVOW_2020IHA_MonRep_OPR1.pdf?null=] Distances to injury-causing sound levels measured in one study varied from 0.7 to 3.1 km for marine mammals during installation activities. [Footnote 193: Id. p. 32.] Consequently adequate spatial buffers or suitable observation distances may be required for incorporation into study designs that are used to monitor avian reactions to subsurface acoustic disturbance.	
BOEM-2023-0011-0140-0063	We also suggest more transparent discussion of areas where minimal risk is assumed based on limited information or high uncertainty. This includes effects of low frequency sound (infrasound) during turbine operations potentially interfering with avian navigation. While there is limited information available to test or contextualize infrasound impacts on birds more study is necessary.	Please refer to the response to comment BOEM-2023-0011-0137-0046.

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BOEM-2023-0011-0140-0064	The indirect effects to marine birds from redistribution of seabird forage fish populations after construction are not discussed. Installation of turbines at SouthCoast will likely affect forage fish by removing existing hard and soft bottom substrates and replacing them with vertical structures that act as artificial reefs. Given high uncertainty in the synergistic effects of these alterations on fish and secondary consequences for avian habitat use and energetics potential for such effects should be acknowledged and incorporated into adaptive monitoring frameworks.	Foraging and displacement impacts on birds are discussed in Draft EIS and Final EIS Section 3.5.3.5 under the *presence of structures* IPF. As stated, presence of birds with high displacement sensitivity around the Project is low. The effects of offshore wind farms on bird foraging ultimately depend on bird species, size of the offshore wind farm, spacing of the turbines, and foundation types. Mitigation measures used to avoid and reduce impacts on birds and their habitat can be found in Appendix G. Also refer to the response to comment BOEM-2023-0011-140-0061.
BOEM-2023-0011-0140-0065	SouthCoast "…will ensure that lighting on WTGs will be executed in accordance with FAA regulations" and "…minimized to that required for navigation safety to reduce potential attraction of birds to the extent practicable." [Footnote 194: Table 16-1 in SCW COP Volume II at 16.5.] To reduce long-term phototactic attraction SouthCoast must extend this approach to include use of minimal lighting intensity on vessels wind turbine generators and electric service platforms to permit safe construction operations and decommissioning activities while still reducing potential attraction of birds. In addition and conditional on U.S. Coast Guard approval the top of each light should be shielded to prevent upward illumination to minimize the potential of attracting migratory birds. [Footnote 195: See for example NEWP DEIS Appendix H p. H-7.] An Aircraft Detection Lighting System (ADLS) efficacy analysis reveals that an ADLS-controlled obstruction lighting system could result in over a 99% reduction in duration of system activation as compared to a traditional always-on obstruction lighting system. [Footnote 196: NEWP COP Appendix III-K Aircraft Detection Lighting System (ADLS) Efficacy Analysis p. 1.] Although reduced lighting practices might reduce potential impacts to avian species no provisions for studying avian response(s) to lights have been made in the SouthCoast monitoring framework. [Footnote 197: Table 16-1 in SCW COP Volume II	As described in Draft EIS and Final EIS, Section 3.5.3, *Birds,* bird presence in the offshore environment is relatively low. Final EIS Section 3.5.3.5 describes potential impacts on birds from artificial light from the Proposed Action. The analysis found that with SouthCoast Wind's commitments to minimizing lighting effects, including implementing an Aircraft Detection Lighting System (ADLS) on all offshore WTGs, the Proposed Action would result in long-term but negligible impacts from lighting. Furthermore, BOEM has identified multiple mitigation measures to minimize the impact of artificial lighting on birds, which are described Final EIS Section 3.5.3.9, including downshielding lights on WTGs and OSPs, using an FAA-approved vendor for the ADLS, and adaptive mitigation for birds, which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if the reported post-construction bird and bat monitoring results indicate bird and bat impacts deviate substantially from the impact analysis included in this EIS.

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	at 16.5.]We stress that phototaxis (i.e. the disoriented attraction of birds drawn from some distance to lights on turbine towers) creates conditions in which the bird numbers that are attracted will scale as the square of the range from which they are drawn thereby greatly increasing potential for adverse impacts (i.e. higher collision risk). [Footnote 198: Deakin Z Cook A Daunt F McCluskie A Morley N Witcutt E Wright L Bolton M. 2022. A review to inform the assessment of the risk of collision and displacement in petrels and shearwaters from offshore wind developments in Scotland. Scottish Government: Riaghaltas na h-Alba. ISBN: 978-1-80525-029-6 (web only) https://www.researchgate.net/profile/Zoe-Deakin-2/publication/366139542_A_review_to_inform_the_assessment_of_the_risk_of_collision_and_displacement_in_petrels_and_shearwaters_from_offshore_wind_developments_in_Scotland/links/6393231e484e65005bf86842/A-review-to-inform-the-assessment-of-the-risk-of-collision-and-displacement-in-petrels-and-shearwaters-from-offshore-wind-developments-in- Scotland.pdf] In the context of collision with turbine blades the probability of collision is inflated by flux density as disoriented birds pass repeatedly through rotor swept areas. More research and monitoring is needed to measure distances at which this phototaxis operates in seabirds (especially the susceptible procellariiforms). [Footnote 199: At least 56 species of Procellariiformes more than one-third of them (24) threatened are vulnerable to grounding by lights. See the synthesis in: Rodríguez A Holmes ND Ryan PG Wilson KJ Faulquier L Murillo Y Raine AF Penniman JF Neves V Rodríguez B Negro JJ. 2017. Seabird mortality induced by land?based artificial lights. Conservation Biology 31:986–1001.] Neither the avian risk assessment nor avian monitoring framework for SouthCoast suitably address a potential of high flux density caused by turbine-associated phototaxis.Previous research indicates that spatial responses of marine birds to	

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	offshore wind infrastructure can consist of (1) displacement around (2) attraction to (3) or neutral association with the overall project footprint. One large literature review of North American and European bird reactions to wind farms indicates that displacement in offshore habitats is 2–3 times more prevalent than attraction. [Footnote 200: Marques AT Batalha H Bernardino J. 2021. Bird displacement by wind turbines: Assessing current knowledge and recommendations for future studies. Birds 2:460–475.] Across 71 peer-reviewed studies avian displacement distances from turbines (mean ± standard deviation) ranged from 116 ± 64 m in Anseriformes (ducks) 2517 ± 5560 m in Charadriiformes (gulls terns shorebirds) and 12062 ± 6911 m in Gaviiformes (loons). [Footnote 201: Id.]	
BOEM-2023-0011-0140-0066	The SouthCoast Mitigation and Monitoring plan fails to show how nocturnal bird or bat traffic will be monitored. Acoustic sensors can identify species passing through the turbine area but cannot reliably count large flocks identify migrating birds that do not call in-flight or separate species having similar calls. [Footnote 202: Sanders CE Menhill DJ. 2014. Acoustic monitoring of nocturnally migrating birds accurately assesses the timing and magnitude of migration through the Great Lakes. Condor 116:371–383.] Integrating acoustic data with camera technologies and/or radar systems is essential to fully measure migrant traffic and identify all species as well as provide valuable supplementary data on the number of individuals flight speed and flight height. [Footnote 203: Horton KG et al. 2015. A comparison of traffic estimates of nocturnal flying animals using radar thermal imaging and acoustic recording. Ecological Applications 25:390–401.]	SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework, included as Final EIS Appendix G, Attachment G-2, which includes a discussion of proposed bird acoustic monitoring and radar monitoring for nocturnal migrants. As noted in the framework, SouthCoast Wind is considering conducting acoustic monitoring with detectors to capture species-specific vocalizations to better understand bird presence offshore and the conditions under which they occur. SouthCoast Wind is also planning to conduct a 1- to 2-year radar study to detect nocturnal migrants; the specific radar system(s), location, time of year, and methodology will be determined in consultation with USFWS closer to the commencement of Project operations. In addition, BOEM has identified multiple mitigation measures to minimize the impact of artificial lighting on nocturnal birds, which are described Final EIS Section 3.5.3.9 (Table 3.5.3-4), including downshielding lights on WTGs and OSPs, using an FAA-approved vendor for the ADLS, and adaptive mitigation for birds, which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if the reported post-construction bird and bat monitoring results indicate

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		bird and bat impacts deviate substantially from the impact analysis included in this EIS.
BOEM-2023-0011-0140-0067	The SouthCoast Mitigation and Monitoring plan fails to address how micro-scale collision or avoidance will be addressed. [Footnote 204: Everaert J. 2014. Collision risk and micro-avoidance rates of birds with wind turbines in Flanders. Bird Study 61:220–230.] The COP merely states "…Mayflower Wind will develop and implement a Post-Construction Monitoring Plan." Absolutely no details are given including whether anti-perching devices will be installed on offshore wind structures to reduce bird perching locations. [Footnote 205: In contrast to other offshore wind farm projects e.g. Measure #14 in NEW DEIS Appendix H at H-3.] Comprehensive collision monitoring is key to assessing effects of wind turbines yet here only annual fatality reporting of opportunistically found carcasses on platforms and vessels are included. [Footnote 206: SCW DEIS Appendix G at G-49 (Measure BRT-2).] Provision for an automated multi-sensory monitoring system should be required to evaluate avian and bat activity by tracking micro-avoidance or - attraction behaviors gauging species composition at the SouthCoast site (both diurnally and nocturnally) and detecting movement flux rates for individual aerial wildlife through at least some portion of the project site. [Footnote 207: Bird fluxes have been quantified continuously at risk heights in offshore wind farms over multiple years; see Fijn RC Krijgsveld KL Poot MJ Dirksen S. 2015. Bird movements at rotor heights measured continuously with vertical radar at a Dutch offshore wind farm. Ibis 157:558–566. Furthermore thermographic sensors an ambient light camera a VHF receiving station and improved acoustic sensors for birds and bats have been combined into a single automated continuous monitoring system able to sense a large portion of the rotor swept zone with thermal and ambient light cameras effectively recording micro-avoidance or collisions of flying animals. See: https://www.normandeau.com/news-blog-from-a-top-	SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework, included as Final EIS Appendix G, Attachment G-2, which presents a framework for how SouthCoast Wind will monitor bird and bat activities at the Project area during O&M. The framework proposes radar monitoring, which includes a proposed study on bird avoidance rates. As noted in the framework, details and specifics of the monitoring plan will be determined in consultation with USFWS, BOEM, and other regulatory agencies closer to the commencement of Project operations. In addition, BOEM has identified multiple mitigation measures to further minimize the potential for bird collision with WTGs, including requiring installation of bird deterrents on WTGs and OSPs. The location of bird-deterrent devices must be proposed by SouthCoast Wind based on BMPs applicable to the appropriate operation and safe installation of the devices. Furthermore, BOEM has identified an adaptive mitigation approach for birds, which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if the reported post-construction bird and bat monitoring results indicate bird and bat impacts deviate substantially from the impact analysis included in the EIS.

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	environmental-consulting-firm-in-the-united-states/2021/06/01/normandeau-deploys-its-atomtm-system-technology-off- the-coast-of-virginia/]	
BOEM-2023-0011-0140-0068	The SouthCoast Mitigation and Monitoring plan fails to show how individual tracking data will be used to monitor mitigate and compensate for harms to ESA-listed species or track non-ESA listed species. There are important justifications for tracking non-listed avian species. In cases where welfare concerns or rarity preclude movement studies for listed birds non-listed species can substitute (e.g. Common Terns for Roseate Terns). [Footnote 208: Loring et al. 2019.] Certain marine bird species that are globally threatened or endangered under the IUCN Red List are not listed under the ESA because of listing delays or because they breed elsewhere. [Footnote 209: https://www.biologicaldiversity.org/species/birds/black-capped_petrel/index.html] Regardless of listing status species with high vulnerability to offshore wind or with uncertain population trends should be included in Motus and other tracking studies to better measure migratory connectivity and determine the appropriate locations for population monitoring.	SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework, included as Final EIS Appendix G, Attachment G-2, which includes measures for radar monitoring and Motus tracking to monitor for avian occurrence. The full scope of impacts from the Proposed Action is addressed in Final EIS Section 3.5.3, *Birds*. The IPFs analyzed in the Final EIS section address all birds, whether they are federally or state-listed as endangered or threatened, have some other special designation, or have no designation at all. The impact types and mechanisms apply to all bird species regardless of status. BOEM recognizes that species with special designations may be more sensitive to the impact types and mechanisms compared to those species with no special designations or protections. For federally listed threatened and endangered birds, BOEM developed a BA and is consulting with USFWS, as required under Section 7 of the ESA. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations. BOEM concluded its ESA Section 7 obligations on September 1, 2023, when USFWS issued its Biological Opinion for the Project. As stated in the Biological Opinion, USFWS does not anticipate significant reduction in the reproduction, numbers, or distribution of piping plover and rufa red knot, and concluded that the Project is not likely to jeopardize the continued existence of the species. For roseate tern, USFWS concurred with BOEM's determination of "not likely to adversely affect."
BOEM-2023-0011-0140-0069	The SouthCoast Mitigation and Monitoring plan does not identify acceptable levels of mortality or displacement or describe potential mitigation activities that could offset such	SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework, included as Final EIS Appendix G, Attachment G-2, which describes proposed bird

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	impacts when and where they were to occur to the most susceptible species. The lack of monitoring measures for offshore birds in the DEIS and COP precludes determining the mitigation actions that might be needed for any observed collision or displacement effects what level of observed impact would trigger such measures or the kind of habitat and/or resource equivalency analysis that would be implemented for computing the offsets used for any restoration actions	and bat monitoring measures, including adaptive monitoring. It is outside the scope of the NEPA process for BOEM to establish acceptable levels of mortality or displacement for the Project. In the EIS, BOEM analyzes the potential impacts on birds from construction and O&M of the Project and proposes mitigation measures to minimize and mitigate those impacts. While BOEM has not identified specific levels of mortality or displacement, BOEM has identified an adaptive mitigation measure for birds (Final EIS Table 3.5.3-4), which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if the reported post-construction bird and bat monitoring results indicate bird and bat impacts deviate substantially from the impact analysis included in this EIS.
BOEM-2023-0011-0140-0070	We recommend the following elements for inclusion in the SouthCoast monitoring framework for birds:1. Incorporate visual camera and thermal/infrared camera systems at substations and selected turbines. This will improve detection and identification of nocturnal migrants and help better estimate collision rates and avoidance behaviors. Incorporating multiple sensor types or using available integrated monitoring systems that combine acoustic detection with visual camera technologies thermographic imaging and very high frequency (VHF) detection would be an appropriate system to collect the information required. [Footnote 210: Suryan R. et al. 2016. A Synchronized Sensor Array for Remote Monitoring of Avian and Bat Interactions with Offshore Renewable Energy Facilities (No. DOE-OSU-EE0005363). Oregon State Univ. Corvallis OR; Lagerveld S. et al. 2020. Assessing fatality risk of bats at offshore wind turbines. (No. C025/20). Wageningen Marine Research.] [Footnote 211: https://www.normandeau.com/environmental-specialists-consultant-atom-technology/]	SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework, included as Final EIS Appendix G, Attachment G-2, which includes measures for acoustic monitoring, radar monitoring, and Motus tracking to monitor for avian occurrence. No thermal imaging is currently proposed by SouthCoast wind. Furthermore, BOEM has identified an adaptive mitigation approach for birds, which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if the reported post-construction bird and bat monitoring results indicate bird and bat impacts deviate substantially from the impact analysis included in the EIS. BOEM and USFWS identified additional mitigation and monitoring measures in the Final EIS Appendix G and USFWS's Biological Opinion to monitor for and mitigate impacts on birds.

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BOEM-2023-0011-0140-0071	Use GPS tracking in addition to Motus tracking wherever possible. Satellite-uploading GPS transmitters weighing 4 g are now commercially available meaning that any individual bird or bat weighing ≥133 g could be tracked using GPS without exceeding the accepted 3% body mass threshold for ideal transmitter weight. This number will likely decrease over time as transmitters weighing 1 g (suitable for a 33 g animal) are currently in development.	Please refer to SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework, in Final EIS Appendix G, Attachment G-2, which includes radar and Motus tracking to capture bird occurrence in the Offshore Project area. Additional mitigation and monitoring measures were identified by BOEM and USFWS through agency consultations and are included in the Final EIS Appendix G.
BOEM-2023-0011-0140-0072	Evaluate non-ESA listed bird species as potential foci for tracking studies across multiple wind area projects to detect whether and how avoidance attraction collision risk and/or displacement may occur around SouthCoast and adjoining lease areas. Selection of such a species can rely on the results of either project site surveys in aggregate or the MDAT data preferably both that identify those species that are most widespread across multiple offshore wind farms in the SouthCoast region. A cross-project tracking study could also build on previous studies that have identified the most susceptible species of marine birds. [Footnote 212: Marques AT Batalha H Bernardino J. 2021. Bird displacement by wind turbines: assessing current knowledge and recommendations for future studies. Birds 2:460–475.]	The bird assessment in Final EIS Section 3.5.3, *Birds,* is based, in part, on bird exposure assessment prepared for the Proposed Action. This assessment estimated risk of various offshore bird species that could be encountered in the Project area. Please refer to COP Volume II, Section 6.1, and Appendix I1 for the full assessment. As stated in the exposure assessment and in Final EIS Section 3.5.3, approximately 106 bird species have been identified as potentially occurring in the Project area through public databases and baseline studies (see Table 6-1 in COP Volume II for the full list of bird species). The 106 bird species are part of the various species groups that the exposure assessment analyzed. The exposure risk conclusions are summarized in Final EIS Section 3.5.3.5, *Impacts of Alternative B - Proposed Action on Birds*, where it states that most of the bird species have minimal to low overall exposure. A few species have low to medium. Overall, the results of the exposure assessment would not warrant a conclusion of a "major" impact because the exposure assessment indicates that population-level impacts would not occur. Given the detailed analysis of all bird species in the bird exposure assessment, providing an impact assessment for each individual bird species is not warranted given the assessment conclusions. As summarized in Final EIS Section 3.5.3, impacts on bird habitat in the onshore environment are anticipated to be limited given the nature of the existing habitat, abundance on the landscape, limited removal of habitat, temporary nature of construction, and

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		implementation of avoidance and minimization measures proposed by SouthCoast Wind.
BOEM-2023-0011-0140-0073	Minimize acoustic disturbance from construction and operations on diving marine birds. One means to accomplish this objective is to co-place seabird observers with marine mammal observers (PSOs) during acoustic disturbance activities and monitoring periods. [Footnote 213: PSOs are NMFS-approved visual observers trained to monitor the area around a vessel or platform during project activities for the presence of protected species and implement appropriate mitigation as necessary e.g. see SCW COP Appendix O. Marine Mammal and Sea Turtle Monitoring and Mitigation Plan at. 2–3.] [Footnote 214: E.g. under those conditions in which PSOs are used during noise-generating construction activities.] Underwater acoustic disturbance to diving marine birds would be obviated however if pile-driving and other noisy activities are scheduled largely outside the winter and early spring months (November-April) when no or few such diving species are present in the wind farm area. [Footnote 215: See for example tabular seasonal densities for diving marine birds; Attachment C in SCW COP Appendix I1 at C.1–C.2.]	Please refer to the response to comment BOEM-2023-0011-0140-0062. Mitigation measures identified for birds were identified by BOEM and USFWS during consultation.
BOEM-2023-0011-0140-0074	Expand monitoring of avian displacement to include detecting avoidance at individual wind turbines across relevant spatial scales. [Footnote 216: May RF. 2015. A unifying framework for the underlying mechanisms of avian avoidance of wind turbines. Biological Conservation 90:179–187.] Meso- and macro-scale displacement can be studied with high-definition digital aerial surveys using established protocols and accepted survey designs. [Footnote 217: Thaxter CB Burton NH. 2009. High definition imagery for surveying seabirds and marine mammals: a review of recent trials and development of protocols. https://tethys.pnnl.gov/sites/default/files/publications/Thaxter-Burton-2009.pdf; Williams KA Stenhouse IJ Adams EM Connelly EE Gilbert AT Duron M. 2015. Integrating novel and	As stated in Final EIS Section 3.5.3.5, BOEM does not anticipate the impacts to result in population-level effects or threaten overall habitat function. BOEM identified one recent study by Vattenfall (2023) that looked at meso- and micro-avoidance movements in an offshore wind farm off Scotland. The study was robust in that seabirds were tracked inside the array with video cameras and radar tracks, which allowed for measuring avoidance movements (meso- and micro-avoidance) with high confidence and at the species level. The study concluded that, together with the recorded high levels of micro-avoidance in all species (>0.96), it is now evident that seabirds will be exposed to very low risks of collision in offshore wind farms during daylight hours. This was

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	historical survey methods: a comparison of standardized boat-based and digital video aerial surveys for marine wildlife in the United States https://briwildlife.org/wp-content/uploads/2021/08/MABS-Project-Chapter-13-Williams-et-al-2015.pdf.] [Footnote 218: Winiarski KJ Burt ML Rexstad E Miller DL Trocki CL Paton PW McWilliams SR. 2014. Integrating aerial and ship surveys of marine birds into a combined density surface model: A case study of wintering Common Loons. The Condor: Ornithological Applications 116:149–161.] Micro-scale displacement should be studied with automated remote instrumentation that quantifies continuous bird flux at collision risk heights but also (where feasible) detect and record the approach distances directional changes and collision impacts of individual birds and bats. [Footnote 219: Fijn et al. 2015.]	substantiated by the fact that no collisions or even narrow escapes were recorded in over 10,000 bird videos during the 2 years of monitoring covering the April–October period. The study's calculated micro-avoidance rate (>0.96) is similar to that of Skov et al. (2018), which is also mentioned in the Draft EIS and Final EIS. The Vattenfall (2023) information has been added to the Final EIS.
BOEM-2023-0011-0140-0075	Include a reasonable requirement for timely reporting of all data (e.g. all data collected during monitoring efforts must be made available within a year after collection much as bird and bat mortality must be reported). [Footnote 220: For example see Measure #7 provided in NEWP DEIS Appendix H at H-7.] Rapid dissemination of monitoring data will ensure that it reaches the public domain and can be accessed by researchers working on affected species throughout their ranges thereby enabling rapid integration of findings across multiple offshore wind energy projects to gauge cumulative effects more fully.	Thank you for your comment. Final EIS Section 3.5.3.9 and Appendix G, Attachment G-2 include a mitigation measure requiring annual mortality reporting as well as a related measure for adaptive measures as more information is developed over time.
BOEM-2023-0011-0140-0076	Describe acceptable levels of impact and specify mitigation to be taken. The Mitigation and Monitoring plan for SouthCoast only mentions annual reporting of dead or injured birds and bats that happen to be found on vessels and structures during construction operations and decommissioning. [Footnote 221: SCW DEIS Appendix G at G-49 (Measure BRT-2).] Effective monitoring and mitigation activity should also include describing justifying: (a) how carcass observations or other collision and displacement monitoring results can be	Thank you for your comment. Please refer to Final EIS Section 3.5.3.9 and Appendix G, Attachment G-2, which reflect additional mitigation measures related to birds.

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	extrapolated to achieve realistic estimates of the mortality within a population-level context (b) what thresholds (demographic mortality etc.) are to be used to initiate the mitigation activities (c) what mitigation activities for restoration will be considered to offset the observed impacts including why those restoration actions are appropriate for the particular taxa involved and (d) what measures of success are to be used to confirm that restoration management strategies have been successful.	
BOEM-2023-0011-0156-0002	More specifically for this and other projects we would like to see a commitment to monitoring deployment of remote monitoring devices to document bird and bat impacts and then design appropriate mitigation as more experience is gained with these projects. Proactive conservation projects such as improving the habitat of coastal nesting water birds your use of quiet foundations rather than piling driving	Please refer to Final EIS Appendix G, Attachment G-, which outlines the use and installation of Motus receivers within the Offshore Project area. Furthermore, BOEM has identified an adaptive mitigation approach for birds, which would require SouthCoast Wind to make recommendations for new mitigation measures or monitoring methods if the reported post-construction bird and bat monitoring results indicate bird impacts deviate substantially from the impact analysis included in the EIS.

N.6.8 Coastal Habitat and Fauna

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BOEM-2023-0011-0117-0006	Conservation Status Must Be Considered: The DEIS fails to examine the direct indirect and cumulative impacts of SouthCoast Wind on individual species in light of the species' particular conservation statuses. Without this species-by-species analysis the DEIS cannot meaningfully consider the effects of SouthCoast Wind on the marine environment. BOEM must go back and actually examine the impacts of the wind farm on a species-by-species basis using the most up- to-date models and telemetry data. BOEM must also be transparent about uncertainties and gaps in the data and adopt a precautionary approach where endangered and protected species are at risk.	BOEM's Final EIS analyzes impacts on terrestrial and marine wildlife from the construction, O&M, and decommissioning of the SouthCoast Wind Project. Each of the relevant biological resource sections in Chapter 3 identifies the species present in the affected environment and then describes the types of impacts that would occur. Where impacts are similar, species are generally grouped to avoid redundant and repetitive discussions. For example, increased onshore construction traffic would result in similar types of impacts on terrestrial wildlife from collisions and avoidance behavior. A species-by-species analysis would result in significantly longer, redundant environmental analysis and is

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		not required by NEPA. Federally listed species are addressed in more detail in BOEM's BAs to USFWS and NMFS.
BOEM-2023-0011-0117-0010	Assumption of Habitat Replacement: BOEM minimizes the impacts of the project on marine life, birds, and bats by insisting that other habitats are available elsewhere; however this does not account for the fact that many species affected by SouthCoast Wind exhibit high site fidelity and as a result may be less likely to simply move elsewhere. It also fails to account for the cumulative impact of the other projects in the lease area and how interactions between stressors might preclude the species from utilizing the "replacement" habitat. BOEM must fully examine the impacts on wildlife that will occur from the loss of habitat particularly on those species that exhibit high site fidelity exhibit the location and availability of alternate habitats and offer concrete evidence to support its assumptions that the impacts will be "minor" due to the existence of other suitable habitats.	In the absence of references to specific text in the EIS or examples of species that may not be able to move to avoid Project impacts, it is unclear to BOEM what information the commenter believes is inaccurately described. Within the EIS, BOEM appropriately analyzed and disclosed the potential for wildlife to temporarily leave an area during construction activity. Following the conclusion of the activity, species may return to the area. For example, following HDD activities at landfall sites, the cable ducts will be buried and there will be limited permanent aboveground infrastructure that would prevent a species from returning to the area. In regard to cumulative impacts, BOEM analyzes cumulative impacts from the SouthCoast Wind Project in combination with other ongoing and planned activities, including other offshore wind projects, in each biological resource section. For example, in Section 3.5.1, BOEM describes how habitat removal from onshore infrastructure would cumulatively reduce potential habitat for bats but that the overall amount of disturbance would be minimal. Federally listed species are addressed in more detail in BOEM's BAs to USFWS and NMFS.

N.6.9 Finfish, Invertebrates, and Essential Fish Habitat

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BOEM-2023-0011-0038-0001	The BOEM Cumulative Environmental Impact Statement of these 27 wind farms acknowledged moderate effects on fisheries and marine mammals (especially North Atlantic Right whales) while ignoring recent scientific research and monitoring endeavors by other state/Federal agencies. For example the migration and proliferation of Black Sea Bass populations into southern New England is likely to be enhanced by the offshore wind farm infrastructure. This	The *presence of structures* IPFs in Sections 3.5.5.3 and 3.5.5.5 have been revised to include a more in-depth discussion on the potential effects of offshore wind farms on primary productivity. This includes findings from a recent (2024) report by NASEM, which evaluated the potential of offshore wind farms to alter the hydrodynamic processes and productivity in the Nantucket Shoals region of the North Atlantic. The report concluded that hydrodynamic impacts

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	species is a voracious pelagic predator which could alter other marine wildlife prey and the the overall pelagic food chain. The NOAA/NEFSC Population Dynamics Branch had to receive input last Summer from saltwater anglers and commercial fishermen on the abundance/distribution of this species north of Chesapeake Bay (since they are not adequately monitored by the Bottom Trawl Survey Program). North Atlantic right whale distribution in space and time in New England waters tends to follow their large zooplankton prey (Calanus finmarchicus) which are impacted by warming inshore waters. As the EMaX research project illustrated the grazing food chain is being replaced by the microbial food web in the Gulf of Maine which will reduce the yield of finfish and shellfish; marine mammals; seabirds and sea turtles.	from offshore wind projects adjacent to Nantucket Shoals will likely be difficult to distinguish from the ongoing effects of climate change currently occurring in this region. While it is possible that offshore wind farm infrastructure could provide suitable habitat for black sea bass and other structure-oriented finfish, more research is still needed to determine how the shift in fish distributions, caused by the offshore wind infrastructure reef effect, impacts trophic dynamics.
BOEM-2023-0011-0106-0004	All Offshore Service Platforms proposed not just the one modeled must be included in an evaluation of the effects of those systems upon the lease area and the zooplankton larvae young of the year and spawning stock biomasses of stocks within the lease area cumulatively for the life of the project. Releasing millions of gallons of seawater as 90 degree effluent is not benign to a fragile ecosystem that supports sustainable fisheries in the region. In addition all effects to the zooplankton that the North Atlantic Right Whale forages upon with the addition of five cooling water intake ESPs must be analyzed for the life of the project.	As stated in the EIS, SouthCoast Wind has selected an HVDC converter OSP design for Project 1. The EIS describes the effects from the HVDC converter OSP supported by modeling data from SouthCoast Wind's NPDES permit application. As noted in Section 3.5.5.5 (and other parts in the Final EIS), if additional HVDC converter OSP(s) are selected for Project 2, the parameters and impacts described for Project 1 are representative of those additional OSP(s) for Project 2. Therefore, the EIS captures the full extent of impacts if multiple HVDC converter OSPs are selected by SouthCoast Wind. Furthermore, if SouthCoast Wind selects HVDC as the technology for Project 2, they would be required to obtain a NPDES permit.
BOEM-2023-0011-0112-0024	The discussion of impacts of an HVDC converter station under Alternative B seems to hedge as to whether HVDC would be used (vs. HVAC) for export cabling. The proposed action clearly indicates that HVDC would be used for the Brayton Point offtake so this language in the fish invertebrates and EFH impacts analysis (page 3.5.5-40) should be more definitive.	Additional language has been added to Section 3.5.5 (discharges/intakes) and Section 3.5.5.9 explaining the selected design of HVDC converter OSP for Project 1 and the potential for HVDC converter OSP for Project 2.

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BOEM-2023-0011-0112-0025	The analysis for both Alternatives B and F includes very little discussion of the converter station locations and how different locations might reduce impacts due to entrainment and impingement beyond stating that these stations will be sited outside "an area of high productivity and foraging value for several marine species" (page 3.5.5-40). Also discussion related to avoidance of open loop cooling systems as a mitigation measure under Alternative F is confusing; our understanding is that at present there is not an economically or technologically feasible closed loop cooling system. The mitigation measure would more accurately be framed as no conversion stations can be located within the enhanced mitigation area near Nantucket Shoals.	SouthCoast Wind has committed to siting the northernmost HVDC converter OSP outside of a 6.2-mile (10-kilometer) buffer of the 30-meter isobath from Nantucket Shoals, which is an area of high productivity and foraging value for several marine species. The indicative location of the northernmost HVDC converter OSP (associated with Project 1) is presented in Appendix B, Figure B-2. As stated in Section 3.5.5.5, if SouthCoast Wind selects HVDC technology for Project 2, the parameters and modeling results from the NPDES permit application for Project 1, which are described in detail in the Final EIS, would be representative of a HVDC converter OSP for Project 2 located in the southern portion of the Lease Area (exact location to be determined). It is unclear what mitigation measure under Alternative F the commenter is referring to. The BOEM and agency-proposed mitigation measures for finfish, invertebrates, and EFH would be applicable to all alternatives and are described in Section 3.5.5.11.
BOEM-2023-0011-0112-0027	The fish invertebrates and EFH impacts analysis for Alternative E would benefit from a table comparing the acreage of installed structures habitat conversion and scour protection for each foundation type. Since our understanding is that up to two foundation types could be used together such a table could include calculations assuming two foundation types in equal proportions in addition to estimates for all of one foundation type. This same table could be used to show further reductions in acreage associated with Alternative D which removes foundations near Nantucket Shoals. These calculations must account for the range of turbine sizes being considered under the project design envelope.	A table showing the acreage of additional benthic disturbance for Alternatives E-1, E-2, and E-3 compared to the Proposed Action has been added to Final EIS Section 3.5.5.8, and text on benthic disturbance has been revised. Because Alternative E is specific to the scenarios where only one foundation type would be used throughout the Lease Area, the discussion in this section is presented as such.
BOEM-2023-0011-0112-0028	The fish invertebrates and EFH impacts analysis for Alternative F is extremely limited. The DEIS describes potential differences in EMF effects for HVAC and HVDC cables (page 3.5.5-25) but the analysis of Alternative F does not discuss the implications of switching from HVAC to HVDC cables on	Additional detail regarding benthic impacts, entrainment/impingement and thermal plume impacts from the HVDC converter OSP, and EMF impacts associated with AC versus DC cables for Alternative F have been added to Final EIS Section 3.5.5.9.

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	electrosensitive or larval fish. This analysis should provide more details on cable routes relative to habitat type in Muskeget Channel (text and maps) and describe specifically how changes to the export cable configuration will avoid impacts to certain habitat types.	
BOEM-2023-0011-0112-0029	The discussion of the NEFMC Habitat Area of Particular Concern (HAPC) is outdated and should be updated in the FEIS to reflect the NEFMC's selection of a preferred alternative during its June 2022 meeting. The DEIS states that "An HAPC designation has been proposed for complex habitat and Atlantic cod spawning which would expand existing Atlantic cod HAPC and could potentially overlap with the Project Area" (page 3.5.5- 19). The FEIS should also clarify that this new HAPC is not an extension of an existing HAPC for cod spawning rather a new designation and would directly overlap SouthCoast Wind's project area. Per the Southern New England HAPC Framework document (Hyperlink: https://www.nefmc.org/library/southern-new-england-habitat-area-of-particular-concern-hapc-framework) the HAPC is defined as the presence of cod spawning and complex habitat within areas where offshore wind development is being planned and/or constructed. The spatial extent of this habitat area is limited to offshore wind lease areas given that impacts associated with offshore wind development are of significant concern to the NEFMC. We anticipate the HAPC may be approved in June or July 2023 by NOAA Fisheries and as a non- regulatory area the designation would take immediate effect.	Final EIS Section 3.5.5.1, *Essential Fish Habitat*, has been updated to describe the Southern New England HAPC as presented in NEFMC (2023). The discussion on HAPCs has been expanded to further describe the HAPCs potentially affected by Project activities.
BOEM-2023-0011-0112-0030	We are concerned that construction in this project area could impact spawning activity for Southern New England Atlantic cod. It is possible that cod will not aggregate due to construction activities and their vocalizations may therefore be reduced. Research by the Massachusetts Department of Marine Fisheries found that relatively minor disturbances from gillnet fishing interrupted the development of cod	A discussion on the potential impact of cod spawning has been added to Final EIS Section 3.5.5.5 under the *noise* IPF.

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	spawning aggregations (Dean et al. 2012); it is reasonable to expect construction activities may do so as well. [Footnote 5: Dean M. W. Hoffman and M. Armstrong (2012). "Disruption of an Atlantic Cod Spawning Aggregation Resulting from the Opening of a Directed Gillnet Fishery." North American Journal of Fisheries Management 32: 124-134.] A recently published BOEM-funded study indicates that cod spawning in Southern New England is concentrated during November and December (Van Hoeck et al 2023). [Footnote 6: Van Hoeck R.V. Rowell T.J. Dean M.J. Rice A.N. and Van Parijs S.M. (2023) Comparing Atlantic Cod Temporal Spawning Dynamics across a Biogeographic Boundary: Insights from Passive Acoustic Monitoring. Mar Coast Fish 15: e10226. https://doi.org/10.1002/mcf2.10226]While the analyses in this publication focused on areas on and around Cox Ledge our understanding is that more recent acoustic sampling for this ongoing project has included areas further east. The absence of published evidence for cod spawning activity within the SouthCoast lease does not preclude the possibility that cod spawn in the project area. In addition cod could be moving through the lease area as they approach spawning grounds on and around Cox Ledge or Nantucket Shoals. The FEIS should evaluate the potential impacts of this area on cod spawning activity using 2022-2023 data from this study if available. The DEIS describes acoustic impacts to fish of the proposed action in general but does not discuss cod spawning specifically.	
BOEM-2023-0011-0112-0042	The DEIS suggests that hydrodynamic effects and disturbances on benthic resources will result from the project mainly from wind wakes but also from the presence of structures in the water (page 3.4.2- 13); however we are concerned that their extent may be underestimated. For example the presence of structures could impact the Mid-Atlantic Cold Pool causing changes in temperature mixing larval transport of important commercial and recreational fish species (e.g. sea scallops) and temperature corridors used for migration for multiple	A study by BOEM that included oceanographic sampling within the Lease Areas in the offshore waters of Massachusetts and Rhode Island (O'Brien et al. 2021) found no evidence that the cold pool feature occurred within this geographic region. "The seasonal evolution of temperature did not suggest the existence of a cold pool in the study area; the cold pool is a common feature of continental shelves in which very cold leftover winter water near the bottom becomes isolated from the surface due to surface warming

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	important fishery species. [Footnote 8: https://tethys.pnnl.gov/sites/default/files/publications/Assessing_potential_impacts_offshore_wind_sea_scallop_laval_juvenile_transports.pdf] This is an area of ongoing research. [Footnote 9: For example two reports on potential impacts of offshore wind energy development on the Cold Pool are available at the following links: https://scemfis.org/wp-content/uploads/2021/01/ColdPoolReview.pdf; https://rucool.marine.rutgers.edu/wp-content/uploads/2020/10/PartnersWorkshop_WhitePaper_Final.pdf] The FEIS should clearly document what is known about potential impacts to the Cold Pool and resulting potential impacts to marine species and fisheries. The FEIS should acknowledge data gaps and ongoing research and should fully consider potential impacts resulting from this project as well as cumulative impacts from all planned wind energy projects throughout the region.	and therefore remains cold. The bottom waters in the study area warmed from < 5°C in winter to > 10°C by the beginning of summer, suggesting that this area is either too shallow or advection from neighboring shallow areas (e.g., Nantucket Shoals) is too strong to support the formation or maintenance of a cold pool" (O'Brien et al. 2021).
BOEM-2023-0011-0112-0050	Impacts of electromagnetic fields (EMF) on fishery species are a concern to the fishing community. For example studies have suggested that EMF can result in changes in behavior movement and migration for some demersal and pelagic fish and shellfish species. [Footnote 11: https://greenfinstudio.com/wp-content/uploads/2017/10/GreenFinStudio_EMF_MarineFishes.pdf] The DEIS states that the project will "use cable shielding materials to minimize effects of EMFs" (page G-14) and "consider use of cable shielding materials to minimize potential but unlikely effects of EMF" (page G-30). The extent to which EMF may or may not impact marine species including the differences between alternatives that use different types and amounts of cables (Alternative F with HVDC cables routed to Falmouth vs. the proposed action Alternative B using HVAC cables) must be thoroughly described in the FEIS.	Final EIS Section 3.5.5.5 (Proposed Action) and Section 3.5.5.5 (Alternative F) have been revised with additional discussion and references to studies regarding the differences in AC and DC cable EMFs and their effects on finfish and invertebrates. Please refer to response to comment BOEM-2023-0011-0070-0014 for additional information.
BOEM-2023-0011-0117-0011	Plankton Bloom Alteration: Increased stratification and temperature changes described by the HDM studies will alter	Section 3.5.5.1 details zooplankton habitat within the Project area. Additionally, Sections 3.5.5.3 and 3.5.5.5 include

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	both the amount and the timing of plankton blooms. This can have downstream effects on migratory species that arrive in exquisite timing with seasonal blooms. Studies from both China and the North Sea demonstrate that offshore wind projects can reduce plankton counts (Daewel 2022) decrease biodiversity (Wang 2022) and alter the distribution of plankton blooms (Slavik 2018). A mere 1% decrease in phytoplankton will cause an increase in CO2 emissions that outweighs any possible benefit from renewable energy sources (Malerba 2019). The SouthCoast Wind DEIS calculates the construction and installation will kill billions of plankton. BOEM does not adequately consider the cumulative effect the interactions between primary production and other species the impact of primary production on CO2 emissions and O2 production (Falkowski 2012) nor does it incorporate the latest scientific findings from the North Sea and China. Please rectify this omission.	summaries of potential impacts on zooplankton, their habitats, and primary production during construction and installation, O&M, and conceptual decommissioning of the Project.
BOEM-2023-0011-0117-0013	Deoxygenation: Deoxygenation in the lower-level water layer occurs in wind farms (Daewel 2022). Deoxygenation can cause large-scale fish die-offs. BOEM does not adequately consider the impact of deoxygenation on fisheries. This project is not consistent with the conservation of biodiversity and marine life implied in the Executive Order.	Section 3.5.5.5 addresses the potential for lowered dissolved oxygen saturation levels as a result of increased water temperature due to the HVDC converter OSP. The analysis concludes the impact on fish would be minor.
BOEM-2023-0011-0117-0016	EMFs: The DEIS minimizes the impact of EMFs and only considers local impacts. EMF's could mask the ability for EMF-sensitive species to appreciate the earth's electromagnetic field. Sharks and other long-range migratory species use the earth's magnetic field to navigate. If local EMF's overwhelm the faint alterations in the earth's magnetic field that alert species to their location then the project could devastate their ability to navigate find found sources and procreate. BOEM needs to consider the EMFs from a more global perspective.	Final EIS Section 3.5.5.5 (Proposed Action) has been revised with additional discussion and references to studies regarding the impacts from AC and DC cable EMFs on finfish and invertebrates. Please refer to response to comment BOEM-2023-0011-0070-0014 for additional information.
BOEM-2023-0011-0123-0014	According to the NOAA Fisheries EFH mapper (available at https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3) the Sakonnet River is documented as:	Text describing Alternative C in the Executive Summary, Chapter 2, and other relevant sections in the Final EIS has been revised to indicate that the Sakonnet River supports

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	• Juvenile Atlantic cod Habitat Area of Particular Concern (HAPC) under the New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment 2 • Summer flounder HAPC (due to submerged aquatic vegetation) by the Mid-Atlantic Fishery Management council • Essential Fish Habitat (EFH) for the following 28 species' life history stages:[See original attachment for table of species life history stages]? The DEIS incorrectly states that the Sakonnet River supports EFH for only 16 species.	EFH for several fish and invertebrate species at varying life stages including HAPCs for summer flounder and Atlantic cod. BOEM has reviewed the latest information on EFH (Table 3.5.5-1) for the Sakonnet River, and the river supports EFH for 32 fish and invertebrate species.
BOEM-2023-0011-0123-0015	Furthermore a detailed analysis of potential impacts to all life history stages of Atlantic cod and winter flounder are not currently but should be included in the Final EIS. • Narragansett Bay has been identified as a settlement and nursery area for early stages of Atlantic cod until late spring temperatures increase. Southern New England Atlantic cod numbers appear to be increasing but may be limited due to warming water temperatures (Langan et al. 2020). Due to this project and others that may be permitted in Atlantic cod EFH minimizing impacts to Atlantic cod nursery grounds like Narragansett Bay is critical.	More detail on the potential impacts from cable emplacement and maintenance for Alternative B has been added to Section 3.5.5.5. This information provides more context regarding the impacts to which species within the Sakonnet River and Mount Hope Bay would be exposed.
BOEM-2023-0011-0123-0016	While winter flounder have been in decline in recent years Sakonnet River larval densities have been some of the highest sampled in Narragansett Bay (McManus et al. 2021). The DEIS states that winter flounder eggs are particularly sensitive to sedimentation as described by Berry et al. (2011). Further discussion on potential impacts to winter flounder life history stages should be presented within the document.	Please refer to response to comment BOEM-2023-0011-0123-0015.
BOEM-2023-0011-0123-0022	DC and AC cables should not be considered comparable when determining impacts as fish may perceive static and alternating magnetic fields differently (Rommel and McCleave 1973a).	Final EIS Section 3.5.5.5 (Proposed Action) has been revised with additional discussion and references to studies regarding the impacts from AC and DC cable EMFs on finfish

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	• Various elasmobranchs (e.g. smooth dogfish and blue sharks) and teleost fish (sea lamprey American eels and Atlantic salmon) are all thought to be able to sense electric fields at low levels (Heyer et al. 1981; Kalmijn 1982; Rommel and McCleave 1973b).However it is presently unknown whether behavioral changes will result from detected AC electromagnetic fields. Behavioral responses of American lobster and little skates have been documented in response to DC electromagnetic fields emitted by two high- voltage DC cables: increased foraging/exploratory behavior in skates and a subtler exploratory response in lobsters (Hutchison et al. 2018; Hutchison et al. 2020). • The impacts of induced electromagnetic fields are expected to be greater for cartilaginous fish because they use electromagnetic signals to detect their prey (Bailey et al. 2014; Gill 2005; Gill and Kimber 2005; Bergstrom et al. 2014). • Other fish may also be affected by interference with their capacity to orient in relation to the geomagnetic field potentially disturbing fish migration patterns (Metcalf et al. 2015) and ultimately disturbing their habitat.	and invertebrates. Please refer to response to comment BOEM-2023-0011-0070-0014 for additional information.
BOEM-2023-0011-0123-0023	RIDEM's Division of Marine Fisheries is conducting a study funded by Revolution Wind LLC on the Revolution Wind HVAC cables to be installed within Rhode Island state waters (Narragansett Bay's West Passage). Findings from this study will be informative with respect to HVAC cable impacts on American lobster and Jonah crab. However additional studies will be needed in the Sakonnet River on the HVDC cables to be installed as part of the SouthCoast Wind Farm to understand impacts to other species from the DC cables.	Please refer to response to comment BOEM-2023-0011-0070-0015.
BOEM-2023-0011-0136-0044	The entrainment of [Bold: almost 4 million] Atlantic herring larvae during a time the stock is under a rebuilding plan and biomass is showing a steady downward trajectory seems inappropriate. To the extent the diet of the adult Atlantic	Section 3.5.5.5, discharges/intakes has been included with additional data and information from the NPDES permit application for the SouthCoast Wind Project 1 HVDC

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	herring influences its fecundity potential impacts on zooplankton and other food sources needs to be accounted for as well. [Bold: We recommend additional analysis on entrainment potential and impacts to ALL stocks which may be entrained.] Analysis of stock level impacts resulting from entrainment can then inform potential fishery and ecosystem impacts from those impacts.	converter OSP, including estimates of entrainment for various stock.
BOEM-2023-0011-0137-0006	It is an insufficient inquiry to estimate the relation between sound pressure levels (noise intensity) emitted underwater by operational turbines and turbine size by the use of a least squares estimation on a data set whose representative "small" turbines have gear box drives and whose representative "larger" turbines have a different type of (quieter) drive called direct drives [as the DEIS has done pg. 3.5.5-48]. Using quieter direct drive to represent larger turbines and examining the relationship between turbine size and noise by comparing these to smaller turbines with a drive type known to generate higher noise level (relative to direct drive of the same size) obviously expected to result in gross error in the quantification of the relationship of noise to size underestimating it when a new size turbine is input to predict the noise. The DEIS appears to recognize the impropriety of this but includes the improper analysis anyway and then attempts to apply a "fix" by claiming its off by about 10 decibels (per micro pascal reference). As to the meaning of this for the turbine size(s) expected to be used in the subject project (which are 15 MW[Footnote 35: BOEM states in the DEIS "BOEM determined the use of a 15 MW [turbine] for Phase 1 is a reasonable assumption based on the PDE in the COP and RFI responses from Mayflower Wind."] substantially larger than block island's 6-MW turbines) is unclear BOEM not only does not support its position but does not have one.If there are turbines in use off the shores of other countries that are much closer in size (to the size proposed to be used in the subject project) then why has the sound pressure levels of such turbines not been empirically measured by the	Operating noise for WTGs installations with capacities of 10 MW or greater have yet to be studied. A full description of the best available information regarding current operational noise levels, and potential noise levels as WTGs are scaled up is provided in Final EIS Section 3.5.6.5. Measuring sound levels associated with operating turbines and other anthropogenic activities will be part of the monitoring required for the Project. See MA-2 in Appendix G.

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	SouthCoast/Mayflower developer who has submitted the COP or by the Bureau? Obtain empirical measurement of the actual sound signature profile (loudness v frequency) at various underwater distances from a turbine of like size and drive type to those planned for the subject project.	
BOEM-2023-0011-0137-0008	The conclusion in the Mayflower/SouthCoast DEIS that the combined noise of a few neighboring operating turbines "is lower than is generated by cargo ship" refers to a study concerning consideration of smaller turbines that have a 6 MW nameplate capacity not 15 MW-capacity turbines.The comparison is an invalid one. Even if—for argument's sake—the turbine size comparison were not invalid and the conclusion could be reached cargo ships come and go; They do not anchor in quantities of thousands 1 nm apart running their engines parked in a grid array formation over an expansive 826241-acre area[Footnote 36: See https://www.boem.gov/renewable-energy/state-activities/massachusetts-leases-ocs-0500-bay- state-wind-and-ocs-0501#:~:text=The%20Call%20Area%20was%20locatedwell%20as%2019%20partial%20blocks ; https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/MA_AreaID_Announcement_052412_Final.pdf for twenty four hours a day 365 days a year every year for 35 years.	Please see the response to comment BOEM-2023-0011-0137-0006.
BOEM-2023-0011-0137-0047	BOEM's position that because ocean itself generates and serves as a medium for infrasound the addition of mechanical infrasound-generators (many turbines) will not have significant advserse effect is a conclusory and not supported. Fish detect the relative velocity of layered ocean currents via their perception of infrasound. Hydrodynamic noise generated by swimming fishes is mainly in the infrasound range and may be important in courtship and in predator-prey interactions. Intense infrasound has a deterring effect on	BOEM acknowledges hearing sensitivity in fishes is generally considered to fall along a spectrum. While some species can detect ultrasonic (Mann et al. 2001), more fishes detect sound in the infrasound range (Enger et al. 1993), and most fishes in the audible range (Ladich and Fay 2013). The evaluation of potential impacts from noise in Section 3.5.5.5 was made based on the best available science. Based on this evaluation, a determination was made that the noise from

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	some species and is under commercial development for use as a “fish fence” an invisible acoustic barrier to fish passage. Acute sensitivity to infrasound is common in fish.	the proposed Project would have moderate adverse impacts on finfish, invertebrates, and EFH. The ability of marine invertebrates to detect particle motion and the impacts from the proposed Project are detailed in Sections 3.5.5.3 and 3.5.5.5 of the EIS.
BOEM-2023-0011-0137-0073	The DEIS fails to consider that both sound and substrate particle motion causes serious adverse effects to benthic invertebrates ignores many of the most likely mechanisms of serious adverse effects and instead quite oddly focuses its attention on minutial potential effects such as an anchor falling onto a benthic animal. The DEIS estimation on the effect of the proposed action on invertebrates is capricious using hearing damage thresholds for fishes and invertebrates from studies written before most of the studies demonstrating sound can damage hearing apparatus were conducted. Perhaps far more importantly the diversity of cilia-based mechanosensory systems and their functions in marine animal behavior is astounding [See Bezares-Calderón Berger and Jékely 2019. Diversity of cilia-based mechanosensory systems and their functions in marine animal behaviour. 30 December 2019. Royal Society Publ. https://doi.org/10.1098/rstb.2019.0376]. The potential for operational noise noise produced during pre-construction surveys and noise from pile driving to cause harm to cilia and ciliated structures as well as organs specific to invertebrates have not even been considered.[Underline: It is the ultimate in Anthropomorphosis to] in the consideration of impacts to other taxa of operation of the site characterization equipment expected to be operated on the proposed lease sites [Underline: focus on hearing and hearing apparati]. Like the hair cells in vertebrate hearing apparati and like the hair cells in lateral-line neuromasts in fishes a variety of ciliated cells in a wide range of aquatic organisms located in different parts of the bodies of organisms and their organs serving different purposes are structurally similar to the iconic vertebrate auditory hair cell and just as easily damaged by “sound”.	Please see the response to comment BOEM-2023-0011-0137-0047.

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BOEM-2023-0011-0137-0079	It should also have been explored what damage is expected to result from water-borne particle motion[Footnote 9: Discussion Paper on Particle Motion – Inch Cape Wind Farm by Graeme Cook October 13 2017] rather than sound pressure levels per se; Zhang et al. (2015) models the sensory capabilities of cephalopods and states that particle motion could cause irreparable damage to the statocyst. Particle motion levels exceeding 0.27 ms-2 were considered sufficient for such irreparable damage to potentially occur [Zhang 2015]. Zhang anticipated this to occur at short range. However seismic waves can be carried over the seabed. Near a seabed carrying seismic waves theoretically the evanescent component of the wave can induce high particle velocities in the overlying water without corresponding sizable rises in acoustic pressure. [Footnote 10: bottom of pg.8 §3.2.1. of Nedwell Edwards Turnpenny (Fawley Aquatic Research Laboratories) and Gordon (Ecologic) 2004. Fish and Marine Mammal Audiograms: A summary of available information Subacoustech Report ref: 534R0214. https://tethys.pnnl.gov/sites/default/files/publications/Nedwell-2004-Audiograms.pdf] The evanescent wave will only affect animals in contact with or near the seafloor since past one wavelength elevation from the seafloor they drop off profoundly but the internally reflecting waves in the substrate that generate them can propagate along (within) the seabed. Surface roughness and other characteristics of the seafloor would interfere with internal reflection.However that propagation of energy along the sea floor and translating into particle motion (of each substrate and water) affecting benthic animals should be a consideration for both use of site characterization equipment and for turbine operations. [Footnote 11: Pouliquen Lyons Pace 1998. Penetration of Acoustic Waves Into Sandy Seafloors at Low Grazing Angles: The Helmholtz-Kirchhoff Approach 1998. NATO SCALANT Undersea Resesarch Center. Report no. SR-290 formerly SR-290-UU revised March 2006.] Where the substrate is flexible	Additional text has been added to Final EIS Section 3.5.5.5 detailing cephalopod sensitivity to noise and potential damage to statocysts.

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	sholte waves propagate through the substrate and can produce small but powerful circular movement in the substrate[Footnote 12: Waves travelling within the substrate where the second (less dense) medium is liquid are called Sholte waves; the more commonly used name for them is Rayleigh waves appropriate when the second medium is a vaccum. [See e.g. Akal 2001. Acoustics in Marine Sediments: Seismo-acoustic Waves in the Vicinity of the Water– Sediment Interface in Encyclopedia of Ocean Sciences (Second Edition) John H. Steele Ed. 2001 ISBN 978-0- 12-374473-9]].	
BOEM-2023-0011-0137-0099	Substantial consideration needs to be given to particle acceleration values not simply sound pressure (Suga et al. 2005) in determining the impact of sound on bony fishes. Action potential responses need to be recorded from both auditory and lateral line inputs. The relative contributions of these two systems to whole-brain processing is expected to influenced the acceleration (but not the pressure) audiogram shape.The Lance can swim tail first and does so to shoot itself tail-first into the sand lodging there with its head and gills sticking out. It is dependent on soft ocean bottom. Unusually for marine organisms is a highly visual creature and is also a model for study of the lateral line. The Lance is a priori reasonably expected to be far more adversely impacted than other fishes (whose habitat is exclusively the water column) to particle motion transmission through the substrate which may propagate vibrations with less attenuation further than water-borne particle motion. Thus particle motions vibrations may be detectable over a greater distance and have greater biological meaning to the lance. The Mayflower (SouthCoast) Wind treatment of sand lance in the DEIS is inadequate.	BOEM acknowledges hearing sensitivity in fishes is generally considered to fall along a spectrum. While some species can detect ultrasonic (Mann et al. 2001), more fishes detect sound in the infrasound range (Enger et al. 1993), and most fishes detect sound in the audible range (Ladich and Fay 2013). The evaluation of potential impacts from noise, including particle motion, in Section 3.5.5.5 was made based on the best available science. Based on this evaluation, a determination was made that the noise from the Project would have moderate adverse impacts on finfish, invertebrates, and EFH. Text has been added in the *noise* IPF discussion of Section 3.5.5.5 stating how there is a lack of knowledge on the effects of substrate vibration and particle motion on fish and invertebrates that live close to or within the substrate (Hawkins et al. 2021), such as sand lances.
BOEM-2023-0011-0137-0101	Physiological and behavioral responses of these fishes to site characterization activities pile driving [Bold: and to habitat degradation from substrate vibration from operating turbines needs to be measured in empirical studies on sand lance]. Guesses at expected effects of sound based on audiograms	BOEM acknowledges that the effects of operating noise for WTGs installations with capacities of 10 MW or greater need to be researched further to address outstanding questions. Continuous low-frequency noise from operating WTGs would persist during the operational life of the proposed Project.

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	derived from SPL measurements only are grossly insufficient to conclude minor impacts.	The particle motion component of sound from operating WTGs could be below hearing thresholds for some fish species based on a study at the Block Island Wind Farm (Elliot et al. 2019). However, WTG sizes and capacities are expected increase to meet generation goals.
BOEM-2023-0011-0137-0102	Before large-scale wind turbine power plants are permitted to be developed in large areas of the OCS there needs to be a good understanding of distribution of Ammodytes and the factors influencing its distribution as well as experiments or empirical observations of physiological and behavioral responses of Ammodytes to the actual operational noise of wind turbines including both the effects of the unique sound signature produced (as measured by both SPL and particle acceleration measures) that is carried through water and also via transmission of vibrations through the mast and across the substrate which particle motion the lance could be particularly subject as it regularly partially is buried in soft substrate. The effect of stress on lance energy budgets should be examined. Energy budget for one species of lance established from data collected between 1977 and 1986 [Gilman S. L. 1994. An energy budget for northern sand lance Ammodytes dubius on Georges Bank 1977-1986. Fishery Bulletin 92(3) 647- 654. https://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1303&context=gsofacpubs]The sampling performed to establish Ammodytes density is very much appreciated and shows better due diligence in determining presence of ecologically important species than other developers and EISs in the offshore wind program. However due to the presence of Ammodytes in the lease area and landward areas near it and due to the unique relationship between Ammodytes and the substrate empirical studies on habitat loss and degradation from substrate vibration due to operating turbines should be performed as well as sholte wave modelling to get a clearer picture of effects on Ammodytes prior to project approval.	BOEM acknowledges that the effects of operating noise for WTGs installations with capacities of 10 MW or greater need to be researched further to address outstanding questions. Continuous low-frequency noise from operating WTGs would persist during the operational life of the proposed Project. The particle movement component of sound from operating WTGs could be below hearing thresholds for some fish species based on a study at the Block Island Wind Farm (Elliot et al. 2019). However, WTG sizes and capacities are expected increase to meet generation goals.

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BOEM-2023-0011-0137-0119	Evaluation of harm via noise often expresses the frequencies of sound emitted by the site- characterizing equipment or operating turbines as a single frequency or narrow band to characterize the dominant frequency. For example the operational frequency of an AA Duraspark Sparker dominant frequency may be 1.2 kHz but the operational frequency of sound emitted by this sparker is in the range of 0.3 kHz– 1.2 kHz[Footnote 8: The operational ranges for these devices were provided by NOAA [See FR Vol 86 No. 68 Pages 18943-1896]. It is not reasonable to limit the inquiry of evaluation of impacts to marine life from operation of this equipment to the frequency show in Table 6 of the DEA.]. Likewise noise in frequencies other than the dominant frequencies produced is typically disregarded. This causes expected effects of use of equipment or operation of turbines to be left unexplored in the DEIS. Even short exposure to relatively low-intensity sound of frequency 0.4 kHz (430 Hz) has been shown to be devastating to Cephalopods.	Additional text has been added to Final EIS Section 3.5.5.5 detailing cephalopod sensitivity to noise and potential damage to statocysts.
BOEM-2023-0011-0140-0090	BOEM has not conducted a separate analysis on the extent to which the noise generated by the Project's construction and operations activities would impact Atlantic cod and specifically spawning cod. In the Final EIS BOEM should include an analysis of the likely noise impacts from construction and operations on Atlantic cod including juvenile Atlantic cod HAPC and Atlantic cod reproduction in complex habitat areas of the Falmouth and Brayton Point export cable corridors. Additionally in the Final EIS BOEM should expand its analysis on the extent to which avoiding pile driving from January 1 to April 30 as proposed by SouthCoast Wind to mitigate impacts to North Atlantic right whales will mitigate noise impacts to spawning Atlantic cod which primarily spawn from December to May in southern New England. In Section IV of these Comments we recommend that BOEM extend the proposed seasonal restriction on pile driving to December to reduce impacts to North Atlantic right whales. BOEM should analyze the extent to which extending pile driving restrictions	Section 3.5.5.1 details Atlantic cod presence and spawning habitat in the offshore Project area. Additional detail has been added to Final EIS Section 3.5.5.5 of to include impacts of underwater noise on Atlantic cod.

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	to December will also mitigate impacts to spawning Atlantic cod. Finally BOEM should expand its analysis of the noise impacts from construction and operations to other spawning fish species in the lease area and export cable corridors.	
BOEM-2023-0011-0140-0126	BOEM has not analyzed the potential impacts of hydrodynamic effects on specific fish populations that spawn in the lease area and in the area of Nantucket Shoals adjacent to the lease area. The Final EIS for SouthCoast Wind should analyze any impacts to spawning fish populations from hydrodynamic turbulence including any particular fish stocks that are known to spawn in the lease area and its vicinity.	Findings from a BOEM study on the effects of hydrodynamic changes from offshore wind farm build-out scenarios in the MA-RI wind energy area on the larval dispersal of Atlantic sea scallop, silver hake, and summer flounder (Johnson et al. 2021) have been incorporated into the *presence of structures* IPF discussion in Section 3.5.5.5.

N.6.10 Marine Mammals

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BOEM-2023-0011-0026-0001	The construction of these projects is in the middle of whale migration and feeding habitats. We know that the testing construction and operation impacts the whales and much more marine life. The planned project violates the Endangered Species Act (16 U.S.C. §§1531-1544) the Marine Mammal Protection Act (16 U.S.C. §§ 1361 et seq.) the Endangered Bald and Golden Eagles Act (16 U.S.C. §§ 668-668d) and the Migratory Bird Treaty Act (16 U.S.C. §§ 703 et seq.) by threatening the existence of fourteen (14) endangered species: four (4) whale species two (2) turtle species one (1) fish species [26] four (4) bird species two eagle species and 1 bat species [27]. Three whale species began to suffer from unabated unusual mortality events (UME's) that began in 2016-2017 [282930]. The conduction of underwater seismic surveys in preparation of offshore wind farm construction coincides with the onset of these UMEs. The ESA and MMPA require agencies both to protect and to promote the recovery of the species. The BOEM DEIS does not adequately address the impact of offshore wind on endangered species mortality or recovery.	BOEM analyzed the potential impacts from the construction, O&M, and decommissioning of the Project on marine mammals in Section 3.5.6, on sea turtles in Section 3.5.7, birds in Section 3.5.3, bats in Section 3.5.1, and finfish in section 3.5.5. See the NMFS BA and USFWS BA for additional information on effects of the Project on ESA-listed species under the ESA and MMPA.

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BOEM-2023-0011-0065-0018	It is also extremely concerning that the effluent will be tainted by bleach. [Footnote 22: DEIS p. 3.4.2-23 24.] We do not agree that the discharge of hot seawater containing bleachL will be "negligible" or "short term". Discharge of an untold and as yet unanalyzed tens of millions of gallons of hot effluent as well as the entrainment of zooplankton fish larvae and other marine resources in the platforms over the life of the project is certainly not "short term". Nor can it be negligible. It is astonishing that BOEM can maintain that offshore wind industrialization is necessary to prevent climate change while its proposed infrastructure will increase water temperature of the ocean far faster than the climate change it is supposedly mitigating. The impacts of this effluent on the specific zooplankton necessary for North Atlantic right whale forage must also be analyzed.	Section 3.4.2 of the EIS states the concentration of sodium hypochlorite release into seawater is equivalent to 0.0002 percent per unit volume. The discharge of warm water with small concentrations of bleach would be negligible and would be oxidized in the water. This analysis is consistent with the NPDES permit application.
BOEM-2023-0011-0079-0002	One of the areas we found concerning was the apparent lack of information regarding the effects this project would have on marine mammals. In Table 4.2-1 from the DEIS for the proposed action regarding irreversible and irretrievable resources the explanation section for marine mammals states that no high-severity behavioral effects are anticipated but there is a lack of information in this field so effects are still possible. Therefore we students find this explanation insufficient and the NEPA process is not followed to satisfaction. How could this conclusion be reached if there is a clear lack of information?	The EIS provides detailed discussions of the Project activities, its potential impacts on marine mammals and its habitat, as analyzed in Sections 3.5.6.3 and 3.5.6.5. SouthCoast Wind is committed to implement several mitigation measures in Appendix G to ensure that Project activities are conducted in a safe and environmentally responsible manner, and that potential impacts on marine mammals, from all phases of the Project, are minimized to the greatest extent. BOEM's analysis of incomplete and unavailable information for each Chapter 3 resource section is presented in EIS Appendix E. When incomplete or unavailable information was identified, BOEM considered whether the information was relevant to the assessment of impacts and essential to its analysis of alternatives based upon the resource analyzed. If essential to a reasoned choice among the alternatives, BOEM determined that the overall costs of obtaining the missing information for or addressing these uncertainties are exorbitant, or the means to obtain it are not known. Therefore, to address these, BOEM extrapolated or drew assumptions from known information for similar species and studies using acceptable scientific methodologies to inform

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		the analysis in light of this incomplete or unavailable information, as presented in Chapter 3, Section 3.5.6.
BOEM-2023-0011-0079-0003	Furthermore we are also concerned regarding the section involving the region's finfish invertebrates and essential fish habitat resources as the explanation states that the populations would recover following decommissioning activities. Therefore this would seem to insinuate that the area around this project would be biologically unproductive while this project is commissioned. If this is true then that would mean the region's whales would lose a healthy swath of their prey's breeding grounds and thereby severely diminish their food resources (2023). In order to alleviate our concerns we ask that the committee in charge of carrying out the completion of the final EIS would look into these grievances and provide evidence to support the claim that the proposed action will have no high-severity behavioral effects on marine mammals and that the whales would also not lose a large portion of their food source.	The Offshore Project area does not occur in any designated critical foraging habitat areas for NARW. Because the proposed Project would not occur in critical foraging habitat, potential behavioral disturbances are not likely to disrupt feeding behaviors, particularly with the proposed seasonal restriction on this activity. Section 3.5.6.1 details the importance of prey distribution for marine mammals and are considered when assessing impacts on marine mammals. Impacts on prey items are considered in Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*.
BOEM-2023-0011-0081-0007	The area planned for construction is a critical habitat for the North Atlantic Right Whale (NARW) of which only 349 members are alive today on the brink of extinction. Deaths happen faster than births. Seismic surveys are associated with whale deaths and the unusual mortality event that began in 2017 has affected 20% of the population. And by the way whales sequester carbon so the loss of a single whale let alone an entire whale species will increase the carbon footprint of this project. This project will inevitably drive threatened whale species closer to extinction.	APMs and BOEM-proposed mitigation to reduce impacts associated with Project activities are described in EIS Appendix G, Attachment G-2. As the death of a single NARW could lead to population-level consequences and the application of mitigation cannot rule out the potential for this effect to occur, this impact is considered moderate to major for NARW.
BOEM-2023-0011-0081-0008	High voltage boomers (3000 V) sparkers (20-200Hz) and multi-beam echo sounders side scan sonars (100-500 kHz) shallow and mid penetration sub-bottom profilers ultra short baseline positioning equipment and marine magnetometers will all be used during the construction project. These will likely cause maladies in whales and other marine animals such as disorientation hearing loss unconsciousness and death. Any of	Studies on noise included in Section 3.5.6.3 represent the best available science and information for evaluating impacts of wind noise on marine mammals. Cumulative noise of operating wind farms is evaluated in Section 3.5.6.3.

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	these symptoms can also increase a marine mammal's risk of ship strikes. BOEM minimizes the impacts of the project on animals by insisting that other habitats are available elsewhere. However this fails to account for the cumulative impact of the other projects in the area and how many species will die simply because they are creatures of habit and will have no other places to go.	
BOEM-2023-0011-0088-0002	One concern is that the acoustic impact on endangered species like North Atlantic right whales is overly focused on the construction phase rather than the O&M phase. Although the devastating acoustics of pile-driving and trenching cease after construction the noise of turbine operation coupled into the water is enduring. The DEIS attempts to downplay the impact of operational noise by comparing it to other anthropogenic sources of underwater noise as from vessels. But those anthropogenic sources are largely transient; passing ships continue on their way. But the underwater noise generated by WTG's is constant 24/7 static in location and the effects are cumulative. The very lives of whales and other marine mammal depend on their hearing which could be irreparably impaired by the noise of several hundred WTG's being injected into the waters they inhabit. Yet the "takes" requested seem to only consider the noise-intense phases of construction.	Studies on operational noise in existing wind farms, along with studies evaluating the relationship between sound levels and turbine power, represent the best available science and information for evaluating impacts of operational wind noise. These studies are summarized in Section 3.5.6.3. Operating wind turbine noise associated with the Proposed Action is evaluated in Sections 3.5.2, 3.5.5, 3.5.6, and 3.5.7.
BOEM-2023-0011-0117-0009	Biodiversity Threatened: Executive Order 14008 mandates that the federal government support renewable energy projects that "conserve our land waters and biodiversity." Mortality risk to endangered species potential introduction of invasive organisms and known anticipated degradation of coastal marine habitat from the Project will all threaten biodiversity violating Executive Order 14008's mandate. Moreover given the health consequences of biodiversity loss expansive wind farm installations could violate the internationally recognized Human Right to Health (UN 2000).	The introduction of invasive species as a consequence of ballast water and bilge water discharges from marine vessels is unlikely to occur under the Proposed Action. SouthCoast Wind would comply with several regulatory requirements, protocols, and applicant-proposed measures to prevent any accidental discharges and release of contaminants, and consequently, the loss of biodiversity from the introduction of invasive species. SouthCoast Winds' suite of applicant-proposed and agency-proposed mitigation measures (Appendix G) would be implemented to avoid, minimize, and

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	The federal government has an obligation under international human rights law to protect biodiversity as an important factor in human health (Hamley 2022). Wind energy has documented risks to biodiversity (Voigt 2019). The BOEM DEIS does not incorporate the latest scientific findings from the North Sea on biodiversity loss nor does it address the relationship between biodiversity loss and human health. The BOEM DEIS fails to consider biodiversity loss in evaluating the costs and benefits of the Project.	mitigate adverse impacts on marine mammals, as well as avoid direct loss or degradation of sensitive habitats. Conversely, the installation of turbine towers and scour protection may enhance diversity in areas with homogenous seabed as these structures can introduce hard substrate in the wind farm area leading to an artificial reef effect, which then leads to sheltering and foraging opportunities for marine species in the area (Raoux et al. 2017; Bennun et al. 2021). BOEM will continue to coordinate with federal agencies and state and local governments in accordance with requirements to ensure that renewable energy development occurs in a safe and environmentally responsible manner.
BOEM-2023-0011-0117-0018	Seismic Surveys: the Project like other offshore wind projects uses high voltage boomers (3000 V) sparkers (20-200Hz) and multibeam echo sounders side scan sonars (100-500 kHz) shallow and mid penetration sub-bottom profilers ultra short baseline positioning equipment and marine magnetometers to collect their high-resolution geophysical maps of the seabed.These mid-frequency seismic ranges can cause rectified diffusion which can initiate decompression sickness in marine mammals independent of any effect on the behavior of the animals. Decompression sickness can disorient cause hearing loss unconsciousness and death. Moreover all of these symptoms increase the risk of ship strikes. BOEM's DEIS fails to adequately address this issue. The correlation between the unprecedented numbers of coastal whale deaths (UMEs) and the increase in seismic survey activity suggests that the Project may violate the MMPA and the ESA and must be researched before any approvals are given.	Ongoing activities off Massachusetts are currently limited to HRG surveys. BOEM and NMFS have assessed the potential effects of HRG surveys associated with offshore wind development in the Atlantic. Following a rigorous assessment, NMFS has concluded that these types of surveys are not likely to harm whales or other endangered species. BOEM requires developers to use protective measures, such as protective species observers, exclusion zones, and independent reporting, to avoid whales during these survey activities. Both the Marine Mammal Commission and NJDEP have issued their independent statements on this topic making similar determinations. NMFS is the lead for determining causes of whale strandings and is working with its partnerships to continue to gather data to help determine the cause of death for these mortality events. BOEM would not speculate on the cause of death of these whales. More information regarding offshore wind and whales is provided by NMFS at https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-life-distress/frequent-questions-offshore-wind-and-whales and by BOEM at https://www.boem.gov/sites/default/files/documents/renewable-energy/state-

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		activities/Offshore%20Wind%20Activities%20and%20Marine%20Mammal%20Protection_1.pdf.
BOEM-2023-0011-0117-0019	North Atlantic Right Whales: The US has designated the area planned for construction as a critical habitat for the North Atlantic Right Whale (NARW). With approximately 334 members alive today the NARW faces extinction. The unusual mortality event (UME) that began in 2017 has affected 20% of the population. Deaths outpace births. Pre-construction seismic surveys and impact drilling within whale habitats coincided with the onset of their UME and the most recent NARW death today (02/14/2023) substantiates this association. BOEM and NOAA have a legal obligation to protect and promote the recovery of this species under the ESA and the MMPA. Absence of Evidence is NOT evidence of absence. Seismic surveys are associated with whale morbidity and mortality (Engel 2004). As evidenced by the most recent death BOEM's monitoring mitigation strategies cannot ensure the safety of the species. Because whales sequester carbon the loss of a single whale let alone an entire whale species will increase the carbon footprint of this project (Chami 2019). Moreover an alarming 224 Level B Incidental Harassment Authorizations for NARW's are active and an even more alarming 691 applications for Level B IHA's are in process. The eight (8) additional Level B IHA's SouthCoast has requested further endangers the precarious NARW population. These IHA's are in direct conflict with the mandate to protect and promote the recovery of the species. Offshore wind farms (OWFs) will inevitably drive threatened whale species closer to extinction (Seals 2017). The BOEM DEIS and COP violates the MMPA and the ESA.	Mitigation measures in the EIS include both PAM and visual monitoring, which would provide for detection of non-vocalizing marine mammals, as well as vessel strike avoidance measures. Impacts on marine mammals from underwater noise and vessel strike are analyzed under the noise and vessel traffic IPFs, respectively, in EIS Sections 3.15.3 and 3.15.5. Use of sound-attenuation devices such as bubble curtains are only one strategy within a layered mitigation strategy that includes measures for visual monitoring, use of soft-start methods, clearance and shutdown zones, sound field verification, and seasonal restrictions and BOEM-proposed measures for PAM and pile-driving monitoring plans, sufficient protected species observer coverage, notification, and reporting requirements. ESA consultation with NMFS is underway and findings of the Biological Opinion are not anticipated to be available until September 2023; however, a jeopardy decision is not expected for NARW or any other ESA-listed marine mammal.
BOEM-2023-0011-0124-0019	Several studies have been published in the last two years that represent the best available science on the oceanographic impacts of offshore wind and BOEM cannot discount the conclusions of these studies if it is to comply with its mandate under NEPA.BOEM included in the DEIS a lengthy discussion	BOEM input requested – NOAA letter and hydrodynamic BOEM has considered the best available information in its analysis of potential impacts to right whales. BOEM is not required to assess an implausible worst-case scenario if the best available information suggests that such impacts would

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	of the possible hydrographic effects of turbines on NARW forage in the region noting that "increased mixing may disperse aggregations and may decrease efficient foraging opportunities." [Footnote 44: DEIS at 3.5.6-29.] And BOEM concluded this discussion by stating that "BOEM cannot discount the possibility that the presence of structures could have long-term intermittent impacts on foraging migration and other normal behaviors." [Footnote 45: Id.] However BOEM ignores this clear acknowledgement of the possible effects on a critically endangered species that is reliant on sufficient quality quantity and density of food to efficiently feed in making the conclusions of the DEIS to justify the proposed action and the effects on North Atlantic right whales.BOEM dismisses the conclusions of studies finding possible hydrographic oceanographic and primary productivity impacts by stating that "conclusions are difficult to draw because those studies are based in different geographic regions use differing offshore wind development scenarios and the individual studies use varying methodology and models." [Footnote 46: DEIS at 3.5.6-48.] But BOEM does not rationalize why the agency could not draw conclusions from the science when the science expert for protected species in the Northeast at the National Marine Fisheries Service was able to draw conclusions.	be implausible. The analysis in the EIS (and in the SouthCoast Wind BA) does not conclude such impacts are plausible. To solicit independent expert opinion to address the NARW concerns raised by NMFS, BOEM has partnered with NASEM for an independent peer review of potential hydrodynamic impacts for offshore wind facilities on prey species. The report concluded that hydrodynamic impacts from offshore wind projects adjacent to Nantucket Shoals will likely be difficult to distinguish from the ongoing effects of climate change currently occurring in this region. Likewise, BOEM finds that measurable impacts of offshore wind farms to the foraging success of whales that would result in population-level effects are not reasonably likely to occur and that a recommended NARW conservation buffer is not warranted based on the review of best available information and expert opinion found in the report. Further monitoring studies will be needed to have the spatial and temporal coverage to adequately understand the impact of future wind farms and BOEM will continue to coordinate with partners to develop regional monitoring strategies to obtain scientific information on the potential hydrodynamic effects of WTGs. BOEM does not conclude the impacts of wake effects or foundation presence on hydrodynamic processes are anywhere near a magnitude that translate to a reduction in prey availability and reduced foraging success of whales that would lead to increased mortality or a reduced birth rate in the population. Additionally, the spatiotemporal nature of plankton blooms means opportunistic feeding could occur anywhere on the OCS. While NARW habitat shifts have been observed over the past three decades, moving south and west towards SNE (Meyer-Gutbrod et al. 2021), this shifted habitat still encompasses a large area where high densities of zooplankton occur outside of the Lease Area and surrounding area.

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BOEM-2023-0011-0124-0020	BOEM's dismissal of the same concerns raised by the NEFSC may be the result of two studies that were released after the letter from NEFSC was sent a North Sea study (Daewel et al.) and one focused on effects of wind turbines in the US (Golbazi et al.). But BOEM's conclusions on many of the studies cited in the DEIS misrepresent the conclusions and miss important pieces of information.For example when discussing the impacts from the presence of structures BOEM cites to the Dorrell study to say that "[w]akes from individual structures may persist for 100 meters to 1 kilometer downstream." [Footnote 47: DEIS at 3.5.6-28.] But that was not the conclusion drawn from the Dorrell study. The Dorrell study observed wakes "at least 1 km in length" making no conclusion of the full distance of the wakes. [Footnote 48: Dorrell et al. Anthropogenic Mixing in Seasonally Stratified Shelf Seas by Offshore Wind Farm Infrastructure Front. Mar. Sci. (March 22 2022)]	Section 3.5.6.3 of the EIS has been revised to clarify the results of the Dorrell study.
BOEM-2023-0011-0124-0021	But to the extent that BOEM is relying on the Golbazi study to discount the anticipated effects based on other North Sea studies it is mistaken for at least two reasons. First the Golbazi study discusses meteorological and wind wake effects of turbines not the oceanographic or hydrographic effects like in the North Sea studies. BOEM does not discuss why the study's findings on meteorological impacts discount instead just jumping to its conclusion that this study introduces uncertainty about the effects discussed in Daewel. [Footnote 55: Id.] If BOEM is going to use the Golbazi study to discount the concerns raised in other studies it must include more detailed analysis of how the findings in Golbazi on meteorological impacts translate to oceanographic and hydrographic impacts.Second the Golbazi study looked at next-gen turbines with hub height exceeding 100 meters but while BOEM has given a maximum hub height in the project design envelope it has not given a minimum height. BOEM needs to more clearly delineate why based on the project design envelope this study creates the uncertainty BOEM	Based on reviews of recent projects by NMFS OPR and BOEM, and BOEM's partnership with the National Academies of Science Engineering and Math for an independent peer review of potential hydrodynamic impacts for offshore wind facilities on prey species, updated analysis for this section has been completed and has been incorporated in the FEIS.

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	claims it does. And if BOEM is going to discount the concerns raised in other studies by looking at the Golbazi study it must exclude the possibility of turbines smaller than those looked at in the Golbazi study in the project design envelope.For these reasons BOEM cannot discount potential effects of turbine presence based on the Golbazi study.	
BOEM-2023-0011-0124-0022	The analysis and opinion in the NEFSC letter provides explicit and clear guidance on the risk to NARWs posed by offshore wind development in the waters adjacent to Nantucket Shoals. However BOEM made no mention of the NEFSC's analysis synthesis and opinion in the DEIS and dismissed the science relied upon by the NEFSC as uncertain. The NEFSC's opinions must be treated as expert opinion and BOEM must vigorously explore and discuss their assessment in the context of best available science. BOEM's dismissal of the relevant science and the NEFSC's assessment violates its mandate under NEPA to take a hard look at the effects of the project and the DEIS for SouthCoast Wind must be amended to reflect the guidance and incorporate the cited literature.	BOEM has provided a more robust analysis of the potential hydrodynamic impacts based on the best available information compiled since receiving the NOAA recommendations. BOEM has considered the NOAA comments on that more recent analysis and made any necessary edits.
BOEM-2023-0011-0129-0003	The Commission is concerned that BOEM may be discounting prematurely the potential for hydrodynamic changes from the installation and operation of wind turbines in southern New England the potential effects on primary productivity and in turn the availability of prey species (Calanus spp.) for right whales. More research is needed on the hydrodynamic changes expected to result from the installation of large turbines in southern New England and how these changes may affect the distribution and/or availability of Calanus spp. The Commission understands that the National Academies of Sciences Engineering and Medicine (NASEM) has undertaken an "Evaluation of Hydrodynamic Modeling and Implications for Offshore Wind Development: Nantucket Shoals" to "assess potential impacts from offshore windfarms in the Nantucket Shoals region on marine hydrodynamics and resulting impacts on marine mammals specifically on the availability of North	BOEM, in cooperation with the National Marine Fisheries Service, has requested this issue be reviewed by experts in the relevant fields of science. BOEM has partnered with the National Academies of Science Engineering and Math for an independent peer review of potential hydrodynamic impacts for offshore wind facilities on prey species. The report concluded that hydrodynamic impacts from offshore wind projects adjacent to Nantucket Shoals will likely be difficult to distinguish from the ongoing effects of climate change currently occurring in this region. Likewise, BOEM finds that measurable impacts of offshore wind farms on the foraging success of whales that would result in population-level effects are not reasonably likely to occur and that a recommended NARW conservation buffer is not warranted based on the review of best available information and expert opinion found in the report. Further monitoring studies

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	Atlantic right whale prey." [Footnote 4: https://www.nationalacademies.org/our-work/evaluation-of-hydrodynamic-modeling-and-implications-for-offshore- wind-development-nantucket-shoals] The Commission fully supports such an evaluation as a means for reviewing the available literature on hydrodynamic effects determining whether the models being used by BOEM to assess such effects are appropriate and whether other models should be considered. The Commission recommends that BOEM continue to work with NMFS and other partners to conduct research and modeling to investigate the hydrodynamic effects of wind turbine installation in southern New England and other Atlantic Ocean WEAs and particularly the question of cumulative effects of large-scale wind farms on primary productivity and in turn the availability of prey to North Atlantic right whales and other marine species.	would be needed to have the spatial and temporal coverage to adequately understand the impact of future wind farms, and BOEM would continue to coordinate with partners to develop regional monitoring strategies to obtain scientific information on the potential hydrodynamic effects of WTGs. Based on the current information available, including the initial meetings associated with the peer review, BOEM is of the position that that our current NEPA and ESA analyses accurately reflect the expected impacts on NARWs from offshore wind projects, as well as provide an adequate suite of measures to avoid, minimize, or mitigate impacts on NARWs.
BOEM-2023-0011-0132-0045	While the DEIS seems to imply that NARW are newly spending time in the waters south of Nantucket historically this is incorrect. "The earliest English settlers observed that every autumn hundreds of right whales converged to the south of the island and remained until the early spring. Right whales—so named because they were "the right whale to kill"—grazed the waters off Nantucket as if they were seagoing cattle straining the nutrient-rich surface of the ocean through the bushy plates of baleen in their perpetually grinning mouths. This is how whaling on Nantucket an integral part of the island's history began. As early as the 1690s whales were hunted in small boats launched from Nantucket's south shores." The MA/RI wind lease area has been home to the NARW for hundreds of years. While they may have been observed here more frequently in recent years their presence is not new.	Final EIS Section 3.5.6.1 has been updated to include reference to the historical presence of NARWs in New England.
BOEM-2023-0011-0132-0046	The follow paragraph on page 3.5.6-14: [Text in Blue: "Global climate change is an ongoing risk for marine mammal species in the geographic analysis area. Warming and sea level rise	Impacts of the No Action Alternative presented in Section 3.5.6.3 includes the impacts of existing environmental trends, including climate change.

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	could affect marine mammals through increased storm frequency and severity altered habitat/ecology altered migration patterns increased disease incidence and increased erosion and sediment deposition (Evans and Bjørge 2013; Evans and Waggitt 2020; Learmonth et al. 2006). Increased temperatures can alter habitat modify species' use of existing habitats change precipitation patterns and increase storm intensity (USEPA 2016; NASA 2019; Love et al. 2013). Increase of the ocean's acidity has numerous effects on ecosystems including reducing available carbon that organisms use to build shells and causing a shift in food webs offshore (USEPA 2016; NASA 2019; Love et al. 2013). This has the potential to affect the distribution and abundance of marine mammal prey. Warming is also expected to influence the frequency of marine mammal diseases particularly for pinnipeds. Warming and sea level rise with their associated consequences and ocean acidification could lead to long-term high-consequence population-level impacts on marine mammals especially mammal populations already stressed by other factors (e.g. NARWs)."] These statements are not related to the current conditions being described. Climate change is not an immediate threat to the marine mammals in the wind lease area although it may be a longer-term threat. Further the role that large whales play in moderating CO2 in the atmosphere and acidity in the ocean is not described. Whales are known to play a vital role in ocean health and biodiversity. They sequester carbon in their large bodies they release fecal plumes that are rich in nutrients that phytoplankton need to grow and through their migrations from nutrient-rich feeding grounds to nutrient-poor breeding grounds they move nutrients around the ocean. The presence of whales in the proposed project area and in the broader wind lease areas is more scientifically important and concrete than the idea that the project may have a minor benefit to carbon emissions. In addition the DEIS never shows data explaining how the	

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	presence of wind turbines will moderate the climate or improve ocean acidification in the near or long term.	
BOEM-2023-0011-0132-0047	The second paragraph on page 3.5.6-15 goes on to state that vessel collisions have been a risk factor for whales. However G&G survey work has been ongoing since 2016. The ITAs issued for this work certainly allow for whales to become disoriented. There is no mention or explanation for how the increased noise could make it more likely for disoriented whales to be victims of vessel strikes.	Available information suggests that there are no mortal injuries that would likely occur due to vessel noise given the non-impulsive nature of these sources, and behavioral responses that do occur in response to these would not result in removal of any individuals from a population. Sources in Section 3.5.6 support this conclusion.
BOEM-2023-0011-0132-0049	This paragraph on page 3.5.6-15 illustrates the confusion and misrepresentation created by the document structure. [Text in Blue: "Ongoing offshore wind activities including site assessments for future offshore wind projects would affect marine mammals primarily through the IPFs of noise presence of structures and vessel traffic. Ongoing offshore wind activities would have the same types of impacts that are described in Cumulative Impacts of the No Action Alternative for ongoing and planned offshore wind activities but the impacts would be of lower intensity."] That whales are already being harmed (as evidenced by increase mortality of humpback whales in Massachusetts since G&G survey work began) from existing project activity is not the correct analysis for which to gauge this project's impact on whales and especially NARWs. It seems that the format is intended to sow confusion. However the fact remains that NARWs will be put in harm's way and no mitigation measures have been put forth that can prevent that.	The cumulative impact analysis for the No Action Alternative considers the impacts of ongoing activities and other reasonably foreseeable planned activities, excluding the Proposed Action, as described in Final EIS Appendix D, *Planned Activities Scenario*. The cumulative impact analysis of the Proposed Action considers approval of the SouthCoast Wind Project in combination with other reasonably foreseeable planned activities, including planned offshore wind activities, within the geographic analysis area for marine mammals, which is the entire east coast. The purpose is to capture the cumulative impacts on marine mammals that would be affected by the Proposed Action, as well as the impacts that would still occur under the No Action Alternative.
BOEM-2023-0011-0132-0051	The document describes level B harassment as [Text in Blue: "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 a disruption of behavioral patterns including but not limited to migration breathing nursing breeding feeding or sheltering but that does not have the potential to injure a marine mammal or marine mammal stock in the wild (16 USC 1362)."] To date dozens of level B	The most recent UME information available at the time of preparing the EIS have been incorporated, and the critical status of the NARW and humpback whale populations is considered throughout the EIS impact decisions.

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	ITA have been issued to developers of the east coast wind lease areas. These ITAs directly overlap the unusual mortality event for both NARW and Humpback Whales. However no analysis is provided for how this extensive survey work has affected marine mammals' ability to navigate and stay safely away from vessels. The data exists and should be provided as part of the DEIS. That these ITAs have been issued since beginning in at least 2017 and that they coincide with the UMEs is contrary to NOAAs public statements on the unusual number of whales and dolphins washing ashore in the NY/NJ area this winter. In 2020 for instance Massachusetts saw 34 dead whales at a time when survey work for Vineyard Wind and other projects was active. Data for timing of surveys and whale deaths has not been provided for the MA/RI lease area. How can the public believe that BOEM NOAA and NMFS will stop work or change course to protect NARWs and other whale species if they have not done so to date and have not been forthcoming with data regarding the G&G survey work to date.	
BOEM-2023-0011-0132-0053	The document describes pile driving activities taking place over a period of 8 years often for multiple days. The impacts to marine mammals are described as [Text in Blue: "The short-term consequences of masking from pile-driving activities range from temporary changes in vocal patterns to avoidance of important areas. Longer-term consequences include permanent changes to vocal patterns; reductions in fitness survivorship and recruitment; and abandonment of important habitat areas."] With regard to the NARW an 8 year construction period is not "short-term" and will lead to the extinction of this important species.	Section 3.3 of the EIS defines *short-term effects* as effects that occur during construction and may extend beyond construction, potentially lasting for months or years.
BOEM-2023-0011-0132-0055	Regarding noise from turbine operations the document states that [Text in Blue: "Mechanical noise associated with the operating WTG is transmitted into the water as vibration through the foundation and subsea cable. Both airfoil sound and mechanical vibration may result in long-term continuous	BOEM has considered the best available information in the analysis of potential impacts from WTG operational noise. While no comparable studies are available, Tougaard et al. (2020) and Stöber and Thomsen (2021) provide modeled analyses of noise that could occur if the source levels and the

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	noise in the offshore environment."] It then goes on the refer to studies of turbines that are not close to the 14MW size being proposed for either the SouthCoast wind or other projects in the MA/RI wind lease area. The DEIS does not disclose the underwater noise impacts of the much higher operational noise levels from the proposed larger turbines. It has been shown that elevated noise levels will extend many miles from the turbines disturbing NARW and other marine mammal behavior potentially disrupting its feeding and essential migration. This is a fatal and seeming intentional omission by BOEM to downplay a very serious problem because it would expose BOEM's flawed decision to site this project in this area to begin with. It must address this in a draft supplement to the DEIS.	number of turbines were scaled up, of which are considered appropriate for assessing the Proposed Action. Studies on operational noise in existing wind farms, along with studies evaluating the relationship between sound levels and turbine power, represent the best available science and information for evaluating impacts of operational wind noise.
BOEM-2023-0011-0132-0056	The conclusion that [Text in Blue: "Based on the current available data underwater noise from turbine operations is unlikely to cause PTS or TTS in marine mammals but could cause behavioral and masking effects."] does not address the effects of that behavior disturbance which is the key impact. Given the size of the turbines and the vast area encompassing the MA/RI wind lease area that conclusion itself is not supported by the current science. Should the NARW be displaced from its only known year-round foraging ground the consequences could be extinction. A supplemental DEIS is needed before proceeding with any further offshore wind projects in NARW habitat.	Section 3.5.6.3 of the EIS address the impact of observed behavioral responses including displacement on marine mammals.
BOEM-2023-0011-0132-0057	The following summary statement on noise is troubling [Text in Blue: "If marine mammal populations are subjected to multiple anthropogenic noise stressors throughout their lifetimes that disrupt critical life stages (e.g. feeding breeding calving) and throughout their ranges then additional impacts from noise from ongoing non-offshore wind activities could be major. However there is no evidence ocean noise would result in population declines in the geographic analysis area for any marine mammal species. Additionally all projects are	Mitigation measures in Appendix G of the EIS include both PAM and visual monitoring, which would provide for detection of non-vocalizing marine mammals, as well as vessel strike avoidance measures. These measures have been reviewed by BOEM, in coordination with NMFS, as part of the ESA consultation.

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	expected to comply with a suite of mitigation measures (e.g. exclusion zones protected species observers) that would avoid and minimize underwater noise impacts on marine mammals."] No mitigation measures have been proposed that will eliminate the presence of NARW or other whales during construction activities or turbines operation. The whales are often under water and silent. If they are encouraged to vacate the area with soft starts they will use valuable energy to find a safe area. The correct conclusion is that the impacts from projects activities could be major. Therefore unless proven mitigation procedures can be implemented the project should not be approved.	
BOEM-2023-0011-0132-0060	Page 3.5.6-50 states [Text in Blue: "The incremental impacts from vessel traffic and accidental releases contributed by the Proposed Action would be small when compared to the number of vessel trips associated with offshore wind development and existing vessel traffic in the region".] In essence the document is making the argument that there will be increased vessel traffic from other projects and therefore there is only a little impact from the SouthCoast project. This makes no sense and again illustrates that the structure of the document which tries to say that significant offshore wind development is happening anyway so this project will not incrementally add to stresses on the environment is flawed. The increased vessel traffic is problematic across the MA/RI and entire east coast wind lease areas.	Section 3.5.6.3 of the EIS discusses the cumulative impacts of vessel traffic risks to marine mammals.
BOEM-2023-0011-0132-0061	The conclusion of the marine mammal section on the proposed action indicated the project cannot be safely implemented with regards to NARW. It states [Text in Blue: "Cumulative Impacts of the Proposed Action: Considering all of the IPFs together the cumulative impact on marine mammals would range from negligible to major and could include minor beneficial impacts. BOEM anticipates that the overall impacts from the Proposed Action when combined with ongoing and planned activities would be moderate on	SouthCoast Wind is requesting Level A and Level B harassment from Scenarios 1 and 2. Take estimates under Scenarios 1 and 2 are in the Request for Incidental Take Regulations for the Construction and Operations of the SouthCoast Wind Project (September 2022) can be found in Final EIS Table 3.5.6-13 and Table 3.5.6-14, respectively. ESA consultation with NMFS is underway and findings of the Biological Opinion are incorporated into the Final EIS.

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	marine mammals in the geographic analysis area [Highlighted text: with the exception of NARW on which impacts could be major. Impacts are magnified in severity for NARW due to low population numbers and the potential to compromise the viability of the species from the loss of a single individual.] Although a measurable impact is anticipated most other marine mammals would likely recover completely when IPF stressors are removed or remedial or mitigating actions are taken."] The purpose of an EIS is to present environmental impacts not conclusions especially unsupported ones. The DEIS presents no marine mammal "take" assessments to support these conclusions. It should secure such from the NMFS and place them in a draft supplement to the DEIS for public review.	
BOEM-2023-0011-0132-0063	The pages 3.5.6-5&6 indicate that [Text in Blue: "the physical oceanographic and bathymetric features provide for year-round high phytoplankton biomass likely contributing to increased availability of zooplankton prey for NARWs (Quintana-Rizzo et al. 2021). Waters from the Gulf of Maine the Great South Channel and Nantucket Sound mix in the shallow dune- like Nantucket Shoals. The convergence of these waters creates a well-mixed water column throughout the year (Limeburner and Beardsley 1982) making the Nantucket Shoals the only known winter foraging ground for NARWs."] This same water is carried into Nantucket Sound and thus Nantucket Harbor with each tide cycle. The water then washes around Nantucket and thru Muskegat Channel. The hydrodynamic effects of thousands of wind turbines on water quality in Nantucket Harbor have not been analyzed as part of the DEIS or the COP. It is not enough to say that the ecosystem wide impacts are unknown. Clearly more study is needed before a project of this scale gets built.	Under the *presences of structures* IPF discussions in Section 3.6.6.3 and Section 3.6.6.5, BOEM presents a synthesis of the best available science on hydrodynamic effects from the presence of structures, including modeling that was conducted for the southern New England offshore wind lease areas. The analysis describes impacts on oceanic process and primary productivity in and around Nantucket Shoals. Additional information on this topic is included in Section 3.4.2, *Water Quality*, Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, and Section 3.5.7, *Sea Turtles*.
BOEM-2023-0011-0132-0124	Table 4.1-1 also admits even while it labels the impacts as not irreversible [Text in Blue: "Irreversible impacts on marine mammal populations could occur if one or more individuals of	Use of sound attenuation devices such as bubble curtains are only one strategy within a layered mitigation strategy that includes APMs for visual monitoring, use of soft start

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	an ESA-listed species were injured or killed or if those populations experienced behavioral effects of high severity. With implementation of mitigation measures developed in consultation with NMFS (e.g. timing windows vessel speed restrictions safety zones) the potential for an ESA- listed species to experience high-severity behavioral effects or be injured or killed would be reduced or eliminated. No irreversible high-severity behavioral effects from Project activities are anticipated; however due to the uncertainties from lack of information these effects are still possible. Irretrievable impacts could occur if individuals or populations grow more slowly as a result of displacement from the Project area."] The chart should label the impacts as they are shown in the document as "irreversible". In addition the mitigation measures will not be effective as:- Timing windows do not eliminate the presence of NARWs.- Vessel speed restrictions do not apply to the majority of vessel trips (crew transfer vessels).- PSOs cannot see whales that are under water and PAM devices cannot hear whales that are silent for hours at a time.- Pile driving including soft start warnings could send whales out of important foraging areas and into more traveled shipping lanes.- There has been put forth NO mitigations that guarantee the safety of NARWs.	methods, clearance and shutdown zones, sound field verification, and seasonal restrictions and BOEM-proposed measures for PAM and pile-driving monitoring plans, sufficient PSO coverage, notification, and reporting requirements. ESA consultation with NMFS is underway and findings of the Biological Opinion are incorporated in the Final EIS.
BOEM-2023-0011-0134-0004	Regarding biological resources it is disturbing that BOEM is still in the process of developing strategies to minimize the negative effects of offshore wind development on the North Atlantic right whales and their habitat given South Fork Wind and Vineyard Wind 1 projects have already received NEPA approval and several projects are in the Draft EIS stage. The significance of these whales to the Tribe is evident as they are prominently featured in the Tribes oral histories our seal and logo. As stated on BOEM's website "The agencies are working to understand the effects of offshore wind development on North Atlantic right whales and the ecosystems on which they depend and to develop strategies to avoid minimize and monitor offshore wind development impacts to the species."	Section 3.5.6 presents a comprehensive analysis of the impacts of the Proposed Action and other ongoing and planned projects on NARW. Impacts on NARWs are discussed in more detail in the NMFS BA for the Project, which is incorporated by reference into the EIS. ESA consultation with NMFS is ongoing and findings of the Biological Opinion are incorporated into the Final EIS.

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	[Footnote 2: https://www.boem.gov/environment/protecting-north-atlantic-right-whales-during-o?shore-wind-energy-development] The effects to North Atlantic right whales need to be more precisely assessed prior to approving OSW development and properly avoided or mitigated. These species are our relatives and as seafaring peoples integral to our traditional lifeways and cultural practices. Protections for these severely endangered whales themselves as well as the environment and habitat that nourishes and sustains them requires meticulous careful and deliberate consideration. The United States has legal and moral obligations to protect our ways of life and this includes preserving these priceless ecosystems so that our future generations may continue to live according to our traditions.	
BOEM-2023-0011-0137-0004	The treatment of operational noise on marine life in the Draft Environmental Impact Statement for Mayflower/SouthCoast Wind is inadequate because:(a) the assumptions about turbine noise rely on a least squares mathematical regression analysis of data sets that combined are clearly inappropriate because they introduce an influential dependent factor (drive type) other than size in a way that is not randomized(b) it does not account for fitness consequences to individuals or how populations may be affected [Footnote 34: if there is (as there is likely to be) insufficient variability within populations of the degree of harm to fitness caused by the impact-producing factors within the timeframe of cumulative U.S. Offshore Wind program development to allow evolutionary adaptation to environmental changes](c) The risk of cumulative adverse effects of offshore wind turbine power plants on wildlife including marine life is poorly researched and assessment processes are seriously underdeveloped for the scale of development planned and the short time scale (a decade or two) over which rapid expansion of the U.S. Offshore Wind program is reasonably expected to occur. (Assessments of cumulative effects must assess the	The Final EIS presents the best available information on operation noise impacts on marine life. As detailed in Section 3.5.6.5, operational noise is expected to be detectable by marine mammals at relatively short distances from a turbine. The comprehensive overview of WTG-generated noise in the EIS provides a summary of available information. Additionally, cumulative impacts on all marine mammals are evaluated in this EIS (Section 3.5.6.5), as well as the EISs for all other offshore wind projects.

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	cumulative exposure of a wildlife population to each hazard and then estimate how the exposure will affect the population.)	
BOEM-2023-0011-0137-0011	The SouthCoast (Mayflower) Wind Power plant is expected to modify ocean habitat so as to adversely affect marine life. The effects of the project can be expected to be cumulative i.e. in addition to other wind power plant projects planned on the OCS. The bureau has not (other than for pile driving during construction) [Footnote 44: The Bureau has to some degree considered effects of sound-generating hydrographic studies for site characterization. However the rationality of the conclusions (of negligible to minor adverse impact for most taxa is questionable given known empirical studies published in peer-reviewed scientific journals of the effects of the types and frequencies of sound and given the known sound signatures and received levels of sound pressure caused by emission from sound-generating equipment that has been declared by the developers as those they intend to use to conduct the surveys. See Appendix A.] put forth any reasonable support for its conclusions of radius of harm from operating turbines or made any proper inquiry with due diligence into impacts to the respective other taxa of marine life. [Footnote 45: The Bureau has not actually quantitatively estimated effects (of the projects it is tasked with reviewing) on any taxon or species by issuing a quantitative estimate of decline in fitness (reductions in survival rates or reproductive rates) average condition or recruitment (replacement rate) from Offshore Wind Activity within and near the power plant footprint nor performed any energy budget analyses on any species.]	Changes to the acoustic habitat have now been discussed in Section 3.5.6.5. Based on the best available knowledge, detailed in Section 3.5.6.5, operational noise is expected to be detectable by marine mammals at relatively short distances from a turbine. Therefore, impacts associated with WTG operational noise are expected to be minor.
BOEM-2023-0011-0137-0012	Underwater acoustic modeling of construction sound only is found at Appendix U2[Footnote 46: internet source: https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Appendix%20U2_Underwater%20Acoustic%20Mod	Refined acoustical modeling results are included in the MMPA ITA application and have been added to Final EIS Section 3.5.6.3.

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	eling%20Report.pdf.] of the COP. The limitations presented by the available data and the contract specifications to those performing the mathematical modeling are apparent. Bioacousticians have been requesting that the Bureau require that the settings (parameters) on the sound testing equipment with which data is harvested be expanded reasonably. For example it is standard but inappropriate to use High-Pass Filter settings that filter out relevant information; It has been requested that the High-Pass filter be set to 1 Hz or as low as possible. The reasonable requests weren't satisfied.NOAA acoustical guidelines suggest a weighting function for "Low Frequency Cetaceans" that includes a 2-pole High-pass filter set at 200Hz even while Southall et al (2007) suggested moving the high-pass filter down to 7Hz there is nothing in the literature or in empirical evidence that would suggest that either of these weighting curves align with mysticetes infrasonic hearing. That some rorquals phonate below the High Pass cutoff[Footnote 47: Baumgartner M.F Van Parijs S.M. Wenzel F.W. Tremblay C.J. Esch H.C. and Warde A.M. (2008). Low frequency vocalizations attributed to sei whales (Balaenoptera borealis) J. Acoust. Soc. Am. 124 pp.1339-1349.] substantiates the inadequacy of the NOAA guidelines. Both mysticetes below the waterline and birds above the waterline depend on microbaroms and meteorological energy for migration and navigation cues. Therefore the modeling and analysis is missing proper analysis of biologically relevant sounds and thus the utility of predictions of the environmental effects of the project based on such modeling and analysis of animal exposure and consequences is limited.	
BOEM-2023-0011-0137-0013	The weighting curves in Section D of the noise-modelling appendix aren't representative of the real auditory curves of mysticetes (Baleen whales). Given estimates of harm to marine mammals is dependent upon data harvested from few animals and few species. The curves for the Low Frequency Cetaceans – which is based on informed but speculative	No audiogram based on real hearing experiments is publicly available for baleen whale hearing at this time. As such, the weighting curve applied in Section D is the accepted weighting function by the NMFS and is written into their technical guidance as such. This weighting function was generated by the U.S. Navy using the best available science

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	understanding of the hearing physiology of mysticetes (some peer-reviewed some non-peer-reviewed models and some mere predictions) vocalizations and according to the Guidelines Section II:2.1 “taxonomy and behavioral responses to sound” taken from a white paper review[Footnote 48:Reichmuth C. 2007. Assessing the hearing capabilities of mysticete whales. A proposed 15 research strategy for the Joint Industry Programme on Sound and Marine Life (JIP link not available).] of a 1990 paper [Footnote 49: Dahlheim M.E. and D.K. Ljungblad. 1990. Preliminary hearing study on gray whales 42 (Eschrichtius robustus) in the field. Pages 335-346 in J. Thomas and R. Kastelein eds. Sensory Abilities of Cetaceans. New York: Plenum Press.] whereas valuable verifiable behavioral data are available on mysticete responses to sound; Thus better estimations for Low Frequency cetaceans based on such data remains within reach[Footnote 50: e.g.: Goldbogen JA Southall BL DeRuiter SL Calambokidis J Friedlaender AS Hazen EL Falcone EA Schorr GS Douglas A Moretti DJ Kyburg C McKenna MF Tyack PL.2013 Blue whales respond to simulated mid-frequency military sonar. Proc R Soc B 280: 20130657. Blackwell SB Nations CS McDonald TL Thode AM Mathias D Kim KH et al. (2015) Effects of Airgun Sounds on Bowhead Whale Calling Rates: Evidence for Two Behavioral Thresholds. PLoS ONE 10(6): e0125720. Lucia Di Iorio Christopher W. Clark Exposure to seismic survey alters blue whale acoustic communication. Biol. Lett. (2010) 6 51–54. Manuel Castellote Christopher W. Clark Marc O. Lammers 2012 Acoustic and behavioral changes by fin whales (Balaenoptera physalus) in response to shipping and airgun noise. Biological Conservation 147 (2012) 115–122. Cerchio S Strindberg S Collins T Bennett C Rosenbaum H (2014) Seismic Surveys Negatively Affect Humpback Whale Singing Activity off Northern Angola. PLoS ONE 9(3): e86464] and the current thresholds and thus estimates of harm are not on the best available data.	(Finneran 2015). Applying weighting functions is the accepted approach for acoustic modeling with respect to predicting injury and behavioral impacts associated with noise on various functional hearing groups. This approach was taken in the acoustic modeling for all marine mammal functional hearing groups, providing a standardized and comparable approach across all marine mammal species.

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BOEM-2023-0011-0137-0014	Signal kurtosis which has great bearing on the degree of physical assault or damage to hearing and to body tissues need be included in any predictive models. While the Bureau in its publications has mentioned kurtosis and acknowledged its important it abandons the endeavor to use it for being "not practical to implement". We respectfully request to be contacted for input on how FFT (Fast Fourier Transform) can be utilized to take into account this important metric component factor that is relevant to expected harm.	Sounds with high kurtosis values (> 30) have been shown in terrestrial species to be correlated with hearing impairment (Hamernik and Qui 2001). There is growing interest in applying this finding to marine species (e.g., von Benda-Beckmann et al. 2022), but the current regulatory paradigm in the NMFS technical guidance requires that sources be classified as either "impulsive" or "non-impulsive", without taking kurtosis into effect. BOEM's technical experts are currently considering new approaches to this regulatory framework and would encourage the commenter to make their work publicly available so that regulators can draw on their knowledge in future EISs (Hamernik and Qiu 2001; von Benda-Beckman et al. 2022).
BOEM-2023-0011-0137-0029	The DEIS also does not attempt to quantify the effect of turbine-induced clouding on primary productivity and autotroph density. Wind-turbine power plants impact local atmospheric conditions through their air wakes characterized by reduced wind speed and increased turbulence. At certain threshold humidity levels localized sharp drop in air pressure caused by the blade pass causes water vaporization which when subjected to the turbulence in the wake of a turbine enables the water vapor to expand over a larger area. This turbine-induced low cloud cover in turn impacts zooplankton abundance and ecosystems as autotrophic activity by phytoplankton is impaired which affects zooplankton (heterotrophic planktonic organisms) other heterotrophs etc. (ocean productivity generally).	*Presence of Structures*, under Section 3.5.6.3, *Impacts of Alternative A- No Action Alternative*, summarizes a study of atmospheric wake effects by Daewel et al. (2022). In summary, although detectable changes to the atmospheric forces that could affect surface mixing may occur, the influence of these impacts on biological productivity are likely minor.
BOEM-2023-0011-0137-0063	In expressions of estimated impact on populations of marine life and other wildlife of various individual energy projects (including the subject SouthCoast Wind project) of the offshore wind program generally and of regional programs in numerous statements that have been published throughout this NEPA process the federal agencies and commissioned assigns [Underline: when explaining how a conclusion]—that a species or taxon is not expected to be significantly adversely	Section 3.5.6.3 of the EIS outlines the research that was used to draw this conclusion (Brandt et al. 2009, 2011, 2016; Thompson et al. 2010; Tougaard et al. 2009; Lindeboom et al. 2011; Russell et al. 2016; Southall et al. 2021; and Blackwell et al. 2004).

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	affected by operation of the wind- turbine power plants—[Underline: is reached] one of the common statements is that the animals are expected to be able to avoid operating turbines or that they will not be likely to physically contact them. There is no earnest examination of or supported conclusions about whether animals will or won't travel within the 1 nm area located inbetween the turbines or will avoid the lease area altogether or will suffer noise-induced physiological oxidative stress from attempting to travel through or inhabit within an operating power plant inbetween the turbines and what the population consequence of that are for different taxa.	
BOEM-2023-0011-0137-0065	The Bureau has not supported the presumption that the ability of animals to avoid the operating power plants or turbines is without fitness consequences that can affect species on the population-level even as it has recognized that avoidance may causes substantial diversion from a migration course which is known to increase the energy required for migration and thus to tax limited energy budgets and that taxed energy budgets decrease condition and survival across individuals in the population[Footnote 86: Without enough genetic variation in the population with respect to resiliency to these phenomenon necessary to support evolutionary adaptation and without time for populations to adapt (due to planned rapid expansion in offshore development) it is unlikely populations would be able to adapt through evolutionary processes to the rapid changes in their environment occasioned by the expected explosion in a decade or two of wind energy projects on the outer continental shelf.]	Behavioral exposure modeling is conducted as a part of the developers MMPA permitting and is incorporated by reference into the EIS.
BOEM-2023-0011-0137-0069	The analysis performed by the Bureau in the making of the DEIS focuses too singularly on direct injury to hearing apparatus of different animals. While this needs to be considered there are a plethora of other ways noise impacts marine animals. It need to consider first for each taxa for	Details about the life history and ecology of marine species are provided in the affected environment for each animal group. The analysis in the EIS is based on the best available science related to noise impacts and uses the regulatory framework

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	which it is responsible for estimating impacts how animals of that taxon "make a living" (obtain energy) survive and reproduce. Only then will it become clear how the project may impact animals of that taxa and how to perform literary research. The Bureau needs to broaden consideration of site characterization activities' expected impacts. It does not seriously address effects on individual fitness (except those related injury of the hearing apparatus) or what the mechanisms are by which (what we experience as) anthropogenic sound impacts fitness and how these effects can accumulate (across individuals and over time) to present as population effects. It does give adequate consideration to how population level effects in one species might result in consequences for others or the consequences of affecting how species interact. The DEIS also does not address to how the expected project activities will affect species distribution community composition or health of ecosystems. It does not consider the life stages of the animals for which it is tasked with evaluating project impacts and does not look for trends that span across taxa.	for marine mammals which is provided in the NMFS technical guidance. The thresholds provided therein focus solely on damage to auditory tissues, because the majority of research in this field have focused on these effects. There is secondary guidance addressing impacts on behavior, but BOEM recognizes that there are limitations to our understanding of these effects, especially because they are so highly variable across species. BOEM understands that issues related to masking, reproduction, and ecosystem effects are important to consider and is tracking this body of literature closely. Regarding effects from site characterization activities, BOEM and colleagues recently published a paper classifying active acoustic sound sources and their likelihood to result in incidental take (i.e., behavioral harassment) of marine mammals (Ruppel et al. 2022). The paper concluded that most sources used during site characterization can be considered *de minimis*, meaning unlikely to result in take, based on key characteristics of these sounds. Mitigation measures are expected to reduce potential impacts from noise to minor or negligible levels, which are unlikely to cause significant harm to ecosystems.
BOEM-2023-0011-0137-0096	[Bold: The DEIS fails to characterize sound emitted from site characterization equipment and operational turbines. These cannot be described in terms of the sound pressure levels only of its dominant frequencies because the sound can have an energy density spectrum that features substantial energy density at other frequencies.]For example Madsen and Johnson[Footnote 28: Madsen and Johnson 2006. Quantitative measures of air-gun pulses recorded on sperm whales (Physeter macrocephalus) using acoustic tags during controlled exposure experiments The Journal of the Acoustical Society of America 120 2366 (2006); https://doi.org/10.1121/1.2229287] recorded received levels during a seismic gun survey on tags attached to Sperm whales. Seismic gun has highest power at low frequencies.	A description of the activity and potential impacts on marine life associated with other site characterization work and turbine operation are described in each resource section within Chapter 3. Air guns are not proposed for use in the site characterization surveys for this project. A description of the activity and potential impacts on marine life associated with other site characterization work and turbine operation are described in each resource section within Chapter 3.

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	When whales were close to the surface the first arrivals of air-gun pulses contained most energy between 0.3 kHz and 3 kHz a frequency range extending well above the normal frequencies of interest in seismic exploration. Therefore air-gun arrays can generate significant sound energy at frequencies many octaves higher than the frequencies of interest for seismic exploration.	
BOEM-2023-0011-0137-0122	BASELINE NOISE MUST BE MEASURED Offshore wind activity including siting installation and operation will be accompanied by noise. Right from the launch of the first survey vessel there will be an effect on the natural soundscape of the subject area. For this reason it would be wise to immediately begin monitoring the area soundscapes. This would give us a temporal/spatial understanding of the density and activity of marine life in the area across all sound-making taxa – from marine arthropods to fish to marine mammals. These passive acoustical surveys need to be broad-band recording between 4 Hz to 100kHz to capture all acoustical niches anticipated in the area – from the largest whales to harbor porpoises. They will also capture anthropogenic noise sources including vessel traffic and surveying equipment; from impulse signals used for geological characterization to scanning sonars used for seafloor profiling. Additionally they will provide acoustical data that would reveal interactions between marine life and the anthropogenic noise sources to which they are being subjected.While there is already considerable anthropogenic noise in the sea due to shipping traffic robust baselining of the proposed activity areas would help reveal the acoustical changes to the habitat as a consequence of the development deployment and operation of the turbines and the associated ongoing support and maintenance of the equipment.	A description of the activity and potential impacts on marine life associated with other site characterization work and turbine operation are described in each resource section within Chapter 3.
BOEM-2023-0011-0137-0123	The implications for marine mammals of anthropogenic noise likely to be emitted from wind-turbine power plants during operation have not been studied and could result in changes that cause a decrease in fitness of these and other marine	Changes to the acoustic habitat are now discussed in Section 3.5.6.5. Based on the best available knowledge, detailed in Section 3.5.6.5, operational noise is expected to be detectable by marine mammals at relatively short distances

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	mammals in areas within auditory reach of the project.Given the grand scale on which wind projects are expected to be built and that so much of the OCS is intended to be developed and given that migration of whales are long-range it is unlikely that they will be able to migrate outside the auditory reach of operational noise from wind projects without substantial energetic costs. Disruption of the making of calls for foraging or mating or to maintain group cohesion may reduce fitness and thus can be injurious at the population level.Habitat modification constitutes "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 on the NARW of how far a distance from the turbine the effects are expected to attenuate below harassment level and must determine whether – within that distance – overlapping areas of harassment would result from adjacent turbine to create a larger enjoined harassment area.	from a turbine. Therefore, impacts associated with WTG operational noise are expected to be minor. The SouthCoast NMFS BA (and summarized in the Final EIS) evaluated the energetic consequences of any avoidance behavior or masking effects of ESA-listed marine mammals in response to underwater noise sources, and potential delay in resting or foraging is not expected to affect any individual’s ability to successfully obtain enough food to maintain their health, to make seasonal migrations, or to participate in breeding or calving. Due to the transient nature of marine mammals, any behavioral effects would be expected to resolve within a few days to a week of exposure and are not expected to affect the health of any individual or its ability to migrate, forage, breed, or calve. Based on the results of several studies, sound pressure levels would be expected to be at or below ambient levels at relatively short distances from the WTG foundations (Miller and Potty 2017; Kraus et al. 2016; Thomsen et al. 2015). Avoidance behavior would incur small, but measurable energetic costs (i.e., the cost of swimming a given distance), but this short-term displacement to avoid the entirety of the Lease Area would not have long-term detectable impacts on marine mammals. Please refer to the NMFS BA for additional information.
BOEM-2023-0011-0140-0025	Our groups have several general and specific concerns with BOEM’s analysis of marine mammal and sea turtle occurrence abundance and seasonality in the Project Area. As an initial matter the DEIS does not provide a comprehensive assessment of all marine mammal and sea turtle species with common occurrence in the Project Area. BOEM provides minimal descriptions of general and Project Area-specific occurrence of individual species expected to occur in the Project Area. The most detailed description is provided for the right whale but thorough descriptions are missing for the other species. [Footnote 55: SCW DEIS at 3.5.6-4 to 3.5.6-6.] Information on species is scattered across pages and therefore difficult to find and assess and there are no tables	ESA consultation with NMFS is ongoing and findings of the Biological Opinion are incorporated into the Final EIS.

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	summarizing species occurrence designations abundance/density info stock information. [Footnote 56: SCW DEIS at 3.5.6-4 to 3.5.6-9.] BOEM does provide a summary of some data and information that have been collected during studies that overlapped with the Project Area (e.g. sightings data from the Atlantic Marine Assessment Program for Protected Species (AMAPPS) sightings and acoustic data from the Northeast Large Pelagic Survey Collaborative studies Protected Species Observer (PSO) data etc.). However thorough descriptions of species-specific occurrence in and near the Project Area should be provided for all species by BOEM as the agency responsible for assessing environmental impacts of the proposed activity not by the developer or another agency. BOEM can refer readers to these documents for more information but still should provide a summary of such information to inform the public and its own analysis. Regarding the specific findings for the marine mammal and sea turtle occurrence and abundance we highlight the following concerns.	
BOEM-2023-0011-0140-0026	BOEM uses the draft 2022 NMFS stock assessment population estimate of 365 and the Pace model estimate of 336 but does not refer to the 340 estimate for 2021 which uses data as of August 30 2022. [Footnote 60: SCW DEIS at 3.5.6-5] We encourage the use of the 340 population estimate to reflect the species' true status and subsequent risk assessment more accurately. NMFS also recently included whales experiencing sublethal injury and illness as part of the UME which the agency refers to as "morbidity." BOEM must incorporate into consideration that to date 97 right whales have been impacted by the UME (i.e. from mortality serious injury and morbidity). [Footnote 61: NMFS 2017–2023 North Atlantic Right Whale Unusual Mortality Event supra; see also DEIS at 3.7-12.]	The Final EIS and Appendix B have been revised with the updated NARW abundance estimate (from 365 to 338) based on the most recent Marine Mammals Stock Assessment Report (Hayes et al. 2022).
BOEM-2023-0011-0140-0027	BOEM misinterprets data from Stone et al. 2017 and Kraus et al. 2016. [Footnote 62: SCW DEIS at 3.5.6-4] Blue whales were	The statement in question has been revised and concurs with the commenter; blue whales rarely occur in the Project

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	not sighted during the Northeast Large Pelagic Survey Collaborative (NLPSC) aerial surveys which covered the Rhode Island and Massachusetts Wind Energy Areas (RI-MA WEAs). Blue whale vocalizations were sparsely detected from acoustic devices during winter (Kraus et al. 2016); however due to the far detection range of a blue whale vocalization (more than 108 nm [more than 200 km]) (Kraus et al. 2016) and the lack of blue whale sightings during these recent surveys these vocalizing blue whales were likely not within the WEAs. In addition during the recent AMAPPS studies blue whales were sighted (Palka et al. 2021b) and acoustically detected along the shelf break as opposed to the shelf (Palka et al. 2021d) which further supports the occurrence of blue whales in waters farther offshore than the proposed Project Area.	area, if at all, as visual and acoustic detections of the blue whale were sparse and occurred outside of the Massachusetts and Rhode Island WEA. Stone et al. (2017) has been removed as reference as the literature did not include blue whales among the seven cetaceans documented in their survey area.
BOEM-2023-0011-0140-0028	Sei whale occurrence should be listed as year-round based on known occurrence in nearby shelf regions (e.g. surveys of the New York Bight recorded sei whales during August February/March and April/May). [Footnote 63: E.g. NYSERDA surveys in the New York Bight recorded sei whales during August February/March and April/May; see NYSERDA (New York State Energy Research and Development Authority). 2020. Digital aerial baseline survey of marine wildlife in support of offshore wind energy. Third annual report: Summer 2016–Spring 2019 Sixth interim report. Prepared for New York State Energy Research and Development Authority by Normandeau Associates Inc. with APEM Ltd.]	Information on sei whales has been updated to include the statement that sei whales are known to occur year-round in Southern New England and the New York Bight (Davis et al. 2020), indicating that these regions have ecological importance to this species.
BOEM-2023-0011-0140-0029	The DEIS should include information on the feeding biologically important area (BIA) for fin whales designated by NMFS east of Montauk Point from March to October. [Footnote 64: 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.] Feeding behavior for this species has also been observed in and near the proposed Project Area. [Footnote 65: Kraus S.D. et al. 2016 Northeast Large Pelagic	Information on fin whales has been updated to include a designated BIA from the area east of Montauk Point, New York to the western boundary of Massachusetts WEA (Labrecque et al. 2015)

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	Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles supra; Stone K.M. et al. 2017. Distribution and abundance of cetaceans in a wind energy development area offshore of Massachusetts and Rhode Island supra.]	
BOEM-2023-0011-0140-0033	BOEM does not provide a clear determination for marine mammals from impact pile driving but does note that permanent threshold shift (PTS) is likely. PTS for one or more NARW could have outsized impacts on this critically endangered species and the included monitoring and mitigation is inadequate to ensure whales do not enter an area with a radius of up to 6200 meters (since observers can reliably observe marine mammals at lesser distances and animals do not always vocalize). BOEM should analyze pile driving impacts on all marine mammal species including North Atlantic right whales and update mitigation requirements as necessary to avoid PTS for North Atlantic right whales and minimize it for all other species.	BOEM's proposed mitigation measures that are adopted based on ESA consultation with NMFS are incorporated into Final EIS Appendix G. Mitigation measures related to pile driving include noise mitigation strategies, time of year restrictions, and shutdown zones.
BOEM-2023-0011-0140-0034	BOEM provides support for its "moderate" adverse impacts conclusion by stating that "the population can sufficiently recover from the impacts or enough habitat remains functional to maintain the viability of the species both locally and throughout their range." [Footnote 76: Id. at 3.5.6-13.] BOEM's conclusion that the impacts posed by vessel traffic would be minor with no population-level impacts expected for marine mammals other than NARW significantly underestimates the risk of vessel strike on marine mammals. [Footnote 77: Id. at 3.5.6-45.] Vessel strike risk for right whales and large whales generally will never be simply "removed" either under the No Action Alternative or Proposed Action. BOEM is thus reliant on remedial or mitigating actions to support a minor or moderate impact determination. Indeed BOEM discounts the possibility of vessel strike based upon adherence to voluntary implementation of measures by the developer to reduce	The EIS addresses the known use of the Project area, its vicinity to marine mammal habitat, especially its proximity to Nantucket Shoals, and considers the importance of these habitats. Section 3.5.6 of the EIS discusses the potential impact of the proposed Project on marine mammals and has been revised to include more details on the Project's proposed mitigation measures that specifically focuses on measures to protect NARWs. Additionally, Appendix G includes a comprehensive list of mitigation and monitoring measures (Table G-1, under *Vessel Operations*) that would be implemented to avoid, minimize, and mitigate adverse impacts to marine mammals, specifically the NARW. Among these measures specific to vessel strikes include requiring vessels of all sizes operating port to port to reduce speeds to 10 knots or less between November 1 and April 30. This vessel speed reduction also applies while operating or transiting in any SMAs, DMAs, or

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	vessel strike risk. Non-mandatory and non-enforceable measures are not sufficient mitigation strategies for vessel strikes. Moreover to justify a minor determination for a major source of mortality some discussion and/or quantitative analysis should be conducted regarding the base likelihood for vessel strikes and the effectiveness of required mitigation strategies.	slow zones. Both applicant- and agency-proposed measures require trained lookouts to be posted on all vessel transits during all phases of the Project. A PAM system, as part of the MMPA ITA, would be developed consisting of near real-time monitoring such that NARW or other large whale calls made in or near the transit corridor can be detected and transmitted to the transiting vessel. These measures are particularly protective to NARWs and the strict implementation of such measures would overall reduce the risk of vessel strikes to zero. The mitigation measures incorporated into the ROD for the EIS would be enforceable and would reduce impacts of the Project on marine mammals. BOEM and NMFS continue to work together to use the best available information to determine appropriate mitigation measures. Additionally, mitigation and monitoring measures may arise from consultations from federal and state resource agencies and will be considered by decision makers and potentially adopted as conditions for approval.
BOEM-2023-0011-0140-0035	Even a single lethal vessel strike could jeopardize the species' survival. BOEM defines major impacts as "Impacts on individual marine mammals or their habitat would be detectable and measurable; they would be of severe intensity can be long lasting or permanent and would be extensive. Impacts on individuals and their habitat would have severe population-level effects and compromise the viability of the species." [Footnote 78: Id. at 3.5.6-13.] Based on this definition vessel strike clearly represents a major impact for North Atlantic right whales. BOEM should capture this distinction for this critically endangered species in its impact analysis as it has done previously; this will help ensure that appropriate avoidance minimization and mitigation measures are developed and required to address the outsized risk posed to North Atlantic right whales. [Footnote 79: E.g. CVOW-C DEIS at 3.15-32 and Ocean Wind DEIS at 3.15-55.]We also remind BOEM that there is little to no literature currently	Section 3.5.6 of the EIS discusses the potential impact of the proposed Project on marine mammals and has been revised to include more details on the Project's proposed mitigation measures that specifically focuses on measures to protect NARWs. Additionally, Appendix G includes a comprehensive list of mitigation and monitoring measures (Table G-1, under *Vessel Operations*) that would be implemented to avoid, minimize, and mitigate adverse impacts on marine mammals, specifically the NARW. For example, mitigation measures BA-5 and BA-7 ensure that vessels of all sizes operating port to port will reduce speeds to 10 knots or less between November 1 and April 30. This vessel speed reduction also applies while operating or transiting in any SMAs, DMAs, or slow zones. Vessels will steer a course away from any sighted NARWs at 10 knots or less until the 1,640-foot (500-meter) minimum separation distance has been established. Trained lookouts will be posted on all vessel

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	available to support the assumption that offshore wind development will provide tangible benefit to marine mammals. Due to a lack of evidence and significant uncertainties BOEM should not include an assumption of increased prey availability as a benefit as part of its overall conclusion on the impacts of the Proposed Action.	transits during all phases of the Project and will immediately communicate any sightings to initiate the required avoidance measures. A PAM system will be developed consisting of near real-time monitoring such that NARW or other large whale calls made in or near the transit corridor can be detected and transmitted to the transiting vessel. These measures are particularly protective to NARWs and the strict implementation of such measures would overall reduce the risk of vessel strikes to zero. BOEM and NMFS continue to work together to use the best available information to determine appropriate mitigation measures. Additionally, mitigation and monitoring measures may arise from consultations from Federal and State resource agencies and will be considered by decision makers and potentially adopted as conditions for approval. To address the second comment regarding prey availability, the EIS has been updated to state that the presence of structures (as it introduces hard substrate creating an artificial reef effect) would have minor beneficial effects on fish-eating odontocetes and pinnipeds that benefit from increased prey abundance around the structures. This statement is supported by studies such as those by Raoux et al. (2017), De Mesel et al. (2015), and Degraer et al. (2020).
BOEM-2023-0011-0140-0036	There are critical omissions from BOEM's sound exposure analysis presented in the DEIS that must be addressed in the Final EIS. While this information is included in the appendices to the SouthCoast Wind COP BOEM should transpose all information critical to supporting its impact analysis into the Final EIS.First in the model predicted exposure ranges for monopile and jacket foundations the distances to the behavioral threshold vary between marine mammal hearing groups despite a stated use of a flat 160 dB rms threshold and between species for sea turtles with the same hearing thresholds. [Footnote 80: SCW DEIS 3.5.6-39.] [Footnote 81: SCW DEIS Tables 3.5.7-5 and 3.5.7-6.] This may be unexpected given how exposure ranges are often calculated solely by	Under the *noise: pile driving* IPF discussion under Alternative B - Proposed Action has been updated throughout to reflect the latest installation parameters as outlined in the most recent MMPA ITA (December 2023). Based on the updated acoustic modeling, radial distances to PTS thresholds (i.e., Level A harassment) for impact pile driving were estimated using NMFS (2018) hearing-group-specific, dual-metric thresholds for impulsive noise and marine mammal auditory weighting functions were applied (selecting the larger acoustic isopleth or larger exposure effect to assess PTS onset). To estimate radial distances to behavioral thresholds, NMFS' impulsive noise threshold for Level B harassment under the MMPA was used (SPLRMS of 160 dB re 1 µPa). For

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	hearing group. BOEM should explain the reason behind this variation (i.e. that exposure ranges are computed using the simulated movements of individual animals within each species group considered in the animal movement and exposure modeling). [Footnote 82: SCW COP Appendix U2.] In addition BOEM should correct the description and captions for Tables 3.5.6-8 through 3.5.6-13. [Footnote 83: According to the tables they report ER95% ranges to behavioral thresholds which isn't an acceptable approach to modeling the isopleth to behavioral thresholds. They also appear to report distances to the isopleths for PTS from peak and cumulative sound energy exposure but do not describe these.] These tables are described incorrectly in what they are reporting. They also report attenuated levels and unattenuated levels which again calls into question whether achievable attenuation of at least 10 dB is required or not. If it is they should not report unattenuated values.	sea turtles, radial distances to injury and behavioral thresholds for impact pile driving were estimated using peak SPLs and frequency-weighted accumulated SELs for the onset of PTS in sea turtles from Finneran et al. (2017) and from McCauley et al. (2000) for behavioral response thresholds. By incorporating animal movement into the calculation of ranges to time-dependent thresholds (SEL metrics), exposure ranges (ER95%) can provide a more realistic assessment of the distances within which acoustic thresholds may be exceeded. This also means that different species within the same hearing group can have different exposure ranges as a result of differences in movement patterns for each species. Modeling also used a 10-dB-per-hammer-strike noise attenuation to incorporate the use of a single noise-abatement system (e.g., bubble curtain system and an additional system) and is considered achievable with currently available technologies (Bellmann et al. 2020).
BOEM-2023-0011-0140-0037	Second estimates of the number of individual marine mammals that may experience injury (i.e. PTS) temporary threshold shift (TTS) or behavioral disturbance are not included in the impacts analysis. [Footnote 84: BOEM states: "Take estimates under Scenarios 1 and 2 are in the Request for Incidental Take Regulations for the Construction and Operations of the Mayflower Wind Project (September 2022) Tables 25 and Table 26 respectively." Mayflower DEIS at 3.5.6-42.] As this information represents a key component of assessing the potential for impact BOEM must incorporate this information into the Final EIS. Appendix U2 of the SouthCoast Wind COP provides exposure estimates for marine mammals and for sea turtles that could be included in the DEIS. [Footnote 85: SCW COP Appendix U2 Table 15; as noted in this letter we recommend these estimates be updated based on ver. 12 of the Roberts et al. models and the new density estimates for sea turtles developed by the U.S. Navy.] For all marine mammals and North Atlantic right whales in particular it is unreasonable to make any determination of	*Noise* IPFs such as for pile driving, HRG surveys, and UXO detonations under Alternative B - Proposed Action on Marine Mammals include the most up-to-date exposure estimates based on the latest acoustic modeling reports within the MMPA ITA Application (December 2023). Discussions related sea turtle density estimates is in Section 3.5.7.

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	impact levels for impact producing factors (IPFs) that have large areas of potential PTS TTS and behavioral impacts (e.g. impact pile driving vibratory pile driving UXO detonations) without having an understanding of the number of individuals that could be affected.	
BOEM-2023-0011-0140-0038	Third it is unclear from the impacts analysis if noise attenuation technology will be required during impact pile driving and other activities. Four levels of noise attenuation (0 dB 6 dB 10 dB and 15 dB) are modeled in the marine mammal section but it is not stated in the DEIS which level must be attained if any. [Footnote 86: SCW DEIS at 3.5.6-38.] The acoustic impact analysis presented in Appendix U2 of the SouthCoast Wind COP states that a noise abatement system (NAS) performance of 10 dB broadband attenuation was chosen for the study of acoustic impacts because of its achievability. BOEM's analysis of noise impacts in the DEIS should clearly state what level of noise attenuation will be required so potential impacts to marine mammals can be accurately evaluated.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0039	Fourth the DEIS's description of potential noise effects from operational WTGs is also cursory and does not provide any analysis of sound source levels compared to thresholds or ambient noise. A wealth of research exists on the impacts of operational noise from offshore wind turbines on marine life and the importance of reducing this impact. Best available scientific information indicates that during the operation phase offshore wind turbines may generate noise audible and potentially impactful to large whales and other marine species over significant distances. [Footnote 87: Stöber Uwe and Frank Thomsen. "How could operational underwater sound from future offshore wind turbines impact marine life?" The Journal of the Acoustical Society of America 149.3 (2021): 1791-1795; Carduner Jordan. "Characterizing the operational soundscape of floating offshore wind parks: Implications for environmental risk assessment and wildlife." Presentation at	The best available information about measured and modeled underwater operational noise levels is available now in Section 3.5.6.6. Impacts of Alternative B. A discussion of how this noise could impact marine mammals is provided. Due to the relatively short distances over which operational noise is expected to be over ambient noise levels, the potential impacts are expected to be minor. Therefore, a full-scale acoustic modeling is not warranted for this sound source at this time.

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	the State of the Science Workshop on Wildlife and Offshore Wind Energy. New York USA. July 28 2022.] Understanding levels and impacts of operational noise should be an immediate research and monitoring priority for BOEM as the first offshore wind projects are constructed in the United States. The Final EIS should include a proper quantitative analysis that considers the operational noise generated by turbines.	
BOEM-2023-0011-0140-0040	Within the DEIS BOEM asserts that pile-driving activities will likely exceed PTS and TTS for all marine mammal functional hearing groups. [Footnote 88: SCW DEIS at 3.5.6-41.] We note that behavioral impacts resulting from noise exposure can also be significant and the best available scientific information on this matter is not incorporated into the DEIS. For example the entirety of consideration of the potential for behavioral effects is quoted below:“Mitigation would reduce PTS from impact pile driving on marine mammals; however behavioral and masking effects are still considered likely for activities with large acoustic disturbance areas. Based on the analysis conducted by Southall et al. (2021) it is expected that pinnipeds are likely to leave the area during pile-driving activities and more severe responses are likely for harbor porpoises including minor reductions in vocal output possible sustained avoidance reduced vocal mechanisms and habitat avoidance (Southall et al. 2021).” [Footnote 89: Id. at 3.5.6-41.]BOEM then provides a minor determination for the potential of behavioral impacts to pinnipeds and a moderate impact level for all other species. To include a moderate determination with such little consideration of the behavioral effects is inadequate.There are additional data available that BOEM should consider and include. For example scientific information on North Atlantic right whale functional ecology shows that the species employs a “high- drag” foraging strategy that enables them to selectively target high-density prey patches but is energetically expensive. [Footnote 90: Van der Hoop J. Nousek-McGregor A.E. Nowacek D.P.	The discussion of potential behavioral effects to marine mammals from impact pile driving is under the cumulative impacts of the No Action Alternative, in the Noise section, under Pile Driving Noise. This section and the following subsections present the background information on the potential impacts on marine mammals from the various IPFs considered in the IPF, the determinations made under Alternative B incorporate this information into their impact determinations.

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	Parks S.E. Tyack P. and Madsen P "Foraging rates of ramfiltering North Atlantic right whales" Functional Ecology vol. 33 pp. 1290-1306 (2019).] Thus if access to prey is limited in any way the ability of the whale to offset its energy expenditure during foraging is jeopardized. Researchers have concluded: "right whales acquire their energy in a relatively short period of intense foraging; even moderate changes in their feeding behavior or prey energy density are likely to negatively impact their yearly energy budgets and therefore reduce fitness substantially." [Footnote 91: 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. [Footnote 92: 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). 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.] A recent study confirmed that larger females do indeed have more calves. [Footnote 93: Stewart Joshua D. et al. "Larger females have more calves: influence of maternal body length on fecundity in North Atlantic right whales." Marine Ecology Progress Series 689 (2022): 179-189.] These studies provide an indication of the significant impact disturbance during foraging may have on a marine mammal species. The waters off southern New England are a critically important foraging area for North Atlantic right whales; for this Final EIS and other DEISs that are forthcoming BOEM	

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	must fully assess the impacts associated with disturbance of North Atlantic right whales and other marine mammal species during foraging at the spatial and temporal scale those impacts are expected to occur for individual projects and cumulatively across projects. [Footnote 94: Quintana-Rizzo E. Leiter S. Cole T.V.N. Hagbloom M.N. Knowlton A.R. Nagelkirk P. Brien O.O. Khan C.B. Henry A.G. Duley P.A. and Crowe L.M. 2021. Residency demographics and movement patterns of North Atlantic right whales Eubalaena glacialis in an offshore wind energy development area in southern New England USA. Endangered Species Research 45 pp.251-268; O'Brien O. Pendleton D.E. Ganley L.C. McKenna K.R. Kenney R.D. Quintana-Rizzo E. Mayo C.A. Kraus S.D. and Redfern J.V. 2022. Repatriation of a historical North Atlantic right whale habitat during an era of rapid climate change. Scientific Reports 12(1) pp.1-10.] As the energetic requirements of many marine mammal species are not yet known we recommend BOEM proceed with this analysis in a precautionary manner and support research aimed at addressing these knowledge gaps.	
BOEM-2023-0011-0140-0041	Concerningly under the noise analysis for marine mammals for the Proposed Alternative high- resolution geophysical (HRG) surveys are afforded only a paragraph while listing HRG equipment that can have significant impacts on marine mammals (sparkers and boomers which can have peak source levels greater than 140 dB). [Footnote 95: SCW DEIS at 3.5.6-44.] Further BOEM continues to rely on information from the 2021 BOEM Biological Assessment (BA) and the 2021 programmatic informal consultation. We have profound concerns with the 2021 BOEM BA and the programmatic informal consultation it supports because it relies on grossly outdated scientific information about the right whale and fails to include mitigation measures that meet the ESA's requirements. Indeed in a letter submitted to BOEM and NMFS on January 20 2022 several of the undersigned groups urged NMFS to immediately reinitiate consultation under the ESA based on the best available scientific data and new right	Background information on the impact of HRG surveys on marine mammals in the Cumulative Impacts of the No Action Alternative, in the *noise* IPF, under *geophysical surveys*. This presents the potential impacts on marine mammals from HRG surveys. This information is used for the effects determination for the Proposed Action.

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	whale population number to ensure the mitigation measures on which BOEM is relying for site characterization and assessment activities are protective enough to reduce risk to right whales. [Footnote 96: Letter from Defs. of Wildlife et al. to Amanda Lefton Dir. Bureau of Ocean Energy Mgmt. & Janet Coit Assistant Adm'r NMFS Re: BOEM and NMFS Must Reinitiate Consultation on the Effects of Site Assessment Characterization Activities for Offshore Wind Energy on North Atlantic Right Whales (Jan. 20 2022) Attachment 2.] We reiterate the request for BOEM to update the analyses now in order to comply with the ESA on this and all future Atlantic coast leases.	
BOEM-2023-0011-0140-0053	To reduce impacts from noise produced by impact pile driving BOEM indicates that the applicant will implement noise attenuation mitigation to reduce sound levels by a target of approximately 10 dB (re: 1 µPa2s) Sound Exposure Level (SEL) or greater. [Footnote 146: SCW DEIS Appendix G page G-75.] We note that it is not clear from the DEIS whether BOEM is conditioning its permit for SouthCoast Wind on a specific level of noise reduction. [Footnote 147: SCW DEIS 3.5.6-36 to 37. BOEM states "Combinations of noise-attenuation systems (e.g. double big bubble curtain hydrosound damper plus single big bubble curtain) potentially achieve much higher attenuation than the 10-15 dB of small single bubble curtains (Buehler et al. 2015). The type and number of noise-attenuation systems to be used during construction have not yet been determined and impact pile driving 24 hours per day was deemed necessary to complete installation within as few years as possible."] Additionally even at the 10-dB target level noise reduction and attenuation falls below what can now be achieved with best available noise control technology and we recommend BOEM strengthen its requirements to maximize the level of noise reduction during construction. As described in Bellman et al. (2020) and Bellman et al. (2022) noise reduction levels achieved in Europe through the combined use of NAS (one positioned in the near-field and one in the	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	far-field) have reached a 20 dB (re: 1 µPa2s) reduction in SEL or greater. [Footnote 148: Bellmann M. A. Brinkmann J. May A. Wendt T. Gerlach S. & Remmers P. (2020) Underwater noise during the impulse pile- driving procedure: Influencing factors on pile-driving noise and technical possibilities to comply with noise mitigation values. Supported by the Federal Ministry for the Environment Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt Naturschutz und nukleare Sicherheit (BMU)) FKZ UM16 881500. Commissioned and managed by the Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie (BSH)) Order No. 10036866. Edited by the itap GmbH; Bellman M. A. Wendt T. May A. Gerlach S. and Remmers P. (2022). Underwater noise during percussive pile driving: influencing factors on pile-driving noise and technical possibilities to comply with noise mitigation values (ERA report). Presentation at The Effects of Noise on Aquatic Life conference Berlin Germany 2022.] [Footnote 149: Sound Exposure Level (SEL) is defined following Bellmann et al. (2020) at 31-32. Findings are based on post-processed underwater noise measurement data and many relevant metadata of more than 2000 pile installations with and without the application of noise abatement systems (NAS) for complying with German thresholds.] A combination of the IHC Noise Mitigation Screen (IHC-NMS) and an optimized big bubble curtain (BBC) has proven among the most effective to date with a minimum average and maximum reduction in sound exposure level (ΔSEL) of 17 19 and 23 dB respectively. [Footnote 150: Bellman et al. (2020) at Table 4.] The deployment of a combination NAS (i.e. two different systems) is considered by those authors to be “state of the art” in terms of SEL reduction and is also important for attenuating sound across a range of frequencies and maximizing transmission loss. [Footnote 151: Bellman et al. (2022) id.] [Footnote 152: Bellman et al. (2020 2022) id.] [Footnote 153: Peng Y. Tsouvalas A. Stampoultzoglou T and Metrikine A.	

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	(2021). Study of sound escape with the use of an air bubble curtain in offshore pile driving. Journal of Marine Science and Engineering 9(2) 232. https://doi.org/10.3390/jmse9020232.]We recognize that there are differences between the European offshore wind context and that of the U.S. making the direct transference of findings difficult. The monopiles included in the data set examined by Bellman et al. (2020 2022) were approximately 8 m or less in diameter compared with the approximately 10 m or greater diameter monopiles planned for the U.S. Larger diameter monopiles generate greater noise levels at the source. The noise reduction standard the NAS were compared against in Europe was also specifically designed to protect harbor porpoises in German waters (i.e. SEL less than or equal to 160 dB (re: 1 µPa2s) at 750 meters from the monopile installation site) and not tailored to the low-frequency cetaceans that are a priority in the U.S. That said the water depths are in some cases comparable across both regions (up to 40 m) and the European findings can be directly applied to the installation of smaller diameter pin-piles in the U.S. The limited evidence that is available from U.S. offshore wind projects also indicate alignment with Bellman et al. (2020 2022). For example the limitations of using a single NAS have been demonstrated. Measurements of sound pressure recorded during the installation of an unmitigated and mitigated monopile for the Coastal Virginia Offshore Wind pilot project indicate that a double bubble curtain (i.e. a single NAS) was most effective at higher frequencies (>200 Hz) and did not attenuate sound as effectively at lower frequencies. [Footnote 154: Ampala K. Miller J.H. Potty G.R. Newhall A. Amaral J. Frankel A.S. Mason T. and Khan A. (2022). Measuring the effectiveness of a double bubble curtain during impact pile driving at the Coastal Virginia Offshore Wind (CVOW) Pilot Project. Poster presentation at the State of the Science Workshop on Wildlife and Offshore Wind Energy. New York USA 2022.] This indicates that the deployment of a	

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	second NAS designed to attenuate noise at lower frequencies would have further reduced noise impacts.Given these developments BOEM should require the developer to implement the best commercially available combined NAS technology to achieve the greatest level of noise reduction and attenuation possible in line with the mitigation hierarchy. Based on the findings of Bellman et al. (2020 2022) which indicate a reduction of 20 dB SEL is feasible for monopiles 8 meters in diameter we recommend that up to a 10-dB (re: 1 µPa2s) reduction of SEL be viewed as a floor only. BOEM should require developers to deploy technologies proven in Europe to be capable of a 15-dB (re: 1 µPa2s) reduction in SEL or greater. The noise reduction requirement should apply to all aspects of pile driving operations including pile strikes compressors and operations vessels engaged in construction. Field measurements must be conducted on the first pile installed and data must be collected from a random sample of piles throughout the construction period. We do not support field testing using unmitigated piles. Sound source validation reports of field measurements must be evaluated by both BOEM and NOAA Fisheries prior to additional piles being installed and be made publicly available.	
BOEM-2023-0011-0140-0054	NMFS' and thus BOEM's reliance on a 160 dB (re 1 µPa2s) threshold for behavioral harassment is not supported by the best available scientific information and such reliance grossly underestimates Level B take. [Footnote 156: See e.g. Gomez C. Lawson J.W. Wright A.J. Buren A.D. Tollit D. and Lesage V. "A systematic review on the behavioral responses of wild marine mammals to noise: the disparity between science and policy" Canadian Journal of Zoology vol. 94 pp. 801-819 (2016); Tyack P.L. and Thomas L. "Using dose-response functions to improve calculations of the impact of anthropogenic noise" Aquatic Conservation: Marine and Freshwater Ecosystems vol. 29 pp. 242-253 (2019). See also Letter from the Marine Mammal Commission to Ms. Jolie Harrison Chief Permits and Conservation Division Office of	The letter from the Marine Mammal Commission opposed the use of the 160 dB re 1 µPa threshold for behavioral impacts from non-impulsive sources of noise (e.g., parametric SBPs, chirps, echosounders, sonars). In its noise modeling, SouthCoast Wind did use the lower, more precautionary Level B harassment threshold of 120 dB re 1 µPa recommended in the Marine Mammal Commission's letter for continuous, non-impulsive vibratory pile driving. Thus, behavioral disturbance from non-impulsive noise sources should be conservatively captured in the Final EIS.

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	Protected Resources National Marine Fisheries Service regarding the IHA requested by Orsted Wind LLC. (June 13 2018). https://www.mmc.gov/wp-content/uploads/18-06-13-Harrison-Orsted-Bay-State-IHA.pdf. The Marine Mammal Commission "…remains concerned that NMFS' current behavior thresholds do not reflect the current state of understanding regarding the temporal and spectral characteristics of various sound sources and their impacts on marine mammals."] As previously noted behavioral disturbance of right whales must be minimized to the greatest extent possible if the species is to be adequately protected. Establishing Clearance and Exclusion Zones and monitoring those areas for the presence of marine mammal and sea turtles is one of the primary means of reducing acoustic exposures of these species during impact pile driving.	
BOEM-2023-0011-0140-0055	BOEM sets out several Clearance and Exclusion Zones for North Atlantic right whales to be implemented at different time periods in Appendix G of the DEIS (we encourage BOEM to also include this important information on monitoring and mitigation in the main text of the Final EIS). [Footnote 157: SCW DEIS Appendix G G-77.] For impact pile driving with a minimum noise reduction/attenuation level of 10 dB (re 1 µPa2s) as intended by the SouthCoast Wind Project the following minimum Clearance and Exclusion Zone distances should be required for North Atlantic right whales (see Attachment 1):1. A visual Clearance Zone and Exclusion Zone must extend at minimum 5000 m in all directions from the location of the driven pile.2. An acoustic Clearance Zone must extend at minimum 5000 m in all directions from the location of the driven pile.3. An acoustic Exclusion Zone must extend at minimum 2000 m in all directions from the location of the driven pile.	BOEM has considered all public comments on the Draft EIS in selecting mitigation to be included in the Final EIS. Additionally, ESA consultation with NMFS is underway and findings of the Biological Opinion are incorporated into the Final EIS.
BOEM-2023-0011-0140-0056	In addition Clearance and Exclusion Zone distances for other marine mammal species are extremely small relative to the size of the zone of potential impact. Sea turtles and mysticete	BOEM has considered all public comments on the Draft EIS is selecting mitigation to be included in the Final EIS. Additionally, ESA consultation with NMFS is underway and

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	whales other than the North Atlantic right whale are afforded a 500-meter exclusion zone harbor porpoise only a 120-meter exclusion zone and all other species only a 50-meter exclusion zone. [Footnote 158: SCW DEIS Appendix G G-42.] BOEM should revise the required Clearance and Exclusion Zones increasing their size in a manner that eliminates Level A take and minimizes behavioral harassment to the fullest extent possible for all marine mammal species as well as sea turtles.	findings of the Biological Opinion are incorporated into the Final EIS.
BOEM-2023-0011-0140-0057	BOEM states that adverse effects are not anticipated on marine mammal stocks or populations due to the implementation of applicant-committed avoidance minimization and mitigation measures (Appendix G) which will reduce/eliminate potential Level A harassment the low number of UXOs identified in the Project Area and the required detonations that will be timed to occur no more than once per day. [Footnote 159: SCW DEIS at 3.5.6-43] However monitoring and mitigation measures specific to UXO detonations are not included in the Appendix G and BOEM's lack of analysis for UXO detonations for SouthCoast Wind does not comport with how this activity has been analyzed in recent and concurrent DEIS's for other offshore wind projects. BOEM must provide a complete analysis of potential impacts from UXOs and a full description of monitoring and mitigation measures required for this activity in the Final EIS.	A complete analysis of potential impacts from UXOs and a full description of monitoring and mitigation measures required for this activity have been added to the Final EIS
BOEM-2023-0011-0140-0125	Although the Draft EIS provides a reasonably detailed explanation of hydrodynamic effects the Draft EIS does not analyze whether such hydrodynamic effects are likely to result in negative impacts to the cold pool a mass of cold bottom water in the Mid-Atlantic Bight overlain and surrounded by warmer water which has a northern limit in the general area of the Project. [Footnote 331: Zhuomin Chen and Enrique Curchitser Interannual variability of the Mid-Atlantic Bight Cold Pool Journal of Geophysical] Research: Oceans (2020).] In the Final EIS BOEM should attempt to quantify any impacts to	BOEM has determined the Atlantic cold pool does not overlap with Lease Area; thus, the presence of WTGs in the Lease Area would not have any impacts on oceanographic processes that could affect the Atlantic cold pool.

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	the cold pool from WTG structures and include such impacts in its impact level ratings. In the Final EIS BOEM should also include specific analysis of any impacts to Nantucket Shoals from hydrodynamic effects that it expects to occur because of the Project.	
BOEM-2023-0011-0177-0004	I read three times the mitigation measures and the impacts on right whales and the document ignores the fact that right whales are quiet for hours mothers and calves are rarely at the surface. These animals are quiet and below the surface and no amount of on board vessel watchers PSO people or acoustic monitoring is going to be able to protect them. There is just simply not an acknowledgement in the document about natural behavior of right whales which is to be silent for hours and not necessarily at the surface unless they are actively feeding.	Mitigation measures in the EIS include both PAM and visual monitoring, which would provide for detection of non-vocalizing marine mammals, as well as vessel strike avoidance measures.

N.6.11 Sea Turtles

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BOEM-2023-0011-0039-0001	There is little research done on how offshore wind farms affect marine life but in recent studies it has shown that offshore wind farms reduce the amount of oxygen in the water and increase the biogenic carbon by 10% in these areas (Offshore Wind [Fisheries NOAA. “Offshore Wind Energy: Protecting Marine Life.” NOAA Fisheries https://www.fisheries.noaa.gov/topic/offshore-wind-energy/protecting-marine-life.]). This is troubling as there is many wildlife surrounding these areas that need adequate amounts of oxygen levels. Protected wildlife within these areas include; roseate terns piping plovers leatherback sea turtles loggerhead sea turtles Kempâ€TMs Ridley sea turtles and grey seals (Nantucket Sound [“Nantucket Sound.” Center for Coastal Studies https://coastalstudies.org/our-work/marine-policy-initiative/nantucket-sound/#:~:text=Nantucket%20Sound%20is%20a%20recognize	EIS Appendix E, *Analysis of Incomplete and Unavailable Information*, Section E.1.2.7, *Sea Turtles*, acknowledges that the data to investigate impacts on sea turtles is lacking. However, the available relevant information suggests that the planned activities are not expected to result in population-level effects on sea turtles. The NOAA link provided by the commenter does not include information that offshore wind farms decrease the amount of oxygen in the water.

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	dsea%20turtles%2C%20and%20grey%20seals.]). These wildlife should be at special concern since their populations are protected in order to avoid declines and help with the conservation of them.	
BOEM-2023-0011-0137-0110	Sea turtles have a nomadic lifestyle. Speculation about sea turtles they will aggregate at the foundations of structures is just that speculation. That sea turtle populations will benefit from "fish" aggregation at the base of turbines or that such benefit will balance out the increased entanglement and other risks presented by the proposed activities is also not founded.	Section 3.5.7.3, *Presence of structures*, describes the potential for offshore wind structures to create an artificial reef effect, whereby growth around the artificial reefs may provide food for sea turtles. This is a well-established phenomenon that is explained in the text with supporting scientific references.
BOEM-2023-0011-0137-0113	The Bureau should also consider and provide an adequate analysis of whether wind-turbine Power plants can be expected to contribute to cold-shock deaths from a combination of turbine structures reducing water current velocity (and increasing localized temperatures) the physical presence of the structures themselves and interference with magnetoreception in these animals all or some of which might have the potential to facilitate lingering or containment in the lease area or nearby later in the season (when they may be cold-shocked) than they would ordinarily remain. Turtles navigate using magnetoreception especially in absence of other navigatory cues and at night. There will be cross cables throughout the sea floor inside the lease areas once developed (inter-turbine connector cables along the sea floor). Sea turtles are magnetosensitive and both sense magnetic fields and have magnetic compass orientation. The DEIS did not consider the likelihood or possibility of this confluence of factors or them separately.	A discussion of the hydrodynamic effects from offshore wind structures, including the potential to change water velocity associated with the wind wake effect, is discussed in detail in Section 3.5.7.3, *Presence of structures*. There is no evidence from Europe or modeled data to indicate the potential for structures to result in large changes in water temperature that could induce cold-shock deaths. In regards to magnetoreception, Final EIS Appendix E, *Analysis of Incomplete and Unavailable Information*, Section E.1.2.7, *Sea Turtles*, acknowledges that the effects of EMF on sea turtles are not completely understood. However, the available relevant information is summarized in the BOEM-sponsored report by Normandeau et al. (2011). Although the thresholds for EMF disturbing various sea turtle behaviors are not known, the evidence suggests that impacts may only occur on hatchlings over short distances, and no adverse effects on sea turtles have been documented to occur from the numerous submarine power cables around the world.
BOEM-2023-0011-0137-0120	Clear avoidance reactions to seismic signals at levels between 166-179 dB re 1µPa have been observed. [Footnote 55: Moein S.E. J.A. Musick J.A. Keinath D.E. Barnard M.L. Lenhardt and R. George. 1995. Evaluation of seismic sources for repelling sea turtles from hopper dredges pp. 90-93. In: L.Z. Hales (ed.) Sea Turtle Research Program: Summary Report. Technical Report	Data regarding sea turtle hearing abilities are summarized in EIS Table 3.5.7-3. NMFS has adopted the U.S. Navy acoustic thresholds for the onset of PTS, TTS, and behavioral disruptions for sea turtles as presented in Finneran et al. (2017) (and shown in Table 3.5.7-4). Section 3.5.7.3 concludes that underwater noise generated from installation

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	CERC-95] [Footnote 56: McCauley Fewtrell Duncan C. Jenner M.N. Jenner Penrose Prince Adhitya Murdoch and McCabe 2000. Marine seismic surveys – a study of environmental implications. APPEA Journal 692-708.] The DEIS has not fully examined the fitness and population effects of loss of habitat use by turtles due to offshore wind activity.	of WTGs and OSPs may temporarily cause behavioral disturbance to sea turtles. This section includes that construction activities could temporarily displace animals; however, individuals may become habituated to repeated exposures over time. BOEM has determined that the analysis provided is sufficient to support sound scientific judgments and informed decision-making about the proposed Project with respect to its impacts on sea turtles.
BOEM-2023-0011-0140-0030	Sea turtles: The description of relative occurrence should also include "Year-Round" for leatherback loggerhead green and Kemp's Ridley sea turtles. [Footnote 66: SouthCoast DEIS Table 3.5.7-1] While not as likely to occur during the winter they may occur during the spring summer and fall with peak occurrence during summer and fall. Leatherback sea turtles become more numerous off the Mid-Atlantic and southern New England coasts in late spring and early summer and by late summer and early fall they may be found in the waters off eastern Canada. [Footnote 67: CETAP. 1982. Characterization of marine mammals and turtles in the Mid- and North Atlantic areas of the U.S. Outer Continental Shelf-Final report of the Cetacean and Turtle Assessment Program. Prepared for U.S. Bureau of Land Management Washington D.C. by Cetacean and Turtle Assessment Program University of Rhode Island Graduate School of Oceanography Kingston Rhode Island. Contract AA551-CT8-48; Dodge K.L. B. Galuardi T.J. Miller and M.E. Lutcavage. 2014. Leatherback turtle movements dive behavior and habitat characteristics in ecoregions of the Northwest Atlantic Ocean. PLoS ONE 9(3):e91726; Shoop C.R. and R.D. Kenney. 1992. Seasonal distributions and abundances of loggerhead and leatherback sea turtles in waters of the northeastern United States. Herpetological Monographs 6:43-67; Thompson N.B. J.R. Schmid S.P. Epperly M.L. Snover J. Braun-McNeill W.N. Witzell W.G. Teas L.A. Csuzdi and R.A. Myers. 2001. Stock assessment of leatherback sea turtles of the western North Atlantic. Pages 67-104 in NMFS-SEFSC (National Marine Fisheries Service-	Section 3.5.7 of the EIS details the relative occurrence for all four turtle species occurring within the offshore Project area based on best available scientific information. Therefore, the relative occurrence information provided in the EIS is sufficient to support sound scientific judgements and informed decision making about the proposed Project with respect to its impact on Sea Turtles.

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	Southeast Fisheries Science Center) ed. Stock assessments of loggerhead and leatherback sea turtles and an assessment of the impact of the pelagic longline fishery on the loggerhead and leatherback sea turtles of the western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-455.] During NLPSC aerial and acoustic surveys loggerhead turtles were sighted within the RI-MA WEAs during spring summer and fall with the greatest number of observations in summer and fall. [Footnote 68: Kraus S.D. et al. 2016. Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles supra; O'Brien O. K. McKenna D. Pendleton and J. Redfern. 2021. Megafauna aerial surveys in the Wind Energy Areas of Massachusetts and Rhode Island with emphasis on large whales: Interim Report Campaign 6A 2020. U.S. Department of the Interior Bureau of Ocean Energy Management. OCS Study BOEM 2021-054; O'Brien O. K. McKenna B. Hodge D. Pendleton M. Baumgartner and J. Redfern. 2021. Megafauna aerial surveys in the Wind Energy Areas of Massachusetts and Rhode Island with emphasis on large whales. Summary Report - Campaign 5 2018-2019. Agreement No.: M17AC00002. OCS Study BOEM 2021-033. US Department of the Interior Bureau of Ocean Energy Management; Quintana E. S. Kraus and M. Baumgartner. 2019. Megafauna aerial surveys in the Wind Energy Areas of Massachusetts and Rhode Island with emphasis on large whales. Summary report - Campaign 4 2017-2018. Prepared by New England Aquarium Anderson Cabot Center for Ocean Life and Woods Hole Oceanographic Institution; Stone K.M. S.M. Leiter R.D. Kenney B.C. Wikgren J.L. Thompson J.K.D. Taylor and S.D. Kraus. 2017. Distribution and abundance of cetaceans in a wind energy development area offshore of Massachusetts and Rhode Island. Journal of Coastal Conservation 21(4):527-543.] During recent surveys in the New York Bight sightings of Kemp's ridley sea turtles were recorded during the spring summer and fall and one green sea turtle was sighted during spring 2016. [Footnote 69: NYSERDA	

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	(New York State Energy Research and Development Authority). 2020. Digital aerial baseline survey of marine wildlife in support of offshore wind energy supra.; 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. for New York State Department of Environmental Conservation.] One confirmed sighting of a green sea turtle was also recorded in the RI-MA WEAs in 2005 and five green sea turtle sightings were recorded off the Long Island shoreline 10 to 30 miles (16 to 48 kilometers) southwest of the WEAs during AMAPPS aerial surveys conducted from 2010 to 2013. [Footnote 70: Kenney R. D. and K. J. Vigness-Raposa. 2010. Marine mammals and sea turtles of Narragansett Bay Block Island Sound Rhode Island Sound and nearby waters: an analysis of existing data for the Rhode Island Ocean Special Area Management Plan. In: Ocean Special Area Management Plan Vol 2. Rhode Island Coastal Resources Management Council Wakefield RI.] [Footnote 71: NEFSC (Northeast Fisheries Science Center) and SEFSC (Southeast Fisheries Science Center). 2018. 2017 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. Northeast Fisheries Science Center and Southeast Fisheries Science Center.]	
BOEM-2023-0011-0140-0031	BOEM uses the latest density models for cetaceans released in 2022 (Roberts et al. 2022 models). For sea turtles BOEM refers to the COP Volume II which uses seasonal density estimates from the U.S. Navy Operating Area Density Estimate database (U.S. Navy 2007). [Footnote 72: SCW DEIS at 3.5.7-3 to 3.5.7-7] The Navy's density estimates are generated via modeling and are outdated as they are based on NMFS aerial survey data collected prior to 2005. The Navy is shortly expected to release updated sea turtle density models and is currently making this information available upon request to	The discussions and results in the Final EIS are in alignment with the most recent JASCO acoustic modeling report for SouthCoast Wind (December 2023) and the density estimates therein. BOEM is aware of the more recent sea turtle density estimates available (DiMatteo and Sparks 2023); however, as the most recent JASCO acoustic modeling made use of the U.S. Navy Operating Area Density Estimate (NODE) database on the Strategic Environmental Research and Development Program Spatial Decision Support System (SERDP-SDSS) portal (U.S. Navy 2012, 2017) and from the

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	support agency decision-making. BOEM should request and use these updated models to derive density estimates for the Project Area.	*Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles* (Kraus et al. 2016) as basis to derive sea turtle density estimates, these are the values currently being reflected in this Final EIS.
BOEM-2023-0011-0140-0042	The SouthCoast Wind COP acknowledges that open loop cooling poses an entrapment risk for juvenile seals and for sea turtles and states "Mayflower Wind will consult with EPA and NMFS to ensure appropriately sized bar racks are included in the engineering design to minimize the risk of entrapment at the CWIS." [Footnote 97: SCW COP Version E Volume II at 6-258 and 6-2292.] [Footnote 98: Id. at 418.] However the DEIS only discusses the potential for marine mammal and sea turtle entrapment in relation to fisheries survey gear and does not mention the potential for entrapment in cooling water intakes. [Footnote 99: SCW DEIS page 3.5.6-34 [mammals] and page 3.5.7-33 [sea turtles].] In addition the only mitigation measures that involve cooling are for zooplankton. [Footnote 100: SCW DEIS pages G-49 and G-57. "To minimize potential impacts on zooplankton from impingement and entrainment in offshore wind HVDC converter station open-loop cooling systems no open-loop cooling systems would be permitted in the enhanced mitigation area of the Lease Area. No geographic restrictions on the offshore export cable corridor nor the installation of an HVAC OSP are included in this mitigation measure."] BOEM is required to analyze the impacts of open loop cooling on juvenile seals and sea turtles and should include bar racks as well as other appropriate options as part of their mitigation measures to protect seals and sea turtles.	The Final EIS, Section 3.5.7.5 has been revised to add a new IPF discussion, *Discharges/intakes*, which includes an updated discussion of the impacts of the HVDC converter OSPs on sea turtles, based on information from SouthCoast Wind's NPDES permit application for one HVDC converter OSP for Project 1. The discussion includes mention of bar racks.
BOEM-2023-0011-0140-0043	BOEM notes that dredging including the use of hopper dredging may be used for cable installation sand wave clearance exit pits and ground prep for gravity-based structure foundations but provides little analysis on the potential impacts to sea turtles. [Footnote 101: SCW DEIS page 3.5.7-27] Given the well-documented and severe	Text concerning GBS dredging impacts have been removed, as GBS foundations are no longer in the PDE. Dredging is only anticipated to occur within three relatively small sand wave clearance areas in the Falmouth ECC, with no sand wave clearance dredging is anticipated within the Brayton Point ECC.

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	impacts of hopper dredging on sea turtles particularly during seasons with high sea turtle presence any possibility of such activity could be a cause for concern. [Footnote 102: E.g. Dickerson D. et al. 2004. Dredging impacts on sea turtles in the southeastern USA: A historical review of protection. Proceedings of World Dredging Congress XVII Dredging in a Sensitive Environment. Vol. 27; Harms Craig A. et al. 2020. Gas embolism and massive blunt force trauma to sea turtles entrained in hopper dredges in North and South Carolina USA. Diseases of Aquatic Organisms 142 189-196.] BOEM should therefore explicitly estimate areas of dredging total volume of dredge material analyze the risks and impacts of each and following the principles of using the maximum-case scenario of the project design envelope use the maximum possible impact in their analyses and required mitigation measures.	
BOEM-2023-0011-0140-0044	In addition in considering the potential for dredge and cable emplacement under the No Action Alternative BOEM should not equate lower densities of sea turtles in open ocean environments with low risk of impacts from these activities on sea turtles. [Footnote 103: SCW DEIS page 3.5.7-14.] This is particularly true when these activities are taking place in nearshore areas where sea turtles densities are higher.	The statement that interactions from dredging and cable emplacement is lower in the offshore areas in comparison to nearshore navigational channels is well supported and consistent with the assessments in other BOEM offshore EIS documents. Should cable laying and seabed preparation activities occur in nearshore areas, habitat disturbance would typically be minimized by SAV surveys and these areas would then be avoided during construction.
BOEM-2023-0011-0140-0045	Given that marine mammals and sea turtles are at a relatively high risk of entanglement from both actively fished and displaced and abandoned fishing gear as well as other marine debris this IPF requires more detailed discussion in the Final EIS. The Northeast Monitoring and Assessment Program (NEAMAP) surveys which the fishery surveys that will be implemented for SouthCoast Wind are modeled after have a capture rate for sea turtles that is non-negligible. Based on the known impact rates for the NEAMAP surveys BOEM should include estimates of the number of sea turtles that may be affected by the SouthCoast Wind surveys based on measures of survey effort and provide an appropriate impact	SouthCoast Wind has prepared fisheries monitoring plans for the Lease Area and Brayton Point ECC. Final EIS Section 3.5.7.5, *Gear Utilization*, has been revised to include a discussion of these plans and their potential for effects on sea turtles. For example, a demersal otter trawl survey will be conducted by SMAST in the Lease Area. SMAST is working with NMFS to obtain a LOA from NMFS prior to survey activities. The LOA application states as a result of surveys they "do not expect bycatch of or interaction with marine mammals, sea turtles, sturgeons, or other protected species" based on BMPs. An official workplan is being developed.

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	level determination. [Footnote 104: Available as part of the NEFSC PEA]	

N.6.12 Wetlands

None.

N.6.13 Commercial Fisheries and For-Hire Recreational Fishing

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BOEM-2023-0011-0106-0003	We believe BOEM must prior to approving any cable landings emanating from RI-MA wind energy areas do a cumulative analysis of ALL cable landings that are slated from not only all RI-MA lease areas and South Coast Wind but throughout the Atlantic Ocean from Maine to South Carolina. Included within that analysis must be reviewing the cumulative economic losses that could occur of the historical commercial trawl fleet fishing. Not just the fleet that would displaced from the RI-MA lease areas cables that become exposed but throughout the coastline. Within that analysis there must be a delineation of losses by fishery. Displacement from commercial fishing grounds and cumulative impacts would also include in areas where armoring of a transmission or inter-array cable would take place and the areas within a lease and cable landing that are exposed to sediment mobility like many of the lease areas of South Coast Wind are within Appendix F2- Scour Potential Impacts from Operational Phase and Post-Construction Infrastructure and Attachment C by Fugro "Sediment Mobility Potential."	Conducting an analysis of impacts from all offshore wind cables throughout the Atlantic Ocean is outside the scope of this EIS, the purpose of which is to evaluate the SouthCoast Wind Project. Within this EIS, BOEM appropriately evaluates the cumulative effects of the installation of the SouthCoast Wind cables when combined with ongoing and planned projects within the geographic analysis area. At this time, the exact location of all cables and cable protection for all planned offshore wind projects is not known but estimates on total cable length and protection are estimated in Appendix D and considered as part of the cumulative analysis of commercial fisheries in Section 3.6.1 Each individual project will be subject to a standalone environmental analysis that will allow for public input and will identify mitigation measures to avoid or minimize impacts on environmental resources.
BOEM-2023-0011-0112-0031	Table 3.6.1-5 through Table 3.6.1-10 include average commercial fishing landings and revenue data over many years. While this is helpful to gain a broad understanding of the level of revenue exposure in the lease area and cable routes including data by year is most helpful similar to what is	Data from NOAA's Socioeconomic impact tool was used to compile the tables referenced in the comment. Please refer to Section 3.6.1.1, *Commercial Fisheries in the Offshore Project Area*, for a description of the variability of catch for herring.

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	provided in NOAA's Socioeconomic Impacts tool (Hyperlink: https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development). Fisheries revenues can fluctuate for a variety of reasons (changing fish distributions change in fishing regulations market factors etc.); therefore an average value may not always accurately describe the economic value of the fishery. This is particularly true for Atlantic herring where the DEIS states that herring is the top species within the Regional Fisheries Area accounting for 27% of landings over 2008 - 2019 (page 3.6.1-9). Atlantic herring is now considered overfished with a rebuilding plan in place effective July 2022.	Please refer to Table 3.6.1-12 for additional context into which species are more exposed as well as how the average annual revenue from the Lease Area compares to the entire geographic analysis area. This table also more accurately represents fluctuations in catch and shows that the landings/revenue of Atlantic herring from the offshore project area did not contribute greatly to the total landings/revenue of Atlantic herring in the geographic analysis area. In addition, refer to Table 3.6.1-21, which depicts the number of vessels and trips associated with a specific FMP and the level of effort estimated in the Lease Area. Tables 3.6.1-5 through 3.6.1-8 deal with the regional fisheries area, whereas tables 3.6.1-9 and 3.6.1-10 deal with the much smaller Offshore Project Area and should be compared against the RFA and geographic analysis area.
BOEM-2023-0011-0112-0032	The Offshore Project Area and the Regional Fisheries Area are referenced throughout the Affected Environment and impacts sections; however only text descriptions are provided versus also providing a figure like what is provided for the Geographic Analysis Area (Figure 3.6.1-1).	A figure has been added to Section 3.6.1 depicting the regional fisheries area. The Offshore Project area is the offshore area encompassing the footprint of the project, which is depicted in Chapter 2.
BOEM-2023-0011-0112-0033	The Regional Fisheries Area is defined as GARFO statistical areas 537-539 and 611-612 (page 3.6.1-8). It is unclear why these specific statistical areas were selected and why area 613 was excluded.	The Final EIS has been revised to correct the text to indicate that statistical area 613 is included. A new figure has been added showing the extent of the RFA. The RFA provides a condensed region, relative to the geographic analysis area, to better analyze impacts at a more relevant scale for the fisheries that operate in the Offshore Project area
BOEM-2023-0011-0112-0034	We recommend better characterizing which commercial and recreational fisheries and fish species would be affected by various stages of wind development and why. Unless necessary to protect confidential data grouping data across and within FMPs is not particularly helpful given the impact determinations could differ by fishery and species.	Section 3.6.1 describes fisheries in the geographic analysis area, RFA, and Offshore Project area, and describes in various tables that particular species that are fished in these areas, such as in Table 3.6.1-6. A description of the biological and ecological impacts to various recreational and commercial fish species, and life stages likely impacted by the various stages of wind development is provided in FEIS Section 3.5.5.

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BOEM-2023-0011-0112-0035	Table 3.6.1-19 includes the number of revenue outliers in the lease area by year; however the table description and corresponding text do not include a description on what is meant by 'outliers.' This is a term that is typically used for observations that lie an abnormal distance from other values in a sample. Text on page 3.6.1-21 indicates that the outliers in Figure 3.6.1- 2 are vessels that derived a high proportion of its revenue from the lease area. No analysis is presented that shows this determination used standard statistical techniques for example the third quartile plus 1.5 times the interquartile range is a standard approach to estimating 'mild' outliers. [Footnote 7: https://www.itl.nist.gov/div898/handbook/prc/section1/prc16.htm] The FEIS should describe specifically how these revenue outliers were determined. In some years up to 29% of the vessels are characterized in this way which is a large percentage suggesting the underlying data generally cover a narrow range of values but with a substantial number of vessels falling outside the range. In addition to documenting the methods we suggest calling these vessels "highly dependent" including more detailed table captions and column headers for tables and including cross references to tables in the corresponding text.	NMFS calculated these outliers using ggplot2 in R (Wickham 2016). The methodology is as follows: The lower and upper hinges correspond to the first and third quartiles (the 25th and 75th percentiles). This differs slightly from the method used by the boxplot() function, and may be apparent with small samples. See boxplot.stats() for more information on how hinge positions are calculated for boxplot(). The upper whisker extends from the hinge to the largest value no further than 1.5 * IQR from the hinge (where IQR is the inter-quartile range, or distance between the first and third quartiles). The lower whisker extends from the hinge to the smallest value at most 1.5 * IQR of the hinge. Data beyond the end of the whiskers are called "outlying" points and are plotted individually. Section 3.6.1.1, *Commercial Fisheries in the Offshore Project Area*, has been revised to include this additional information.
BOEM-2023-0011-0112-0036	Page 3.6.1-32 includes a discussion on the most affected fishery management plans that occur in and near the lease area and also along the export cable corridors however the text references VMS data from 2015-2016 does not reference the previously provided data tables that have more recent data and information and states "exceptionally high landings of Atlantic herring in 2013 put Atlantic herring as the most affected species by landings" which does not reflect current conditions. For example longfin squid are one of the top ten species by revenue within the SouthCoast lease area (according to NOAA's Socioeconomic Impacts tool). Longfin squid landings and ex-vessel revenues have fluctuated drastically over time especially from 2015 - 2021 (MAFMC	The FEIS states that squid and Jonah crab would be the most affected fisheries. Please refer to FEIS Section 3.6.1.1, *Commercial Fisheries in the Offshore Project Area*, for a description of the variability of catch for herring. Please refer to Table 3.6.1-12 which more accurately represents fluctuations in catch and shows that the landings/revenue of Atlantic herring from the offshore project area did not contribute greatly to the total landings/revenue of Atlantic herring in the geographic analysis area. The VMS data on the NEODP has not been updated from 2015-2016 and does not include the < 4 knot modifier to represent fishing.

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	Longfin Squid Fishery Information Document 2022) (Hyperlink: https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/62603fdf8be6d8487d2d479f/1650474975761/Longfin_2022_FID.pdf). The FEIS should clearly state how most affected and impacted species fisheries etc. are determined using the most recent data available along with a longer time series to capture the periodicity of fisheries biology and management.	
BOEM-2023-0011-0112-0038	For-hire recreational fishing is included within the Socioeconomic Conditions and Cultural Resources section which also includes commercial fisheries; however no data tables or figures are provided nor is information provided about recreational highly migratory species trips. The DEIS references the COP Volume 2 which includes commonly caught recreational fish species in MA and RI in 2019 (COP Vol. II page 11-41). Additional years of data should be provided including the most recent fishing year available along with the number of trips landings and revenue by species in the fisheries affected environment and impact section.	NMFS's assessment of impacts of Atlantic Offshore Wind Development does not have any recreational data for the Lease Area. FEIS Section 3.6.1.1 has been revised to include a description of the common recreational fishing locations within and near the Offshore Project Area; this includes times of year and species targeted in these areas.
BOEM-2023-0011-0112-0039	Pages 3.6.1-41-42 reference the potential for commercial and for-hire recreational vessel operators to switch gear types and to target less-valuable species. These may not be feasible given the high cost potentially lower prices and different permits that would be required. Such adaptation would only occur over the longer term and may require fishery management changes. It should not be assumed that fisheries management will adapt in any particular way as fisheries management must achieve a number of varied objectives and offshore wind energy development is just one consideration.	The FEIS identifies different scenarios that individual vessel operators may or may not make as different conditions arise from offshore wind development (with and without the Proposed Action). The FEIS states that operators may leave the area entirely or continue to fish in the Lease Area during the operations and maintenance phase. There are many vessel operators who carry multiple permits and operate vessels outfitted for different gear types (generalists), just as there are operators who fish for a particular species with one gear type (specialist). The FEIS clearly states there is variability of individual risk tolerance and the ability/willingness/skill of individual operators to adapt to changing conditions. The FEIS does not assume that management/operators will/will not adapt, and fully

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		recognizes that some individuals may not be able to adapt given fuel, cost, risk tolerance, and management concerns.
BOEM-2023-0011-0112-0040	The fisheries revenue exposure compares FMP revenue exposure within the lease area to the total annual FMP revenue in the Mid-Atlantic and New England regions. This comparison minimizes the potential impact of lease development on fisheries. We recommend also comparing revenue exposure to a more geographically specific area or port.	The FEIS includes an analysis of impacts with a regional fisheries area, which is smaller than the geographic analysis area and larger than the Project area, which describes. Further, the average number of trips and vessels from ports in the region is included in Table 3.6.1-15. Table 3.6.1-16 shows commercial fishing revenue of federally permitted vessels in the Lease Area by the ten most affected ports and shows commercial fishing engagement and reliance.
BOEM-2023-0011-0112-0041	The DEIS describes commercial and recreational fisheries within the lease area and the export cable corridor. Some fisheries will be impacted by activities within both the lease area and the export cable corridor while other fisheries will be primarily impacted by one or the other. It is important to consider the differences in impacts due to the different activities which will occur in the lease area and the cable corridor and the different fisheries that operate in those areas. Different mitigation measures may also be relevant for the two areas. For these reasons we support the approach of analyzing the lease area and export cable corridor separately in terms of their impacts on fisheries as well as considering their combined impacts. This approach should be carried forward in future analyses of other wind projects.	The FEIS describes separate impacts for the Lease Area and the ECCs. This provides context for how much value is derived from these areas relative to all other areas accessible to fishing.
BOEM-2023-0011-0112-0043	The Councils are concerned about the impacts of boulder removals required for cable installation especially when done via plow (grapnel or boulder clearance plows) which is the proposed method for larger boulders that cannot be avoided by rerouting in combination with orange peel grabber (page 3.6.1-48). We recommend using grabs to relocate boulders given plowing will have a much larger impact on benthic habitats than grabs. The FEIS should specify plow width and the size of the area that will be impacted. The nature of this impact is very different from dredging used to harvest seafood and the scientific literature on fishing gear impacts is	Regarding boulder relocation, refer to the response to comment BOEM-2023-0011-0185-0270. SouthCoast Wind has stated grabs are the preferred method for relocating boulders.

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	unlikely to provide a reasonable proxy for the impacts of boulder clearance plows. For example fishermen attempt to avoid boulders to reduce the risk of costly damage to fishing gear and the penetration depth of fishing gear is much less than a boulder clearance plow.	
BOEM-2023-0011-0117-0017	Fishing Industry Impacts: Under the current plan to develop the region around Coxes Ledge the Project will harm the Cod fishery historically the economic driver of the fishing industry in New England (Dlouhy 2014). South Fork Wind Revolution Wind and SouthCoast Wind farms will surround this critical marine habitat. Cod spawn in the Coxes Ledge region. They rely on acoustic communication during this ritualized sensitive behavior (Zemeckis 2014). Noise from construction and operations of turbines will interfere with their communication and have "population-level impacts on Southern New England Atlantic Cod" (Chiarella 2021). Other fisheries such as lobster that are less mobile and more site specific will be even more impacted. The DEIS fails to consider the cumulative impact of Revolution Wind South Fork and SouthCoast Wind. Further it fails to consider multiplicative effects of interactions among multiple stressors.	The proposed SouthCoast Wind Farm Area is not immediately adjacent to Coxes Ledge; the border of the Lease Area is over 50 km from Coxes Ledge, noise impacts from pile driving wind turbine foundations for the SouthCoast Wind Farm Area are not modeled to travel that far. The EIS analyzes the cumulative impacts of each alternative in combination with ongoing and planned offshore wind projects, including South Fork wind. The analysis considers how overlapping activities could have a cumulative impact on commercial and for-hire recreational fishing.
BOEM-2023-0011-0123-0025	The developer has considered a variety of offshore fishing data sources: vessel trip reports (VTRs) vessel monitoring systems and Marine Recreational Information Program data. Each data source has merits and limitations as none of these data reporting systems were designed to assess the spatial distribution and value of offshore catch. A variety of studies are currently underway to generate additional data sharing systems and assessment tools.• Other sources of data and improved methods should be incorporated into impact assessment as they become available. For example vessel monitoring system (VMS) automatic identification system (AIS) and electronic monitoring data are becoming more prevalent and may present opportunities to improve upon existing methods. These data may offer higher spatial and	FEIS Section 3.5.2, *Benthic Resources*, and 3.5.5, *Finfish, Invertebrates, and EFH*, provide more information on where and when species may be found. The data provided by NMFS does provide some spatial context to where and how much revenue is derived from the Lease Area and the ECCs relative to the geographic analysis area. While some VMS data is used, the most up-to-date VMS data on the Northeast Ocean Data Portal provides likely vessel transits. The socioeconomic data compiled by NMFS does not provide any data for for-hire/recreational fishing within the Lease Area due to insufficient data.

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	temporal resolutions and address challenges associated with self-reporting when compared to VTRs.• Additional methods are particularly needed to understand potential changes to recreational fishing activities.	
BOEM-2023-0011-0123-0026	The RIDEM looks forward to reviewing proposed fisheries resource monitoring survey designs associated with the SouthCoast Farm. We recommend survey proposals should include a preliminary power analysis demonstrating that the proposed design will achieve a minimum of 80% statistical power (see Cohen 1988). However higher power levels with low effect sizes should be targeted. Both power and effect size should be discussed with the FAB prior to survey implementation. Efforts should also be made to use shared sampling methods and results with other wind development surveys and existing fisheries surveys.	BOEM thanks the RIDEM for the comment and the willingness to collaborate on fishery resource monitoring survey designs.
BOEM-2023-0011-0136-0027	Concern remains about the datasets utilized in the DEIS to reflect commercial fishing activity in and around the Project Areas. The DEIS utilizes VTR datasets from 2008 - 2021 and VMS data sets from 2014-2019. It should be noted that changes have happened in the fishing industry resulting from Covid-19. We recommend extending the VTR and VMS datasets coverage for at least 10 years prior to 2014. Looking at each fishery individually is the only way to fully analyze and understand the potential impacts. By aggregating the fisheries data the DEIS will compact effort and lose the more minor but equally important impacted fisheries.	The NMFS compiled data from VTR datasets from 2008 through 2021. Further, the NEODP has complete data for multiples fisheries from 2011-2014 and 2015-2016; this data has the <4 knot modifier associated with it, which is the indicator thought to be representative of actual fishing, based on typical tow speeds. Earlier data only has the modifier for a few species as well as for the data that goes to 2019. Thus the 2011-2016 data appears to be the most up-to-date and useful information for this EIS. A disclaimer has been added to Section 3.6.1.1, noting that a decline in revenue for a number of species in 2020 is attributed to disruptions from the Covid-19 pandemic.
BOEM-2023-0011-0136-0028	"In 2019 total species landings in the Mid-Atlantic and New England regions were valued at $2.02 billion." [Footnote 24: See DEIS p. 3.6.1-7] This (ex-vessel revenues) shows the economic benefits to the fishing vessels and the DEIS acknowledges the $9.4 billion in personal and proprietor income provided by the seafood industry to the Mid-Atlantic and New England regions. The importance of the downstream economic activity provided by sustainable seafood harvesters	Section 3.6.1.5 qualitatively assesses impacts on the commercial fishing/seafood industry, noting that the impacts on other fishing industry sectors, including seafood processors and distributors and shoreside support services, would be long term and minor to major, depending on the fishery in question. Further analysis of the socioeconomic impacts on fishing support industries is included in Section 3.6.3, *Demographics, Employment, and Economics* and

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	should not be minimized. The DEIS fails to undertake an analysis of the impacts to jobs in the commercial fishing/seafood industry despite acknowledging the "living resource" sector of the Ocean Economy. (See section C. Impacts to Small Businesses below) In 2018 the Mid-Atlantic seafood industry supported 136813 jobs while the New England seafood industry supported 211359 jobs. [Footnote 25: See National Marine Fisheries Service. 2022. Fisheries Economics of the United States 2019. U.S. Dept. of Commerce NOAA Tech. Memo. NMFS-F/SPO-229A 236 p. Mid-Atlantic includes the states of Delaware Maryland New Jersey New York and Virginia. New England includes the states of Connecticut Maine Massachusetts New Hampshire and Rhode Island.]	Section 3.6.4, *Environmental Justice*. BOEM is proposing a mitigation measure that would require SouthCoast Wind to conduct an analysis of impacts to shoreside seafood businesses and to develop a plan to compensate for losses to shoreside businesses. BOEM has added this measure to the FEIS; refer to Section 3.6.1-11 as well as Appendix G, Table G-2; CF-5.
BOEM-2023-0011-0136-0029	The commercial fishing revenue information provided needs to be put in context. There are many small businesses reliant upon access to fishing grounds within the lease areas and have developed business plans and made investments over the years with the expectation of utilizing those grounds. For example according to Table 3.6.1-9 of the SouthCoast DEIS the average annual revenues generated by Federally permitted vessels participating in the Mackerel Squid and Butterfish fisheries within the lease areas was $88286. These revenues are likely indispensable to the small businesses prosecuting that fishery.	The average number of mackerel, squid, and butterfish vessels fishing in the lease area is estimated at 91; the expected number of vessels is 14, this would amount to an impacted revenue equaling $970 or $6,307 per vessel annually, using the average annual revenue of $88,286. From a trip perspective, the average number of trips annually in the Lease Area for mackerel, squid and butterfish is 613, and the expected number of trips is 15, which amounts to either $144 dollars per trip or $5,883 per trip using the annual revenue of the Lease Area of $88,286. While these amounts differ by an order of magnitude, no fishing operation could rely on traveling the distance to the Lease Area for a trip worth $5,883 on a consistent basis. Fishing will not be restricted in the Lease Area during the operation and maintenance phase; a financial compensation program has been implemented by SouthCoast Wind to cover for these exposures. Please refer to Section 3.6.1-11.
BOEM-2023-0011-0136-0030	The DEIS fails to analyze any economic impact on commercial fishing along installed cable corridors. Exposed cables and cable protection measures pose a major hazard for bottom tending gear vessels. This is particularly concerning in areas	Impacts from direct cable installation will be temporary (i.e. elevated total suspended solids and sedimentation). The area of direct impact per cable is 19.7 ft. The areas of secondary cable protection would be small in nature and

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	with strong currents such as Muskeget Channel - a proposed location for the export cables. We have already seen exposed cables from the Block Island Wind project and overseas and we strongly urge BOEM to require the monitoring and timely reburial of exposed cables. For these reasons it is shortsighted to assume that there will be no economic impacts to commercial fisheries along export cable routes temporarily or permanently.	would only be used as a last resort, where remedial burial would not be feasible. Further, the installed secondary cable protection would be designed to be mobile bottom-tending gear friendly. The addition of secondary protection would not preclude all mobile bottom-tending gear from fishing in the area, nor would it preclude static fishing gear. Overall, impacts of direct cable installation and cable protection measures as noted above will be temporary given the small area of direct impact, and the small areas of secondary cable protection.
BOEM-2023-0011-0136-0031	BOEM incorrectly assumes that all fisheries will be able to adapt and/or regulatory needs namely fishery management plans - will be adaptable and adaptable on a relevant time scale. “Fishing vessel operators unwilling or unable to travel through areas where offshore wind facilities are located or to deploy fishing gear in those areas may be able to find suitable alternative fishing locations and continue to earn revenue while others may switch the species they target and/or the gear they use.” [Footnote 26: See DEIS p. 3.6.1-41] RODA reiterates that fishermen cannot simply “go somewhere else to fish” or “switch fisheries” for many reasons: 1) harvested species are not uniformly distributed and may not be present ‘elsewhere’ 2) management restrictions constrain where and how fishermen can fish and 3) individuals and businesses have made long term financial and cultural investments and often cannot easily switch to harvesting a difference species without significant costs. It is frustrating the BOEM continues to either not understand or minimize the reality of displacement and (in)ability for adaptation.	Please refer to the response to comment BOEM-2023-0011-0112-0039.
BOEM-2023-0011-0136-0032	The DEIS does acknowledge the potential changes to fishery management from impacts to independent surveyors and changed patterns of fishing behaviors. But the document claims that changes will have “moderate beneficial impacts on commercial and for-hire recreational fisheries as management adapts to changing fishing patterns data availability and	FEIS Section 3.6.1.5 (under Presence of Structures), highlights the impact of potential changes to fishery management as a range of scenarios. The impacts could also include long-term, moderate, beneficial impacts for some for-hire recreational fishing operations due to the artificial reef effect. This does not change the preceding conclusions

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	management options" [Footnote 27: See DEIS p. 3.6.1-45] with no analysis of how this conclusion was reached. RODA strongly objects to this finding: that increased uncertainty and changed fishing behavior will benefit the commercial fishing industry.	in the same paragraph of moderate to major adverse impacts on commercial fisheries and minor to moderate adverse impacts on for-hire recreational fishing. FEIS Section 3.5, *Finfish, Invertebrates, and EFH* provides a description of the artificial reef effects.
BOEM-2023-0011-0136-0033	The DEISs fail to fully address the impacts that the projects will have on small businesses which will include the vast majoring of fishing companies and supporting businesses. Fishermen and the fishing industry have reiterated time and time again that it is not easy for adaptation to occur because serious economic investments and management restrictions can make it prohibitive. The impacts to fishing and processing jobs must not be diminished in the DEIS analysis. As recommended by the U.S. Small Business Administration for Fisheries Mitigation Guidance BOEM must conduct a Regulatory Flexibility Act (RFA) analysis of its proposals including this DEIS to adequately understand the impacts of offshore wind development activities on small businesses. [Footnote 28: See https://www.regulations.gov/comment/BOEM-2022-0033-0055] Improved data and analyses of impacts to commercial fishing businesses port infrastructure serving the fishing industry port operators marine equipment retailers onshore processors fish markets and other fishing industry representatives should inform mitigation strategies.	Please refer to the response to comment BOEM-2023-0011-0136-0028.
BOEM-2023-0011-0136-0040	Fisheries Communications Plans: The Fisheries Communication Plan (FCP) for Mayflower Wind is insufficient and out-of-date. Mayflower Wind's Fisheries Liaison Officer no longer is at SouthCoast and no information is provided on the new appropriate contact. The FCP focuses primarily on informational meetings and information dissemination. While this is an important component of any FCP we again reiterate the importance of having a two way communication flow to ensure that fishermen are authentically included. The first step must be the development of written commitments that	BOEM requested input from SouthCoast Wind regarding this comment. SouthCoast Wind has stated that a new Fisheries Liaison Officer is now working with the company; updates to the Fisheries Communication Plan are anticipated (as necessary and applicable) and will be submitted to BOEM, and posted on the SouthCoast Wind website. The updated Fisheries Communication Plan will include additional details on two-way communication conducted to date with the fishing communities.

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	the developer and their representatives respect the input inclusion and limited available time to participate in meetings. Fishermen have already put time and resources into providing feedback (through meetings and written letters described above) and nowhere indicates if or how they plan to incorporate the feedback they have already solicited. We have requested numerous times to BOEM developers and states to work directly with the fishing industry to provide readily accessible project information. Repeatedly fishermen have requested Atlantic leaseholding developers to improve the basic dissemination of project information—shoreside and perhaps more importantly on the water. RODA urges BOEM to work with us to ensure that we can effectively get critical project information to fishermen in a relevant and accessible manner. We also respectfully request that timely provision of relevant project information for these purposes in a format determined by the fishing community be a condition of any OSW permit that BOEM may issue in the future.	SouthCoast Wind has stated that it supports direct communication with the fishing community and acknowledges that such communication is valuable and necessary in order to effectively co-exist with the fishing community. In response to requests from fishermen for easily accessible information on offshore activities, SouthCoast Wind maintains a website with a calendar of activities including vessel name and area of operation, that is updated on a regular basis.
BOEM-2023-0011-0139-0028	SouthCoast Wind would like to highlight that we have prepared and submitted with Rhode Island state permit applications a Fisheries Monitoring Plan (FMP) for the Brayton Point ECC. The FMP was prepared by a local firm based in Newport RI (Inspire Environmental) and integrates local knowledge of key fisheries. SouthCoast Wind met on March 7 2023 with the Rhode Island Fishermen's Advisory Board (FAB) Rhode Island Coastal Resources Management Council and Rhode Island Division of Marine Fisheries to present and gain input on the draft FMP. SouthCoast Wind is also working with the University of Massachusetts School of Science and Technology (SMAST) to develop and implement a fisheries monitoring program for the Lease Area with data collection consistent with other leaseholders in the Massachusetts/Rhode Island Wind Energy Area. SouthCoast Wind requests that this information be incorporated and reflected in the FEIS.	Please refer to FEIS Section 3.5.5.5; this discussion of impacts associated with the Proposed Action includes a description of the fisheries monitoring plan for the Brayton Point ECC.

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BOEM-2023-0011-0139-0029	Regarding the specifics included in the DEIS on commercial and recreational fisheries in Section 3.6.1.3 the DEIS states "However there is not enough resolution in the data to allow estimates to be made on a small enough scale to differentiate impacts along wind farm export cable corridors." While limitations of this data are known (and acknowledged in other parts of the DEIS) and while data from export cable corridors is included later (i.e. Section 3.6.1.5 of the DEIS) it is important to acknowledge that there is still utility in these data even in this portion of the DEIS and what it is describing. While there is not enough resolution to meaningfully draw a distinction between two hypothetical export cable corridors that are very close these data are useful in showing the relative amount of fishing effort in areas such as export cable corridors where impacts will be of very limited duration and magnitude.	FEIS Section 3.6.1.5 includes descriptions of the fisheries/species impacted in the ECCs.
BOEM-2023-0011-0139-0030	Section 3.6.1.5 of the DEIS states that "some commercial fishers may avoid the Lease Area if large numbers of recreational fishers are drawn to the area by the prospect of higher catches". However due to the large distance of SouthCoast Wind's Lease Area from shore the likelihood of a significant increase in recreational fishing vessel traffic in the Lease Area is low. This is particularly true when compared to the Block Island Wind Farm which is cited as a comparison in this section of the DEIS. Outreach by SouthCoast Wind to the local recreational fishing community has shown that this distance (23 miles from the closest turbine to shore) will preclude large increases in recreational fishing vessel traffic owing to the time/fuel considerations and the composition of the recreational fishing fleet. Outreach conducted by SouthCoast Wind to the recreational fishing industry and community as well as anecdotal observations by SouthCoast Wind G&G survey vessels indicate that a smaller number of larger recreational fishing vessels utilize the Lease Area during the summer months targeting high profile gamefish while a larger number of more diverse recreational fishing vessels	FEIS Section 3.6.1.3 reflects this caveat in the discussion of the traffic IPF.

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	utilize the export cable corridors and surrounding area targeting a wider array of species.	
BOEM-2023-0011-0139-0032	In its discussion of Alternative C Section 3.6.1.6 of the DEIS states that "The only difference would be for recreational and commercial fishers that exclusively use the Sakonnet River in particular aquaculture lease holders and floating fish trap fishers. These individuals would experience negligible to major impacts from offshore wind development." While there are aquaculture lease holders and permitted locations for floating fish traps near the Export Cable Corridor to Brayton Point the corridor (and especially the much smaller extent of the cable itself) do not directly overlap with these other uses. Hydrodynamic/sediment transport modeling conducted by SouthCoast Wind (COP Appendix F3) has shown minimal impacts at the distances from which aquaculture lease holders and permitted fish traps exist from proposed cable laying activities. SouthCoast Wind feels that it is important to acknowledge that outreach to the commercial fishing industry by SouthCoast Wind has shown that there are other commercial fisheries in the Sakonnet River and Mount Hope Bay notably for whelk and mantis shrimp. This outreach has also shown that the majority of effort in these fisheries occurs outside of indicative centerline for the export cable. Further outreach also showed that at least some of the commercial fishing vessels in this area are trailered as opposed to being docked at local fishing ports. BOEM has not analyzed potential impacts from traffic impacts on local roads that would be associated with Alternative C to fishermen that trailer their vessels in this area.	The analysis of the Proposed Action under Section 3.6.1.5 has been modified to include information on sediment modeling from installation of cables and to acknowledge that most of the effort for whelk and mantis shrimp fisheries occurs outside of the centerline for the export cable. The analysis of Alternative C in Section 3.6.1.6 was revised to acknowledge that outreach to the fishing community has showed that at least some of the commercial fishing vessels in this area are trailered as opposed to being docked at local fishing ports.
BOEM-2023-0011-0139-0043	Page 3.6.1-1 within Section 3.6.1.1 the date range for data shown in the title for Table 3.6.1-3 is listed as “2010-2019” while the date range described in the text on page 3.6.1-6 referring to Table 3.6.1-3 is listed as “2008-2019”. SouthCoast Wind requests that this discrepancy is amended in the FEIS for clarity.	Please refer to FEIS Section 3.6.1.1, in which Tables 3.6.1-1 through 3.6.1-4 reflects updates to the years for the description of landings and revenue for the geographic analysis area. Relevant text references have also been updated. The date range for landings and revenue for the geographic analysis area is 2010 through 2019.

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BOEM-2023-0011-0139-0044	Page 3.6.1-35 within Section 3.6.1.3 the two Coastal Virginia Offshore Wind turbines are listed as contributing to the cumulative impacts to commercial and recreational fisheries from SouthCoast Wind. While those turbines are in the geographic analysis WTGs that may be installed in other project's lease areas near SouthCoast Wind will contribute to cumulative impacts and commercial fishing vessels do transit from Virginia to SouthCoast Wind's Offshore Project Area the presence of two turbines off of the coast of Virginia will contribute no conceivable cumulative impact in addition to SouthCoast Wind's Proposed Action.	The section cited in the comment describes the No Action Alternative, which does not include consideration of the SouthCoast Wind project (Proposed Action). Please refer to Section 3.6.1.5 for a discussion of cumulative impacts inclusive of the Proposed Action.
BOEM-2023-0011-0139-0045	Page 3.6.1-47 within Section 3.6.1.5 the DEIS states "The relocation of boulders also could increase the risk of gear snags as uncharted or unknown obstructions could result in damage to equipment lost revenue and potential safety impacts." However SouthCoast Wind will make both the original and relocated locations of boulders available in a way that they can be charted.	FEIS Section 3.6.1.5 reflects updates to this statement. Refer also to the response to comment BOEM-2023-0011-0185-0270.
BOEM-2023-0011-0139-0046	Page 3.6.1-64 within Section 3.6.1.10 the DEIS states that "Mayflower Wind would implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment." However SouthCoast Wind already has implemented such a program not only for gear but also for foregone revenue. The application form for this compensation program is available on SouthCoast Wind's website and was developed in coordination with other offshore wind developers to provide consistency to the commercial fishing industry. Further this form was developed using input from the commercial fishing industry. This process is designed to cover potential impacts from gear interactions with SouthCoast Wind G&G survey vessels but will be adapted to	FEIS Section 3.6.1.111 has been updated to reflect that SouthCoast Wind has implemented 1) the gear loss and damage compensation program and 2) the lost income mitigation measure.

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	cover gear interactions with construction vessels and eventually the presence of structures.	
BOEM-2023-0011-0178-0001	More than several times this evening it had been mentioned that some sections of these cables would need to be armored meaning that what they call mattresses would be placed above them and these mattresses are basically concrete and steel which would actually effect or impact or prevent fisherman from crossing over these sections. There is no mention made of the length or the place or positioning of these cables which I know may be difficult to determine previous to trying to lay the cables as a buried cable but at some point it needs to be published because these like I say are going to be minefields for anyone attempting to use bottom gear on these fishing areas. Like I say many times these comments were made and they were passed on very obliquely as no real big deal but I want to make sure that people understand that there is more consequences involved with these mattresses than they may understand and it needs to be -- needs to be more precisely presented to the public as to how it may impact those who actually work in these areas.	The estimated percent of cable protection needed in the Lease Area is 10%, 10% in the Falmouth ECC, and 15% of the Brayton Point ECC. Cable protection is a last resort that will be used only after all other remedial burial options have been ruled out. Further, to the extent practicable the cable protection used will be mobile gear friendly, with sloped/tapered designs.

N.6.14 Cultural Resources

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BOEM-2023-0011-0117-0027	Cultural Heritage and Tourism: The Project will negatively impact the cultural value of hundreds of properties with historical relevance within the viewshed. Colonial landmarks attract more tourists than any other type of historical site (Cameron 2010). The harm to these resources may be irreversible. The impact on historic properties violates the Historic Preservation Act (Public Law 89-665; 54 U.S.C. 300101 et seq.) The DEIS minimizes the Project's impact on our cultural heritage and does not consider the difference between colonial history and other types of historical landmarks.	Section 3.6.2, *Cultural Resources,* and Appendix I, *Finding of Adverse Effect for the SouthCoast Wind Construction and Operations Plan* (hereafter, *Finding of Adverse Effect*), discuss the impacts of the Project on cultural resources, including historic aboveground resources, marine and terrestrial archaeological resources, ancient submerged landform features (ASLFs), and traditional cultural places (TCPs). Although Section 106 of the National Historic Preservation Act (NHPA) focuses its effects assessment specifically on those cultural resources that are listed or eligible for listing in the National Register of Historic Places

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		(NRHP), the potential Project impacts on cultural resources are considered and discussed in the EIS regardless of periods of historic and cultural significance. In compliance with Section 106 of the NHPA, BOEM has consulted with federally recognized Tribes, the Massachusetts and Rhode Island State Historic Preservation Officers (SHPOs), the Advisory Council on Historic Preservation (ACHP), and consulting parties on the identification of historic properties in the Project's area of potential effects (APE), assessment of effects on historic properties, and measures to resolve adverse effects. BOEM's analysis in Section 3.6.2, *Cultural Resources*, focuses on physical resources valued by a group of people, including historic properties as defined in the NHPA (54 United States Code [USC] 300308). BOEM's analysis of Project impacts on tourism is provided in Section 3.6.8, *Recreation and Tourism*.
BOEM-2023-0011-0119-0001	Alternative C-2 would make landfall on the ocean-facing side of Breakwater Point in Little Compton and follow a route north through Tiverton to the westernmost end of Schooner Drive where it would enter Mount Hope Bay. Similar to Alternative C-1 the route of Alternative C-2 is planned to follow existing public road rights-of-way in shoulders and medians but may also include private property and transmission line rights-of-way. These alternative routes were not included in the original terrestrial archaeological survey area. An archaeological assessment of these routes should be conducted to identify known sites and areas of archaeological sensitivity that may be impacted.	As presented in the MOA and *Terrestrial Archaeology Phased Identification Plan* (MOA Attachment 12), a phased approach to the identification and evaluation of historic properties within the terrestrial portion of the Project's APE will be completed where final design selection occurs after approval of the COP and for areas that have not been surveyed for historic properties. If Alternative C-2 is chosen, the procedures for identifying archaeological resources as presented in the Phased Identification Plan will be followed.
BOEM-2023-0011-0119-0002	The Analysis of Visual Effects to Historic Properties (the AVEHP) defines the theoretical distance at which the blade tips would potentially be obscured by the curvature of the earth as 42.88 miles. The 43-mile radius of the offshore Area of Potential Visual Impact (APVI) does not include any land in Rhode Island. The closest Rhode Island land to the offshore lease area appears to be between 57 and 60 miles distant (Warren Point in Little Compton). The south end of the Cliff	BOEM thanks RIHPHC for its review and comments.

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	Walk in Newport appears to be between 62 and 65 miles to the closest proposed WTG location and the closest point on Block Island appears to be between 57 and 60 miles distant. Based on the information in the reports from this and other offshore wind projects we believe that the SouthCoast Wind WTGs will not be visible from historic properties in Rhode Island.	
BOEM-2023-0011-0119-0003	RIHPHC staff reviewed reports related to the potential visual impacts of the Project on historic properties including the Analysis of Visual Effects to Historic Properties (COP Appendix S 2023) (the AVEHP) the Visual Impacts Assessment (COP Appendix T; December 2022) and the Cumulative Historic Resources Visual Effects Analysis - Mayflower Wind Project (January 2023). These reports analyze an array of up to 147 WTGs with maximum heights of 1066.3 feet above Mean Lower Low Water (MLLW) and the height of the tops of the WTG nacelles at 605.1 feet above MLLW. The AVEHP defines the theoretical distance at which the blade tips would potentially be obscured by the curvature of the earth as 42.88 miles. The 43-mile radius of the offshore Area of Potential Visual Impact (APVI) does not include any land in Rhode Island. The closest Rhode Island land to the offshore lease area appears to be approximately 58 miles distant (Warren Point in Little Compton). The south end of the Cliff Walk in Newport appears to be between 62 and 65 miles to the closest proposed WTG location and the closest point on Block Island appears to be approximately 58 miles distant. Based on the information in the reports from this and other offshore wind projects we believe that the SouthCoast Wind WTGs will not be visible from historic properties in Rhode Island.	BOEM thanks RIHPHC for its review and comments.
BOEM-2023-0011-0119-0004	Two precontact sites were located in the terrestrial archaeological survey in Portsmouth Rhode Island: [Redacted terrestrial archaeological resource names and identification numbers] These sites are potentially eligible for listing in the National Register of Historic Places (NRHP); impacts to both	Per BOEM's request, SouthCoast Wind revised the TARA report (COP Appendix R) for its recommendations section to include snow-fencing and monitoring during construction, and revised the TARA abstract to match the updated recommendations section.

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	sites should be avoided and if this is not possible there should be archaeological monitoring of the cable duct trench excavation in the vicinity of the sites.	Additionally, BOEM, with the assistance of SouthCoast Wind, revised the MOA and *Historic Property Treatment Plan for Archaeological Sites in Rhode Island* (MOA Attachment 7) to include minimization measures (i.e., snow-fencing and monitoring), a draft and final Monitoring Report, and Rhode Island SHPO Archaeological Site Form updates. The revised HPTP also includes the potential for development and implementation of a *Historic Property Archaeological Site Protection Plan* for ongoing O&M; this plan would be completed after any archaeological data recovery in order to incorporate the results of the resulting data collection. The HPTP states that BOEM, in consultation with participating consulting parties, will determine whether the Protection Plan is required after data collection is completed.
BOEM-2023-0011-0119-0006	The Bureau of Ocean Energy Management (BOEM) has made a finding of effect for the proposed project as reported in the Determination of Effect for NHPA Section 106 Consultation (Draft Environmental Impact Statement Appendix I; 2023). BOEM's determination is that the project will have adverse effects on five submerged sites in Rhode Island however no above- ground sites in Rhode Island either archaeological or built will be adversely affected by the proposed project. As Rhode Island's Interim State Historic Preservation Officer I concur with this determination of effect for Rhode Island properties.	BOEM thanks Rhode Island Historical Preservation & Heritage Commission (RIHPHC; Rhode Island SHPO) for its concurrence with BOEM's *Finding of Adverse Effect.*
BOEM-2023-0011-0119-0007	BOEM has proposed a Draft Memorandum of Agreement (MOA) to document the resolution of the Project's adverse effects. While we recognize that the MOA is still in draft form we do have one comment which applies to Section III Measures to Mitigate Adverse Effects to Identified Historic Properties. It is our understanding that it may not be possible to avoid the following submerged cultural resources located in Rhode Island waters: Target BP-03 Target BP-04 Target BP-05 Target BP-11 and Target BP-20. RIHPHC has not made any	BOEM, with the assistance of SouthCoast Wind, has revised the MOA and *Historic Properties Treatment Plan for Ancient Submerged Landforms and Submerged Cultural Resources* (Attachment 6) accordingly. As described in Stipulation I of the MOA, SouthCoast Wind has committed to avoiding 31 marine archaeological resources and 7 ASLFs by complying with protective buffers recommended by the Qualified Marine Archaeologist (QMA). BOEM has determined that the remaining marine

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	determinations of NRHP eligibility for these sites other than agreeing that they are potentially eligible for listing in the NRHP. Confirming if this is in fact the case should be the first step in the mitigation process before the other approach stages suggested in Section III(A)(1)(iii)(a) (under development) are undertaken.	archaeological resource and the remaining two ASLFs will be adversely affected by the Project. Prior to execution of the MOA, SouthCoast Wind will conduct additional investigation of the marine archaeological resource to determine whether it is eligible for the NRHP. If the resource cannot be avoided and is determined to be eligible for the NRHP as a result of the investigation, mitigation measures will be developed through consultation and documented in the MOA. As described in Stipulation III of the MOA, for ASLFs that cannot be avoided, BOEM will implement the mitigation measures as stipulated in III.C and described in associated attachments in the MOA as conditions of approval of the Project COP. BOEM has also revised Appendix I, *Finding of Adverse Effect*, to reflect the jurisdictional waters for each marine archaeological resource and ASLF.
BOEM-2023-0011-0119-0008	RIHPHC staff reviewed the Area of Potential Effects Delineation Memorandum for Mayflower Wind Project (ICF January 2023). The Project's Marine Area of Potential Effects (APE) includes the route of the Brayton Point offshore export corridor in Rhode Island waters. The Rhode Island portion of the Terrestrial APE consists of a 3-mile underground onshore export cable route across Aquidneck Island in the Town of Portsmouth. The Visual APE does not include any properties in Rhode Island water or on land within the boundaries of the State of Rhode Island. We concur with the delineation of the proposed Project's Area of Potential Effects (APE) in relation to Rhode Island properties.	BOEM thanks RIHPHC for its review and comments.
BOEM-2023-0011-0119-0009	Twenty targets were identified in the Rhode Island portion of the Brayton Point Export Cable Corridor APE. The RIHPHC concurs with the recommendations in the MARA that the following targets are potentially eligible for listing in the NRHP: Target BP-02 Target BP-03 Target BP-04 Target BP-05 Target BP-09 Target BP-11 Target BP-12 Target BP-13 Target BP-14 Target BP-18 Target BP-19 and Target BP-20. We concur	Thank you for RIHPHC's concurrence. BOEM, with the assistance of SouthCoast Wind, has revised the MOA and *Historic Properties Treatment Plan for Ancient Submerged Landforms and Submerged Cultural Resources* (MOA Attachment 6) to include avoidance of additional marine archaeological resources including Targets BP-03 and BP-11. As described in Stipulation I of the draft MOA, prior to

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	that avoidance using the boundaries of the areas to be avoided as presented in the MARA would result in a finding of no effect on these resources. We understand that the project design is not finalized and that it might not be possible to avoid Targets BP-03 BP-04 BP-05 BP-11 and BP-20. If this proves to be the case additional investigation of these targets will be necessary to determine if they are in fact significant resources.	execution of the MOA and commencement of any bottom-disturbing activities associated with construction of the project, SouthCoast Wind will either commit to avoidance of these remaining targets or will conduct additional marine archaeological resource investigation of the targets to determine whether the targets are eligible for the NRHP.
BOEM-2023-0011-0121-0021	BOEM should also ensure that all impacted tribes are properly consulted including state-recognized tribes and non-federally recognized tribes in a geographic analysis area that is representative of their historical presence in the region. Robust consultation with tribes should be extended to Project activities that take place out of the state or region. Ensuring the consultation of tribes and ensuring the preservation of cultural resources is critical for advancing the environmental justice goals set by the Biden-Harris Administration.	BOEM has consulted with federally and non-federally/state-recognized Tribes on the identification of historic properties, assessment of effects, and resolution of adverse effects under Section 106 of the NHPA. This includes consultations on content in Section 3.6.2, *Cultural Resources*; Appendix I, *Finding of Adverse Effect*; and Attachment A of Appendix I, *Memorandum of Agreement* (MOA), including on the development of avoidance, minimization, and mitigation measures stipulated in the MOA and adopted by the Project and protocol for handling any unanticipated discoveries of archaeological resources during Project construction, installation, or O&M, including a consultation process with Tribes on any such discoveries. BOEM's analysis of Project impacts on environmental justice populations is provided in Section 3.5.4, *Environmental Justice*.
BOEM-2023-0011-0128-0002	the DEIS is inadequate because it fails to take a "hard look" at impacts to historic and cultural resources by undervaluing their significance undervaluing their connections to a pristine ocean viewshed and downplaying adverse impacts to the Town's economy	The Draft EIS provides an assessment of environmental impacts, including on cultural resources and historic properties, for this federal action in accordance with NEPA requirements and other regulatory frameworks. BOEM is addressing all regulatory requirements of the NHPA Section 106 process through NEPA substitution. BOEM informed the public and NHPA Section 106 consulting parties that BOEM would use the NEPA process to substitute for the steps in the Section 106 process when it released the Notice of Intent (NOI) for the Project. BOEM has engaged in, currently engages in, and will continue to engage in consultation with

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		federally recognized Tribes, SHPOs, ACHP, and consulting parties. Section 3.3 of the *Analysis of Visual Effects to Historic Properties* (AVEHP; COP Appendix S), provided to Section 106 consulting parties on February 2, 2023 and January 17, 2024, and provided to consulting parties on July 1, 2024, for reference in the distribution of the revised draft MOA analyzes whether unobstructed ocean views are character-defining features of historic properties identified in the APE and assesses whether changes to character-defining ocean views adversely affect the identified historic properties. Section 3.6.2, *Cultural Resources*, and Appendix I, *Finding of Adverse Effect*, describe the significance of ocean views as character-defining features of historic properties and how the Project will affect these views. As discussed in Appendix I, BOEM has found the Project would have adverse effects on two TCPs (i.e., Chappaquiddick Island and Nantucket Sound) and the Nantucket Historic District National Historic Landmark (NHL). BOEM has consulted and will continue to consult with federally recognized Tribes and consulting parties on the identification of historic properties, assessment of effects, and resolution of adverse effects under Section 106 of the NHPA. BOEM's analysis in Section 3.6.2, *Cultural Resources*, focuses on physical resources valued by a group of people, including historic properties as defined in the NHPA (54 USC 300308). BOEM's analysis of Project impacts on economics is provided in Section 3.6.3, *Demographics, Employment, and Economics.*
BOEM-2023-0011-0128-0004	BOEM has failed to comply with Section 106 of the National Historic Preservation Act	BOEM disagrees with the assertion that the agency has failed to comply with Section 106 of the NHPA. BOEM has consulted with federally recognized Tribes and consulting parties on the identification of historic properties, assessment of effects, and resolution of adverse effects under Section 106 of the NHPA. From September to October 2021, BOEM initiated Section 106 consultation by inviting federally recognized Tribes, Massachusetts and Rhode Island

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		SHPOs, ACHP, and other federal, state, and local agencies and organizations to consult on the Project. BOEM held five NHPA Section 106 Consultation Meetings on July 7, 2022; March 16, 2023; January 24, 2024; July 15, 2024; and October 8, 2024, to provide consulting parties with information regarding the NEPA and NHPA review processes, Project, cultural resources technical reports produced for the Project, BOEM's finding of adverse effect, and MOA, and to solicit feedback from consulting parties on any of the aforementioned topics and documents. BOEM considered consulting party feedback in the development of the Final EIS, including in BOEM's *Finding of Adverse Effect* (Appendix I) and MOA.
BOEM-2023-0011-0128-0005	BOEM has failed to use all possible planning to minimize harm to National Historic Landmarks as required by Section 110(f).	Per Section 110(f), BOEM notified the U.S. National Park Service (NPS; as delegate of the Secretary of the Interior) and ACHP of its determination of adverse effect on the Nantucket Historic District NHL with the distribution of BOEM's Draft EIS, including Appendix I, *Finding of Adverse Effect*, on February 2, 2023. The NPS and ACHP have been active consulting parties on the Project since accepting BOEM's invitation to consult at the initiation of the NHPA Section 106 process beginning on September 29, 2021. BOEM is fulfilling its responsibilities to give a higher level of consideration to minimizing harm to NHLs, as required by NHPA Section 110(f), through implementation of the special requirements outlined at 36 CFR 800.10. As described in more detail in Appendix I, *Finding of Adverse Effect*, BOEM has considered prudent and feasible alternatives to avoid adverse effects on the Nantucket Historic District NHL. BOEM held consultation meetings with federally recognized Tribes and consulting parties, including those associated with the NHL, on July 7, 2022; March 16, 2023; January 24, 2024; July 15, 2024; and October 8, 2024.BOEM has taken into account all prudent and feasible measures proposed by consulting parties to avoid, minimize, and mitigate adverse effects on NHLs.

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		As described in Appendix I, BOEM has identified one alternative (i.e., Alternative D) that reduces the number of WTGs from the maximum-case scenario of the Proposed Action. This alternative would reduce the visibility of the Project from the NHL. However, BOEM has determined the Nantucket Historic District NHL would still be adversely affected by the Project given the size, location, and number of proposed WTGs and distance of the Wind Farm Area to the shoreline under this alternative. As a result, BOEM determined that all feasible alternatives would result in visual adverse effects on this NHL. The only alternative that BOEM was able to identify that avoids any Project effects on this NHL was the No Action Alternative.
BOEM-2023-0011-0128-0006	THE DEIS IS INADEQUATE BECAUSE IT FAILS TO TAKE A "HARD LOOK" AT IMPACTS TO CULTURAL AND HISTORIC RESOURCES. By ignoring Nantucket's significance and its historic oceanfront context BOEM has failed to uphold its obligations to properly inform the public in the DEIS and through public meetings about the full range of SouthCoast Wind's anticipated effects as NEPA requires.	Section 3.6.2, *Cultural Resources*, and Appendix I, *Finding of Adverse Effect*, describe BOEM's finding that the Nantucket Historic District NHL would be visually adversely affected by the Project. Appendix I, *Finding of Adverse Effect*, Section I.3.1.3, *Assessment of Effects on Historic Properties in the Visual APE*, provides further detail on the significance of the Nantucket Historic District NHL, its maritime setting and seaward views, and impacts on the viewshed and setting from the introduction of offshore Project components (WTGs and OSPs). The public was provided opportunities to comment on the impact on Nantucket Historic District NHL and BOEM's finding of adverse effect during the public comment period on the Draft EIS (originally scheduled to end on April 3, 2023, and extended to April 18, 2023). BOEM also held three virtual public meetings on the Draft EIS where the public was able to provide comments on and ask questions about the Draft EIS, including on the impacts on cultural resources and BOEM's finding of adverse effect. The virtual public meetings were held on March 20, 2023, at 5:00 p.m., March 22, 2023, at 1:00 p.m., and March 27, 2023, at 5:00 p.m. To provide more context for the historical significance of Nantucket, BOEM has integrated additional discussion of

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		Nantucket's history into Section 3.6.2, Table 3.6.2-1, *Cultural context of the Project area in coastal Massachusetts and Rhode Island*, and Appendix I, *Finding of Adverse Effect*, based on the AVEHP's (COP Appendix S) overview of the historic significance of the Nantucket Historic District NHL. Please refer to response to comment BOEM-2023-0011-0128-0002 for additional information on BOEM's assessment of the Project's visual effects.
BOEM-2023-0011-0128-0012	Due to the historic integrity of historic properties within the Project Area and Area of Potential Effects BOEM must establish and implement best practices. Based on the omissions described above the DEIS should be amended to reflect—and the Final EIS should include—a complete cumulative assessment of all impacts to historic and cultural properties and include additional cumulative visual simulations for the Town of Nantucket's historic properties including those reasonably foreseeable effects that adjacent wind farms will generate.	Section 3.6.2.5, *Impacts of Alternative B – Proposed Action on Cultural Resources*, includes an analysis of the cumulative impacts on cultural resources from the Proposed Action in combination with other ongoing and planned non-offshore wind and offshore wind activities. The CHRVEA, which was provided to consulting parties for review and comment on February 2, 2023, specifically addresses anticipated cumulative visual effects on historic properties accruing from the Project and other foreseeable wind farms. Numerous visualizations are provided in the VIA (COP Appendix T), AVEHP (COP Appendix S), and CHRVEA for a range of conditions from various KOPs. Additionally, Appendix C of the CHRVEA includes cumulative visual simulations from five KOPs within the Nantucket Historic District NHL (i.e., Sanford Farm Barn, Tom Nevers Beach, Cisco Beach, Head of Plains, and Madaket Beach) during daytime and nighttime conditions. The cumulative visual simulations include locations within and nearby the Nantucket Historic District NHL, TCPs, and other historic properties. Please refer to response to comment BOEM-2023-0011-0128-0024 regarding requests for additional visual simulations.
BOEM-2023-0011-0128-0014	According to the VIA CHRVEA and SLVIA SouthCoast is expected to cause major adverse effects to Nantucket even though BOEM cites "NEPA's objective of providing Americans with aesthetically and culturally pleasing environments."	Section 3.6.9, *Scenic and Visual Resources*, describes the impacts of the Project on seascape, open ocean, landscape, and viewer experience. BOEM has revised Section 3.6.2, *Cultural Resources*, to specify that the Project's nighttime

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	[Footnote 13: SLVIA at H-1.] Adjacent wind farms will magnify SouthCoast's adverse effects and along with SouthCoast will change the ocean's undeveloped character to an industrial wind farm environment with major adverse impacts on scenic and visual resources. Although BOEM characterizes adverse effects in some cases as "minor" or "moderate" BOEM has failed to rely on worst case visual scenarios preferring to use atmospheric haze to minimize SouthCoast's visibility. Considering the sensitivity of Nantucket's historic properties and direct connection to the ocean's viewshed as one of their character-defining features BOEM should consider all visual effects as "major" and err on the side of caution rather than in SouthCoast's favor even though risks are not fully known. The DEIS also fails to assess adverse effects to Tuckernuck and Muskeget Islands even though they are part of the Nantucket NHL. Nor does the DEIS assess adverse effects—especially nighttime lighting effects—on Maria Mitchell Association's historic observatory one of the Town's historic assets that depends on dark night skies to continue its historic use.	lighting impacts on cultural resources will be negligible when the ADLS is not active and moderate for the duration of the ADLS activation. This is consistent with the impact levels defined in Section 3.6.2, Table 3.6.2-2, *Definitions of potential adverse impact levels for cultural resources by type*. BOEM has consulted with federally recognized Tribes, SHPOs, ACHP, NPS, and consulting parties on the development of mitigation measures stipulated in the MOA to resolve adverse effects on the Nantucket Historic District NHL, which includes Tuckernuck and Muskeget Island and the Maria Mitchell Observatory.
BOEM-2023-0011-0128-0015	Due to the high cultural and historic sensitivity of our client' ocean-facing historic properties best practice criteria must be applied. Minimum standards should include: • Requiring the least impactful nighttime lighting such as ADLS as a permit condition; • Requiring all windfarms in a specific region to use the same non-reflective paint color determined to be most effective in minimizing the visual impacts per specific atmospheric/geographical conditions of the lease sites; • Establishing minimum set-back standards from land with specific considerations for historic landmarks and areas with tourism-driven economies; • For communities with historical significance BOEM should help ensure that local stakeholders receive fair and direct access to any state and federal agencies or resources which may provide critical regulatory guidance on how best to avoid minimize and mitigate the local impacts of offshore	BOEM thanks the Town of Nantucket for these comments. In order to minimize visual effects on historic properties, BOEM will include the use of and ADLS and general application of paint colors (no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey) that conform to BOEM's *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development* (as cited in Appendix H; BOEM 2021) as conditions of COP approval. SouthCoast Wind will implement an ADLS to reduce nighttime visual impacts on aboveground historic properties in the visual APE for offshore Project components. BOEM has and will continue to engage with communities and stakeholders on all phases of offshore wind energy development in the region. BOEM has and will continue to engage in consultation with federally recognized Tribes, Massachusetts and Rhode Island SHPOs, ACHP, consulting

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	windfarms. This support would be provided independent of the Section 106 process and would for example identify and encourage dialogue between communities with their State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP); and • Requiring—to the extent to which harm to historic and cultural resources cannot be avoided or minimized—appropriate project mitigation measures to offset the impacts to communities such as community benefit agreements offshore wind mitigation trust funds or other economic development arrangements as are standard in the offshore wind industry globally. At this critical juncture in the development of the U.S. offshore wind industry stakeholders are open minded if not supportive of a successful industry that shares benefits with local communities who will bear the brunt of adverse impacts and certain risk of loss to their economies.	parties, and the public on resolution of adverse effects on historic properties from offshore wind energy development, as required under NHPA Section 106. BOEM has consulted on mitigation of adverse effects on historic properties with all required and interested parties, as reflected in Appendix I, *Finding of Adverse Effect*, and the MOA.
BOEM-2023-0011-0128-0016	The documents BOEM provided for review as drafted fall short of the NHPA's mandates that require consideration and resolution of all adverse effects. By contrast BOEM downplays them. In reviewing SouthCoast Wind's visual simulations our client has serious concerns regarding the assessment of adverse effects to these properties. Without additional visualizations to and from historic properties including all NHLs (including Nantucket Island Muskeget Island and Tuckernuck Islands) consulting parties cannot understand how SouthCoast Wind and projects cumulative to SouthCoast Wind will affect their historic properties' integrity including their context seaside character and connection to a maritime setting that has historically depended on open views to and from the Atlantic Ocean. The number and density of SouthCoast Wind's turbines will create a visual mass that will have a presence of large-scale modern infrastructure on the horizon that cannot be avoided.	Please refer to responses to comments ACHP-02-02 and BOEM-2023-0011-0128-0012.

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BOEM-2023-0011-0128-0017	However BOEM cannot reasonably expect consulting parties to understand the full extent of SouthCoast Wind's adverse visual effects. The visual simulations that BOEM has provided are too limited in nature and not only preclude meaningful consultation and resolution of adverse effects but BOEM's continued reliance on them will result in decision making that is arbitrary capricious and contrary to law. Because current visual assessments and simulations do not show the actual impact of the SouthCoast Wind's turbines and associated infrastructure BOEM must amend them to assess adverse impacts and to determine appropriate avoidance minimization or mitigation measures. Failure to do so will result in a record of decision that is arbitrary capricious and contrary to law.	In addition to the visual simulations provided within the VIA (COP Appendix T) and CHRVEA to consulting parties on February 2, 2023, BOEM provided video simulations to Tribes and consulting parties on September 30, 2024. Please refer to response to comment BOEM-2023-0011-0128-0024 regarding requests for additional visual simulations.
BOEM-2023-0011-0128-0022	Furthermore BOEM has not fully shown consulting parties or the public how SouthCoast Wind will address potential lighting impacts including during the construction phase. Prolonged constant and bright lights will be required to construct the WTGs as well and this lighting will cause major impacts to our client' views for at least close to a decade when all the projects are considered cumulatively over decades of their expected lifespans. BOEM must include construction impacts including lighting in its final analysis of impacts to historic properties so that consulting parties and the public can evaluate them.	COP Volume I and COP Appendix T, *Visual Impact Assessment* (VIA), describe the proposed lighting for onshore and offshore Project components, including temporary construction lighting. Final EIS Section 3.6.9, *Scenic and Visual Resources,* and Section 3.6.2, *Cultural Resources*, describe Project lighting impacts during construction, installation, O&M, and decommissioning for both onshore and offshore Project components. BOEM has consulted with federally recognized Tribes, Massachusetts and Rhode Island SHPOs, ACHP, and other consulting parties under Section 106 of the NHPA to identify avoidance, minimization, and mitigation measures for resolving adverse effects on historic properties, including those caused by Project lighting. BOEM provided federally recognized Tribes and consulting parties with drafts of the MOA and Historic Property Treatment Plans (HPTPs) on February 2, 2023, January 17, 2024, July 1, 2024, and September 30, 2024, for review and comment. BOEM also held NHPA Section 106 Consultation Meeting #3 on January 24, 2024, to provide an overview of the MOA and solicit feedback from federally recognized Tribes and consulting parties, including on potential avoidance, minimization, and

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		mitigation measures; and Meeting #4 on July 15, 2024 and Meeting #5 to finalize the MOA. Mitigation measures determined through consultations for the Nantucket Historic District NHL and stipulated in the MOA (Appendix I, Attachment A), as well as an associated HPTP for the NHL, which is attached to the MOA, will be implemented by the Project to resolve adverse effects in accordance with Section 106 and Section 110(f) of the NHPA.
BOEM-2023-0011-0128-0023	Our client 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 with special attention paid to internationally renowned Maria Mitchell Association's historic observatory a contributing property within the NHL which depends on visitation revenue for its continued maintenance and preservation.	Thank you for these comments. Please refer to responses to comments BOEM-2023-0011-0128-0014 and BOEM-2023-0011-0128-0024.
BOEM-2023-0011-0128-0024	In addition BOEM must consider the visual impacts of all light units on each turbine and their reflections on the ocean's surface especially during nighttime hazy conditions that will magnify their glow—and how nighttime light pollution will further diminish the integrity of all historic properties and NHLs within the APE. [Footnote 19: For example see Amy Shira Teitel Why is the Night Sky Turning Red? Light Pollution Is Turning Our Dark Skies Red DISCOVER (Aug. 23 2012) at https://www.discovermagazine.com/the-sciences/why-is-the-night-sky- turning-red; Joshua Sokol The Sky Needs Its "Silent Spring" Moment SCIENTIFIC AMERICAN (Oct. 1 2022) at https://www.scientificamerican.com/article/the-sky-needs-its-silent-spring-moment/.]	BOEM has considered the impacts of WTG lighting in the EIS. As described in EIS Chapter 2 under the Proposed Action Alternative, all structures would have appropriate markings and lighting in accordance with USCG and International Association of Marine Aids to Navigation and Lighthouse Authorities guidelines. This includes where navigational lighting would be placed near the base, midway WTG towers, and on the WTG nacelles. Weather or atmospheric conditions are considered, as is distance to historic properties, which would ameliorate the effects of lighting impacts such as in surface reflection. The EIS also considers that the impacts of Project lighting would be greater in areas where darker skies exist or would be reduced by existing ambient lighting. Section 3.6.2, *Cultural Resources*, describes lighting impacts during construction, installation, O&M, and decommissioning for both onshore and offshore Project components. Appendix I, *Finding of Adverse Effect*, describes the effects of lighting on historic properties in the APE, including the Nantucket Historic District NHL. Additionally,

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		lighting impacts on scenic and visual resources are described in Section 3.6.9, *Scenic and Visual Resources.* During operation of the Project, SouthCoast Wind will use ADLS on the WTGs, which activates the hazard lighting system in response to detection of nearby aircraft. The synchronized flashing of the aviation warning lights would occur only when aircraft are present. The shorter-duration synchronized flashing of ADLS is anticipated to have reduced visual impacts at night as compared to the standard continuous, medium-intensity red strobe FAA warning system. Based on estimates from SouthCoast Wind, ADLS-controlled obstruction lights would be activated for less than 5 hours per year (COP Appendix T, Section 5.1.3; SouthCoast Wind 2024). It is estimated that the reduced time of FAA hazard lighting resulting from an implemented ADLS would reduce the duration of potential impacts of nighttime aviation lighting to less than 1 percent of the normal operating time that would occur without using ADLS. Atmospheric and environmental factors such as haze and fog would influence visibility and perception of hazard lighting from historic properties. Numerous visualizations are provided in the VIA (COP Appendix T), AVEHP (COP Appendix S), and Cumulative Historic Resources Visual Effects Analysis (CHRVEA) for a range of high-contrast conditions from various key observation points (KOPs). Attachment 3 of the VIA includes visual simulations intended to capture a range of lighting conditions (i.e., side lit, back lit, front lit) at different times (e.g., from morning through night) from seven KOPs on Martha's Vineyard and fifteen KOPs on Nantucket, providing adequate coverage from along the south coastline and inland areas of Nantucket Island. BOEM determined this information is sufficient to enable an informed assessment of visual impacts as found in the VIA, AVEHP, and CHRVEA.
BOEM-2023-0011-0128-0025	BOEM's Technical Reports include an assessment of adverse effects. The size and scale of SouthCoast Wind within our	As described in Appendix I, *Finding of Adverse Effect*, and MOA, BOEM has found the Project would have adverse

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	client' historic viewshed with its constant daytime view alteration coupled with nighttime and construction lighting will inexorably change the historic nature of Nantucket's historic properties their feeling their association and the connections of these historic properties to the ocean and its unimpeded horizon.	effects on the Nantucket Historic District NHL. BOEM has consulted with federally recognized Tribes and consulting parties, including the Town of Nantucket, on the development of mitigation measures to resolve adverse effects on the NHL. Mitigation measures determined through consultations for the Nantucket Historic District NHL and stipulated in the MOA (Appendix I, Attachment A), as well as an associated HPTP for the NHL, which is attached to the MOA, will be implemented by the Project to resolve adverse effects in accordance with Section 106 and Section 110(f) of the NHPA.
BOEM-2023-0011-0128-0026	In addition considering the magnitude of SouthCoast Wind's adverse effects on the landscape and visual blight SouthCoast Wind will cause BOEM should consider Nantucket for eligibility as traditional cultural property so that BOEM can assess adverse effects more accurately rather than downplaying them. The historic properties located within the Nantucket NHL maintain ties to living communities who continue to preserve maintain and associate these properties with cultural practices traditions lifeways and social institutions—all of which are located within the Nantucket NHL and who continue to appreciate occupy and use these properties. [Footnote 20: See e.g. NATIONAL PARK SERVICE GUIDELINES FOR EVALUATING AND DOCUMENTING TRADITIONAL CULTURAL PROPERTIES NATIONAL REGISTER BULLETIN 38.]	The AVEHP (COP Appendix S) and Appendix I, *Finding of Adverse Effect*, consider and discuss the historic significance of the Nantucket Historic District NHL. BOEM has determined it is beyond a reasonable and good-faith effort to research and evaluate the Nantucket Historic District NHL as a TCP as it is already designated as an NHL and identified as an adversely affected historic property in BOEM's *Finding of Adverse Effect* (Appendix I) and the MOA. Throughout the course of NHPA Section 106 consultations on this Project, BOEM has welcomed input from the Town of Nantucket on mitigation measures for adversely affected historic properties located within the APE. In its development of the MOA, BOEM considered a potential mitigation measure for the assessment of Nantucket Island as a TCP. Consulting parties did not agree to this measure as part of the mitigation to resolve adverse effects on the Nantucket Historic District NHL. Mitigation measures determined through consultations for the Nantucket Historic District NHL and stipulated in the MOA (Appendix I, Attachment A), as well as an associated HPTP for the NHL, which is attached to the MOA, will be implemented by the Project to resolve adverse effects in accordance with Section 106 and Section 110(f) of the NHPA. As described in more detail in the MOA and associated Attachment 9 (*Historic*

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		Properties Treatment Plan For Nantucket Historic District), the Lessee will conduct cultural resource surveys of the NHL in areas selected by the Town of Nantucket in consultation with the Massachusetts SHPO, consulting Tribal Nations, and other participating consulting parties.
BOEM-2023-0011-0128-0027	Descriptions about Nantucket are illustrative of the traditional historic relationship of this community to its pristine ocean setting and the connections the living community continues to have to their settings and celebrate. BOEM however has not explored these connections and thus not provided the deeper level of historic property identification and analysis of adverse effects that Nantucket merits.	The Nantucket Historic District NHL is identified as a historic property in the SouthCoast Wind Project's visual area of potential effects, and BOEM determined that the NHL would be visually adversely affected by offshore Project components in EIS Appendix I, *Finding of Adverse Effect*. Per BOEM's request, SouthCoast Wind prepared a supplemental analysis and report for the Nantucket Historic District NHL, including contextual photographs of ocean views from the Nantucket Historic District NHL, to further support BOEM's compliance with Section 110(f). BOEM distributed this supplemental analysis to consulting parties on January 17, 2024, and provided a copy of this document for reference in the distribution of the revised MOA on July 1, 2024. Please refer to responses to comments BOEM-2023-0011-0128-0005 and BOEM-2023-0011-0128-0026 for additional information on BOEM's fulfillment of its Section 110(f) obligations pertaining to the Nantucket Historic District NHL.
BOEM-2023-0011-0128-0028	Distinguishing features of Nantucket's NHL designation—diversity of historic and cultural resources and their high level of integrity overall size of the resource and centrality of its ocean viewshed—mean that among the almost 2600 properties designated as NHLs throughout the country few comparators exist. Indeed the only NHLs arguably comparable with Nantucket's significance's significance may be the French Quarter in New Orleans Charleston Historic District in South Carolina the Santa Fe Historic District in New Mexico. Internationally Venice and its lagoon a UNESCO World Heritage Site is the most similar destination. Nevertheless the DEIS ignores Nantucket's significance and downplays the harm that SouthCoast will cause to it.	Please refer to responses to comments BOEM-2023-0011-0128-0005, BOEM-2023-0011-0128-0026, and BOEM-2023-0011-0128-0027.

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BOEM-2023-0011-0128-0029	Going forward in revising SouthCoast Wind's DEIS and technical reports BOEM must employ common sense in its assessment of Nantucket's historic properties' character and setting and work closely with consulting parties (as opposed to consultants) to understand how people in this community—including historic property owners who were never notified by BOEM about this permitting process—interact with these properties and how SouthCoast Wind will adversely affect these properties individually and cumulatively.	BOEM has determined the Nantucket Historic District NHL would be adversely affected by the Project as described in Section 3.6.2, *Cultural Resources*; Appendix I, *Finding of Adverse Effect*; and the CHRVEA report. In addition to the Town of Nantucket's participation in Section 106 consultation, per BOEM's request, SouthCoast Wind published a public notice of the Project inviting property owners of potentially affected historic properties and other parties with a demonstrated interest in the undertaking to participate in Section 106 consultation. The public notice was published on August 10, 2023 in the Inquirer and Mirror in order to be accessible by Nantucket and other communities in the Project area.
BOEM-2023-0011-0128-0030	As evidence of BOEM's skipping steps in the Section 106 and NEPA process BOEM has submitted to consulting parties a draft Memorandum of Agreement (MOA) before consulting parties have had an opportunity to conclude consultation with BOEM on earlier steps in the Section 106 process. Suggested minimization measures do not qualify as such because BOEM has not used all possible planning to avoid or minimize harm including the evaluation of scenarios with fewer turbines on SouthCoast's front rows closest to the Town. [Footnote 21: SouthCoast Wind appears to take the position that it should receive credit for minimization measures for design aspects that SouthCoast Wind would have to do anyway such as turbine spacing and layout which is required by the U.S. Coast Guard. U.S. Coast requirements dictate turbine placement for reasons of navigational safety not minimization of adverse effects under Section 106. Similarly atmospheric conditions are not minimization measures either. Moreover use of nonreflective paint and Aircraft Lighting Detection Systems have become standard.]	Under 36 CFR 800.8(c), for NEPA substitution, BOEM is required at the Draft EIS stage to identify and describe the proposed measures to resolve any adverse effects on historic properties. BOEM's approach to sharing a draft MOA as an attachment with the Draft EIS offers the public an opportunity to review the proposed measures to avoid, minimize, and mitigate adverse effects. BOEM has solicited feedback from consulting parties throughout the NHPA Section 106 consultation process, including in the development of the MOA. BOEM has adopted the approach of distributing drafts of MOAs to facilitate meaningful consultation and seek consulting party feedback on the information contained in the draft MOAs. The draft MOAs offer measures to avoid, minimize, and mitigate adverse effects that have been developed by qualified historic preservation professionals and/or based on consulting party feedback. Measures in the draft MOAs are not final and include only those that had been identified as potential options at that point in the consultation process. The inclusion of standardized avoidance or minimization measures in the MOA does not preclude the development and implementation of other measures that are determined

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		through consultations, nor does it preclude the ability of such measures to substantively minimize adverse effects on historic properties. BOEM has developed standardized measures, such as nonreflective paint and ADLS, because they are effective means for avoiding or minimizing both adverse effects on historic properties and adverse impacts on other environmental resources. A draft of the MOA was distributed to consulting parties for review and comment on February 2, 2023, as a starting point for consultations on the development of avoidance, minimization, mitigation, and monitoring measures to be included in the Final MOA. Revised versions of the Draft MOA were distributed to consulting parties on January 17, 2024 and July 1, 2024, to solicit additional input. BOEM also held NHPA Section 106 Consultation Meeting #3 on January 24, 2024, to provide an overview of the finding of adverse effect and MOA and solicit feedback on potential avoidance, minimization, and mitigation measures; and Meeting #4 July 15, 2024 and Meeting #5 on October 8, 2024 to finalize the MOA. BOEM has determined through consultation that the measures as stipulated in the MOA resolve the Project's adverse effects on historic properties. Please refer to response to comment BOEM-2023-0011-0128-0005 for additional information on BOEM's fulfillment of its Section 110(f) obligations pertaining to the Nantucket Historic District NHL.
BOEM-2023-0011-0128-0031	Moreover the MOA has proposed mitigation measures to resolve adverse effects that are not adequate have not been requested and do not offset the magnitude of harm that SouthCoast Wind will cause. BOEM's message to consulting parties is that whatever SouthCoast Wind wants is a fait accompli and whatever consulting parties want does not matter.	BOEM has solicited feedback from consulting parties throughout the NHPA Section 106 consultation process, including in the development of the MOA. BOEM has adopted the approach of distributing drafts of MOAs to facilitate meaningful consultation by helping consulting parties understand the specific types of input and information needed to develop this agreement document. The draft MOAs offer standard and example measures that have been developed by qualified historic preservation professionals and/or based on consulting party feedback.

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		Measures in the draft MOAs are not final and include only those that had been identified as potential options at that point in the consultation process. A draft of the MOA was distributed to consulting parties for review and comment on February 2, 2023, as a starting point for consultations on the development of avoidance, minimization, mitigation, and monitoring measures to be included in the Final MOA. Revised versions of the Draft MOA were distributed to consulting parties on January 17, 2024, July 1, 2024, and September 30, 2024, to solicit additional input. BOEM also held NHPA Section 106 Consultation Meeting #3 on January 24, 2024, to provide an overview of the finding of adverse effect and MOA and solicit feedback from consulting parties on potential avoidance, minimization, and mitigation measures; and Meeting #4 on July 15, 2024 and Meeting #5 on October 8, 2024 to finalize the MOA. BOEM has determined the measures as stipulated in the MOA resolve the Project's adverse effects on historic properties.
BOEM-2023-0011-0128-0032	Moreover our client objects to the draft MOA and proposed mitigation plans since they do not meet the standard needed for mitigation to offset unavoidable adverse effects and fail to consider the creation of appropriately capitalized historic preservation mitigation funds. Nevertheless so that all consulting parties can understand the basis of SouthCoast Wind's mitigation proposals and so that future consultation can be productive we request copies before the next consultation meeting of all documents on which SouthCoast Wind and BOEM have relied to show that the existing mitigation proposals are the result of all possible planning to minimize harm. This information is also needed to understand how SouthCoast Wind's proposed mitigation proposals rise to a level of "rough proportionality" relative to SouthCoast Wind's adverse effects and which would be required to offset those effects.	BOEM welcomes consulting parties' input on specific mitigation measures to resolve adverse effects on historic properties. Please refer to responses to comments BOEM-2023-0011-0128-0015 and BOEM-2023-0011-0128-0031 for additional information on the development of mitigation measures to resolve adverse effects on historic properties, including the Nantucket Historic District NHL.

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BOEM-2023-0011-0128-0033	However BOEM and SouthCoast Wind's reliance on undefined mitigation measures in the draft MOA is not a workable solution especially where BOEM and SouthCoast Wind have failed to address our client's concerns.	Please refer to responses to comments BOEM-2023-0011-0128-0015 and BOEM-2023-0011-0128-0031.
BOEM-2023-0011-0128-0034	BOEM's Draft MOA has proposed the following mitigation measures the gist of which includes: • Historic property surveys of neighborhoods along Nantucket Island's south coast with National Register nomination eligibility recommendations; • possible Archaeological Overview and Assessment of the above neighborhoods to focus on the pre-contact history with an emphasis on areas subject to coastal erosion SouthCoast Wind's proposal does not amount to acceptable mitigation for at least twenty-five to thirty years of harm to Nantucket's historic context the risk that SouthCoast Wind might never be decommissioned and the indirect and cumulative financial harm our client' historic properties are expected to experience.	Please refer to response to comment BOEM-2023-0011-0128-0031.
BOEM-2023-0011-0128-0035	As our client has already explained to BOEM and SouthCoast Wind a sufficiently capitalized historic preservation mitigation fund tailored to the community which the Town can deploy for needed historic preservation and coastal resiliency purposes to protect its historic properties is the most appropriate and efficient way to offset SouthCoast Wind's adverse effects that cannot be avoided. Moreover the Town and Vineyard Wind established Nantucket Offshore Wind Community Fund specifically for this purpose and for future developers to use to offset the adverse effects that they will cause to the Town's historic properties and its economy. Therefore our client objects globally to the proposed mitigation offers that have not developed through consultation. What BOEM has apparently endorsed undermines Section 106's legitimacy. Moreover SouthCoast Wind's proposals are essentially meaningless and discount the value property owners and historic preservation advocates—	Please refer to responses to comments BOEM-2023-0011-0128-0031 and BOEM-2023-0011-0128-0032. BOEM notes that the Nantucket Offshore Wind Community Fund referenced here was developed outside of NHPA Section 106 consultation and did not resolve adverse effects to historic properties from other offshore wind energy development projects.

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	including local governments—place on their historic oceanfront settings.	
BOEM-2023-0011-0128-0036	Finally BOEM cannot demonstrate that it has complied with Section 110(f) of the NHPA. As noted above BOEM's visual simulations are not adequate. BOEM has not prepared enough of them during different seasons and times of day for consulting parties to consider them as representative samples for understanding the adverse effects of SouthCoast Wind and cumulative offshore wind developments. BOEM has the duty to assess all adverse effects and to resolve all adverse effects; the NHPA does not place the duty on consulting parties to extrapolate guess or fill in the blanks. Without a comprehensive understanding of visual impacts as a starting point BOEM cannot possibly demonstrate all possible planning to minimize harm because the full extent of SouthCoast Wind's adverse effects is unknown.	The current analysis and visual simulations represent a good-faith effort to analyze the visibility of the Project from affected historic properties per the VIA (COP Appendix T) requirements of a "typical day." The photographic visualizations were taken during summer, fall, and winter and under different lighting conditions and at different times of day. Current KOP coverage is sufficient to represent visibility along the shoreline for historic properties in the Project APE. Please refer to responses to comments BOEM-2023-0011-0128-0014 and BOEM-2023-0011-0128-0017 for additional information on BOEM's visual effects assessment and visual simulations.
BOEM-2023-0011-0128-0037	Moreover for Section 110(f) purposes it is not appropriate for BOEM to default to SouthCoast Wind's preferred alternative in the Draft Environmental Impact Statement ruling out all other minimization alternatives—as well as other avoidance and minimization measures—because they do not fit with SouthCoast Wind's self-serving purpose and need.	Please refer to response to comment BOEM-2023-0011-0128-0005.
BOEM-2023-0011-0128-0038	Likewise BOEM's apparent decision that SouthCoast Wind will not significantly affect our client's NHL's historic integrity fails to consider their inseparable connection to the Atlantic Ocean or the special sensitivity that those who value NHLs have to integrity losses. Section 110(f) demands a heightened level of scrutiny that BOEM has not yet met.	Please refer to response to comment BOEM-2023-0011-0128-0005.
BOEM-2023-0011-0128-0039	Finally the DEIS contains no evidence that the National Park Service has consulted with and agrees with BOEM on its avoidance minimization and mitigation measures which Section 110(f) requires.	Please refer to response to comment BOEM-2023-0011-0128-0005.
BOEM-2023-0011-0132-0084	Nantucket is a cultural resource for which unobstructed ocean views or a setting free of modern visual elements is a	Per Section 3.6.2, Table 3.6.2-2, *Definitions of potential adverse impact levels for cultural resources by type*, "major"

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	contributing element to its historical integrity. The document states that the proposed Project may have moderate visual impacts on the Nantucket Historic District NHL. The impact will in fact be major. In describing the "no action alternative" it states that other construction is likely to happen. This makes no sense. Nantucket's Historic Landmark status affords it strong protections under NEPA from not only SouthCoast Wind but any other projects in its viewshed. It is simply not acceptable to assume this that Nantucket's would have impacts from other projects regardless of the proposed action. The only approved project impacting Nantucket in this regard is in dispute.	impacts are defined as equivalent to a Section 106 (36 CFR 800.5(a)(1)) finding of adverse effect on historic properties such that characteristics of historic properties would be "affected in a way that diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association ***to the extent that the property is no longer eligible for listing in the NRHP*** [emphasis added]." Although BOEM has found the Project will have adverse effects on the Nantucket Historic District NHL, BOEM has determined the NHL will retain its overall integrity and character-defining features that contribute to its eligibility for listing in the NRHP. Therefore, BOEM has found the Project will have moderate impacts on the Nantucket Historic District NHL. Under the No Action Alternative, BOEM would not approve the COP and the SouthCoast Wind Project would not be built. Ongoing activities that would contribute to baseline conditions, excluding the Proposed Action, are also described under the No Action Alternative. Offshore wind activities that have already been constructed (Block Island Wind Farm offshore Rhode Island and Coastal Virginia Offshore Wind Pilot Project offshore Virginia) or that have an approved COP (e.g., Vineyard Wind 1 in Lease Area OCS-A 0501, South Fork Wind Farm in Lease Area OCS-A 0517, Revolution Wind project in Lease Area OCS-A 0486, and Sunrise Wind Farm in Lease Area OCS-A 0487,) are considered ongoing activities that have been included in the No Action Alternative. These offshore wind activities have completed the environmental review process and the public has had the opportunity to comment on them. The No Action Alternative does not include reasonably foreseeable planned activities, such as the buildout of other offshore wind projects within the region. The No Action Alternative acts as the baseline to evaluate potential impacts of the Proposed Action within the geographic analysis area for each Chapter 3 resource topic.

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		The CEQ NEPA Implementing Regulations require NEPA impact analysis to include cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to other past, present, and reasonably foreseeable actions. The cumulative impact analysis for the No Action Alternative considers the impacts of ongoing activities and other reasonably foreseeable planned activities, excluding the Proposed Action, as described in Appendix D, *Planned Activities Scenario*. The cumulative impact analysis of the Proposed Action considers approval of the SouthCoast Wind Project in combination with other reasonably foreseeable planned activities within the geographic analysis area for each Chapter 3 resource topic. As such, the analysis of the No Action Alternative in Section 3.6.2, *Cultural Resources*, serves in part to identify how and where impacts on cultural resources and historic properties are ongoing, potential, or would be likely without approval of the Project.
BOEM-2023-0011-0132-0085	The document correctly states that the WTGs would adversely impact the Nantucket Historic District NHL and that the presence of visible WTGs from the Proposed Action alone would have long-term continuous widespread impacts on these resources. However the document states that these impacts would be moderate and there is no basis for that claim. The impacts are clearly major.	Please refer to response to comment BOEM-2023-0011-0132-0084.
BOEM-2023-0011-0132-0086	After stating that the Nantucket Historic District NHL would be subject to viewshed impacts with portions of up to 743 WTGs theoretically be visible from the southern shores of the district and the closest WTG approximately 14.8 miles (23.8 kilometers) away from the resource the document states that the intensity of cumulative visual impacts on these historic properties would be limited by distance and environmental and atmospheric factors such as meteorological conditions like low cloud cover fog or haze. However clear calm days are	Section 3.6.9, *Scenic and Visual Resources,* addresses impacts from the Proposed Action on seascape, open ocean, and landscape character and viewers. Additionally, within this section, Section 3.6.9.5 addresses cumulative impacts of the Proposed Action combined with other ongoing and planned activities. The VIA (COP Appendix T) states that all efforts were made to secure KOP photos under clear-sky conditions; however, that was not always possible. Simulations reflect a range of visual contrast under differing conditions (e.g., overcast/cloudy, haze, clear); such conditions are identified

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	when the viewshed is most likely to be enjoyed. Therefore the impacts are major.	with each simulation. The Project contains more visual simulations than other offshore wind projects of similar magnitude, and BOEM has determined the existing simulations adequately represent the impacts without needing additional simulations. Please refer to responses to comments BOEM-2023-0011-0132-0084 and BOEM-2023-0011-0128-0024 for additional information on BOEM's assessment of the Project's visual effects.
BOEM-2023-0011-0132-0095	Regarding construction lighting the document state the impacts will minor. This is supported by claims that the construction will be short term when in fact the duration has been increased from 4 to 7 years. It also states that lighting impacts will be reduced by atmospheric and environmental conditions such as clouds fog and waves that could partially or completely obscure or diffuse sources of light. However clear calm evenings are when the dark skies of Nantucket are most often enjoyed. The dark nighttime sky is a character-defining feature that contributes to the historic significance and integrity of Nantucket. The impacts to Nantucket's nighttime skies will clearly be major.	The AVEHP (COP, Appendix S) and Section 3.6.2, *Cultural Resources*; Section 3.6.9, *Scenic and Visual Resources*; and Appendix I, *Finding of Adverse Effect*, consider the visual impacts of lighting, including light from vessels, use of lighting during construction and decommissioning, and use of lighting on WTGs and offshore substations during O&M. The EIS indicates the visibility of the WTGs will be variable depending on current meteorological and day or nighttime conditions. Please refer to response to comment BOEM-2023-0011-0132-0084.
BOEM-2023-0011-0132-0111	Table 3.6.2-1. This table that covers significant historical events makes no mention of Nantucket its whaling history or its importance as the largest National Historic Landmark. The impacts to tourism on Nantucket do not seem to be a consideration at all. From a social justice standpoint many lower paying tourism jobs are what will be lost. Nantucket's economy will be severely impacted and this is not addressed.	BOEM has integrated additional discussion of Nantucket's history into Section 3.6.2, Table 3.6.2-1, *Cultural context of the Project area in coastal Massachusetts and Rhode Island*, and Appendix I, *Finding of Adverse Effect*, including recognition of the historic whaling and tourism industries on Nantucket Island. BOEM's analysis in Section 3.6.2, *Cultural Resources*, focuses on physical resources valued by a group of people, including historic properties as defined in the NHPA (54 USC 300308). BOEM's analysis of Project impacts on economics and tourism are provided in Section 3.6.3, *Demographics, Employment, and Economics*, and Section 3.6.8, *Recreation and Tourism*, respectively.

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BOEM-2023-0011-0132-0114	Considering the importance of the view shed to Nantucketer's and its visitors all scenic impacts to the NHL are MAJOR. The visual analysis explains that a criterion for assessing the impact to viewshed is the concern to the audience. The views on Nantucket are of utmost importance to Nantucketer's and its visitors.	Please refer to responses to comments BOEM-2023-0011-0132-0084 and BOEM-2023-0011-0132-0086.
BOEM-2023-0011-0133-0001	[The Nantucket Maria Mitchell Association provided historical and background information on the Maria Mitchell Association and Maria Mitchell Observatory and House.]	Thank you for this additional context. Analysis of impacts on night skies can be found in Section 3.6.2, *Cultural Resources*, and Section 3.6.9, *Scenic and Visual Resources*. Please refer to response to comment BOEM-2023-0011-0128-0014 for additional information regarding BOEM's assessment of effects on the Nantucket Historic District NHL, which includes the Maria Mitchell Observatory.
BOEM-2023-0011-0133-0002	Dark skies are critical to our work in observation of the galaxy. We are actively conducting research via direct observation year-round and we offer programming to the community for learning and observing the night sky. Last year we had more than 3000 visitors to the Loines Observatory and offered 20 Open Nights at the Observatory for free to the local community (parents children and educators) through our grant funded "Look Up" program. Our goal is that every child growing up on Nantucket looks through our telescopes and sees Jupiter or Saturn views the Milky Way and understands the importance of this special natural resource – dark skies – and humanity's responsibility to protect it.	Please refer to response to comment BOEM-2023-0011-0133-0001.
BOEM-2023-0011-0133-0003	MMA and its stakeholders interact with the dark skies daily and have done so historically for over 100 years as part of the traditional historical use of MMA's properties and otherwise. For example currently ourdirector of astronomy our telescope technician 6 REU students and 2 post baccalaureate research fellows are using the observatories year-round to collect data and conduct astrophysical research. This research is funded by the NSF through competitive grants that we have received for many years. This research encompasses a wide variety of topics including variable stars dwarf galaxies quasars galaxy	Please refer to response to comment BOEM-2023-0011-0133-0001.

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	formation and evolution and the newly discovered enigmatic and fast radio bursts. For many years now numerous other Nantucket residents and visitors to Nantucket as a result of MMA or on their own participate in observational activities of this sort as well in furtherance of MMA's longstanding mission.	
BOEM-2023-0011-0133-0004	[The Nantucket Maria Mitchell Association provided additional information and specific studies on research conducted on artificial lighting and dark/night skies.]	Please refer to response to comment BOEM-2023-0011-0133-0001.
BOEM-2023-0011-0133-0005	[The Nantucket Maria Mitchell Association provided additional information and on how impacts to the Maria Mitchell Association and Maria Mitchell Observatory and House could impact tourism and economy.]	BOEM's analysis of Project impacts on tourism and economics are provided in Section 3.6.8, *Recreation and Tourism*, and Section 3.6.3, *Demographics, Employment, and Economics*, respectively. Please refer to response to comment BOEM-2023-0011-0133-0001 for additional information.
BOEM-2023-0011-0133-0006	[The Nantucket Maria Mitchell Association provided additional comments on other impacts, aside from disruption of the night sky, that may contribute to adverse effects on the Maria Mitchell Association and Maria Mitchell Observatory and House.]	Please refer to response to comment BOEM-2023-0011-0133-0001.
BOEM-2023-0011-0133-0034	MMA also has concerns about the process itself. For example BOEM has published a draft Memorandum of Agreement (MOA) at a time when there is still no consensus on what adverse effects will flow from the projects much less how those effects might be mitigated. The draft MOA contains no mitigation pertinent to MMA in any way and MMA was not consulted with respect to the draft MOA. The limited mitigation that is identified in the draft MOA appears to be window dressing at best. Both the premature timing of publishing such a document and the patently inadequate content of the document raise concerns about whether there is a predetermined result of the process. MMA objects.	Please refer to response to comment BOEM-2023-0011-0128-0031.
BOEM-2023-0011-0133-0035	[Footnote 1: Other examples include the failure of BOEM to rely upon any sources other than the applicant's own hired	BOEM has ensured SouthCoast Wind's consultants meet the U.S. Secretary of the Interior's Professional Qualifications

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	consultants the rapid pace at which the process is proceeding the failure of BOEM to reveal the existence of a revised COP until the day comments were due the failure to publish much of the relevant information at all and when published the failure to do so in a readily accessible and readable format.]	Standards, as required per BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (dated May 27, 2020) and the MOA. Cultural resource technical documents prepared by SouthCoast Wind's consultants meet applicable state guidelines and have taken into consideration several data sources as well as consulting party feedback. BOEM has determined the cultural resource technical reports demonstrate a good-faith effort to identify historic properties in the APE and are sufficient to allow BOEM to make a finding of adverse effect for the Project. Version E of the COP became available for review on BOEM's website on March 23, 2023. The public comment period was initially scheduled from February 17, 2023, to April 3, 2023, but was extended 15 days to end on April 18, 2023, to ensure the public had adequate time to review the latest version of the COP. The EIS and COP are published on the BOEM website and formatted per Section 508 of the Rehabilitation Act to ensure the greatest amount of accessibility to the public. BOEM has also posted public summaries or redacted versions of Section 106 documents to BOEM's website; unredacted versions containing confidential or sensitive information are distributed to consulting parties electronically and/or via hard copy if a hard copy is requested. In addition to BOEM's Section 106 document distributions to all consulting parties on February 2, 2023, January 17, 2024, July 1, 2024, and September 30, 2024, BOEM has provided information to consulting parties by request and has made its representatives available to answer questions via email, phone, and consultation meeting throughout the duration of the Project.
BOEM-2023-0011-0133-0036	No consideration has been given to the impact of the proposed project on: MMA's historical and current use of its observatory for observation of stars and other elements of the night sky dome; MMA's historical and current educational	The Maria Mitchell Association is within the Nantucket Historic District NHL, a historic property that BOEM has determined would be adversely affected by the Project. In Section 3.6.2, *Cultural Resources,* of the Final EIS, BOEM

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	mission with respect thereto; the historical and current use of numerous other locations throughout the Nantucket Historic District for observation of stars and other elements of the night sky dome; the economic impact on MMA; or the impact on MMA's other missions regarding appreciation of the sea scape sea life and nature more broadly. The approach has instead been to focus exclusively on the degree to which aviation lighting on the towers is perceptible by observers in one location on shore. While important this is a distinctly different issue from the issues identified above.	assessed visual effects from the presence of structures and nighttime lighting for aboveground historic properties and TCPs for which a dark nighttime sky is a character-defining feature that contributes to the historic significance and integrity of the resource, including the Nantucket Historic District NHL. BOEM consulted with federally recognized Tribes and consulting parties, including the NPS, Nantucket Maria Mitchell Association, and Town of Nantucket, on the development of mitigation measures to resolve adverse effects on the NHL. Mitigation measures determined through consultations for the Nantucket Historic District NHL and stipulated in the MOA (Appendix I, Attachment A), as well as an associated HPTP for the NHL, which is attached to the MOA, will be implemented by the Project to resolve adverse effects in accordance with Section 106 and Section 110(f) of the NHPA.
BOEM-2023-0011-0134-0005	Disturbance of the seabed may result in irreparable damage to historically significant and culturally and spiritually important archeological resources. Our submerged cultural and sacred sites face complete destruction or irreparable damage unless sincere planning for avoidance impact minimization or mitigation is conducted in collaboration with our Tribe and all other affected Tribal Nations. The entire wind energy project area under consideration should be protected due to its eligibility for listing on the National Register as a Traditional Cultural Property and under other Tribal Indigenous Traditional and Ecological Knowledge.	Thank you for these comments. BOEM recognizes its government-to-government obligation to consult with Tribal Nations that may attach religious and cultural significance to historic properties, including sacred sites, which may be affected by the Project. BOEM understands that Tribal Nations possess special expertise in assessing the eligibility of historic properties with religious and cultural significance to Tribal Nations. In consultation with Tribal Nations, three TCPs were identified in the APE for the Project: Nantucket Sound TCP, Chappaquiddick Island TCP, and Vineyard Sound and Moshup's Bridge TCP. Two TCPs were identified as adversely affected by the Project: Nantucket Sound TCP and Chappaquiddick Island TCP. In addition, BOEM understands that the ASLFs in Nantucket Sound identified in the Project's marine APE may be contributing elements to the Nantucket Sound TCP and may contain archaeological resources that are of historical, cultural, and spiritual importance to the Wampanoag Tribe of Gay Head (Aquinnah). SouthCoast Wind prioritized avoidance measures for TCPs and ASLFs to the extent feasible. Due to avoidance

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		commitments made by SouthCoast Wind as stipulated in the MOA, BOEM determined the Project would have no effect on 7 of the 9 identified ASLFs that are or may be contributing elements to the Nantucket Sound TCP. However, avoidance was determined to not be possible for four of the ASLFs. As such, BOEM has consulted with federally recognized Tribes and consulting parties, including the Wampanoag Tribe of Gay Head (Aquinnah), on the development of minimization and mitigation measures to minimize and/or resolve adverse effects on the Nantucket Sound TCP and the two ASLFs. These measures, as well as an Unanticipated Discoveries Plan for marine archaeological resources (MOA Attachment 13), are stipulated in the MOA. BOEM welcomes continued consultation with Tribal Nations and will work with Tribal Nations to incorporate their expertise and Indigenous Traditional Ecological Knowledge in NHPA Section 106 consultations over the course of the Project and implementation of the MOA.
BOEM-2023-0011-0139-0033	Section 3.6.2.5 of the DEIS states that "the Proposed Action may have negligible to major physical impacts on 46 marine archaeological resources." SouthCoast Wind disagrees with this statement as it lacks important details regarding the nature of the specific marine archaeological resources and some avoidance commitments the Project has already made to date. Out of the 46 submerged cultural resources encountered during geophysical and geotechnical surveys conducted by SouthCoast Wind and analyzed by the Qualified Marine Archaeologist (QMA) for the Project 5 are located within the Lease Area 16 are within the Falmouth ECC and 25 are within the Brayton Point ECC. As stated in the Historic Properties Treatment Plan for Ancient Submerged Landforms and Submerged Cultural Resources (COP Appendix Q.4) 14 of the 46 marine archaeological resources were not recommended for avoidance by the QMA because they were determined to not be culturally significant. Out of the remaining 32 marine archaeological resources SouthCoast	Per Section 3.6.2, Table 3.6.2-2, *Definitions of potential adverse impact levels for cultural resources by type*, "negligible" impacts are defined as equivalent to a Section 106 (36 CFR 800.4(d)(1)) finding of no effect on historic properties. In Section 3.6.2.5, *Impacts of Alternative B – Proposed Action on Cultural Resources*, BOEM's statement that 46 identified marine archaeological resources would be subject to "negligible to major impacts" is intended to indicate that individual resources among the total of 46 resources would be subject to negligible, minor, moderate, or major impacts. BOEM has revised Section 3.6.2.5 in the Final EIS for clarity. Additionally, Appendix I, *Finding of Adverse Effect*, describes BOEM's finding of effect for each of the 46 identified marine archaeological resources in greater detail and reflects SouthCoast Wind's avoidance commitments for 31 of the 32 marine archaeological resources in the marine APE

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	Wind has committed to avoiding 11 by micro- routing around the resources. These commitments were included in COP Appendix Q.4 which also states that SouthCoast Wind is still evaluating the feasibility to micro-route around the remaining 21 marine archaeological resources which have been recommended for avoidance by the QMA.	recommended to be historic properties potentially eligible for listing in the NRHP, as stipulated in the MOA.
BOEM-2023-0011-0139-0034	The DEIS notes that three tribally important Traditional Cultural Properties (TCPs) have been identified in the Project's cultural resources geographic analysis area two of which may be subject to impacts from the Project (COP Appendices Q and R): Chappaquiddick Island and Nantucket Sound. Both TCPs are eligible for listing in the NRHP. TCPs are places landscape features or locations associated with the cultural practices traditions beliefs lifeways arts crafts or social institutions of a living community. Ancient Submerged Landscape Features (ASLF) may be contributing elements to TCPs. The Nantucket Sound and Chappaquiddick Island TCPs intersect the Falmouth ECC. SouthCoast Wind recognizes the importance of TCPs and is committed to avoiding adverse impacts on ASLFs. Of the 16 ASLFs located within the SouthCoast Wind APE 15 were recommended for avoidance by the QMA. Eleven of the ASLFs are found along the Falmouth ECC and six of those ASLFs along the Falmouth ECC lie below the vertical APE and will not be adversely affected by construction. Where avoidance may not be possible consultation with the relevant authorities and stakeholders to develop mitigation plans may be required based on construction activities. SouthCoast Wind is developing and will adhere to a Mitigation Plan and an Unanticipated Discoveries Plan; these plans are described in Appendices G and I of the DEIS.	Appendix I, *Finding of Adverse Effect*, and the MOA have been revised to reflect avoidance, minimization, mitigation, and monitoring measures for TCPs and ASLFs as identified and finalized through BOEM's NHPA Section 106 consultations since publication of the Draft EIS. Please refer to response to comment BOEM-2023-0011-0134-0005 for related information on the Nantucket Sound TCP and ASLFs.
BOEM-2023-0011-0139-0035	The two tribally important TCPs identified in the Project's cultural resources geographic analysis area (Chappaquiddick Island and Nantucket Sound) are subject to visual impacts from the visibility of Project components. We note that the	Section 3.6.2, *Cultural Resources,* describes the effect of clouds, fog, waves, sea spray, and haze, which could reduce the impacts of lighting and visibility of WTGs.

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	scale extent and intensity of these impacts would be partially mitigated by environmental and atmospheric factors such as clouds haze fog sea spray vegetation and wave height that would partially or fully screen the WTGs from view during various times throughout the year.	
BOEM-2023-0011-0165-0001	Oak Grove cemetery is a non profit non denominational cemetery formed in 1847 and we abut the Lawrence and Lynch location for the converter station of just about a thousand feet the whole boarder. We have concerns of the location of that station. I know in the paper they showed a diagram and it's pretty darn close to our border fence. The noise factor is significant. I think the -- as you look at the cemetery we are very active and we have sufficient how you say burial site for the next hundred years. We are also the very -- the largest cemetery on Cape Cod with veterans outside of our born national cemetery and we have an awful lot of national heroes that are interm there in the cemetery not to mention Catherine Lee Bates and Winston Jenkins and a few other folks that have been very prominent within the Falmouth history. The noise factor we feel would prohibit many of our expanding in the future since that expansion is along that borderline.	BOEM determined one of the Project's proposed onshore substations would have adverse effects on the Oak Grove Cemetery under Section 106 of the NHPA if technical, logistical, grid interconnection, or other unforeseen challenges that arise during the Project's design and engineering prevent Project 2 from making interconnection at Brayton Point and the Falmouth variant ECC is utilized, making landfall and interconnection in Falmouth, Massachusetts. BOEM has consulted with federally recognized Tribes and consulting parties, including the Oak Grove Cemetery, on the development of mitigation measures to resolve adverse effects on historic properties. Mitigation measures determined through consultations for Oak Grove Cemetery and stipulated in the MOA (Appendix I, Attachment A), as well as an associated HPTP for Oak Grove Cemetery, which is attached to the MOA, will be implemented by the Project to resolve adverse effects in accordance with Section 106 of the NHPA if the Falmouth variant ECC is utilized. Per BOEM's request, SouthCoast Wind revised the AVEHP (COP, Appendix S) for the onshore substation in Falmouth to include more description of the potential physical and auditory effects on the Oak Grove Cemetery from construction, installation, and O&M. The AVEHP discusses locations within the cemetery from which potential views of the station and associated construction activities would be possible. Based on the analysis, construction activities would likely generate the greatest noise that could temporarily impact the cemetery. This revised AVEHP was provided to consulting parties for review and comment on January 17,

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		2024, and was used to revise Section 3.6.2, *Cultural Resources*, and Appendix I, *Finding of Adverse Effect*.
BOEM-2023-0011-0165-0002	We also are in the process oh for the last year and a half of building a -- some folks may laugh at it as to what a cemetery is doing with it but we are building a butterfly garden it's a symbol of renewed life and it's in honor of those folks in Falmouth Mashby that have passed as a result of Covid. It's a significant size garden it's essentially 100 by 50 and we are proceeding with phase two and it just happens to have been right along the general area of our border with Lawrence and Lynch existing site. That we feel would have a significant impact the noise level that has been discussed we have not actually read anything that mitigates that noise and we would like some additional environmental considerations reviewed before that site is actually selected.	Please refer to response to comment BOEM-2023-0011-0165-0001.

N.6.15 Demographics, Employment, and Economics

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BOEM-2023-0011-0015-0008	Will energy costs increase as a result like they did in France? Are these even economically sensible?	The Project will generate up to 2,400 MW of energy that will supply electric power to customers in the northeast United States, including Massachusetts, Connecticut, and/or Rhode Island. The price of the power generated by the Project will be determined by offtake agreements, also known as power purchase agreements, negotiated between SouthCoast Wind and electric distribution companies, subject to each state's offshore wind procurement laws and regulations. The electric distribution companies that acquire the power from the Project will distribute and sell the power to their customers. While SouthCoast Wind's offtake agreements may influence the electricity prices paid by ratepayers in the states where the Project's power is purchased, the exact cost cannot be known at this time, as electricity rates are affected by myriad factors including current demand for electricity, the mix and price of other generation sources (e.g., other

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		offshore wind projects, natural-gas power plants), and other factors, including natural events like high summertime temperatures. In electricity markets where wind power is generated, the electricity cost for ratepayers may be variable, such as when the market is saturated with electricity due to windy seasons, or, conversely, when there is less wind, the power demand may be higher, causing rates to increase. This information has been added to Section 3.6.3.5, *Impacts of Alternative B - Proposed Action on Demographics, Employment, and Economics*, of the Final EIS.
BOEM-2023-0011-0030-0001	I am generally in favor of the Southcoast Wind project as large scale problems need large scale solutions. The impact on reducing our dependence on fossil fuels is undisputable. The impact on reducing energy bills is unclear - there are too many variables to forecast any positive results at this time. What is clear is that the residents of Falmouth Heights will be negatively impacted perhaps only for one year during construction perhaps for much longer in ways that are not clear at the moment. The rest of us in Falmouth and the rest of Massachusetts will derive some benefit from this project while we're asking one particular neighborhood to bear many of the risks and inconvenience. Is there some way to compensate them such as rebates for a percentage of their property taxes for a number of years? The shortfall in tax revenue to Falmouth should be filled in by Southcoast Wind who can make it up by passing some of the those costs to all consumers who are benefitting from the project.	While construction of onshore facilities is an unavoidable aspect, construction-related inconveniences are expected to be minor and localized, as discussed further in Final EIS Section 3.6.3.5. Traffic disruptions would be temporary during construction; SouthCoast Wind has committed to implementing a Traffic Management Plan to minimize disruptions to residences and commercial establishments. Moreover, local communities will realize economic benefits from local preference in terms of construction hiring and spending. It is therefore premature to conclude that Falmouth or other onshore communities would see tax revenue shortfalls as a result of construction. Also refer to the response to comment BOEM-2023-0011-0015-0008.
BOEM-2023-0011-0038-0003	At the CCC Subcommittee New England Connector 1 meeting many opponents cited the LLC status of most of the foreign wind farm development companies and the Jones Act constraints on utilizing foreign equipment and construction vessels as a source of economic uncertainty in providing more local jobs and the projects being completed in a timely fashion to reduce ghgs by 2030. I am not an expert in these issues but BOEM might want to utilize the Economic Multiplier Effect for	Comment noted. Also refer to the response to comment BOEM-2023-0011-0121-0002.

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	coastal counties where wind farm development is being considered since the Jones Act constraints and LLC status are unlikely to be changed by Congress. The Gulf of Maine Council on the Marine Environment developed an EME indicator which might provide a useful case study.	
BOEM-2023-0011-0055-0004	The ongoing maintenance/ preventive maintenance associated with these structures have an intangible cost to the area. There will frequently be trucks and personnel interrupting the life and lifestyles of residents businesses and tourists. Additionally the amount of dredged material generated will need to be hauled away does this require a constant flow of trucks in and out of congested neighborhoods?	Impacts on local communities from vehicle traffic would result from construction of the landfall locations, installation of onshore cable routes, and construction of onshore substations/converter stations, which are analyzed in Final EIS Sections 3.6.3, *Demographics, Employment, and Economics*, and Section 3.6.5, *Land Use and Coastal Infrastructure*. Traffic disruptions would be temporary during construction, and SouthCoast Wind has committed to implementing a Traffic Management Plan to minimize disruptions to residences and commercial establishments. Dredging would be used for installation of offshore cables. Dredged material would be side cast alongside the cable corridor route. Accordingly, no offsite (onshore) disposal of dredged material or use of trucks to haul material would be required.
BOEM-2023-0011-0117-0029	Human Well-being: Rhode Island and the nation as a whole suffer from a mental health crisis and increased drug abuse. Encounters with nature improve both mental and physical health by providing a sense of awe (Lopes 2020; Chirico 2021 Monroy 2022). Compromising the ocean's natural state will potentially exacerbate the country's mental health problems by destroying a source of visual peace and open space. BOEM has failed to take this adverse impact into its analysis.	Final EIS Sections 3.6.3, *Demographics, Employment, and Economics*, 3.6.4, *Environmental Justice*, and 3.6.8, *Recreation and Tourism*, analyze the socioeconomic, environmental justice, and recreational impacts of the Proposed Action on affected communities, including effects associated with the presence of offshore wind projects. The cited concerns regarding offshore wind energy's potential to exacerbate community mental health is speculative and therefore beyond the scope for consideration in the EIS.
BOEM-2023-0011-0121-0001	The DEIS also estimates a range of compensation from $43000 for trades and technicians to $150000 for managers. Given that one of the biggest factors affecting workers' compensation is whether they are members of a trade union We recommend evaluating and reporting in the FEIS the status of any negotiations between the developer and labor	Please refer to response to comment BOEM-2023-0011-0121-0002.

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	unions as a critical factor in determining whether economic benefits to residents of the Commonwealth will be maximized. [Footnote 1: Bureau of Labor Statistics "Union Members" 2021. Available online: www.bls.gov/news.release/pdf/union2.pdf]	
BOEM-2023-0011-0121-0002	However for a U.S. workforce to access opportunities in offshore wind developers must share information about the specific skills training and certifications required as well as information about the employment opportunities related to the project. This information along with specifc commitments to develop durable pathways for minority contractors and workers into training and employment throughout the Project is invaluable. In the FEIS socioeconomic impacts analysis these factors should be considered along with the status of negotiations related to project labor or community workforce agreements labor peace agreements and Community Benefits Agreements with labor unions and grassroots organizations based in environmental justice communities such as Fall River New Bedford Brockton Wareham Falmouth Hyannis Edgartown Tisbury and Aquinnah. If there are no such negotiations this also merits consideration in the FEIS.	Section 3.6.3.5 of the Final EIS provides information on SouthCoast Wind's proposed investments in community development and workforce training. Additional detailed information is included in the COP. Regarding training, each role will have training and certifications unique to the skills necessary to safely and effectively complete the tasks required. The primary training and certification body for the industry is the Global Wind Organization, which provides standard training and certifications recognized throughout the offshore wind industry. SouthCoast Wind has committed to the hiring of local personnel to fill the positions required for the various preparation and construction activities. The training and use of local and regional resources will be prioritized so that the regional populations can benefit from the direct and indirect economic benefits. SouthCoast Wind enacted Supplier and Workforce Diversity Plans, which promote career pathways for minority workers both within SouthCoast Wind and with the suppliers. SouthCoast Wind has formed local partnerships across New England to support a diverse and inclusive offshore wind workforce pipeline. For example, through its partnership with the National Society of Black Engineers, SouthCoast Wind committed to funding internships with SouthCoast Wind and/or the Project's suppliers. Additionally, SouthCoast has a partnership with Bristol Community College to support the development of its National Offshore Wind Institute, which will be in an environmental justice community. In 2022, SouthCoast Wind signed a Memorandum of Understanding (MOU) with North America's Building Trades

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		Unions and the United Brotherhood of Carpenters regarding the onshore and offshore construction work for the delivery of the first 1,200 MW from the Lease Area. The MOU was renewed in 2024. The MOU includes commitments to create jobs for local and diverse workers and to comply with the labor requirements of the Inflation Reduction Act, including paying prevailing wages and utilizing apprentices. Consistent with industry practice, SouthCoast Wind will negotiate a Project Labor Agreement once the main contractors have been appointed and the Proposed Action is closer to a Final Investment Decision. SouthCoast Wind has committed to making O&M jobs locally based in the state(s) that procure energy from the Project. Regarding job agreements with environmental justice communities, SouthCoast Wind has established a Protected Species Observer (PSO) Training Program, where it is working to provide local Native American communities with cost-free training and all certifications to work as a PSO. Information regarding the use of local work force and labor agreements has been added to the Final EIS in Section 3.6.3.5, *Impacts of Alternative B – Proposed Action on Demographics, Employment and Economics.*
BOEM-2023-0011-0121-0005	The DEIS provides information related to job creation including direct indirect and induced jobs. The FEIS should build on this information and include further specificity for each of these categories. The DOL's Good Jobs Initiative highlights equity and job quality principles and metrics to be used in federal grant making processes that should be strongly considered by BOEM for use in the FEIS.	SouthCoast Wind's COP indicates that full-time equivalent (FTE) job-years created in Massachusetts for this Project would be 14,860 direct jobs, 4,300 indirect jobs, and 7,780 induced jobs, totaling 26,940 FTE job-years from the Project. The EIS discusses this further by FTE job-years per Project phase. For the number of jobs anticipated by labor categories, for offshore wind in general, please see the National Renewable Energy Laboratory's (NREL's) U.S. Offshore Wind Workforce Assessment at https://www.nrel.gov/docs/fy23osti/81798.pdf (Stefek et al. 2022).

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BOEM-2023-0011-0121-0006	According to NREL the average and maximum job creation utilizing 25% domestic content versus 100% domestic content in offshore wind projects results in a difference of approximately 30000-40000 jobs from 2023-2030. The DEIS provides some information related to the local regional and domestic manufacture of components to be utilized in the Project but BOEM should make efforts to include greater detail in the FEIS.	Best available Project-specific information regarding direct, indirect, and induced FTE job-years as well as those that will be in development, construction, and operations can be found in Final EIS Section 3.6.3.5. Also refer to the response to comment BOEM-2023-0011-0121-0002.
BOEM-2023-0011-0121-0007	The FEIS should specify job categories and job numbers per category resulting from each domestically manufactured component as well as how these numbers are accounted for in the total number of direct indirect and induced jobs gross state product and personal income anticipated from the project.	SouthCoast Wind has conducted an analysis of job creation associated with the Proposed Action (COP Appendix BB, Economic Development Benefits Report). Annual FTE employment was calculated by subtracting the total operating margin from the gross value added and dividing that value by the average annual wage plus non-wage average annual cost of employment. The development, construction, and operation of the full Lease Area with up to 2.4 GW of offshore wind capacity will create approximately 26,900 FTE years in Massachusetts and 27,800 FTE years in the New England/New York region. These total job types are summarized in Section 3.6.3.5 of the Final EIS and in the COP Volume 2, Section 10.1.2.1. Appendix BB, which is business confidential, provides some additional information regarding jobs within supply chain categories that has informed BOEM's analysis in the Final EIS. For the number of jobs anticipated by labor categories, for offshore wind in general, please see NREL's U.S. Offshore Wind Workforce Assessment at https://www.nrel.gov/docs/fy23osti/81798.pdf (Stefek et al. 2022).
BOEM-2023-0011-0121-0008	The FEIS should also include an assessment of education and certifications necessary to access each job category the training average wages hours career advancement physical demands and safety information as well as any commitments the company has made to ensure workers have the free and fair choice to join a union such as through a union neutrality	An assessment of the education, certifications, training, safety information, and other requirements for employment to ensure workers have equitable access to employment opportunities is beyond the scope of BOEM's NEPA process, the purpose of which is to analyze the environmental and human effects of the Project and to aid decision-makers in

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	agreement. This information is essential for the U.S. workforce to have equitable access to employment opportunities.	deciding whether to approve or disapprove SouthCoast Wind's COP. BOEM does not regulate labor or employment. However, information regarding employment requirements in the offshore wind industry is available in Appendix B of NREL's U.S. Offshore Wind Workforce Assessment (Stefek et al. 2022), which lists different roles and the educational requirements for potential jobs in the offshore wind industry, such as for development, supply chain, and manufacturing jobs. For example, a factory-level supply chain and manufacturing plant manager will need a bachelor's degree in a relevant engineering field and experience in a manufacturing supervisory role and an electrical technician will need an associate's degree or vocational training for electricity or in electrical engineering. Consistent with the National Labor Relations Act, individuals have the autonomy to decide if they want to be represented by a union and which specific union they would like to represent them.
BOEM-2023-0011-0121-0009	Finally the FEIS should also contain information about the manufacture of offshore wind energy components that did not take place in the U.S. in order to understand the full breadth of employment benefits that could be expected as a domestic offshore wind supply chain matures.	Final EIS Section 3.6.3.5 includes estimates on direct, indirect, and induced employment from the Project, which include jobs created through increased demand for materials, equipment, and services. SouthCoast Wind has not yet selected manufacturers for all of the required equipment and material, so the manufacturing location is not known. SouthCoast Wind has stated it will source equipment, materials and supplies, and other services such as vessel provisioning and servicing, and certain fabrication work, from within the region to the extent feasible.
BOEM-2023-0011-0121-0010	Similarly for O&M job impacts the FEIS should specify O&M job categories job numbers in each category and how job numbers are accounted for in the total number of direct indirect and induced jobs gross state product and personal income anticipated from the Project. The FEIS should also include an assessment of education and certifications necessary to access those jobs training average wages career	Please refer to responses to comments BOEM-2023-0011-0121-0007 and BOEM-2023-0011-0121-0008.

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	advancement hours physical demands and safety information as well as any commitments the company has made to ensure workers have the free and fair choice to join a union such as through a union neutrality agreement.	
BOEM-2023-0011-0121-0011	The FEIS should also indicate the number of jobs that if any require specialized experience that would prohibit workers in the U.S. from accessing those jobs and the specific experience and training that is required. When it comes to training, the FEIS should specify whether workers will need to go overseas to receive training and the duration of that training. Given the size of offshore wind projects the FEIS should be sure to specify jobs categories related to the operation and maintenance of every aspect of the Project including the turbines themselves cables and onshore and offshore substations. Any apprenticeship utilization should also be documented and the types of apprenticeships to ensure that they are DOL-certified.	Please refer to response to comment BOEM-2023-0011-0121-0008.
BOEM-2023-0011-0121-0012	The FEIS should include all construction jobs associated with the Project including any construction jobs anticipated to prepare the port that is selected for assembly preparation of the cable route and interconnection and the construction or site preparation of any manufacturing facilities. Consistent with the previous two categories BOEM should specify job categories job numbers in each category and how job numbers are accounted for in the total number of direct indirect and induced jobs gross state product and personal income anticipated from the Project. The FEIS should also include an assessment of education and certifications necessary to access each job category the training average wages hours career advancement physical demands and safety information. If any construction jobs require specialized experience that prohibit workers in the U.S. from accessing these jobs that should also be detailed including the number of jobs as well as the training and experience required. The	Please refer to responses to comments BOEM-2023-0011-0121-0007 and BOEM-2023-0011-0121-0008.

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	FEIS should also specify whether workers will need to go overseas to receive training and the duration of that training.	
BOEM-2023-0011-0121-0013	The FEIS should be sure to include the status of Project Labor Agreements (PLAs) or Community Workforce Agreements (CWAs) associated with all aspects of the construction of the Project.	Please refer to response to comment BOEM-2023-0011-0121-0002.
BOEM-2023-0011-0121-0014	BOEM should be sure to include detailed information regarding training. One of the main mechanisms for building career pathways is through registered apprenticeship pre-apprenticeship and other union-affiliated training programs.	Please refer to responses to comments BOEM-2023-0011-0121-0002 and BOEM-2023-0011-0121-0008.
BOEM-2023-0011-0121-0015	BOEM should also include any language access needs for the local community that may be present in order to access jobs benefits. The NEPA guidance study does not require demographics related to language or education but BOEM should consider these and other qualities that should be taken into account to ensure jobs are accessible to a diverse workforce. Any agreements that project developers have made to increase access be it to jobs in manufacturing operations and maintenance construction or otherwise should be detailed in the FEIS to increase transparency and the local community's ability to access these resources and benefits.	Comment noted.
BOEM-2023-0011-0130-0009	Fossil fuel retirements will mean the loss of some high-quality employment in the sector. It is crucial that states ensure a just transition of these power plants and that offshore wind projects foster the creation of high-quality family-sustaining jobs. Through the use of project labor agreements and community benefits agreements offshore wind can create job transition opportunities for workers affected by this resource shift. The FEIS should consider these impacts in its analysis of all alternatives particularly the "No Action Alternative."	The No Action Alternative analysis in Section 3.6.3.3 of the Final EIS has been updated with additional information regarding the type of energy used in the region (e.g., fossil fuel, wind), jobs by energy type, and the potential impacts on energy employment by energy type from the expansion of the offshore wind industry. As offshore wind projects including the Proposed Action and other activities in the geographic analysis area come online, it is a reasonable assumption that there will be increased demand for jobs in the wind energy sector at the same time that jobs related to electric power generated by fossil fuels may be reduced.
BOEM-2023-0011-0130-0011	Robust socioeconomic analysis is critical to achieve the maximum economic benefits from offshore wind projects. The	Please refer to responses to comments BOEM-2023-0011-0121-0005 and BOEM-2023-0011-0121-0008.

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	FEIS should detail to the greatest extent possible all anticipated job creation involving port utilization and development supply chain and manufacturing of offshore wind components construction operations and maintenance and decommissioning. In addition to salary information should include health and safety certifications training pathways recruitment and retention plans project labor agreements and union neutrality commitments and commitments and requirements for targeted hire of disadvantaged and underrepresented communities.	
BOEM-2023-0011-0130-0012	While some of the details may not be available the FEIS should reference agreements that are in place such as the MOU between SouthCoast Wind and North America's Building Trades Unions (NABTU) covering all of SouthCoast' s contractors and subcontractors for construction of the company's offshore wind project.	Final EIS Section 3.6.3.5 has been updated to reference the MOU SouthCoast Wind entered into with North America's Building Trades Unions and the United Brotherhood of Carpenters. Consistent with industry practice, SouthCoast Wind will negotiate a Project Labor Agreement once the main contractors have been appointed and the Proposed Action is closer to a Final Investment Decision.
BOEM-2023-0011-0130-0013	It would be useful for the FEIS to detail the projected economic impact for the region under one scenario in which the parties successfully negotiate a Project Labor Agreement (PLA) and a scenario in which they do not. The Department of Labor (DOL) reports that unions raise wages for all workers and the Bureau of Labor Statistics reports that non-union workers earn just 83 percent of what unionized workers earn. [Footnote 4: News Release Bureau of Labor Statistics US Department of Labor. January 19 2023. https://www.bls.gov/news.release/pdf/union2.pdf] PLAs have also been demonstrated to reduce project costs for developers save public funds in the long run and produce increased economic benefits for the local community. [Footnote 5: Frank Manzo et al. Efficiencies of Project Labor Agreements 2015. https://illinoisepi.org/site/wp-content/themes/hollow/docs/wages-labor- standards/Illinois-PLAs-in-CDB-Projects-FINAL.pdf]	The Final EIS, Section 3.6.3, appropriately discloses the economic impacts of the Proposed Action based on projected employment and investment in the regional economy. An economic impact analysis of scenarios with and without a Project Labor Agreement is beyond the scope of BOEM's NEPA process. BOEM does not regulate labor or employment, and the establishment of a Project Labor Agreement is at the discretion of SouthCoast Wind. Such an analysis would not support the decision makers in deciding whether to approve or disapprove SouthCoast Wind's COP. Refer also to response to comment BOEM-2023-0011-0130-0012.

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BOEM-2023-0011-0130-0015	Finally the National Renewable Energy Laboratory (NREL) has estimated that the vast majority of offshore wind's potential economic benefit lies in supply chain [Footnote job:s projecting a potential 12000-49000 full time equivalent jobs annually in domestic manufacturing. Indeed NREL names failure to develop sufficient domestic manufacturing as one of the biggest roadblocks to reaching the Biden Administration's offshore wind energy goals. The FEIS for SouthCoast Wind should provide as much detail as possible about the developer's plans to source domestic] and local content.	SouthCoast Wind has not yet selected manufacturers for all of the required equipment and material, so the manufacturing location is not known. SouthCoast Wind has stated it will source equipment, materials and supplies, and other services such as vessel provisioning and servicing, and certain fabrication work, from within the region to the extent feasible. In its engagement with its anticipated supply chain, SouthCoast Wind has asked for suppliers to provide their localization plans and ability to provide domestic content.
BOEM-2023-0011-0131-0007	There is some additional information that the Project did not include in its DEIS that we believe would be useful in a more comprehensive understanding of the economic impact of the project and could lead to more intentional measures to create good jobs at the established industry standards. We urge BOEM to require SouthCoast Wind to include in its DEIS • What steps SouthCoast Wind is taking to build new facilities associated with the operations maintenance or supply chain for the Project under a Project Labor Agreement or other labor agreements • What steps SouthCoast Wind is taking to ensure the renovation of any facilities associated with the construction operations maintenance or supply chain will be done under a Project Labor Agreement • What steps SouthCoast Wind is taking to ensure the remediation of hazards or hazardous materials from land or buildings associated with the Project be done under a project labor agreement at the established prevailing or industry standard wages and benefits and with adequate protections for worker and community safety	Please refer to responses to comments BOEM-2023-0011-0130-0012 and BOEM-2023-0011-0121-0002.
BOEM-2023-0011-0131-0011	SouthCoast Wind has not declared any commitments in the DEIS about the quality of jobs in O&M activities; the creation of family-sustaining jobs where workers have a free voice in their working conditions is crucial to mitigating the employment and economic impacts of the Project. Moreover	SouthCoast Wind has committed to making O&M jobs locally based in the state(s) that procure energy from the Project. It has also stated it will pay prevailing wages consistent with the requirements of the Inflation Reduction Act. Overall, the

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	the existence of a labor dispute could interrupt the project's operation putting BOEM's revenue at risk–and risking noncompliance with the statutory mandate of a fair return–and causing economic harm to the communities affected by the project.	Project would have beneficial impacts on employment and wages in the regional economy.
BOEM-2023-0011-0131-0012	CJMA urges BOEM to require SouthCoast Wind to include more detail in its DEIS to minimize the adverse socioeconomic effects and maximize beneficial impacts through the creation of good union careers: • What steps SouthCoast Wind is taking to operate under a Labor Peace Agreement (LPA) for all Operation & Maintenance directly employed and contracted workers and including those who may work on port facilities or transmission infrastructure to connect to the grid and its willingness to enter into such an Agreement • What steps SouthCoast Wind is taking to ensure that all O&M jobs for workers directly employed as well as employed by contractors will pay at least the prevailing wage rate or established industry standard wages and benefits so that good jobs are being created • What steps SouthCoast Wind is taking to ensure it has a procurement policy for use of contractors based on best value rather than low bid in order to fairly evaluate regulatory compliance history and fair employment practices	SouthCoast Wind has stated it is committed to paying prevailing wages consistent with the requirements of the Inflation Reduction Act. Also refer to responses to comments BOEM-2023-0011-0130-0012 and BOEM-2023-0011-0121-0002.
BOEM-2023-0011-0131-0016	CJMA encourages BOEM to assess the impacts of the Proposed Action on the workers who will be manufacturing the parts and supplies for the Project and integrate such assessments in the final environmental impact statement (EIS). Again any interruption in the supply chain for the Project delays this crucial investment in reducing greenhouse gas emissions and puts the economic well-being of affected communities at risk.	Section 3.6.3 analyzes the effects on employment from the construction, O&M, and decommissioning of the Project. It includes estimates on direct, indirect, and induced employment from the Project, which include jobs created through increased demand for materials, equipment, and services. The section also describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry.
BOEM-2023-0011-0131-0019	CJMA urges BOEM to require SouthCoast Wind to provide more detail regarding their supply chain including:	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with

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	• What measures SouthCoast Wind will take to prioritize use of domestic manufacturing and domestic manufacturers • What measures SouthCoast Wind will take to encourage labor peace agreements for its Tier 1 and Tier 2 supply chain manufacturers • What measures SouthCoast Wind will take to encourage supply chain employers to pay family sustaining wages and benefits at or above the levels that may have been established through collectively bargained agreements	partners to develop capabilities and experience in the domestic offshore wind industry. SouthCoast Wind has stated it will source equipment, materials and supplies, and other services such as vessel provisioning and servicing, and certain fabrication work, from within the region to the extent feasible. In its engagement with its anticipated supply chain, SouthCoast Wind has asked for suppliers to provide their localization plans and ability to provide domestic content. Information on fringe benefits, salaries, training pathways, recruitment, and retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind. Hiring targets that may be included in contracts for the Project are at the discretion of SouthCoast Wind and are not known.
BOEM-2023-0011-0131-0020	What measures will SouthCoast Wind take to require that the employers pay full cost of GWO and helicopter training and certification the required annual anti-harassment training in Massachusetts or any specialized training needed by workers engaged in the constructions operations maintenance of the project.	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry. Information on fringe benefits, salaries, training pathways, recruitment, and retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind.
BOEM-2023-0011-0131-0021	What measures will SouthCoast Wind take to engage with its employers and union stakeholders to develop mutually agreeable plans to provide job opportunities for workers from environmental justice communities and workers displaced by the transition away from fossil fuels in the construction operations and maintenance of the project	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry. Information on fringe benefits, salaries, training pathways, recruitment, and retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind. Refer also to response to comment BOEM-2023-0011-0121-0002.
BOEM-2023-0011-0131-0022	What measures will SouthCoast Wind take to make sure the jobs created are accessible by public transportation or by a SouthCoast Wind shuttle or transit program so that there is not an unreasonable long commute time to the work location	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry. Information on fringe

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	in order to make the jobs more accessible to workers who may not own or have access to cars	benefits, salaries, training pathways, recruitment, and retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind.
BOEM-2023-0011-0131-0023	What measures will SouthCoast Wind take to make sure employers are living up to their commitments with regard to fair employment practices	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry. Information on fringe benefits, salaries, training pathways, recruitment, and retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind. SouthCoast Wind has committed to implementing the labor and apprenticeship requirements of the Inflation Reduction Act.
BOEM-2023-0011-0131-0024	What measures SouthCoast Wind will take to make publicly available fair employment policies such as requirement for Project Labor Agreements Labor Peace Agreements Best Value Contracting and adoption of prevailing wages	Please refer to responses to comments BOEM-2023-0011-0130-0012 and BOEM-2023-0011-0131-0021.
BOEM-2023-0011-0131-0025	What measures will SouthCoast Wind take to maintain harmonious labor relations and provide information to union stakeholders relating to the employment and working conditions of workers the project	Please refer to responses to comments BOEM-2023-0011-0130-0012 and BOEM-2023-0011-0131-0024.
BOEM-2023-0011-0131-0026	What measures will SouthCoast Wind take to ensure high levels of workplace safety including a detailed worker-informed written safety program for employees and subcontractors	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry. Information on fringe benefits, salaries, training pathways, recruitment, and retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind.
BOEM-2023-0011-0131-0027	What measures will SouthCoast Wind take to require contractors and subcontractors to certify that workers are properly classified	Section 3.6.3 describes commitments SouthCoast Wind has made with respect to hiring, training, and working with partners to develop capabilities and experience in the domestic offshore wind industry. Information on fringe benefits, salaries, training pathways, recruitment, and

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		retention plans would vary across the supply chain and would not be under the direct control of SouthCoast Wind.
BOEM-2023-0011-0132-0101	The socio-economic impacts to Nantucket are grossly understated and further study is needed. The document correctly states that 100 % of Nantucket's economy is based on tourism but it fails to acknowledge the impact to low wage seasonal workers who tend to be from underrepresented groups such as immigrants and people of color. Independent study and research are clearly needed to understand the impact to this fragile island tourism economy.	Information regarding lower-income workers can be found in Final EIS Section 3.6.4, *Environmental Justice*. Final EIS Section 3.6.8, *Recreation and Tourism*, includes analysis of anticipated effects on tourism, which are expected to be moderate.
BOEM-2023-0011-0132-0122	In Table 4.1-1 the impacts in the categories of "Demographics Employment and Economics" do not include the loss of tourism revenues and jobs on Nantucket.	The comment refers to EIS Section 4.1, *Unavoidable Adverse Impacts of the Proposed Action*. Demographic, employment, and economic impacts cited in this section and the noted table are for the entire geographic analysis area, which encompasses several counties in Massachusetts, Rhode Island, and Connecticut. Table 4.1-1 acknowledges that both construction and operation of the Proposed Action could result in impacts related to decreases in tourism and recreational activities. Impacts are not further disaggregated. Please refer to Final EIS Section 3.6.8, *Recreation and Tourism*, for more specific considerations of particular counties/communities within the geographic analysis area, including Nantucket.
BOEM-2023-0011-0146-0001	is there any kind of published analysis of the return on investment and cost benefit of the Block Island wind farm that has been compared and included with this proposal? And if not I'd like to have that made available to our community so we can review that.	The purpose of the EIS is to evaluate the environmental impacts of the Project and a cost benefit analysis of the Block Island wind farm is outside the scope of this analysis. Furthermore, BOEM is not aware of such an analysis being prepared. NREL has developed a cost benefit analysis tool for windfarm operations at the following link: https://www.nrel.gov/docs/fy23osti/83712.pdf (Hammond and Cooperman 2022).
BOEM-2023-0011-0158-0004	The final adverse impact is the effect on the rate payers that are going to buy this electricity. This is not really adequately covered in the impact statement because the fact is that the	Please refer to response to comment BOEM-2023-0011-0030-0001.

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	power contract that SouthCoast Wind has signed they are really not going to be able to meet it.	
BOEM-2023-0011-0158-0005	Another adverse impact which is really not discussed in the impact statement there is a lot of supposed benefits related to U.S. jobs but the fact is that the sponsors of SouthCoast Wind they are all foreign-owned companies. There is Shell Renewables from the UK and there is Ocean Winds which is made up of two consortiums French company ENGIE and Spanish company EDP. ENGIE in fact invests in nuclear power in France which is a much preferred way to address climate change rather than this offshore wind proposal. There is a Dutch company that's going to do the geo scan there is a Dutch company that's going to do construction and cabling and there is a Danish company that's going to do the substation construction where is the U.S. involvement in this?	Final EIS Section 3.6.3.5 includes estimates on direct, indirect, and induced employment from the Project, which include jobs created through increased demand for materials, equipment, and services. SouthCoast Wind has not yet selected manufacturers for all of the required equipment and material, so the manufacturing location is not known, but the analysis in the EIS accounts for the fact that some jobs will occur overseas. SouthCoast Wind has stated it will source equipment, materials and supplies, and other services such as vessel provisioning and servicing, and certain fabrication work, from within the region to the extent feasible. SouthCoast Wind has also committed to making O&M jobs locally based in the state(s) that procure energy from the Project.

N.6.16 Environmental Justice

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BOEM-2023-0011-0130-0007	The FEIS should include information about stakeholder engagement and consultation with environmental justice populations and federally recognized and state acknowledged tribes. Several of the ports under development to become critical staging areas for offshore wind projects are located in environmental justice communities. The FEIS should include steps that are being taken to ensure these and other environmental justice communities are seeing economic benefits and not subjected to undue burdens. In addition long-term planning is necessary to ensure that the economic gains in these communities during offshore wind development are long-lasting. For this to happen effectively developers and federal state and local entities must consult these communities at every step of the planning process.	Regarding stakeholder engagement and consultation and finding of disproportionate burden, refer to response to comment BOEM-2023-0011-0056-0008. Regarding the realization of economic benefits, Section 3.6.4.6 of the Draft EIS discusses the economic benefits that environmental justice communities may experience due to the Project, including long-term effects such as decreased air emissions and increases in for-hire recreational fishing due to the artificial reef effect.

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BOEM-2023-0011-0130-0014	SouthCoast Wind has made financial contributions to support diversity in the offshore wind workforce. We would recommend that the FEIS provide further detail of plans to ensure that economically marginalized communities are able to access the full pipeline from workforce development and wraparound supports through employment in the offshore wind supply chain development operations and maintenance.	Section 3.6.4.6 of the Final EIS states that SouthCoast Wind has committed to hiring individuals local to the Project area for 75 percent of the O&M workforce, which could provide local communities, including environmental justice communities, employment for the duration of the Project's lifespan. Section 3.6.4.6 also notes that SouthCoast Wind is additionally encouraging local hiring of construction crew, which may result in employment opportunities for many environmental justice populations. Section 3.6.3, *Demographics, Employment, and Economics*, also notes that the offshore wind industry at large is expected to support as many as 82,500 FTE jobs in 2030, approximately 40 percent of which would be long-term, O&M positions.
BOEM-2023-0011-0131-0002	Thus, consistent with the Act BOEM must require bidders for offshore leases to detail how their plans will promote and preserve the welfare of the communities affected by the project for which the lease is sought. These communities include the persons who will work on the project who will maintain the project who will produce the materials to be used in the project and the communities proximate to the development the ports and infrastructure that will support the project. The term "human environment" has a particular meaning. Congress defined the term to mean "[t]he physical social and economic components conditions and factors which interactively determine the state condition and quality of living conditions employment and health of those affected directly or indirectly by activities occurring on the outer Continental Shelf." 43 U.S.C. § 1331(i). See also 30 § CFR 585.112. BOEM's own regulations require prospective lessees to describe in their Site Assessment Plans GAPs and Construction Operations Plans information concerning the project's implications for "[e]mployment existing offshore and coastal infrastructure (including major sources of supplies services energy and water) land use . . . [and] minority and lower income groups." 30 CFR §§ 585.611(b) 585.627(7) and 585.646(7). For these reasons we urge BOEM to require much	Section 3.6.3, *Demographics, Employment, and Economics*, states that the offshore wind industry is expected to support as many as 82,500 FTE jobs in 2030, approximately 40 percent of which would be long-term, O&M positions. The section also describes the employment benefits for the Project, which include 530 FTE job-years during development, 5,760 FTE job-years during construction, 20,330 FTE job-years during operations, and 310 FTE job-years during decommissioning. Section 3.6.4, *Environmental Justice*, also notes that SouthCoast Wind has committed to making at least 75 percent of the O&M workforce local. Sections 3.4.1, *Air Quality*, 3.6.3, *Demographics, Employment, and Economics,* and 3.6.4, *Environmental Justice*, of the Final EIS discuss the potential Project impacts on economics, employment, and health at greater length.

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	more information from the Project than is currently described in the DEIS. BOEM must be seeking information that will help empower affected environmental justice communities and help close the wealth gap through good union careers. We note that this is precisely what the President has demanded that agencies do with E.E. 14008 §§ 217 and 219.	
BOEM-2023-0011-0132-0125	Table 4.1-1 attempts to address social justice but fails to address the loss of tourism jobs on Nantucket which will impact low-income people as well as people of color and other disadvantaged workers.	Chapter 4, Table 4.1-1, of the Draft EIS notes in the resource areas for both demographics, employment, and economics and environmental justice that the Project may have unavoidable adverse impacts on employment or income. The potential adverse employment impact on environmental justice as described in Table 4.1-1 refers specifically to low-income, minority, and other disadvantaged populations. BOEM has updated Section 3.6.4.6 of the Final EIS to acknowledge that Nantucket and Martha's Vineyard both contain underserved populations within the viewshed of the Project's WTGs. BOEM determined that while these communities may experience some reduced recreational and tourism activity, the visible presence of WTGs would be unlikely to affect shore-based or marine recreation and tourism in the geographic analysis area as a whole.
BOEM-2023-0011-0177-0002	One is that you have a section on social justice and the town of Nantucket is completely ignored in that section. The number of tourism jobs that are at stake here in an economy that relies almost 100 percent on tourism is significant and I think that Nantucket was completely skipped over in your -- there is no -- you are not taking into consideration the impact on tourism jobs which will obviously be significant.	Section 3.6.4.1 of the Final EIS, which defines Massachusetts environmental justice communities according to the State of Massachusetts guidelines, has been updated to indicate that the town of Nantucket includes a community that meets the minority criteria for environmental justice communities. BOEM has updated Section 3.6.4.6 of the Final EIS to acknowledge that Nantucket and Martha's Vineyard both contain minority populations within the viewshed of the Project's WTGs. BOEM determined that while these communities may experience some reduced recreational and tourism activity, the visible presence of WTGs would be unlikely to affect shore-based or marine recreation and tourism in the geographic analysis area as a whole. Furthermore, views of WTGs would be sustained from many

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		coastal communities along the shore and would not disproportionately affect environmental justice populations. The impacts of the Project on employment and tourism are discussed at greater length in Section 3.6.3, *Demographics, Employment, and Economics*, and Section 3.6.8, *Recreation and Tourism*, respectively, of the Final EIS.

N.6.17 Land Use and Coastal Infrastructure

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BOEM-2023-0011-0029-0001	There seems to be some debate as to whether the EMF that radiates from these cables would cause health related issues to the large number of adults and children that frequent this area. Based on the limited studies there seem to be conflicting results. Key points of the Exponent Inc. Report are summarized below. • The early study conducted by the WHO indicated in the WHO 2007 Report that there was a link between EMF and childhood leukemia. Subsequent studies cast some doubt on these results but the conclusion was that some precautionary measures are warranted in interpreting these results. The WHO also stated that "However some gaps in knowledge about biological effects exist and need further study." • A study was conducted that demonstrated a potential relationship between the residential proximity to overhead and underground transmission lines and childhood cancer. • Su et al. (2018) study between parental exposure to ELF magnetic field and childhood CNS (central nervous system tumors) reported a weak statistically significant association between material exposure to ELF magnetic fields and CNS tumors. Also states that the results provide limited evidence for an association which should be explained with caution.	The SouthCoast Wind COP has two appendices that address electromagnetic field (EMF) concerns: Appendix P1, Electric and Magnetic Field Assessment for the Proposed Mayflower Wind Project, and Appendix P2, High Voltage Direct Current Electric and Magnetic Field Assessment. In Appendix P1, SouthCoast Wind states that magnetic field levels were modeled for the onshore transmission route and represent six underground installation scenarios for onshore export cables buried at a minimum depth of 3 feet. All scenarios are less than the International Commission on Non-Ionizing Radiation Protection health-based guideline of 2,000 milligauss (mG) for allowable public exposure of 60-hertz (Hz) magnetic fields at approximately 197 mG to 403 mG. Common household appliances (refrigerators, lamps, electric ranges, heaters) emit a larger frequency of magnetic field than these cables would. Some of the modeled scenarios are greater than the Massachusetts guideline of 85 mG for magnetic fields at right-of-way (ROW) edges; it should be noted that this guideline is not health based and was established in the 1980s to maintain the status quo for EMF levels on and near overhead transmission line ROW. Additionally, the United States has no federal standards limiting general public or residential exposure to 60-Hz EMF. Appendix P2 assesses the potential human health impact from HVDC. The report concludes that there is not significant

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	• Another study indicated that a small association between ELF/EMF and adult brain cancer could not be ruled out. • Carles et al. (2020) investigated the association between residential proximity to power lines and brain tumor development among adults in France. Several statistically significant associations were reported. These were later challenged. • Another statement reflected that while some scientific uncertainty remains on a potential relationship between adult lymphohematopoietic malignancies and magnetic field exposure because of continued deficiencies in study methods. • • The WHO 2007 Report indicated while there is some evidence for increased risk of miscarriage associated with measured maternal magnetic field exposure the evidence is inadequate. • The WHO also stated "when evaluated across all studies there is only very limited evidence of an association between estimated ELF exposure and Alzheimer's disease risk. • Li et al. (2020) assessed whether maternal exposure to magnetic fields was associated with the development of ADHD in their offspring. The authors reported a statistically significant association between mothers exposed to high levels of magnetic fields and diagnosis of ADHD in offspring. It is difficult to understand how anyone who reads this report can conclude with certainty that this Southcoast Wind Project is safe for the beachgoers tourists residents children and grandchildren that visit frequently. Based on 43 years working for medical technology companies that conducted clinical studies and filed for FDA clearance before they could market their products it was obvious that study results can be significantly influenced by the study design critical criteria measured and the follow-up period. The varying results reported under these different studies demonstrated that the	enough research done to determine adverse human health effects from HVDC EMF. Appendix P2 also states that there are no United States federal standards limiting general public or occupational exposure to EMF from HVDC, and that research has primarily been focused on the adverse human health effects from HVAC. There is some evidence, however, for acute health effects from highly elevated magnetic fields, but the exposure would have to be in excess of 1 tesla (10,000,000 mG), which the Proposed Action would not reach.

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	health risks are real and the state and town officials need to make the safe and right decision for their constituents. How can anyone conclude that consistent exposure to EMF is safe in a densely populated residential and highly utilized recreational area? The magnitude of this project and the potential health risks requires the state town and company officials to invest the time effort and dollars to identify a more appropriate onshore location.	
BOEM-2023-0011-0034-0003	Exiting the Park the cables would be buried in Worcester Ct. which is bordered by many mature shade trees and sidewalks. The road contains recently installed sanitary sewers gas and water lines and storm water drains and structures. The sanitary sewer lines and manholes are in the center of the 24 foot wide road. Placement of the duct bank is problematic to say the least if not impossible. Placing the cables on either side of the sewer structures would require removal of trees and shrubs in perpetuity along a scenic residential street. In a short stretch of Worcester Ct. from Lake Leaman Rd. to Alma Rd. (less than 1000 feet) there are eight sewer manholes several storm drains mature trees on both sides a sidewalk on the west side and of course water and gas lines.	Comment noted. The precise location where cables would be buried in relation to the road/public ROW has not yet been determined. The information regarding recently constructed improvements is noted.
BOEM-2023-0011-0090-0002	My concerns are there is a lack of information on the digging stages areas. No indication in the Construction and Operations Plan with the intentions with RWU or Montaup. There is MAJOR disruption for students in the dorm as well for the golfers at Montaup.	As described in Final EIS Section 2.1.2.1 and depicted on Figure 2-4, there are three cable route options, one with two sub-options, that include HDD staging areas on Aquidneck Island. Additional information on the staging areas is contained in COP Volume 2, Section 12.1.2, including aerial photos showing the location of the landfall locations, inclusive of staging areas, for the site across Anthony Road from Roger Williams University parking lot and Montaup Country Club. Final EIS Section 3.6.5.5 describes the impacts from construction of onshore infrastructure, including onshore cables and the landfall/HDD staging area sites, related to land disturbance, noise, and traffic. As stated in this section, installation of the cable landfall sites and underground cable routes would disturb neighboring land

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		uses through construction noise, vibration, dust, and travel delays along the affected roads, but the impacts would be temporary and the sites would be returned to their previous condition in use. In addition, construction staging would occur in parking lots adjacent to or near the landfall locations at Aquidneck Island, which may temporarily reduce available parking; however, impacts would be limited because construction would be outside of the peak tourism seasons.
BOEM-2023-0011-0110-0003	The EIS devotes a considerable amount of analysis to the impact of SCW's project on everything from bats to birds to sea turtles but precious little to the impact on human health (actually just one conclusory paragraph in section 3.6.5.5). Why is this and why isn't there extensive analysis on this topic? The EIS indicates that SCW's cables could carry anywhere from 200000 volts to 525000 volts at different points along its route. It's not clear if the cable at the POI is limited to 375000 volts or if it might carry as many as 525000 volts. Needless to say this is a huge amount of electricity that SCW wants to run through a residential community irrespective of any proposed mitigation measures. My immediate concern is with the attendant EMF radiation both at the beach and all along Worcester Park given that the cable(s) will run only feet under the surface. The EIS states in section 3.6.5.5 that the "EMF impacts on land use would be long term but negligible" citing a single 2010 international study on the subject. My understanding is that the effect (particularly long term) of EMF radiation on humans is at best inconclusive and I'm not aware of any studies that have examined the effects of a 375 or 525 kv cable running three feet under a community park. The EIS indicates that the exposure level should be no more than 400 milligaus (I'm not even sure if that figure is verifiable); however other experts believe that there is no safe level (especially for children) above 1 milligauss. The bottom line is that the cited 2010 study notwithstanding there appears to be no general consensus on safe levels of EMF exposure and the fact that	Please refer to response to comment BOEM-2023-0011-0029-0001 above, which describes the studies and literature review that have been conducted relative to HVAC and HVDC EMF. As presented in Volume 1 of the COP (Table 3-14) and Appendix C of the Draft EIS, *Project Design Envelope and Maximum-Case Scenario*, as part of SouthCoast Wind's PDE, the voltage for the Falmouth export cables would be 200 kilovolts (kV) to 345 kV if HVAC is used or ±525 kV if HVDC is used. As discussed in Final EIS Section 3.6.5, based on available literature and anticipated levels of EMF, no adverse human health impacts from HVAC and HVDC are anticipated.

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	there is no such consensus should cause BOEM to take a much harder examination of this issue. Anything less is wholly inimical to the public interest and frankly irresponsible.	
BOEM-2023-0011-0166-0004	Another issue facing Falmouth just outside of Falmouth Heights is the converter station that's going to be at the substation. There is a noise component that's associated with a converter station and we have seen it reported in excess of 80 decibels. That must be mitigated and I think SouthCoast will certainly have to address that issue.	The analysis of operational acoustics in Falmouth is presented in Final EIS Section 3.6.5.5 under the *Noise* IPF. The analysis captures the maximum noise impacts for the Lawrence Lynch and Cape Cod Aggregates sites, whether an HVAC substation or HVDC converter station moves forward. SouthCoast Wind has committed to complying with the MassDEP requirement to achieve noise levels no more than 10 A-weighted decibels (dBA) greater than ambient noise levels at any inhabited buildings near either property for sound produced by the facility during its 24-hour operation. The analysis of operational acoustics presented in the COP (Volume 2, Section 9.1) found that noise-mitigating sound walls would be required for an HVAC substation to achieve compliance. For the HVDC converter station, similar mitigations could be employed, if necessary. However, with its smaller footprint, the fence line of an HVDC converter station would be farther from sensitive noise receptors (such as residences), allowing for greater noise attenuation.

N.6.18 Navigation and Vessel Traffic

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BOEM-2023-0011-0065-0019	Navigation: We oppose any approval of projects until a comprehensive solution to marine vessel radar interference can be completed tested and verified for success. The National Academies of Sciences (NAS) 2022 study entitled "Wind Turbine Generator Impacts to Marine Vessel Radar (2022 was supported by contracts between the National Academy of Sciences and Bureau of Ocean Energy Management under Award Number 140M0119D0001/140M0121F0013. [Footnote 23National: Academies of Sciences Engineering and Medicine. 2022. Wind	The Draft EIS addresses the adverse impacts of WTG structures on marine vessel radars in Sections 3.6.6.3 and 3.6.6.5 under the *Presence of Structures* IPF. As part of its assessment, BOEM considered the USCG analysis of WTG array impacts on marine vessel radar included as part of *The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study* (MARIPARS, USCG 2019-0131), published May 14, 2020, and the National Academies of Sciences, Engineering, and Medicine 2022 study published by the National Academies Press (2022) titled *Wind Turbine*

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	Turbine Generator Impacts to Marine Vessel Radar. Washington DC: The National Academies Press. See document at Wind Turbine Generator Impacts to Marine Vessel Radar |The National Academies Press.] (https://nap.nationalacademies.org/catalog/26430/wind-turbine-generator-impacts-to-marine-vessel-radar) It details the very real and life threatening issue of marine vessel radar interference and contains no immediate or concrete solutions. BOEM cannot simply as it did in the case of the Vineyard Wind project simply contain a "mitigation measure" that requires the developer to study and develop a potential solution after construction has already occurred. [Footnote 24: See Vineyard Wind ROD p. 95 mitigation measure 88.] This puts US mariner's lives at risk and is unacceptable. We have requested for years that the USCG and BOEM conduct modeling studies as the USCG did for the Cape Wind project for the MA WEA and other East Coast lease areas utilizing both the size and number of turbines planned for each area. We have requested implementable solutions prior to project approval not "potential future mitigation measures" to be developed after the fact. BOEM has a responsibility under OSCLA to "ensure… (A) safety". Ensuring safety means that there are implementable and successful solutions before construction not afterwards. Hope in the future is not a solution. Furthermore if the National Academies of Sciences radar experts could not come up with immediate solutions it is doubtful that a developer or BOEM will be able to do so. BOEM is accountable to act on the information it possesses; it cannot abdicate this accountability to a potential future solution when mariners' lives will be placed in danger in the now.	*Generator Impacts to Marine Vessel Radar*. This latter reference, cited by the commenter, is already incorporated in the Draft EIS. BOEM will continue to engage with the fishing community, offshore wind developers, and other stakeholders regarding the issue of marine vessel radar interference. However, BOEM cannot delay approval of the Project for an indefinite amount of time for new technological solutions to be tested, as doing so would jeopardize the economic viability of the Project and would not meet the purpose and need. BOEM expects that certain technology-based measures and non-technology-based measures will be used to reduce impacts on marine radar such as greater use of an Automatic Identification System (AIS) and electronic charting systems, new technologies like light detection and ranging (LiDAR), employing more watch-standers, and avoidance of wind farms altogether. This information has been added to Section 3.6.6.3 under the *Presence of Structures* IPF. It is outside the scope of the NEPA process to require additional USCG analyses or studies beyond what USCG has relied upon for its review and decisions regarding the Project.
BOEM-2023-0011-0065-0020	BOEM's DEIS takes the developer's word that "Most instances of interference could be mitigated through the proper use of radar gain control (Mayflower Wind 2022)". [Footnote 25: DEIS p. 3.6.1-52.] This is in direct contradiction to the National Academies of Science's experts who noted that "Given the	In Sections 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*, and 3.6.6, *Navigation and Vessel Traffic*, BOEM acknowledges the impacts on marine vessel radar, citing the 2022 National Academies of Sciences study on WTG impacts on marine vessel radar. The National

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	copious detections shown on the MVR display in Figure 2.10 a natural operator response is to adjust the detection threshold upward (reduce the receive gain) to "declutter" the PPI. Unfortunately the unintended consequence of an increased detection threshold is the suppression of weaker returns from smaller vessels or objects such as buoys that "fall under" the detection threshold setting. This undesirable consequence was acknowledged by MVR manufacturers who further indicated that small vessels were primarily the domain of coast guards navies and search and rescue (SAR) operators.	Academies of Sciences study concludes that WTGs do cause interference to marine vessel radar, decreasing the effectiveness of the Maritime Transportation System and potentially complicating maritime surface search and rescue (SAR) operations. BOEM expects that certain technology-based measures and non-technology-based measures will be used to reduce impacts on marine radar such as greater use of AIS and electronic charting systems, new technologies like LiDAR, employing more watch-standers, and avoidance of wind farms altogether. This information has been added to Section 3.6.6.3 under the *Presence of Structures* IPF.
BOEM-2023-0011-0065-0021	Moreover in the context of navigation it was suggested that smaller boats could easily maneuver out of the way of larger ships. Such statements are concerning however as the complexities of multiple ships traversing a large WTG farm may complicate the perceived ease with which small craft can maneuver from harm's way or the corresponding impact on other vessels responding to attempts to navigate free of collision." [Footnote 26: National Academies of Sciences Engineering and Medicine. 2022. Wind Turbine Generator Impacts to Marine Vessel Radar. Washington DC: The National Academies Press. See document at Wind Turbine Generator Impacts to Marine Vessel Radar |The National Academies Press p. 37-38.] (https://nap.nationalacademies.org/catalog/26430/wind-turbine-generator-impacts-to-marine-vessel-radar) BOEM cannot continue to prefer a developer's assertions over actual expert conclusions whether that be NOAA or the National Academies of Sciences. Our vessels consistently transit the proposed Project area and the lives of our captains and crew are at stake.	In Section 3.6.6.5 under the *Presence of Structures* IPF, BOEM acknowledges the navigational complexities for vessels navigating through a wind farm, noting that all vessels will need to navigate with greater caution. Given the uniform grid pattern and the 1-nm spacing between turbines, BOEM anticipates that smaller vessels may choose to navigate through the wind farm area. However, the analysis also notes that Proposed Action structures would increase the risk of allision, as well as collision with other vessels navigating through WTGs, and could interfere with marine radars, resulting in a moderate impact on navigation.
BOEM-2023-0011-0065-0022	BOEM states that "Impacts on navigation can also be mitigated with AIS and electronic chart systems which many fishing vessels use as well as use of additional watchstanders (National Academies of Sciences Engineering and Medicine	The National Academies of Sciences study, *Wind Turbine Generator Impacts to Marine Vessel Radar,* Chapter 3, which is cited in the Final EIS, does identify use of AIS and electronic charting systems and employing more watch-

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	2022)" but it apparently has not actually read the report. The Working Group found no immediate solutions to the problem of radar interference. Key findings of the committee included "no standard approach to active radar deployment for operation in a WTG environment is available" and that the USCG recognizes that "how MVR will lose efficacy in a WTG environment and corresponding impact on navigation performance requires in-depth testing and evaluation". [Footnote 27: Ibid p. 66.] Additionally contrary to BOEM's assertion not all vessels particularly the recreational vessels that BOEM expects to increase in offshore wind areas carry AIS making AIS a non-solution unless BOEM were to require that all vessels in the area-including recreational vessels-possess AIS. Electronic charts do not help you see radar targets. Additional watch standers do not help if your radar is not functioning. None of these are acceptable "solutions" or "mitigations" to the loss of radar. Loss of radar is loss of navigability.	standers for vessels as mitigating methods if the effectiveness of marine vessel radar is degraded. The study also notes these methods cannot "replace the instantaneous, active engagement with the environment of an MVR [marine vessel radar]." BOEM acknowledges in Section 3.6.6.5 under the *Presence of Structures* IPF of the Final EIS that while other navigation tools are available, marine vessel radar is the main tool used by most vessels, and the potential for degradation of radar within or near the wind farm area would result in a moderate impact on navigation.
BOEM-2023-0011-0096-0001	We have concerns about the placement of the offshore export cables from the SouthCoast Wind Energy project. As the Falmouth cable corridor runs north of Martha's Vineyard it appears to overlap with an area of high towing vessel traffic. Similarly the Brayton Point corridor will follow the flow of maritime traffic up the Sakonnet River. If a vessel transiting along these routes must lower an anchor during an emergency situation it would risk inadvertently striking one of these cables. This could be dangerous to mariners and the environment. If it is not possible to find an alternative route for the cables the best practice is for them to cut perpendicularly across the transit route and be buried at least 15 feet deep. This will reduce safety risks to vessel operators to the environment and to the cables themselves.	The Draft EIS assesses the impacts associated with anchoring over export cables in Section 3.6.6.5 under the *Anchoring* IPF. As described, SouthCoast Wind has conducted a Cable Burial Risk Assessment to calculate the target cable-lowering depth to minimize risks associated with offshore export cable burial. The offshore export cables would be buried at a target depth of 6 feet (1.8 meters) but may be up to 13.1 feet (4 meters) deep depending on site specific conditions. If sufficient burial depth cannot be achieved, armoring or other cable protection would be used to protect cables and would avoid direct contact with an anchor. The analysis in the Draft EIS determined that impacts from anchoring in an emergency situation would be negligible.
BOEM-2023-0011-0106-0005	We oppose any approval of any wind lease area project until a viable tested and proven marine radar system is verified by the National Academy of Sciences (NAS) and an industry	The Draft EIS addressed the adverse impacts of WTG structures on marine vessel radars in Sections 3.6.6.3 and 3.6.6.5 under the *Presence of Structures* IPF. As part of its

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	chosen group of commercial trawl fishermen working jointly that solves the marine radar interference issue. The system must be able to be produced ordered and received within a timely fashion and is comparable in cost to other commercial fishing radar systems. To allow a lease holder to promise monitoring and mitigation in the future when the danger is clear and present now is unacceptable. No commercial fishermen should have his life put in jeopardy while developers continue to kick the safety can down the road promising solutions that do not work and BOEM allows them to do so. The National Academies of Sciences Engineering and Medicine 2022 report "Wind Turbine Generator Impacts to Marine Vessel Radar" made clear one cannot just reduce the gain and move forward. BOEM should understand the seriousness of this issue since safety is a core tenet the Secretary of the Interior must ensure within the Outer Continental Shelf Lands Act. Requiring AIS of all commercial vessels would be an added expense that many could not afford and recreational boats are not required to have AIS which would make targets within a wind energy area during fog or inclement weather still invisible to the commercial boat inside a turbine field.	assessment, BOEM considered the USCG analysis of WTG array impacts on marine vessel radar included as part of MARIPARS (USCG 2019-0131), published May 14, 2020, and the National Academies of Sciences, Engineering, and Medicine 2022 study published by the National Academies Press (2022) titled *Wind Turbine Generator Impacts to Marine Vessel Radar*. BOEM will continue to engage with the fishing community, offshore wind developers, and other stakeholders regarding the issue of marine vessel radar interference. However, BOEM cannot delay approval of the Project for an indefinite amount of time for new technological solutions to be tested, as doing so would jeopardize the economic viability of the Project and would not meet the purpose and need. BOEM expects that certain technology-based measures and non-technology-based measures will be used to reduce impacts on marine radar such as greater use of AIS and electronic charting systems, new technologies like LiDAR, employing more watch-standers, and avoidance of wind farms altogether. This information has been added to Section 3.6.6.3 under the *Presence of Structures* IPF.
BOEM-2023-0011-0136-0034	BOEM must identify test and verify a comprehensive solution to marine vessel radar interference for all offshore wind development projects. The National Academies of Sciences (NAS) 2022 study entitled "Wind Turbine Generator Impacts to Marine Vessel Radar". [Footnote 29: National Academies of Sciences Engineering and Medicine. 2022. Wind Turbine Generator Impacts to Marine Vessel Radar. Washington DC: The National Academies Press. Available at https://nap.nationalacademies.org/catalog/26430/wind-turbine-generator-impacts-to-marine-vessel-radar] It details the very real and life threatening issue of marine vessel radar interference and contains no immediate or concrete solutions. BOEM cannot simply contain a "mitigation measure" that requires the developer to study and develop a	See response to comment BOEM-2023-0011-0065-0019.

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	potential solution after construction has already occurred as they did with the Vineyard Wind project. [Footnote 30: See Vineyard Wind ROD p. 95 mitigation measure 88.] This puts US mariner's lives at risk and is unacceptable. We have requested for years that the USCG and BOEM conduct modeling studies as the USCG did for the Cape Wind project for the MA WEA and other East Coast lease areas utilizing both the size and number of turbines planned for each area. We have requested implementable solutions prior to project approval not "potential future mitigation measures" to be developed after the fact. BOEM has a responsibility under OSCLA to "ensure... (A) safety". Ensuring safety means that there are implementable and successful solutions before construction not afterwards. Hope in the future is not a solution. Furthermore if the National Academies of Sciences radar experts could not come up with immediate solutions it is doubtful that a developer or BOEM will be able to do so. BOEM is accountable to act on the information it possesses; it cannot abdicate this accountability to a potential future solution when mariners' lives will be placed in danger in the now.	
BOEM-2023-0011-0136-0035	BOEM's DEIS takes the developer's word that "Most instances of interference could be mitigated through the proper use of radar gain control." [Footnote 31: See DEIS p. 3.6.1-52] This is in direct contradiction to the National Academies of Science's experts who noted that "Given the copious detections shown on the MVR display in Figure 2.10 a natural operator response is to adjust the detection threshold upward (reduce the receive gain) to "declutter" the PPI. Unfortunately the unintended consequence of an increased detection threshold is the suppression of weaker returns from smaller vessels or objects such as buoys that "fall under" the detection threshold setting. This undesirable consequence was acknowledged by MVR manufacturers who further indicated that small vessels were primarily the domain of coast guards navies and search and rescue (SAR) operators.	See responses to comments BOEM-2023-0011-0065-0020 and BOEM-2023-0011-0065-0021.

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	Moreover in the context of navigation it was suggested that smaller boats could easily maneuver out of the way of larger ships. Such statements are concerning however as the complexities of multiple ships traversing a large WTG farm may complicate the perceived ease with which small craft can maneuver from harm's way or the corresponding impact on other vessels responding to attempts to navigate free of collision." [Footnote 32: National Academies of Sciences Engineering and Medicine. 2022. p. 37-38.] BOEM cannot continue to prefer a developer's assertions over actual expert conclusions whether that be NOAA or the National Academies of Sciences. Our vessels consistently transit the proposed Project area and the lives of our captains and crew are at stake.	
BOEM-2023-0011-0136-0036	BOEM states that "Impacts on navigation can also be mitigated with AIS and electronic chart systems which many fishing vessels use as well as use of additional watchstanders (National Academies of Sciences Engineering and Medicine 2022)" but in fact them Working Group found no immediate solutions to the problem of radar interference. Key findings of the committee included "no standard approach to active radar deployment for operation in a WTG environment is available" and that the USCG recognizes that "how MVR will lose efficacy in a WTG environment and corresponding impact on navigation performance requires in-depth testing and evaluation". [Footnote 33: Ibid p. 66.] Additionally contrary to BOEM's assertion not all vessels particularly the recreational vessels that BOEM expects to increase in offshore wind areas carry AIS making AIS a non-solution unless BOEM were to require that all vessels in the area-including recreational vessels-possess AIS. Electronic charts do not help you see radar targets. Additional watch standers do not help if your radar is not functioning. None of these are acceptable "solutions" or "mitigations" to the loss of radar. Loss of radar is loss of navigability.	See response to comment BOEM-2023-0011-0065-0022.

N.6.19 Other Uses

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BOEM-2023-0011-0117-0023	Rare Earth Metals: Wind turbines require the use of rare earth metals (lanthanides neodymium praseodymium dysprosium terbium). Mining these metals contaminates water tables generates radioactive waste risks harmful human exposure and generates CO2 emissions (Ives 2013). The push for offshore turbines has increased the demand for rare earth metals. The pressure for more supply may require ocean floor mining which will incur another stress on the ocean and on global warming by resuspending carbon previously sequestered in marine sediments further heavy metal contamination of marine food webs and further biodiversity loss. Increasing demand for rare earth metals could have a profound effect on public health (Hamley 2022). BOEM needs to consider the global environmental costs of mining rare earth metals in the overall assessment of the project's environmental impacts.	BOEM does not consider the mining of components used in the Project to be a direct or indirect impact of the Proposed Action or a connected action that would warrant analysis under NEPA. SouthCoast Wind has not proposed development of a mining project as part of its Proposed Action. Should development of offshore wind components require a new or expanded mining operation in the U.S., the mining operator would be required to pursue separate environmental review.
BOEM-2023-0011-0123-0013	The RIDEM is supportive of the SouthCoast Wind Farm and remains committed to minimizing all potential impacts to fish habitat, especially within the Sakonnet River portion of Narragansett Bay. The DMF monitors fish and invertebrate abundance in the Sakonnet River and Mt. Hope Bay and has three surveys regularly sampling near the proposed cable route: • Coastal Trawl Survey (http://www.dem.ri.gov/programs/marine-fisheries/surveys- pubs/coastal-trawl.php) • Narragansett Bay Seine (http://www.dem.ri.gov/programs/marine-fisheries/surveys-pubs/narrabay-seine.php) • Rhode Island Lobster Ventless Trap Survey (http://www.dem.ri.gov/programs/marine-fisheries/surveys-pubs/lobster- ventless.php)	Section 3.6.7.1, *Description of the Affected Environment and Future Baseline Conditions*, of the Final EIS has been updated to include the Rhode Island Department of Environmental Management Division of Marine Fisheries studies provided by the commenter.

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	• Please refer to the hyperlinked websites for survey methodologies. The seine survey samples at fixed locations from May – October annually with a focus on juvenile fish (Figure 1). The trawl survey samples at fixed stations on a monthly basis year-round in addition to seasonal random sampling throughout RI state waters. • Refer to Figures 2-13 for mean annual abundance from the two surveys for Atlantic cod black sea bass summer flounder (fluke) scup tautog and winter flounder. • Both Atlantic cod (Figures 2-3) and black sea bass (Figures 4-5) demonstrate recent increases in overall relative abundance; while fluke (Figures 6-7) scup (Figures 8-9) and tautog (Figures 10-11) remain variable. Winter flounder has been consistently in decline (Figures 12-13). • The Rhode Island Lobster Ventless Trap survey has documented high catch per trap (or catch per unit effort) of lobsters in some years where the Sakonnet River has been selected for randomized sampling (Figure 14). The Sakonnet River also supports a substantial commercial harvest of whelk (both channeled and knobbed) (Figure 15).	
BOEM-2023-0011-0136-0041	A finding of [Bold: major] impacts to scientific research and surveys (p. ES-15) cannot be downplayed and the proposed mitigation measures do not provide reassurance that our future understanding of the biological resources will not be gravely hindered. Any reduction of or impact to fisheries surveys will likely result in increased uncertainty for stock assessments leading to changes to fisheries management and reduction in allowable catch. BOEM and NMFS must immediately work to implement strategic plans as soon as possible to minimize any 'lost time' between existing surveys and future adapted surveys.	BOEM and NOAA are currently working on mitigation strategies to minimize impacts of the Proposed Action on NOAA scientific research and surveys, including the ones used for stock assessment. Section 3.6.7.10, *Proposed Mitigation* Measures, describes the NOAA and BOEM Federal Survey Mitigation Strategy that both agencies are pursuing.

N.6.20 Recreation and Tourism

Comment No.	Comment	Response
BOEM-2023-0011-0034-0005	SouthCoast states construction would occur in the "off-season". There is no such season in Falmouth Heights. The beaches parking lots and parks are used year-round. Heights Beach parking lot is one of the very few on the southern coast of Falmouth where people can view the water and Marthas Vineyard from their cars. Tourists senior citizens and many handicapped residents enjoy the scenic vistas from the comfort of their cars all year long.	As described in Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*, construction of onshore components is expected to result in temporary road and/or lane closures (and potential traffic congestion) during installation. SouthCoast Wind will work with the towns of Falmouth, Somerset, and Portsmouth (and others as may be needed) to develop and implement a construction period traffic management plan to avoid and/or minimize disruptions to residents, visitors, commercial uses, and recreational areas in the vicinity of construction activities (Table G-1, Appendix G). Such a traffic management plan will help identify/implement detours where needed.
BOEM-2023-0011-0055-0008	There is a completely subjective conclusion in the Draft that there will be 'minor' impact to Recreation and Tourism. A project of this size and scope could only have detrimental effects and 'Major' impact there will be no positive benefit to the businesses reliant on tourism. The assessment used by BOEM and its consultants cannot be based on any measurable criteria to reach the conclusion(s) cited.	As described in Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*, the impacts of the Proposed Action on recreation and tourism are anticipated to be minor with minor beneficial impacts. Short-term impacts from construction and installation activities are expected as a result of noise, anchored vessels, and hinderances to vessel navigation as a result of the installation of the export cable and WTGs. Long-term impacts include the presence of cable scour protection and structures in the Wind Farm Area, which would affect recreational vessel navigation and visual quality. Beneficial impacts would result from the reef effect and sightseeing attraction of offshore wind energy structures. Refer also to Table 3.6.8-1, which provides impact level definitions concerning recreation and tourism. Based on a review of best-available information, none of the conditions cited in the table for "major" impacts are anticipated as a result of the Proposed Action or alternatives.
BOEM-2023-0011-0117-0020	Commercial and Recreational Boating: As the Ocean State Rhode Island takes enormous pride in its boating and	Section 3.6.8 analyzes impacts from the Proposed Action and other offshore wind farms in the geographic analysis area on

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	recreational fishing eminence. SouthCoast Wind and the other OWFs slated for the coastal waters off Rhode Island will substantially negatively impact marine navigation sailing power boating whale watching and most importantly fishing (NOAA McCann 2013). By displacing these activities SouthCoast Wind violates the Outer Continental Shelf Lands Act (43 U.S.C. §§ 1331 et seq.). The BOEM DEIS fails to adequately address the legal, financial, and cultural ramifications of these negative impacts.	recreational activity, including boating and fishing. In the description of the affected environment, BOEM describes the presence and cultural and financial importance of these activities to the region and has added information to the Final EIS on recreational boating and sailing. The analysis notes that while most recreational boating and fishing takes place closer to shore than the Lease Area, boaters and anglers that venture out to the Lease Area would face obstacles from the presence of structures. While the Lease Area would be available to these activities, some boaters and anglers may choose to avoid the Wind Farm Area entirely. Additional analysis of the economic impacts from the wind projects includes Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*, which analyzes of impacts on for-hire recreational fishing, and Section 3.6.3, *Demographics, Employment, and Economics*. Refer also to response to comment BOEM-2023-0011-0055-0008.
BOEM-2023-0011-0117-0026	Moreover Rhode Island hosts 21 million tourists every year. Tourism provides 11% of Rhode Island's jobs and supplies the state with 1.3 billion dollars of tax revenue (RICC 2020). SouthCoast Wind and associated wind farms' turbines will dominate the horizon from nearly every public beach in Rhode Island and will be visible from a distance of 40 miles. The visual impact will affect over 600 popular destinations including 178 public beaches in Massachusetts and Rhode Island. Contrary to BOEM's projections a survey in England indicates that 37% of tourism-related business owners affirm that wind farms have negatively impacted their businesses (Mordue 2020). The BOEM DEIS minimizes the impact on tourism and does not consider the effect this will have on Rhode Island's economy.	The Mordue et al. 2020 study cited by the commenter looks at impacts on tourism-related businesses as a result of onshore wind turbines. Section 3.6.9.5, *Impacts of Alternative B – Proposed Action on Scenic and Visual Resources*, describes changes in seascape, open ocean, and landscape conditions as a result of WTGs and which beaches are anticipated to have visual impacts as a result of the Proposed Action. Within this section refer to Figure 3.6.9-2 and Table 3.6.9-14; the figure and table show that none of the wind turbines associated with the Proposed Action would be visible from any location in the state of Rhode Island. Section 3.6.3.5, *Impacts of Alternative B – Proposed Action Demographics, Employment, and Economics*, provides analysis of potential economic impacts on the tourism industry as a result of the Proposed Action.
BOEM-2023-0011-0128-0008	The Town of Nantucket is a longstanding steward of one of the nation's most significant NHLs yet BOEM refuses to consider its unique history or consider adequately the	Section 3.6.8.1, *Description of the Affected Environment and Future Baseline Conditions*, and Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*,

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	Project's specific impacts to the community including harm to its tourism economy its financial well-being and tax base and greater sensitivity that heritage tourists have to the loss of historic character and context.	have been revised in the Final EIS to clarify the importance of historic resources, including the Nantucket Historic District, to tourism and recreation on Nantucket, and the potential effects from WTG/OSP visibility on heritage tourists visiting the Nantucket Historic District. As described in Section 3.6.2.5, *Impacts of Alternative B – Proposed Action on Cultural Resources*, portions of up to 743 WTGs will theoretically be visible from the southern shores of the Nantucket Historic District NHL, with the closest WTG approximately 14.8 miles (23.8 kilometers) away from the resource. The Final EIS acknowledges that the presence of visible WTGs from ongoing and planned activities, including the Proposed Action, would have long-term, continuous, and moderate impacts on the Nantucket Historic District NHL and the Nantucket Sound TCP. As part of its responsibilities under Section 106 of the NHPA, BOEM has consulted and will continue to consult with federally recognized Tribes and consulting parties on the identification of historic properties, assessment of effects, and resolution of adverse effects (refer to Appendix I). Mitigation measures determined through consultations for the Nantucket Historic District NHL and stipulated in the MOA (Appendix I, Attachment A), as well as an associated HPTP for the NHL, which is attached to the MOA, will be implemented for the Project to resolve adverse effects in accordance with Section 106 and Section 110(f) of the NHPA, which may also help minimize potential effects on tourism in the Nantucket Historic District from the presence of WTGs. As described in the Final EIS Section 3.6.3 and Section 3.6.8, views of offshore WTGs would have impacts on certain businesses serving the recreation and tourism industry. Impacts could be adverse for particular locations if visitors and customers avoid certain businesses (i.e., hotels or rental dwellings) due to views of the WTGs; impacts could be neutral or beneficial if views do not affect visitor decisions or influence some visitors positively. Based on the relationship

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		between visual impacts and impacts on tourism and the recreational experience, the impact of visible WTGs from the Proposed Action in combination with other ongoing and planned activities would result in long-term, continuous, and minor impacts on recreation and tourism in the overall geographic analysis area, with moderate impacts on shoreline areas with views of WTGs. Seaside locations could experience some reduced recreational and tourism activity, but the visible presence of WTGs would be unlikely to affect shore-based or marine recreation and tourism in the geographic analysis area as a whole and would therefore not have a substantial effect on the tourism economy. For the Proposed Action alone, BOEM anticipates long-term, continuous, but minor impacts on recreation and tourism. BOEM has added discussion to the Final EIS of the impacts on the recreation and tourism economy, including citing several studies (including Parsons and Firestone 2018; Parsons et al. 2020; Smythe et al. 2018; and Trandafir et al. 2020) describing the adverse, beneficial, or neutral impacts from the visual presence of offshore wind projects to further support the conclusions noted above. These studies represent the best available information on impacts on tourism and recreation from the visual presence of offshore turbines. Specifically, text has been added to Section 3.6.3.3 and Section 3.6.3.5 of the *Demographics, Employment, and Economics* section, and Section 3.6.8.3 and Section 3.6.8.5 of the *Recreation and Tourism* section.
BOEM-2023-0011-0128-0009	For example although the DEIS notes that the "scenic quality of the coastal environment is important to the identity attraction and economic health of many of the coastal communities" and that tourism in these communities is a multibillion-dollar industry the DEIS finds the "employment and economic impact would be localized short term and minor." [Footnote 8: DEIS at 3.6.8-1] [Footnote 9: DEIS at 3.6.8-17] In fact the DEIS states falsely that the project would have a beneficial impact on tourism with 2.5% of visitors	Please refer to response to comment BOEM-2023-0011-0128-0008. Final EIS Section 3.6.8.5 has been revised to clarify that 2.5% of visitors coming to see WTGs could offset some lost trips from visitors who consider views of WTGs to be negative (Parsons and Firestone 2018). With regard to impacts on property values and related tax revenues, Hoen et al. (2013) analyzed housing prices from home sales occurring within 10 miles (16 kilometers) of

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	coming to see the wind turbine generators (WTGs). The DEIS fails to contemplate the effect of the wind turbine generators (WTGs) on Nantucket's tourism economy in any serious way—or the effect that SouthCoast Wind will have on historic properties within the community that depend on visitor revenue—from adverse visual effects other than to dismiss the risk. Nor does the DEIS assess the potential for harm to the Town's tax revenues due to SouthCoast's visual blight and risk to property values. To the extent that the DEIS suggests that industrial-scale visual turbine blight would benefit historic communities our client objects. BOEM's conclusion is not supported by credible research. [Footnote 10: DEIS at 3.6.8-16.]	onshore wind facilities in nine U.S. states and found no statistical evidence that home values were affected in the post-announcement/preconstruction or post-construction periods. The Massachusetts Clean Energy Center also commissioned a report—*Relationship between Wind Turbines and Residential Property Values in Massachusetts* (Atkinson-Palombo and Hoen 2014)—to study if home values were affected by their proximity to onshore WTGs. The study analyzed 122,198 home sales occurring between 1998 and 2012 of homes within 5 miles (8 kilometers) of 41 Massachusetts wind turbines. Results of this study indicated that there were no effects on nearby home prices resulting from the development of a wind farm in a community. Brunner et al. (2024) found that onshore wind farms in the United States had temporary adverse impacts on property values within a limited distance (1–2 miles) and that wind farms farther away did not adversely affect property values. A 2017 study found that when placed more than 8 miles (7 nm; 13 kilometers) from shore, there is a minimal effect on vacation rental values associated with offshore wind farms (Lutzeyer et al. 2017). A 2018 study also found that there was no impact on property values when the wind farm is 5.6 miles (9 kilometers) offshore (Jensen et al. 2018). Dong and Lang (2022) found that the Block Island Wind Farm did not adversely affect property values on Block Island or on the Rhode Island mainland. Because Project will be a substantial distance from shore—with the closest WTGs 23 miles (37 kilometers) from Nantucket and 30 miles (48 kilometers) from Martha's Vineyard—any impacts on property values are expected to be negligible. This information was added to the Final EIS, Section 3.6.3, *Demographics*, *Employment, and Economics*.
BOEM-2023-0011-0128-0010	The DEIS contains no analysis of how the Town's tourism economy will be affected even though the Town and its citizens as well as workers depend on it for the current and future maintenance and preservation of the historic	Please refer to responses to comments BOEM-2023-0011-0128-0008 and BOEM-2023-0011-0128-0009.

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	properties under its jurisdiction or control. Under NEPA BOEM must consider a wide range of effects specifically including impacts that are "historic cultural [and] economic." [Footnote 11: 40 C.F.R. § 1508.1(g)(1).] Tourism revenue and property values are vital to the Town of Nantucket's economy. Tourism alone is a $10 billion industry in Massachusetts supporting over 102100 jobs every year. Spoliation of historic landscapes increases the risk of lost tourism revenue and property taxes which are expected to decrease after SouthCoast Wind industrializes the ocean landscape with its unavoidable visual clutter and light. Impacts to our client' tourism economy would be devastating to the economic health of the area and put thousands of jobs in danger creating environmental justice risks. Nevertheless the DEIS ignores these risks in contravention of NEPA.	Section 3.6.4, *Environmental Justice*, discusses the impacts on environmental justice populations in Nantucket from the Proposed Action.
BOEM-2023-0011-0128-0011	Despite this risk the DEIS' discussion of tourism blithely dismisses potential impacts to Nantucket's economy without any serious discussion or supporting research preferring instead to rely on flawed incomplete studies and ignoring industry research that shows that 15% of tourists will not return to oceanfront communities once offshore wind farms are built. Even if 2.5% of visitors travel to see the WTGs as the DEIS suggests the loss of 12.5% of visitors will be devastating to the tourism economy. [Footnote 12: DEIS at 3.6.8-21] Moreover visits to see the wind farm are likely to be a onetime event and will not guarantee repeat visits as the current pristine ocean views do. Thus BOEM cannot support its conclusion that the overall impact to tourism will be "minor" especially when Project impacts at the landscape level are expected to range from "moderate" to "major adverse." BOEM must carefully consider the impacts on our client' unique character as an oceanfront community and its historic properties that qualify as a "resource" both to the area's economy and under NEPA's definition. BOEM must further analyze and quantify these potential adverse effects as BOEM develops the Final EIS.	Please refer to responses to comments BOEM-2023-0011-0128-0008, BOEM-2023-0011-0128-0009, and BOEM-2023-0011-0055-0008.

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BOEM-2023-0011-0132-0098	In section 3.6.8 the following statement is made and it adds significant confusion with regard to lighting as no mention of ADLS is made. Perhaps this the true scenario Nantucket should expect. [Text in Blue: [Bold: "Lighting:] Construction-related nighttime vessel lighting would be used if offshore wind development projects include nighttime dusk or early morning construction or material transport. In a maximum-case scenario lights could be active throughout nighttime hours for other offshore wind projects in the geographic analysis area simultaneously under active construction (Appendix D). Vessel lighting would enable recreational boaters to safely avoid nighttime construction areas. The impact on recreational boaters would be localized sporadic short term and minimized by the limited offshore recreational activities that occur at night.][Text in Blue: In the geographic analysis area permanent aviation warning lighting required on the WTGs would be visible from beaches and coastlines of Martha's Vineyard and Nantucket and could have impacts on recreation and tourism in certain locations if the lighting influences visitor decisions in selecting coastal locations to visit. FAA hazard lighting systems would be in use for the duration of O&M for up to 901 WTGs. The amassing of these WTGs and associated synchronized flashing strobe lights affixed with a minimum of three red flashing lights at the mid-section of each tower and one at the top of each WTG nacelle in the offshore wind lease areas would have long-term impacts on sensitive onshore and offshore viewing locations based on viewer distance and angle of view and assuming no obstructions. Atmospheric and environmental factors such as haze and fog would influence visibility and perception of hazard lighting from sensitive viewing locations (Section 3.6.9 Visual Resources)."] Once again haze and fog are introduced as mitigating but it is on clear nights that the environment is usually enjoyed by the public.	The text cited by the commenter relates to the cumulative impacts of the No Action Alternative. This considers impacts of other planned non-offshore wind and offshore wind activities, as described in Appendix D, *Planned Activities Scenario*. This does not include the Proposed Action or alternatives. Because many of the other planned offshore wind projects in the region are early in the planning process, it cannot be assumed that they will implement ADLS lighting. Please refer to Final EIS Section 3.6.8.5, *Impacts of Alternative B -– Proposed Action on Recreation and Tourism.* Under the *Lighting* IPF, this section of the Final EIS notes SouthCoast Wind's commitment to provide ADLS as part of the Proposed Action, distinct from permanent aviation warning lighting as is currently assumed for other offshore wind projects in the vicinity.
BOEM-2023-0011-0132-0100	In addition the DEIS needs to assess the discomfort of watching blades rotate reduced breeze higher air	Final EIS Section 3.6.9.5, *Impacts of Alternative B – Proposed Action on Scenic and Visual Resources*, describes changes in

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	temperature and audible noise to humans at the shore from turbine operations.	seascape, open ocean, and landscape conditions as a result of WTGs and which beaches are anticipated to have visual impacts as a result of the Proposed Action. With the WTGs proposed to be at least 15 miles distant from the nearest shoreline, the additional effects contemplated by the commenter are not reasonably foreseeable. Please refer to response to comment BOEM-2023-0011-0132-0105.
BOEM-2023-0011-0132-0104	Additional impacts to recreational impacts are discussed on page 3.6.8-13 with the statement [Text in Blue: [Bold: "Presence of structures:] The placement of 901 WTGs (excluding the Proposed Action) in the geographic analysis area would contribute to impacts on recreational fishing and boating. The offshore structures would have long-term adverse impacts on recreational boating and fishing through the risk of allision; risk of gear entanglement damage or loss; navigational hazards; space use conflicts; presence of cable infrastructure; and visual impacts."]For hire recreational fishing is a major attraction on Nantucket. There is no analysis the DEIS as to how this industry especially regarding how deep-sea fishing (Tuna) would be impacted. It appears that some fishing grounds would be inaccessible and others would require re-routing significant distances to reach.	Please refer to Final EIS Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing,* for a discussion of impacts on for-hire recreational fishing, including consideration of access to fishing grounds, including for tuna.
BOEM-2023-0011-0132-0105	The DEIS attempts to make correlations to studies on much smaller turbines in Europe smaller wind farms such as Block Island (only 5 turbines close to shore) and studies where visual simulations have not been provided to the impacts to tourism on Nantucket. It is known that visitors to Nantucket are there for the natural setting including unencumbered views of the ocean. In the same section a University of Delaware Study is mentioned. It is our understanding that this study has been discrediting for referencing much smaller turbines and for not asking follow-up questions. A NC study that shows greater impact is not mentioned. Given the importance of Nantucket as a NHL a study unique to Nantucket should be independently conducted.	The Final EIS cites studies involving smaller WTGs than are proposed for the planned offshore wind projects in the region, including the Proposed Action. For example, the 2018 Parsons and Firestone study was based on turbines with blade tips of 574 feet (175 meters) at distances of 2.5 to 20 miles (4 to 32 kilometers) offshore. In comparison, the Proposed Action's WTGs would have a blade tip height of up to 1,066.3 feet (325.0 meters) but would be 23 miles (37 kilometers) from shore at the closest point. Both the WTGs examined in the studies and the WTGs considered as part of planned offshore wind projects would have WTG hubs, nacelles, navigation lights, and rotor blades visible to viewers on the nearest beaches. The visibility of the WTGs would be

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		variable depending on meteorological, moonlight, and sunlight conditions. In views seaward, there would be periods of high, moderate, low, and no visibility. Therefore, both the 2018 Parsons and Firestone study and this EIS conclude that the WTGs' hubs, nacelles, navigation lights, and rotor blades would be visible to viewers on the nearest beaches. The taller WTGs associated with planned offshore wind projects would result in increased numbers of WTGs visible but they would be at greater distances compared to the cited studies; therefore, the results of the studies are still relevant to this analysis. This information has been added to Final EIS Section 3.6.8. Additional studies have also been added to Section 3.6.8. It is unclear which North Carolina study is being referenced in the comment. Draft EIS Section 3.6.8.3 cited a North Carolina State University study that found nighttime views of aviation hazard lighting would adversely affect the rental price of properties with ocean views (Lutzeyer et al. 2017). Impacts on recreation and the tourism economy throughout the geographic analysis area, which includes Nantucket, are described in both Section 3.6.3 and Section 3.6.8.
BOEM-2023-0011-0132-0106	The document also states generally that [Text in Blue: "WTGs visible from some shoreline locations in the geographic analysis area would have adverse impacts on visual resources when discernable due to the introduction of industrial elements in previously undeveloped views. Based on the relationship between visual impacts and impacts on recreational experience the impact of visible WTGs on recreation would be [Highlighted text: moderate] long term continuous and adverse."] However for Nantucket where tourism is based on the natural environment the impact is undoubtedly [Highlighted text: major].	As described in Final EIS Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*, impacts of the Proposed Action are anticipated to be minor adverse to minor beneficial. Cumulative impacts of the Proposed Action in combination with ongoing and planned activities are expected to be moderate adverse with minor beneficial impacts. Consistent with the impact rating guidance included within Table 3.6.8-1, the main factors informing this impact rating are the expected extent of visual impacts associated with the presence of structures and lighting; impacts on fishing and other recreational activity from noise, vessel traffic, and cable emplacement during construction; and beneficial impacts on fishing from the reef effect.

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BOEM-2023-0011-0132-0107	The following statement on page 3.6.8-21 makes it apparent that no attempt has been made to understand the reason for tourism to Nantucket whose natural environment draws visitors from the throughout the United States and the world. For example [Text in Blue: "beaches with views of WTGs could gain trips from the estimated 2.5 percent of beach visitors for whom viewing the WTGs would be a positive result offsetting some lost trips from visitors who consider views of WTGs to be negative (Parsons and Firestone 2018)."] That 2.5% of beach visitors would like to take a sightseeing trip to see turbines is preposterous to state as a benefit. In fact that means 97.5% do not want to take such a trip.	The comment is noted. Additional information on potential impacts on recreation and tourism was added to the Final EIS, including a more recent study that showed that beachgoers at local, state, or national park beaches self-reported as more favorable toward wind power and correspondingly appeared less inclined to cancel a trip due to the presence of wind turbines. Notably, the same study cited by the commenter showed that 68% of respondents indicated that WTG visibility would neither improve nor worsen their experience visiting the coast.
BOEM-2023-0011-0132-0108	After providing no data or studies to show how for hire recreational fishing on Nantucket might be impacted the document states on page 3.6.3-26 [Text in Blue: "across the Massachusetts and Rhode Island lease areas up to 1069 offshore structures 149 of which would be attributable to the Proposed Action would affect employment and economics by affecting marine-based businesses. Presence of structures would have both beneficial impacts such as by providing sightseeing opportunities and fish aggregation that benefit recreational businesses and adverse effects such as by causing fishing gear loss navigational hazards and viewshed impacts that could affect business operations and income".] The implication that people would incur the time and expense to travel to Nantucket a place where repeat business to enjoy the natural environment is the norm to take a one-off sightseeing trip to see WTGs is just silly. Without the data to back this up there is no basis to make the claim. Perhaps at least interview local business and maybe the Chamber of Commerce. This entire section shows no attempt to understand the unique tourism economy that encompasses Nantucket.	Analysis of the impacts of the Proposed Action on for-hire recreational fishing, which analyzes impacts across the geographic analysis area including Nantucket, can be found in Final EIS Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*. Coastal Massachusetts, including Nantucket Island, attracts tourists for multiple reasons, including access to recreational activities such as beachgoing, surfing, fishing (inshore and offshore), and boating. As described in Final EIS Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*, the presence of WTG structures is anticipated to create new benthic habitat that will act as artificial reefs expected to attract numerous species of algae, shellfish, finfish, and sea turtles. This prospective new fishing opportunity could attract anglers and recreational boaters to offshore areas. That same section, along with Section 3.6.3.3, cite studies that found offshore wind turbines may have beneficial impacts on tourism and recreation, including the potential for demand for boat tours of the facilities. Please refer to responses to comments BOEM-2023-0011-0128-0008 and BOEM-2023-0011-0055-0008 regarding the additional analysis that has been added regarding Nantucket. The studies cited throughout Section 3.6.3 and Section 3.6.8, which incorporate data and views of people from a diversity

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		of geographic locations, represent the best available information to inform BOEM's analysis of impacts on tourism and recreation from the visual presence of offshore turbines, including on Nantucket. In addition, BOEM has consulted and will continue to consult with consulting parties, including the Town of Nantucket, to identify effects on historic properties, including the Nantucket Historic District, as part of its responsibilities under Section 106 of the NHPA. BOEM and consulting parties are identifying mitigation measures to resolve adverse effects on the Nantucket Historic District.
BOEM-2023-0011-0132-0110	In section 3.6.8 Nantucket tourism on Nantucket is summarized as follows: [Text in Blue: "Nantucket County is south of Cape Cod and encompasses approximately 44.97 square miles of land (U.S. Census Bureau 2021d). It is 14 miles long and 3.5 miles wide (Town & County of Nantucket MA 2022a). The county consists of the Island of ' which is an extremely popular summer tourist destination. In the summer months the population of the Island of Nantucket increases by a factor of five due to tourists and seasonal residents (COP Volume 2 Section 10.3.1.1.1; Mayflower Wind 2022). The county is home to many beaches such as Brant Point Beach which is home to the Brant Point Lighthouse. One of the most popular beaches on the island is Jetties Beach which has a café restaurant and tourist shop during the summer (Town and County of Nantucket 2022b)."] The statement makes no mention of the island's popular South Shore beaches such as Surfside Cisco Madaket and Ladies some of which have been named to leading travel publications "Most beautiful beaches in the world". There is also no mention of the sunsets on the West side of the island. It is convenient for BOEM and misleading to readers to only mention beaches with views to the North.	Thank you for your comment. Additional contextual information concerning onshore and offshore attractions of Nantucket was added to Final EIS Section 3.6.8.1, *Description of the Affected Environment and Future Baseline Conditions*.
BOEM-2023-0011-0132-0112	The idea that wind turbines would generate tourism interest in Nantucket is a fairy tale. Especially if one agrees with the premise of the document that wind turbines will be	Please refer to responses to comments BOEM-2023-0011-0132-0108 and BOEM-2023-0011-0132-0107.

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	widespread off the coast of MA and RI. The type of repeat tourism that Nantucket experiences and that its economy depends upon is related to the natural beauty and the "unobstructed view of the ocean that is a balm to the soul" (from NHL document) Occasional trips to view wind farms could never come close to replacing what will be lost.M. An independent study of lost tourism dollars is necessary to protect Nantucket's economy.	
BOEM-2023-0011-0140-0089	As noted earlier the presence of WTG structures could also cause hydrodynamic effects. Hydrodynamic effects occur when structures cause changes in current speed wave height and sediment transport. [Footnote 322: While not discussed in these comments changes to waves could have serious impacts on recreation. In addition to considering how changes in waves may affect marine life the BOEM should consider how changes in waves affect ocean users. Sunrise Wind and BOEM should engage in a robust and transparent stakeholder process with coastal and ocean recreation enthusiasts and experts including sailors kiteboarders surfers and other stakeholders to vet modeling data in relation to potential impacts on wave riding breaks and other wind-driven activities. Such a process would use the best available science and expertise to help build understanding of impacts to wind waves and associated recreation opportunities which may assist in conflict mitigation.]	Section 3.4.2, *Water Quality*, and Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*, cite multiple studies of hydrodynamic effects from WTG foundations. These studies identify the potential for wake effects to occur from a few hundred meters to tens of kilometers from a structure. As recreational activities involving waves (surfing, windsurfing, kiteboarding) are generally concentrated near shorelines and are not typically occurring at distances similar to the offshore lease area, BOEM does not expect substantive effects on wind- and wave-driven activities.
BOEM-2023-0011-0158-0003	One thing that's not adequately covered in the impact statement is the impact on the Falmouth economy and tourism industries in particular. This thing is going to make landfall on one of the most popular beaches in Falmouth essentially putting it out of commission for at least one season possibly more it's also going to run a cable right through the heart of the business area of Falmouth essentially cutting the town in half making certain groceries stores pretty much inaccessible and as one commentor in the last meeting said suggested just we are all going to do it during the winter	As described in Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*, construction of onshore components is expected to result in temporary road and/or lane closures (and potential traffic congestion) during installation. SouthCoast Wind will work with the towns of Falmouth, Somerset, and Portsmouth (and others as may be needed) to develop and implement a construction period traffic management plan to avoid and/or minimize disruptions to residents, visitors, commercial uses, and recreational areas

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	what does that do for the 35000 residents permanent residents of Falmouth that are year round residents.	in the vicinity of construction activities (Table G-1, Appendix G). Such a traffic management plan will help identify/implement detours where needed.

N.6.21 Scenic and Visual Resources

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BOEM-2023-0011-0117-0028	Visibility: The 968-foot-tall wind turbines will be much more visible than the company's simulations imply and will flash red lights during the night. Human visual processing enlarges objects on the horizon. This phenomenon called the Ponzo illusion explains why a full moon rising on the horizon appears much larger than the same moon once it is overhead (Gregory 2013). Humans will experience the turbines as far more sizable than the simulations convey. Human visual processing also pays more attention to moving objects than stationary ones. As a result humans will be keenly aware of these structures on the horizon. BOEM has not adequately considered the visual impact.	The simulations were prepared following accepted professional and industry practices that BOEM believes provide a reasonable depiction of what would be seen by a viewer. Simulations in the COP Appendix T (e.g., KOP 8-N Tom Nevers Field-nighttime) show nighttime lighting of WTGs. Additional information regarding the methodology for preparing the simulations is included in COP Appendix T.
BOEM-2023-0011-0128-0018	The visual simulations BOEM provided for review are incomplete and inadequate. As a result they fail to show the actual impact of SouthCoast Wind. Consequently BOEM must include additional simulations to assess accurately adverse impacts and to determine appropriate avoidance minimization or mitigation measures. As the lead federal agency BOEM must provide consulting parties and the public with adequate and easily accessible information that informs all parties of potential impacts. BOEM's adverse effect characterizations and visual simulations are too limited to show the full extent of SouthCoast Wind's aesthetic impacts. BOEM and consulting parties therefore are operating at an informational disadvantage that assures arbitrary and capricious decision making.	The simulations were developed using accepted professional and industry practices. Approximately 123 photo-simulations were prepared from 33 KOPs that depict what a viewer might see of the Project at various locations based on geographic information system–based viewshed modeling. Additional information regarding the methodology for preparing the viewshed model and simulations is included in the COP Appendix T. BOEM determined that the information is sufficient to enable BOEM to conduct an informed assessment of visual impact.

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BOEM-2023-0011-0128-0021	In addition, it is impossible for consulting parties to understand the full range of SouthCoast's visual effects because of problems with BOEM's approach to visual simulations. Contrary to what BOEM has provided, visual simulations need to be revised and presented together rather than in separate reports that make comparisons difficult if not impossible. Visual simulations should also refrain from using humid hazy or blurry conditions to minimize potential wind turbine visibility. BOEM should also revise them so that they all show what SouthCoast and additional wind farms will look like during every season at multiple times of day including at night rather the piecemeal approach that BOEM has adopted.	Multiple visualizations are provided in COP Appendix T, *Visual Impact Assessment*, which provide a range of high-contrast conditions from multiple KOPs. Simulations offer a spread of conditions (side lit, back lit, front lit), times of day (from morning to sunset), and seasons. The COP VIA states that all efforts were made to secure KOP photos under clear-sky conditions; however, that was not always possible, and simulations reflect a range of visual contrast under differing conditions (e.g., overcast/cloudy, haze, clear); such conditions are identified with each simulation. Additionally, cumulative effects simulations were produced (see EIS Appendix H, *Seascape, Landscape, and Visual Impact Assessment*, and Appendix C of the CHRVEA) showing other offshore wind projects within the Project viewshed displaying incremental visual changes over time as projects are constructed. BOEM determined that the number of visual simulations prepared for the SouthCoast Wind Project is adequate to analyze and determine the Project's magnitude of impact.
BOEM-2023-0011-0132-0082	The document is presenting the cumulative impacts of the no action alternative in a confusing manner. There is a "no action alternative" for which the visual impacts are moderate and a "cumulative no action alternative" in which the visual impacts are major. Regarding Nantucket even one project, the existing VW1 for instance, has major visual impacts. The reader needs to read four separate sections on impacts the fourth of which always implies the SouthCoast/Mayflower project in the context of all the other projects that are not yet approved has only a minor impact. This seems intentionally confusing and inaccurate.	The No Action Alternative looks at ongoing activities, including ongoing non-offshore wind and ongoing offshore wind activities (those projects with an approved COP, e.g., Vineyard Wind 1, South Fork, Revolution Wind), for scenic and visual resources and analyzed the impacts of such if the proposed Project was not developed. BOEM also analyzed cumulative impacts of the No Action Alternative, which looks at other planned non-offshore wind activities and planned offshore wind activities and the relative impacts those may have if the proposed Project was not developed.
BOEM-2023-0011-0132-0091	[Text in Blue: "The WTGs and OSPs would be lit and marked in accordance with Federal Aviation Administration (FAA) and U.S. Coast Guard (USCG) lighting standards and consistent with BOEM best practices. Mayflower Wind would implement an Aircraft Detection Lighting System (ADLS) to automatically	As described in COP Volume 1, Section 3.3.12, USCG navigation lighting consists of quick flashing yellow lights intended to be visible to mariners. SouthCoast Wind is required to submit to BOEM a lighting, marking, and signaling plan in accordance with federal law and regulations

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	activate lights when aircraft approach. Lighting would be placed on all structures and would be visible throughout a 360- degree arc from the surface of the water. Tower marking would include unique rows and columns of letters and numbers to maximize charting effectiveness. Reflective paint and lettering materials would be used to provide visibility at night."] USCG lighting standards are on at all times and this is not mitigated in anyway. This is a problem for Nantucket where there is a tradition of viewing and studying dark skies.	and guidelines, which would include information regarding navigation lighting in accordance with USCG standards. The plan must address aviation and navigation safety, avoidance of harm to wildlife, and avoidance of interference with other uses.
BOEM-2023-0011-0132-0093	Regarding construction lighting the impacts are described as short term. However the construction time frame for this project is 7 years and at least 10 years for the cumulative projects. This does not equate to short-term.	BOEM has defined *short term* in Section 3.3 of the Final EIS to equate to impacts associated with construction. Because construction lighting would result in visual impacts during construction activities, BOEM has accurately characterized the impacts as short term. BOEM acknowledges in EIS Section 3.6.9.5 under the *Lighting* IPF that these impacts would occur over a period of years during construction, primarily associated with nighttime vessel traffic.
BOEM-2023-0011-0132-0096	Once again the claim that since other projects will have lighting the contribution from this project is negligible is misleading confusing and erroneous since none of these other projects have been built.	As stated in Section 3.6.9.5, *Cumulative Impacts of the Proposed Action*, lighting from the Proposed Action in combination with other offshore wind projects would have minor to major long-term cumulative impacts on scenic and visual resources. In evaluating cumulative lighting impacts, BOEM appropriately considered how the SouthCoast Wind Project in combination with other offshore wind projects in the Massachusetts and Rhode Island lease areas would contribute to lighting impacts.
BOEM-2023-0011-0132-0099	Table 3.6.9-14 indicates that two areas KOP-8-N Tom Nevers Field-Nighttime and KOP-12-N Cisco Beach- Nighttime would result in "major' impacts. The following areas are listed as moderate: KOP-8-N Tom Nevers Field-Daytime KOP-10-N Nobadeer BeachKOP-11-N Miacomet Beach and Pond KOP-12-N Cisco Beach-DaytimeKOP-13-N Hummock Pond Road Bike Path KOP-16-N Head of PlainsKOP-17-N Bartlett's Farm KOP-18-N Ladies Beach KOP-20-N MadequechamKOP-22-N Madaket Beach at Sunset. However given the importance of	The impact levels for each KOP identified in Table 3.6.9-14 were determined based upon distance and other criteria described in detail immediately above the table. BOEM has reviewed the impact levels of all KOPs and determined they are appropriate based upon these criteria. The status of a KOP as historic in nature does not affect the visibility of offshore structures from a KOP and therefore does not influence the visual impact levels. However, visual impacts on historic properties, including the Nantucket Historic

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	these area to visitors and residents of Nantucket the historic nature of the unobstructed viewshed and the simulations provided in Attachment H these areas should also be listed as major. The next group which is listed in this chart as impacted in a "minor' way should be moved to "moderate" impacts. It is unclear if any residents or visitors to Nantucket have been consulted in this is matter.	District, are evaluated in context of their setting and historical nature in Section 3.6.2, *Cultural Resources*, and through the Section 106 consultation process, as described in Appendix I. The Nantucket Historic District Commission, Nantucket Historical Commission, and Nantucket Planning & Economic Development Commission are all Section 106 consulting parties. BOEM has consulted with the consulting parties under Section 106 of the NHPA to identify avoidance, minimization, and mitigation measures for resolving adverse effects from Project lighting, the visible presence of WTGs, and other effects on historic properties, including the Nantucket Historic District NHL. Additional information about Section 106 consultation and measures to mitigate adverse effects are presented in Appendix I. In addition, BOEM requested and received public comments about visual impacts during the public scoping period for the Draft EIS (November 1 to December 1, 2021).
BOEM-2023-0011-0133-0014	Threshold. The International Dark-Sky Association (IDA) uses magnitudes per square arcsecond (mpas) to evaluate the darkness of the sky. A reading of lower than 20.2 mpas means that the Milky Way is no longer visible. On Nantucket the average reading is currently 20.61 as shown:[See original attachment for figure of average darkness]. Will BOEM be monitoring the level of skyglow as part of their permitting process or otherwise? Will BOEM commit to requiring that the current dark skies over Nantucket be maintained or improved?	Section 3.6.9.5 under the *Lighting* IPF analyzes the impacts from nighttime lighting of WTGs. To minimize visual effects from lighting, SouthCoast Wind has committed to equipping offshore wind structures with an ADLS that keeps aviation warning lights off until aircraft are present, thereby protecting the existing natural night sky condition. BOEM has added a visual monitoring requirement to the Final EIS, measure SV-1 in Table G-2 of Appendix G, *Mitigation and Monitoring*. SV-1 would require SouthCoast Wind to monitor the visual effects of the wind farm during construction and O&M in both daytime and nighttime and monitor the performance of the ADLS, which would ensure the system is functioning properly.
BOEM-2023-0011-0133-0015	The IDA uses a variety of calibrated monitoring equipment around the world to track the quality of the night sky. The International Dark-Sky Association (IDA) uses a variety of calibrated monitoring equipment around the world to track the quality of the night sky. These devices are designed to	BOEM has evaluated the effects of nighttime lighting on the affected environment in Section 3.6.9.5 under the *Lighting* IPF. Because SouthCoast Wind has committed to using an ADLS, BOEM anticipates impacts on nighttime lighting would be negligible, except when the ADLS is activated, when

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	measure the brightness of the night sky and assess the impact of light pollution on astronomical observations as well as on wildlife human health and the environment. Some of the equipment used by the IDA includes: 1. Sky quality meters (SQMs): These devices measure the brightness of the sky in magnitudes per square arcsecond and can be used to generate standardized data that can be compared across different locations and times. 2. Radiometers: These devices measure the intensity of light in different wavelengths and can be used to determine the spectrum of light pollution in a given location. 3. Photometers: These devices measure the amount of light in a specific range of wavelengths and can be used to measure the brightness of specific sources of light such as streetlights or advertising signs. 4. All-sky cameras: These devices capture images of the entire sky and can be used to generate time-lapse videos or still images that show the brightness and movement of stars planets and other celestial objects. 5. Portable observatories: These are mobile observatories that can be deployed to remote or rural areas to conduct scientific research on the night sky and collect data on the impact of light pollution. By using a variety of calibrated monitoring equipment the IDA is able to collect standardized data on the quality of the night sky in different locations around the world. This data can be used to raise awareness of the importance of dark skies promote policies and regulations that limit light pollution and encourage the development of sustainable lighting practices that preserve the natural beauty of the night sky. Has BOEM identified a baseline and an anticipated impact on that baseline? Will BOEM monitor the light sources from permitted wind warms against the current baseline?	impacts would be major (refer to Table 3.6.9-14). BOEM has added a visual monitoring requirement to the Final EIS, measure SV-1 in Table G-2 of Appendix G, *Mitigation and Monitoring*. SV-1 would require SouthCoast Wind to monitor and compare the visual effects of the wind farm during construction and O&M (daytime and nighttime) to the findings in the COP VIA and verify the accuracy of the visual simulations. In addition, SouthCoast Wind would be required to monitor the performance of the ADLS to ensure the system is functioning properly.
BOEM-2023-0011-0133-0017	The DEIS appears to rely exclusively on the report provided by AECOM the consultant hired by the applicant which itself appears to have adopted an approach based exclusively on	SouthCoast Wind produced the VIA and visual simulations following BOEM guidance and accepted professional and industry best practice visualization techniques. BOEM

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	comparing: (a) photographs taken by AECOM in 2020 using a Nikon D4 camera (COP 4.2.1) with (b) "simulations" generated by AECOM through digital manipulation of the photographs. The chosen approach fails to provide an adequate basis for understanding the proposed project and its impacts on dark skies for numerous reasons including but not limited to: A. Lack of Quantitative Data & Analysis – visual impact as measured by photographs is only one part of the exercise. Using standard scientific methods precise lumen levels and other quantitative measurements can and must be made as part of both the baseline and "alternative" assessment.	conducted multiple reviews of and verified the VIA and simulations. BOEM determined the analysis and simulations were adequate for evaluation. For the EIS, BOEM's third-party NEPA contractor conducted an independent analysis, which is presented in Section 3.6.9 and Appendix H of the EIS, apart from the findings in the COP VIA using the data provided in the COP. Because SouthCoast Wind has committed to using an ADLS, BOEM anticipates impacts on nighttime lighting would be intermittent, occurring only for a few hours each year (refer to Section 3.6.9.5). BOEM has added a visual monitoring requirement to the Final EIS, measure SV-1 in Table G-2 of Appendix G, *Mitigation and Monitoring*. SV-1 would require SouthCoast Wind to monitor and compare the visual effects of the wind farm during construction and O&M (daytime and nighttime) to the findings in the COP VIA and verify the accuracy of the visual simulations.
BOEM-2023-0011-0133-0018	B. Non-Standard Equipment –While the Nikon D4 camera can be used to capture images of the night sky it is not the appropriate equipment to use for standard dark skies measurement. This is because the camera's built-in light meter is designed to measure the amount of light that is being reflected off the subject being photographed rather than the amount of ambient light in the surrounding environment. Additionally the camera's sensor can be affected by factors such as temperature humidity and atmospheric conditions which can introduce errors and inconsistencies into the measurements. Any equipment used must be calibrated and standardized for accurate measurement and error analysis. Light measurement meters on the other hand are specifically designed to measure the amount of ambient light in a given environment and are calibrated to provide accurate and reliable measurements. These meters can be used to measure a variety of different types of light including visible light infrared light and ultraviolet light and can provide readings in a variety of different units such as lux foot-candles or	The camera used for the visual simulations captures what would be seen from a viewer's standpoint. Simulations were prepared following accepted professional and industry best practices, and the COP VIA and simulations were reviewed by BOEM. BOEM determined the simulations provide an appropriate and valid depiction of what would be seen by a viewer at each KOP. Environmental conditions encountered on the day photos were taken for the visual simulations are discussed in the COP VIA.

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	micromoles per square meter per second. To accurately measure dark skies and assess the impact of light pollution it is important to use equipment that is specifically designed for this purpose such as specialized light meters or sky quality meters. These devices are designed to provide accurate and reliable measurements of the brightness of the night sky and can be used to generate standardized data that can be used for scientific research and policy-making. Using equipment that is not designed for this purpose can result in inaccurate or inconsistent measurements which can compromise the integrity of the data and limit the effectiveness of efforts to address light pollution.	
BOEM-2023-0011-0133-0019	C. Poorly Chosen Equipment Settings – There is inadequate explanation provided for the shutter speed aperture and other settings used in the camera.	Shutter speed and aperture are described on each of the visual simulations included in EIS Appendix H, *SLVIA Cumulative Visual Simulations*. Refer also to response to comment BOEM-2023-0011-0133-0018.
BOEM-2023-0011-0133-0020	D. Inadequate Elevation and Location – The only KOP for which nighttime information regarding Nantucket was provided originally was 12N – Cisco Beach. The newly published revised COP uses a different KOP from Tom Nevers as well. It appears that the KOP was measured based upon the eye-height of an adult standing on the beach. COP 4.1.2; 4.2.5. But for purposes of observing night skies multiple other KOP's must be considered including observational heights associated with MMA's observatory rooftop observation of the skies from homes and other sites from which dark skies are appreciated and also including beach locations in the western part of the island closer to the development location.	The commenter is correct that nighttime visual simulations are provided for two KOPs on Nantucket, 12-N Cisco Beach and 8-N Tom Nevers Field. The camera used for the visual simulations captures what would be seen from a viewer's standpoint. The current analysis and visual simulations represent a good-faith effort to analyze the visibility of the Project from various points along Nantucket, based on the digital viewshed modeling (refer to COP Appendix T for more information on viewshed modeling and KOP selection). BOEM has determined that the simulations adequately represent visual impacts without needing additional simulations.
BOEM-2023-0011-0133-0021	E. Limited Orientation – the orientation for the photographs focuses on the horizon. To be sure the horizon orientation is an important one. But data should also be collected focusing more clearly upon the impact of the project's lighting on the entire night sky.	Please refer to responses to comments BOEM-2023-0011-0133-0017 and BOEM-2023-0011-0133-0018.

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BOEM-2023-0011-0133-0022	F. Incomplete Assumptions About Observer Activities – the approach assumes that observers will use only their naked eyes to appreciate the night sky and does not take into account or provide any data or information with respect to the changes from baseline that will occur for those using telescopes or other observational equipment.	The COP VIA and the EIS do not consider telescope viewing when establishing baseline conditions. The current analysis and visual simulations represent a good-faith effort to analyze the visibility of the Project from various KOPs along Martha's Vineyard and Nantucket from a typical viewer's standpoint. BOEM determined that the simulations adequately represent visual impacts without needing additional simulations.
BOEM-2023-0011-0133-0023	G. Small Sample Size-- Images are provided for only one KOP on one day at one time under one set of environmental conditions and using one camera setting.	Please refer to responses to comments BOEM-2023-0011-0133-0017 and BOEM-2023-0011-0133-0018.
BOEM-2023-0011-0133-0024	H. Unexplained Inconsistent Data -- The provided images do not align with the images made public by the applicant in COP Appendix T Attachment 2	While it is unclear which specific images the commenter is referring to, the visual simulations provided in Appendix T of the COP are simulations of the SouthCoast Wind Project from several KOPs. Attachment H-1 to Appendix H of the EIS includes cumulative visual simulations that show impacts from the SouthCoast Wind Project by itself and in combination with other projects under five different scenarios, which is further explained in Appendix H.
BOEM-2023-0011-0133-0025	I. Withheld Data -- The COP references the existence of additional "confidential" images which are not included in the DEIS or provided in the publicly accessible version of the COP.	BOEM cannot make publicly available information deemed business confidential by the developer. However, BOEM has determined all visual simulations developed for the Project and analyzed by BOEM for the EIS have been publicly posted to BOEM's website as part of COP Appendix T or as part of Draft EIS Appendix H.
BOEM-2023-0011-0133-0026	J. Data Promised but Not Provided -- The COP asserts that video simulations and imagery will be provided in support of the proposal but we have not been able to locate the video simulations in the DEIS or the public record.	BOEM received video simulations produced by the developer and posted the video to BOEM's webpage for the SouthCoast Wind Project.
BOEM-2023-0011-0133-0027	K. Data Provided Only from the Applicant not from other Sources – It appears that BOEM did not retain or consult with any independent experts in this area but rather that the DEIS relies exclusively on data provided by the applicant based upon reports funded by the applicant.	BOEM conducted a review of the COP to verify the simulations and analysis were conducted according to accepted professional and industry practices. In addition, BOEM performed its own analysis in the EIS, which is presented in Section 3.6.9, *Scenic and Visual Resources*, and

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		Appendix H, *Seascape, Landscape, and Visual Impact Assessment*.
BOEM-2023-0011-0133-0028	L. Unexplained Methodology Regarding Digital Alteration – Neither the COP nor the DEIS explain the specifics of the methodology used to digitally alter the nighttime photographs in order to create the "simulations" that are provided.	The photos used for the nighttime simulations were taken during daytime hours and modified digitally to display nighttime conditions. BOEM believes these reflect the nighttime conditions satisfactorily. Additionally, the analysis found that impacts would be major when the ADLS is activated but negligible when the ADLS is not activated. COP VIA Section 4.2.5 has been revised to include an explanation about how the nighttime visual simulations were created.
BOEM-2023-0011-0133-0029	M. Impacts of Permanent Lights on Structures – The DEIS and COP each appear to assume that once an object is located below the curvature of the earth it will no longer have impacts on the KOP. Based on this assumption there appears to have been little to no consideration given to lighting from "lower levels" of the permanent structures. While the assumption regarding curvature of the earth may be true when it comes to perceiving a physical object itself the assumption is not necessarily true when it comes to perceiving light given off by a physical object. The light may be visible from the KOP even if the lighting source is not. In addition, the light may have impacts on the night sky from the vantage point of the KOP that are beyond the impact of just seeing the light itself.	The analysis of lighting impacts in the EIS assumes maximum impact from nighttime lighting of WTGs, whether the object is visible or obscured by Earth curvature. During the construction phase, aviation warning lights will be installed and remain on when the tower construction rises above 200 feet above sea level until the ADLS is installed, tested, and approved, likely when the Project transitions to the operational phase. As discussed in the COP and Section 3.6.9, *Scenic and Visual Resources*, when the ADLS is activated, nighttime lighting impacts at KOPs would be major and would then be reduced to negligible when the ADLS is not activated. Furthermore, BOEM has added a visual monitoring requirement to the Final EIS, which would require SouthCoast Wind to monitor the visual effects of the wind farm during construction and O&M (daytime and nighttime) and monitor the effectiveness of the ADLS (refer to measure SV-1 in Table G-2 of Appendix G, *Mitigation and Monitoring*). This measure would ensure that the ADLS is being implemented effectively and would determine whether the actual visual impacts from the Project during construction and O&M correspond to the impacts described in the COP and EIS.
BOEM-2023-0011-0133-0030	N. Impacts of Lights from Sea and Air Traffic – It is unclear whether any consideration was given to the quantitative and measurable anticipated impact on dark skies from the lighting	Please refer to Section 3.6.9.5 under the *Lighting* IPF, which describes visual impacts from nighttime vessel lighting associated with the Project. The exact number of vessels that

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	associated with the increased sea and air traffic created by the ongoing operation of the proposed project itself from the need to maintain and repair the project on an ongoing basis and from the changed sea routes of other traffic that will be caused by the physical barriers that the project and related projects create. These effects are likely material and should be considered.	would be present at night versus in daytime is not known; however, the *Traffic (vessel)* IPF in Section 3.6.9.5 describes that there would be on average 15 to 35 vessels present during construction at any given time and 1 to 3 vessel trips per day during O&M. BOEM anticipates the majority of these vessel trips would be during the daytime but, during construction, foundation installation vessels and other support vessels would likely be present in the Project area 24 hours per day during active construction periods, and would result in a moderate to major impacts (refer to Section 2.1.2.1, *Construction and Installation*, in Chapter 2 for the estimated Project construction schedule). Regarding impacts on other non-Project vessel traffic, as described in Section 3.6.6, *Navigation and Vessel Traffic*, non-Project vessels may choose to travel through the Lease Area or travel around the Lease Area once the wind farm is operational. The exact change in vessel routes, and associated nighttime vessel lighting impacts, cannot be known, as the vessel route decision would be up to the vessel operator at the time of the vessel trip, but BOEM does not anticipate lighting impacts from non-Project vessels would be meaningfully different from current conditions. Under normal operations, offshore flights in support of the Proposed Action, either with aircraft, drones, or helicopters, would be limited to daytime only. SouthCoast Wind would consider night flights only in case of medical emergency to evacuate an injured or sick person to the nearest hospital. If such flights occur, impacts would be negligible because of the short duration aircraft lights would be visible during flight. It should also be noted that during construction, aviation warning lights will be installed and remain on when the tower construction rises above 200 feet above sea level until the ADLS is installed, tested, and approved. Information regarding these impacts has been added to Section 3.6.9.5.
BOEM-2023-0011-0133-0031	O. Impacts of “Temporary” Lights – Both the construction and the decommissioning of the projected are described at times	Impacts from construction and decommissioning nighttime vessel lighting from the Project are discussed in Section

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	as "temporary." Even under generous assumptions about the time to complete these activities for just this one project the temporary effect is for a substantial period of time. Once the cumulative effect of construction and decommissioning of other proposed projects is taken into account the "temporary" begins to become "continuous." The effects on dark skies of the lighting generated by sea traffic structures and activities associated with construction and decommissioning do not appear to have been quantified and taken into account in the DEIS.	3.6.9.5 under the *Lighting* IPF. These impacts from lighting are described as short term, which is defined in Section 3.3, *Definitions of Impact Levels*, as corresponding to the construction and decommissioning phases. The exact number of vessels that would be present at night versus in daytime is not known; however, the *Traffic (vessel)* IPF in Section 3.6.9.5 describes that there would be on average 15 to 35 vessels present during construction at any given time, and it is anticipated that decommissioning vessel traffic would be similar. During periods of foundation installation, vessels and equipment would be present and lit 24 hours per day. BOEM revised Section 3.6.9.5 of the Final EIS to acknowledge that in addition to vessel and equipment lighting, additional nighttime lighting during construction and decommissioning would be present on the offshore structures themselves. In regard to cumulative effects of the Proposed Action in combination with other offshore wind projects, BOEM has added discussion to Section 3.6.9.5, *Cumulative Impacts of the Proposed Action*, of the Final EIS describing the cumulative impacts from lighting and vessel traffic. The analysis notes that, during periods of overlapping construction, offshore wind projects would generate between 165 and 385 vessel trips daily. The analysis also notes that the Proposed Action would contribute up to 147 of a combined total of 1,048 WTGs that would be installed in the geographic analysis area between 2023 and 2030. The cumulative lighting impacts from the combined projects during construction and decommissioning are still considered short term, as they would only occur during periods of overlapping construction and decommissioning.
BOEM-2023-0011-0133-0032	P. Inadequate Assumptions About the Quantity of WTG Lighting – FAA regulations adopted as guidance by BOEM require at least two intense red lights for each and every structure to be placed at the top of the nacelle and three or more such lights slightly lower down the structure. FAA infra	BOEM believes that the analysis in COP Appendix Y3 provides a reasonable approximation of the level of air traffic that may result in ADLS activation. While it is possible that additional aircraft from the Project or other nearby offshore wind projects could trigger the ADLS, BOEM does not

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	13.7.1. The COP and DEIS concede that the effect of mandatory WTG lighting would be “major” when it comes to dark skies. However they rely also upon the assumption that ADLS will be able to be used and that such use will cause the “major” effect to exist for fewer than five minutes per year. This conclusion is based upon a three-page analysis conducted by Capital Airspace Group and submitted and funded by the applicant. COP Appendix Y3. The brief analysis however is inadequate among other reasons because it is based exclusively on a calculation of how often identified aircraft with active transponders entered the relevant airspace during the period February 1 2019 through January 31 2020. This analysis fails to take into account among other things that: There will be substantially increased air traffic associated with construction and operation of the project itself. See e.g. DEIS at 3.4-22 referencing 280 airplane trips per year and 2080 helicopter trips per year (quoting COP Vol 1 Section 3.3.14.1 Table 3-21). There will be substantially increased air traffic associated with the other projects currently anticipated for development as well. The relevant airspace does not require active transponders in all cases and therefore an assessment of how many aircraft without active transponders will be present is required. It is not clear that the data consulted by Capital Airspace included data relating to military aircraft. Air traffic to and near the island is at a higher level that it was during the measurement period. ADLS may be set off by things other than aircraft including WTG’s or other objects in the area wildlife ships or weather developments to name a few. See e.g. https://detect-inc.com/aircraft-detection-lighting-systems/ (describing sensitivity to birds and drones)Companies participating in the ADLS market promote and contemplate that ADLS be set to detect objects at a boundary greater than the minimum distance required by the FAA/BOEM. https://detect-inc.com/aircraft- detection-lighting-systems/FAA regulations	anticipate there would be much nighttime air traffic (versus daytime air traffic) to service offshore wind projects for safety reasons. During construction, aviation warning lights will be in the on position once the tower construction rises over 200 feet above sea level. The ADLS will not be operational until after the system is installed, tested, and approved. The analysis in COP Appendix Y3 shows that with the ADLS, nighttime aviation lighting would be activated for less than 1 percent of normal operating time; even with an increase in air traffic beyond that estimated in COP Appendix Y3, BOEM anticipates the length of time nighttime lighting would be activated would remain short in overall duration. The analysis in the EIS (refer to Table 3.6.9-14) acknowledges that when aviation lighting is turned on (the ADLS is activated), impacts would be major, and when aviation lighting is off, impacts would be negligible; the conclusion would be the same whether the time the ADLS is triggered is less than 1 percent of normal operating time or a slightly greater amount of time due to increased aircraft trips. As described in Section 2.3, *Non-Routine Activities and Low-Probability Events*, of Chapter 2, non-routine activities requiring corrective maintenance because of low-probability events, which could include ADLS malfunction, could occur but are unlikely. While ADLS malfunction would result in extended nighttime impacts, BOEM expects SouthCoast Wind would stock spare parts and have sufficient workforce available to conduct corrective maintenance activities to limit the duration of these impacts. Furthermore, BOEM has added a visual monitoring requirement to the Final EIS, which would require SouthCoast Wind to monitor the visual effects of the wind farm during construction and O&M (daytime and nighttime) and monitor the effectiveness of the ADLS (refer to measure SV-1 in Table G-2 of Appendix G, *Mitigation and Monitoring*). This measure would ensure that the ADLS is being implemented effectively and would determine whether the

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	as adopted in BOEM guidance (see infra) require lighting activation not only during night- time hours but also during any period of reduced visibility. FAA at 13.51. ADLS may malfunction and create lighting beyond that it is intended to due to oversensitivity or error. FAA regulations adopted by BOEM as guidance require that all lighting be activated and remain activated in the event of any malfunction or error in even one part of the overall system. 4/28/21 Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development BOEM; FAA 11/16/20 AC70/7460 at 10.25. These are just examples. The myriad of possibilities that the real world throws up are exactly why looking only at 2019 flight data is inadequate when real-world experience with ADLS exists and should be taken into account. See e.g. https://ocean-energyresources.com/2022/08/04/deutsche-windtechnik-is-granted- worlds-first-approval-for-use-of-adls/	actual visual lighting impacts from the Project during construction and O&M correspond to the impacts described in the COP and EIS.
BOEM-2023-0011-0133-0033	Q. Inadequate Assumptions About the Effect of WTG Lights: The COP and DEIS concede that the effect of mandatory WTG lighting would be "major" when the lighting is "on" but assume that there is no effect at any other time. However the effect of a flashing light on observers and their ability to appreciate the night sky likely persists beyond the time that the light is actually "on." This is particularly true if the observer is using observational equipment. This additional potential effect was not considered and should be.	The analysis of lighting impacts in the EIS assumes maximum impact from nighttime lighting of WTGs based on best available information and accepted professional practices. It would be speculative to assess how each individual observer may perceive the effect of nighttime light from ADLS activation. BOEM anticipates that the ADLS would be activated for less than 1 percent of normal operating time. The analysis found that impacts would be major when the ADLS is activated but negligible when the ADLS is not activated, and these conclusions would be the same whether lighting impacts persist or do not persist beyond the time aviation lighting is on for an individual observer.

N.6.22 Project Design Envelope

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BOEM-2023-0011-0140-0091	Given that the two cable landfalls will occur where sensitive subaquatic vegetation habitats are present the use of HDD is	SouthCoast Wind has proposed the use of HDD at all cable landfall locations in its COP. If BOEM approves the COP,

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	crucial for avoiding and minimizing environmental impacts. Although SouthCoast Wind has already committed to employing HDD for the project's landfall BOEM should require use of HDD as a condition for project approval.	SouthCoast will be required to adhere to the development plans contained in the COP and any other conditions imposed by BOEM.
BOEM-2023-0011-0140-0095	BOEM should require SouthCoast Wind to develop and implement an anchoring plan as a condition of COP approval. Such a plan should delineate areas of complex and sensitive habitat around each turbine and cable locations and identify areas restricted from anchoring. To further reduce impacts BOEM should require to the extent practicable SouthCoast Wind to employ microrouting of the export cable corridor to avoid siting in complex benthic habitats and other sensitive habitat areas particularly in the area of Muskeget Channel which features a high proportion of complex habitats. Similarly as proposed by BOEM SouthCoast Wind should be required to limit boulder clearance activities in order to avoid minimize and mitigate impacts to complex habitats.	As stated in the Anchoring subsection of Section 3.5.2.5, SouthCoast Wind has committed to avoiding habitat loss to benthic resources during construction by selecting lower impact construction methods, where possible, which would include avoiding anchoring on sensitive habitat such as eelgrass beds and hard-bottom habitats. Table 3.5.2-3 which was added to Section 3.5.2.11 presents BOEM-proposed mitigation measures including one measure that requires that boulder clearance be limited to the extent practicable and best efforts should be made to microsite to avoid these areas. Further, the Cable emplacement and maintenance subsection in Section 3.5.5.5 identifies potential anchoring and boulder clearance areas along the Falmouth and Brayton Point ECCs and efforts to minimize impacts at these locations.
BOEM-2023-0011-0140-0096	As proposed BOEM should also require SouthCoast Wind to undertake pre-construction construction and installation and post-construction monitoring of benthic habitats and fisheries in the Project Area. The Draft EIS provides few details on these monitoring studies. At a minimum BOEM should require SouthCoast Wind to conduct the necessary pre-construction construction and post-construction monitoring of benthic habitats and associated flora and fauna to detect any physical changes and impacts to these habitats and species that occur because of construction activities the presence of WTG structures in the water columns hydrodynamic effects EMF noise and other impacts. Regarding hydrodynamic effects the plan should attempt to monitor hydrodynamic impacts in the area of Nantucket Shoals that is in the vicinity of the lease area as well as the proposed 20-km Nantucket Shoals buffer that overlaps the	BOEM has proposed mitigation measure BA-3, which would require SouthCoast Wind conduct fisheries and benthic habitat monitoring surveys during pre-construction, construction, and post-construction phases of the Project (refer to Table G-2 in Appendix G), which would include monitoring of sensitive habitat in the Muskeget Channel, Sakonnet River, and Mount Hope Bay. Another BOEM-proposed mitigation measure MA-1, would require that boulder clearance be limited to the extent practicable and best efforts should be made to microsite to avoid these areas. SouthCoast Wind has developed draft monitoring and mitigation plans benthic resources and fisheries. Details on these plans for finfish and benthic species within the Project area are provided under the Gear Utilization IPF of Section

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	lease area. Moreover the monitoring plan should require SouthCoast Wind to monitor impacts to sensitive habitats in the export cable corridors including in Muskeget Channel the Sakonnet River and Mount Hope Bay. The monitoring plan should also evaluate impacts to juvenile cod HAPC and whether cable protection and/or burial is mitigating impacts to these habitats. [Footnote 374: We note that we have concerns about the route of the Brayton Point export cable corridor up the Sakonnet River because of its designation as juvenile cod HAPC and the presence of boulder fields Crepidula reefs and other complex habitats in the river. While we do not recommend that BOEM select Alternative C–which would avoid siting the export cable corridor in the river–due to questions regarding its feasibility we urge BOEM to require South Coast Wind to utilize microrouting in the Sakonnet River to the greatest extent practicable to avoid these sensitive habitats and to implement robust monitoring to measure any impacts to juvenile cod HAPC and other EFH in the river.] Finally if there is an open loop cooling system at the converter station the monitoring plan should evaluate the impacts from entrainment and impingement of marine organisms as well as the impact of thermal water discharge to the ecosystem.	3.5.5.5, *Impacts of Alternative B – Proposed Action on Finfish, Invertebrates, and Essential Fish Habitat*. As part of SouthCoast Wind's National Pollutant Discharge Elimination System (NPDES) permit application submitted to USEPA (TetraTech and Normandeau Associates, Inc. 2023), the impingement, entrainment, and thermal discharge impacts of the open-loop cooling water intake system were assessed. A summary of these results is presented in the Discharges/intakes subsection of Section 3.5.2.5. Further, SouthCoast Wind plans to monitor the hydrodynamic changes within the Lease Area (Appendix F4 - Nantucket Shoals Hydrodynamic Impacts Study; SouthCoast Wind Incidental Take Application (LGL 2024).

N.6.23 Mitigation and Monitoring

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BOEM-2023-0011-0065-0006	Notably BOEM only required the developer in the Vineyard Wind Record of Decision to "monitor" and report on cable burial but did not prescribe any timeframe within which the developer would be required to rebury the cable should it become exposed. [Footnote 5: See Vineyard Wind ROD p. 59 mitigation measure 18. https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Final-Record-of- Decision-	SouthCoast Wind has committed to the following applicant-committed mitigation measure to ensure appropriate depth is maintained (refer to Table G-1 in Appendix G): "Long term monitoring of cable burial depth and condition will serve as another mitigation strategy, ensuring appropriate burial depth is maintained during the O&M phase." An exact timeframe is not specified, as the time required to re-bury a cable would be subject to various factors such as

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	Vineyard-Wind-1.pdf.] Experience with the Block Island Wind farm as well as offshore wind farms overseas dictate that this can take years. This is unacceptable for cables traversing mobile bottom tending fishing grounds.	weather and vessel and equipment availability. SouthCoast Wind will develop and implement a Cable Maintenance Plan that requires prompt remedial burial of exposed and shallow-buried cable segments, review to address repeat exposures, and a process for identifying when cable burial depths reach unacceptable risk levels.
BOEM-2023-0011-0070-0007	The DEIS estimates that up to 10% of each export cable route will require boulder field clearance via plow and those additional large boulders along the export cable and interarray cable routes will need to be moved by grab lift. Boulders pose a hazard for fishing vessels that may get hung up by their gear; relocating the boulders without effectively communicating their new locations compromises personal safety. The FEIS should include a boulder relocation reporting plan to document and communicate the locations of moved or newly uncovered boulders to vessels that fish the area. This boulder reporting plan would complement the proposed Fisheries Communication plan.	Regarding boulder relocation, refer to the response to comment BOEM-2023-0011-0185-0270 As described in FEIS Appendix G, Table G-1, SouthCoast Wind will implement a comprehensive communication plan and a Fisheries Communication Plan to keep relevant marine stakeholders informed of the Project activities especially during the construction and decommissioning phases, which will include the distribution of notices to inform mariners of Project-related activities within the offshore export cable corridors and Lease Area. A boulder relocation mitigation measure will be developed through EFH consultation as needed and the drafting of COP T&Cs.
BOEM-2023-0011-0100-0002	I ask for the following mitigation: * SouthCoast Wind LLC should respect the spirit of local regulations regarding dust noise and hours of industrial traffic to the extent feasible balanced against the wider public's interest in locally sourced safe reliable clean electricity. * During the construction phase I ask that SC Wind minimize work done outside of typical construction hours to the extent feasible balanced against technical environmental regional traffic and state and federal legal constraints and balanced with the wider public benefit from quickly completing construction. * I similarly ask that SC Wind voluntarily respect local noise ordinances during O&M except during emergencies when the wider public's need for speedy repairs of this essential offshore energy link is balanced against residential neighbors' noise concerns.* I ask that SouthCoast Wind immediately notify local authorities and emergency response services of any accidental releases during all proposed activities and that it publish on its project	Appendix A of the Final EIS describes the local and state permits that SouthCoast Wind is required to obtain. Although BOEM analyzed the entirety of the Project in the Draft EIS for environmental impacts, BOEM's jurisdiction is limited to federal waters, which is approximately 3 nm to 200 nm offshore. If the SouthCoast Wind COP is approved by BOEM, SouthCoast Wind would still be required to obtain all required permits from local and state jurisdictions before commencing operations. In its COP, SouthCoast Wind has committed to a variety of measures to minimize effects on local communities, which are included in Table G-1 in Appendix G of the Final EIS. For example, SouthCoast Wind has committed to minimizing the amount of work conducted outside of typical construction hours. SouthCoast Wind has also proposed various measures to minimize noise impacts, including establishing temporary noise barriers, using equipment silencers, and turning off

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	website all publicly available reports to and responses from state and federal environmental agencies regarding any alleged releases within municipal or state waters for the convenience of residents who may have trouble accessing this public information.* When voluntarily respecting local regulations is not feasible due to the wider public's interest in quickly constructing or repairing the onshore transmission facility at Brayton Point I ask that following each incident SouthCoast Wind LLC publicly explain its constraints to local officials and then to the wider public respectfully listening to local concerns while reminding local residents of the wider public interest in securing and maintaining a local energy source.	construction equipment when not in use. Regarding accidental releases, SouthCoast Wind will be required to adhere to federal, state, and local regulations in the event of an accidental release, including any reporting requirements. SouthCoast Wind will develop a Safety Management System, OSRP, and SPCC Plan, as required, to avoid, control, and address accidental releases that occur during Project activities.
BOEM-2023-0011-0112-0001	The analysis in the DEIS has important ramifications for terms and conditions which may be implemented through final project approval including fisheries mitigation and compensation measures. With this in mind we strongly encourage BOEM to consider the recommendations listed in the wind energy policies adopted by both Councils which apply across all projects. [Footnote 3: Available at https://www.mafmc.org/s/MAFMC_wind_policy_Dec2021.pdf] Our two Councils worked together on and adopted the same wording for these policies.	FEIS Section 3.6.1.11 and Table G-1 of Appendix G reflect several applicant-proposed mitigation measures that seek to reduce impacts to commercial and recreational fishing. These measures seek to reduce gear interactions with Project components, reduce displacement of biological resources, and avoid impacts from changes in vessel traffic during construction and the O&M phase. Additionally, BOEM proposed measures are shown in section G-2 and include: compensation for gear loss and damage, compensation for lost fishing income, mobile gear friendly cable protection measures, fishing gear and anchor strike incident reporting, and a shoreside seafood business analysis.
BOEM-2023-0011-0112-0046	We recommend that all final mitigation guidelines be reflected in terms and conditions for BOEM's approval of this project. This is especially important given the DEIS only states that "the lessee shall implement a gear loss and damage compensation program" and "a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests for construction and operations consistent with BOEM's draft guidance..." (page G- 51).	BOEM has considered all proposed mitigation measures listed in the Draft EIS and identified during the public comment period for inclusion in the Final EIS. Based upon the analysis in the Final EIS, the BOEM decision maker will select the mitigation measures to be required in the ROD.
BOEM-2023-0011-0112-0047	Appendix G includes the analyzed potential mitigation and monitoring measures; however it is unclear which of these	Based on public comments received on the Draft EIS, BOEM has revised and made additions to the mitigation measures

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	measures are likely to be required by BOEM as opposed to optional. The FEIS should clearly indicate which mitigation measures will be required and how they affect the impacts determinations.	listed in Appendix G. In addition, each Chapter 3 resource section analyzes the effects of the mitigation measures proposed by BOEM. Based upon the analysis in the Final EIS, the BOEM decision maker will select the mitigation measures to be required in the ROD.
BOEM-2023-0011-0112-0048	The Councils are supportive of time of year restrictions to reduce potential impacts to sensitive life stages of fishery species to reduce impacts to fisheries and to avoid impacts to submerged aquatic vegetation and other structured habitats throughout the project area and cable route. The DEIS suggests that some time of year restrictions may be required (e.g. pile driving would only be allowed in the "enhanced mitigation area" during June 1 - October 31 which could reduce impacts on cod spawning and could also benefit other species; pages 3.5.5-60 and 3.5.5.61). Further detail should be provided in the FEIS on specific time of year restrictions what exactly these measures would achieve and any monitoring measures that would be in place. We recommend working with NOAA Fisheries on impact determinations and identification of sensitive habitats and fishing periods to avoid as ways to mitigate impact.	An analysis of proposed mitigation measures has been added to the mitigation section of each Chapter 3 resource section. NMFS-recommended conservation measures as part of the Essential Fish Habitat (EFH) consultation and recommended measures included in the Preferred Alternative are identified in the Final EIS.
BOEM-2023-0011-0112-0052	Appendix G of the DEIS states that cable protection measures "should reflect the pre-existing conditions at the site" and if "necessary in non-trawlable habitat...then should consider using materials that mirror the benthic environment" (page G-59). However, Volume 1 of the DEIS states that "Cable protection methods such as the creation of a rock berm concrete mattress placement rock placement and fronded mattresses may be used" (page 2-14). It is unclear which measures will be used for cable protection and the Councils are concerned with rock placement mattress protection etc. measures. Per the Councils' offshore wind energy policy (Hyperlink: https://d23h0vhsm26o6d.cloudfront.net/NEFMC-Offshore-Wind-Energy-Policy-December-2021.pdf) we recommend that if scour protection or cable armoring is	SouthCoast Wind has proposed cable protection measures where target burial depth cannot be achieved. Cable protection measures could include rock berms, concrete mattresses, rock placement, fronded mattresses, or half shells. To minimize the effects of these cable protection measures on commercial and recreational fishing, BOEM has proposed mitigation measure CF-3 (refer to Table G-2 in Appendix G) to ensure cable protection measures are trawl-friendly and generally match the existing conditions of the site. SouthCoast Wind would be required to adhere to this mitigation measure when installing cable protection.

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	needed the materials should be selected based on value to commercial and recreational fish species. Natural materials or materials that mimic natural habitats should be used whenever possible. These materials should not be obtained from existing marine habitats and must not be toxic. [Footnote 12: For examples see: Glarou M. M. Zrust and J. C. Svendsen (2020). "Using Artificial-Reef Knowledge to Enhance the Ecological Function of Offshore Wind Turbine Foundations: Implications for Fish Abundance and Diversity." Journal of Marine Science and Engineering 8(5). Hermans A. O. G. Bos and I. Prusina (2020). Nature-Inclusive Design: a catalogue for offshore wind infrastructure. Den Haag The Netherlands Wageningen Marine Research: 121p. Lengkeek W. K. Didderen M. Teunis F. Driessen J. W. P. Coolen O. G. Bos S. A. Vergouwen T. C. Raaijmakers M. B. de Vries and M. van Koningsveld (2017). "Eco-friendly design of scour protection: potential enhancement of ecological functioning in offshore wind farms. Towards an implementation guide and experimental set-up." (17-001): 87p]	
BOEM-2023-0011-0112-0053	Unexploded ordnances (UXOs) can be uncovered during site preparation activities. The DEIS states that “several alternative strategies will be considered prior to detonating the UXO in place” including avoidance lifting and shifting the UXO low-order detonation and deflagration (Volume 2 page 136). Exposed UXO presents a significant risk to mariners especially those towing mobile gear that could bring UXO to the surface. Offshore wind project construction activities can uncover UXOs. We recommend that the terms and conditions specify that developers are responsible for the safe disposal of UXO exposed due to construction activities. Our understanding is that some UXOs might be detected via surveys but are not exposed; in such cases only mariner notification may be sufficient given disposal may present greater risks. Clear timely and repeated communication about UXO locations and any changes in the location or status of	At this time, BOEM is not planning to change our mitigation measures in light of this comment. BOEM’s understanding is that COP T&Cs already include sufficient protections related to UXOs, although BOEM's technical review branch (ETRB) may be able to provide more information.

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	UXOs is essential and should not rely only on email notifications.	
BOEM-2023-0011-0112-0054	Appendix G includes several compensation-related mitigation measures including $35 million for ports and infrastructure $10 million for local innovation and entrepreneurship $5 million for applied research $5 million for workforce development $10 million for marine science $7.5 million for operations and maintenance port upgrades and $5 million for low-income strategic electrification (page G-25). We support these types of compensation measures but emphasize that fishermen from multiple states fish in the project area and compensation for these individuals may also be needed. The DEIS is not clear if these compensation measures are only applicable for Massachusetts or to a broader region.	The financial commitments cited in the comment are not specific to the fishing community and are not intended to compensate for impacts on fishing interests. These commitments were tied to SouthCoast Wind's prior offtake agreement with the State of Massachusetts, which has since been canceled. SouthCoast Wind is proposing similar commitments for other offtake agreements. BOEM is proposing two mitigation measures, CF-1 and CF-2 (refer to Table G-2 in Appendix G), that would provide compensation for gear loss and damage and compensation for lost finishing income. Compensation resulting from these programs would be available for any commercial and recreational fisherman and other eligible fishing interests affected by the Project.
BOEM-2023-0011-0112-0055	The 1 nm spacing between offshore structures and the Fisheries Communication Plan are listed as mitigation measures within the Recreation and Tourism resource area (page G-27). These should be characterized as part of commercial and recreational fishing mitigation measures.	In Volume 2, Table 16-1, of the SouthCoast Wind COP, SouthCoast Wind has categorized 1-nm spacing between offshore structures and development of a Fisheries Communication Plan as mitigation for recreation and tourism impacts. However, this categorization does not preclude these measures from benefiting commercial and recreational fishing interests, and BOEM agrees these measures would mitigate impacts on commercial and recreational fishing. Furthermore, SouthCoast Wind has categorized other measures as specifically benefiting commercial and recreational fishing, such as implementing 1-nm by 1-nm spacing of offshore structures and working with commercial and recreational fishermen to determine construction timing and locations.
BOEM-2023-0011-0112-0056	Appendix C notes that an estimated "boulder field clearance 10 percent of route" is expected for the Falmouth and Brayton Point offshore export cable routes (page C-11) though it is not clear how much of the lease area will need to be cleared of boulders. We recommend developing a clear strategy for boulder relocation that is protective of habitats in	The amount of boulder removal in the Lease Area associated with inter-array cables is included in the 99-acre estimated area of seabed preparation shown in Appendix C, *Project Design Envelope and Maximum-Case Scenario*. Appendix C in the Final EIS has been updated to clarify that boulder field

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	the area potentially relocating them to soft bottom directly adjacent to existing hard bottom areas. We also recommend this type of seabed clearance be done during times of year that minimizes direct impacts to spawning seasons of vulnerable finfish species the impact of which is noted in Volume 1 (page 3.5.5-28). Mobile gear fishing activity should also be considered when planning specific placement options. Relocation areas with similar habitat impacts might have higher or lower potential for conflict with trawling and dredging activities.	clearance in the Lease Area is not expected but that local boulder removal may be needed. Regarding boulder relocation, refer to the response to comment BOEM-2023-0011-0185-0270. Based on preliminary information provided by SouthCoast Wind, seabed preparation and boulder re-location will be minimized through continued micro-routing of cables.
BOEM-2023-0011-0112-0057	Recreational fishermen often fish on boulder habitats. We recommend that maps of boulder relocation sites be made available to recreational and commercial fishing communities and others.	SouthCoast Wind is developing a Boulder Relocation Plan that will include a plan to document and communicate the locations of moved or newly uncovered boulders to the fishing community.
BOEM-2023-0011-0123-0003	Work with the Rhode Island commercial and recreational fishing industries to minimize impacts to fishing activities and the biological resources on which they rely to the greatest extent possible and offer appropriate mitigation plans if adverse impacts cannot be avoided.o Mitigation plans should be developed with substantial input from the Rhode Island Fishermen's Advisory Board (FAB) and the CRMC.	Measures proposed by SouthCoast Wind to mitigate impacts on commercial and recreational fishing are identified in Table G-1 in Appendix G. Information regarding SouthCoast Wind's outreach to the fishing community is described in the Fisheries Communication Plan (COP Appendix W). Furthermore, BOEM has proposed several additional measures (refer to Table G-2 in Appendix G) including compensation for lost fishing income, requiring cable protection measures to be trawl-friendly with tapered/sloped edges, and requiring fishing gear and anchor strike incident reporting.
BOEM-2023-0011-0123-0004	Conduct comprehensive fisheries resource monitoring surveys consistent with the recommendations outlined by the Responsible Offshore Science Alliance (ROSA): https://www.rosascience.org/wp-content/uploads/2022/09/ROSA-Offshore-Wind-Project-Montioring-Framework-and-Guidelines.pdf. • These surveys should address concerns related to biological impacts associated with pile driving and	SouthCoast Wind has prepared a fisheries monitoring plans for Rhode Island state waters. The fisheries monitoring plan was prepared in accordance with the Rhode Island Ocean Special Area Management Plan and applicable sections of the Rhode Island Code of Regulations, notably 650-20-05 RI Code R. §11.9.9 (Baseline Assessment Requirements in state waters), and also with recommendations set forth in BOEM's *Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf*. Additional fisheries monitoring guidance

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	operational noise habitat loss and creation sedimentation electromagnetic fields and cumulative impacts. • Surveys should include as many years as possible for data collection during pre during and post construction phases of the project to best characterize the environmental impacts. Given that one of the proposed cable routes is slated to pass through Rhode Island state waters through the Sakonnet River surveys should be designed to assess impacts of the project to species of concern for Rhode Island including species of ecological importance as well as social value.	was obtained from the Responsible Offshore Science Alliance's *Offshore Wind Project Monitoring Framework and Guidelines*. SouthCoast Wind is developing the plan in consultation with RIDEM and local commercial and recreational fishermen. The plan must be reviewed and approved by RIDEM as part of SouthCoast Wind's Water Quality Certificate application.
BOEM-2023-0011-0123-0005	Conduct high resolution benthic habitat characterization and avoid areas of sensitive benthic habitats. Complex benthic habitats provide refuge and structure for juvenile fish and invertebrates as well as spawning areas for adult life history stages.o The NOAA Greater Atlantic Regional Fisheries Office recently developed benthic habitat mapping recommendations to better inform Essential Fish Habitat consultations: https://media.fisheries.noaa.gov/2021-03/March292021_NMFS_Habitat_Mapping_Recommendations.pdf?null. These recommendations should be followed to ensure avoidance of sensitive habitats.	SouthCoast Wind has collected extensive geophysical data and ground-truth data to support the mapping and characterization of benthic habitats in the Project area, which is included in COP Appendix M.3. This information has been used in Project design to minimize impacts on sensitive benthic habitats and in support of the EFH Assessment for NMFS.
BOEM-2023-0011-0123-0006	Support NOAA's efforts to minimize impacts to or adapt fish invertebrate and marine mammal monitoring surveys in and around the wind energy area as well as along the cable route. These surveys provide some of the primary data used for informed fisheries and wildlife management decisions and disruptions to such long-term monitoring efforts will introduce additional uncertainty into stock assessments and population monitoring. These assessments are the primary tools used to manage and protect the resources of which have direct effects on commercial and recreational fishing.	BOEM is committed to working with NOAA toward a long-term regional solution to account for changes in survey methodologies because of offshore wind farms. BOEM-proposed mitigation measure OU-1 addresses implementation of the Federal Survey Mitigation Strategy for the Northeast U.S. Region, which is intended to mitigate the effect of offshore wind energy development on NMFS surveys.
BOEM-2023-0011-0123-0007	Minimize impacts to birds sea turtles and marine mammals especially the critically endangered North Atlantic right whale (Eubalaena glacialis).	Comment acknowledged. SouthCoast Wind and BOEM, in consultation with USFWS and NMFS, have proposed several

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	• Southern New England has been identified as a significant foraging ground for right whales during their migrations. Significant measures have been taken to improve their population status via commercial lobster fishing restrictions. Additional commercial fishing measures are being evaluated by the Atlantic Large Whale Take Reduction Team in addition to vessel speed requirement to meet additional risk reduction targets. As such the project should take the necessary actions to ensure it does not counteract these efforts. Impact minimization could occur through but is not limited to construction time of year restrictions and exclusion zones vessel speed restrictions (applied to all vessels associated with the wind farm) and noise mitigation measures. Sound scientific data collection and monitoring of the wind energy area is also essential to evaluating potential effects in real-time to enable implementation of adaptive management measures.	measures to minimize impacts on birds, sea turtles, and marine mammals, which are presented in Appendix G.
BOEM-2023-0011-0123-0008	The RIDEM Division of Fish and Wildlife prohibits any in-stream work from March 1 to July 1 to protect the in-migration of anadromous species including alewife (Alosa pseudoharengus) blueback herring (Alosa aestivalis) and American shad (Alosa sapidissima). While the project does not include work instream construction along the export cable corridor has the potential to affect fish staging to enter the riverine systems during their migration. The Division of Fish and Wildlife recommends that work through this corridor does not take place from February 15 through July 1 to allow the anadromous migrations to take place unimpeded. The Division also limits in-stream work during juvenile out-migrations from September 15 until November 15. However if the project can demonstrate there will be no entrapment or entrainment of juvenile out-migrants the Division may reconsider its restrictions during state application review.	RESPONSE PENDING.

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BOEM-2023-0011-0126-0002	It is our hope and expectation that final guidance for mitigating impacts on commercial and recreational fisheries related to project siting design navigation access safety measure and most importantly financial compensation will be completed before a final Environmental Impact Statement on the Project is finalized. We provided extensive comments regarding fisheries mitigation in our comment letter submitted to BOEM in response to the previous RFI for the draft mitigation guidance.	BOEM appreciates the New Bedford Port Authority's comments and continued engagement in the discussion of fisheries mitigation. Comments on the proposed draft *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585* are outside the scope of the SouthCoast Wind EIS. BOEM is actively working on the fisheries mitigation guidance but we cannot provide an estimated date of completion.
BOEM-2023-0011-0126-0003	Our primary concern with the process to date which remains evident in this environmental impact statement is the lack of definite enforceable measures relative to fisheries mitigation. We appreciate that BOEM has addressed our previous comments on other EIS and placed a requirement that the mitigation measures on the project "shall" be consistent with the final mitigation recommendations of BOEM. (Appendix G - Mitigation and Monitoring). Having said that we would still direct BOEM to our previous comments related to the overall lack of clarity and enforceability with the language presented in the draft document. BOEM must make every effort to make certain that there is a uniform approach to fisheries mitigation through all lease areas and developers. The developers are understandably waiting on BOEM to lead the way on this. While we applaud the inclusion of a mitigation requirement and the creation of a fund to compensate for lost fishing revenue there are two primary issues with the quoted language. The first is that BOEM's requirement of just 5 years post construction will be sufficient for compensating fishermen for revenue lost as a result of the construction of the Project. This limited time frame is not sufficient to help the fishermen recover from any impact of the project. The second issue is the reference to the fishermen being able to "adjust somewhat" and that their losses will therefore be mitigated. Ongoing fisheries regulation combined with the introduction of thousands of offshore wind platforms will	BOEM is actively working on finalizing the fisheries mitigation guidance.

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	likely severely limit the ability of the fishermen to "adjust somewhat". The fishermen are an existing user of the OCS. Statutorily BOEM must address the impact of the new use on them. "Adjust somewhat" is a direction to the fishermen not the developer. The burden for mitigating the impact of offshore wind on the commercial fishing industry must rest with BOEM and the developers.	
BOEM-2023-0011-0126-0005	We appreciate Southcoast Wind's recognition of the importance of the commercial fishing industry which is further reflected in their proactive and ongoing outreach and communications with commercial fishermen and industry leaders through the Southcoast Wind Fisheries Liaisons and Representatives. Southcoast Wind should continue to advocate and promote such a program moving forward and should consider developing a separate fisheries innovation fund similar to Vineyard Wind's mitigation plan to support local fisheries programs and projects to further their commitments and relationship to this important industry.	Comment acknowledged. SouthCoast Wind has proposed various measures to ensure continued coordination with the fishing industry and minimize impacts on commercial and recreational fishing as described in Table G-1 in Appendix G. At this time, BOEM is not aware of SouthCoast Wind proposing a separate fisheries innovation fund.
BOEM-2023-0011-0126-0007	There continues to be uncertainty both on the amount of commercial fisheries mitigation that will be needed in the aggregate as well as the source of those funds and how and when they will be accessed. Developers such as Southcoast Wind have already provided the federal government with billions of dollars in lease proceeds and will continue to do so in future lease rounds. It is more than appropriate for the federal agencies to deploy a significant amount of recent and future revenues to address the impacts on existing industries from the offshore wind developments. Developers should be required to contribute to a mitigation protocol but given the amount the federal government has received it should not be left to the developers alone to address these impacts.	Draft EIS Appendix G included a BOEM-proposed mitigation measure (CF-2), which would require SouthCoast Wind implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests. FEIS Section 3.6.1.11 has been revised to note that the application has implemented such a compensation program. BOEM continues to work with the fishing industry and federal and state regulatory industry on minimizing impacts on commercial and recreational fisheries, including by developing *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585*.
BOEM-2023-0011-0132-0032	The mitigation measures for the North Atlantic Right Whale are not realistic. These critically endangered marine mammals are often below the surface and quiet for hours. Especially	NARW presence can be accurately determined using PAM, which can transmit the detection information to operators in near real-time. PAM has been historically and effectively used by NMFS to record a range acoustic data on marine

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	mother and calf pairs. Both PSO and PAM will be inadequate in this common occurrence.	mammals, including the NARW. The complementary strategies of vessel speed reduction, seasonal restrictions, and acoustic and visual detection would be valuable when the low amplitude, short broadband signals produced by subsurface mother-calf pairs limit the detection efficiency from PSOs and PAM. Vessels will comply with NMFS regulations and vessel speed restrictions (≤10 kts) in NARW management areas including SMAs and active DMAs during migratory and calving periods from November 1 to April 30. Vessels will also reduce speed (≤10 kts) or entirely avoid visually (aerial/vessel sighting) or acoustically (acoustic buoy/glider detection) triggered Right Whale Slow Zones. The layered mitigation measures proposed by SouthCoast Wind as outlined above, including noise-attenuation systems, maintaining vessel separation distances (500 m), site-specific exclusion and harassment zones, and seasonal and time-of-year restrictions for survey and construction activities would minimize or prevent overall potential impacts of the Proposed Action to sensitive, at-risk species such as the NARW.
BOEM-2023-0011-0132-0034	There is no time of year NARW and other whales are not present. The January 1st to April 30th exclusion for pile driving unacceptable. Just this March there have been over 60 sightings of NARW in the area.	March falls within the January 1st to April 30th time of year restriction, thus those sighted whales would not have been exposed to pile driving noise under the current mitigation measures.
BOEM-2023-0011-0132-0043	The "Habitat-based Marine Mammal Density Models for the U.S. Atlantic: Latest Versions" are provided by a collaboration led by the Marine Geospatial Ecology Laboratory at Duke University whose collaborators include: Northeast Fisheries Science Center/NOAA Fisheries Southeast Fisheries Science Center/NOAA Fisheries Dept. of Biology and Marine Biology UNC Wilmington Virginia Aquarium & Marine Science Center Virginia Coastal Zone Management Program Maryland Dept. of Natural Resources Riverhead Foundation for Marine Research and Preservation New Jersey Dept. of Environmental Protection Woods Hole Oceanographic Institute Center for	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS. In January 2024, SouthCoast Wind submitted a "Supplemental North Atlantic Right Whale Monitoring and Mitigation Plan for Pile Driving" to NMFS to clarify mitigation measures intended to protect NARWs. This monitoring plan for pile driving is meant to supplement the existing monitoring and mitigation measures currently described in

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	Coastal Studies Florida Fish and Wildlife Conservation Commission New England Aquarium Massachusetts Clean Energy Center Bureau of Ocean Energy Management Clearwater Marine Aquarium Research Institute Georgia Dept. of Natural Resources New York Dept. of Environmental Conservation Tetra Tech and HDR. [Highlighted text: The models show that the year-round presence of NARW and other large cetaceans has been known for some time. There are NO months in which NARWs and Humpback Whales are not present it the MA/RI WEAs.]The area around Nantucket Shoals was described by Andrew Lipsky in a March 9 2022 presentation as part of the NOAA Ecosystem Based Management & Ecosystem Based Fisheries Management Seminar Series as being the "only winter foraging habitat on earth for NARWs which co-occurs with Southern New England WEAs". As also shown in a presentation from a May 2021 Duke University to the Marine Mammal Sub- committee it has been known for some time that the MA/RI wind lease area is the only know year-round foraging ground for NARWs. This critically endangered species is present in all months. They have been visually sighted at times when PAM devices did not identify them. This underscores the ineffectiveness of PAM tools for identifying the presence of NARW. PSOs may see NARW at the surface in calm waters and in good light but they will not be able to detect them in rough seas or when they are under water. The NARW especially mother and calf pairs are often out of sight and are quiet for hours at a time.	the request for Incidental Take Regulations (ITRs), which was deemed Adequate and Complete by NMFS on September 19, 2022.
BOEM-2023-0011-0132-0054	Regarding the thousands of helicopter trips – will the helicopters have PSOs to avoid harassment of NARWs?	As described in Section 3.5.6 of the Draft EIS, BOEM would require all aircraft operations to comply with current approach regulations for NARWs or unidentified large whales (50 CFR 222.32), which would include prohibiting aircraft from approaching within 1,500 feet (457 meters). BOEM determined Impacts on NARW and other marine mammals would be minor and no additional mitigation would be needed.

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BOEM-2023-0011-0136-0037	While indicated as a mitigation measure in Appendix G no information is provided regarding compensation for damage and/or lost gear from any offshore wind development activities including a claim application form. Compensation for gear loss or damage as a result of interactions with the project should be assured. Language should be included which allows fishery participants to be compensated for all gear loss and damage resulting from interactions with infrastructure supporting an OSW facility. Exceptions would exist for interactions which are intentional or the result of gross negligence on the part of the vessel operator. There are a number of things outside of the operator's control which could result in interactions with infrastructure and facilities supporting OSW. [Footnote 34: Mechanical failures abrupt and unforeseeable changes in wind or current etc could all result in interactions with facilities supporting an offshore wind array. Interactions which would not have occurred but for the presence of the array should be fully compensable to such fishermen.]	SouthCoast Wind already has implemented such a program not only for gear but also for foregone revenue (refer to the response to comment BOEM-2023-0011-0126-0007). The application form for this compensation program is available on SouthCoast Wind's website and was developed in coordination with other offshore wind developers to provide consistency to the commercial fishing industry. Further this form was developed using input from the commercial fishing industry. This process is designed to cover potential impacts from gear interactions with SouthCoast Wind G&G survey vessels but will be adapted to cover gear interactions with construction vessels and eventually the presence of structures.
BOEM-2023-0011-0136-0038	Mitigation measure CF-2 Compensation for lost fishing income refers to BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf as the basis for compensation for lost income. This draft guidance was woefully inadequate in its approach to fisheries compensation. RODA submitted detailed comments outlining those inadequacies and we incorporate those comments by reference. [Footnote 35: See https://www.regulations.gov/comment/BOEM-2022-0033-0083]	Please refer to the response to comment BOEM-2023-0011-0136-0037.
BOEM-2023-0011-0136-0039	Mobile Gear–Friendly Cable Protection Measures: In developing such protection measures developers must engage with fishery participants in an effort to understand their needs. In particular bottom tending gear such as surfclam and scallop dredges bottom-trawl and others should be consulted to mitigate impacts to fleets utilizing that gear	Comment acknowledged. SouthCoast Wind has proposed various measures to ensure continued coordination with the fishing industry and minimize impacts on commercial and recreational fishing from cable installation as described in Table G-1 in Appendix G. In addition, BOEM is proposing measure CF-3, which would ensure cable protection

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	type. This may result in preferred orientation of subsea cables and cable protection or other recommendations from operators in the region should they choose to continue fishing in a project area.	measures are trawl-friendly and do not introduce new hangs for mobile fishing gear.
BOEM-2023-0011-0139-0025	Regarding additional mitigation measures proposed throughout the NEPA process SouthCoast Wind encourages BOEM to conduct careful analysis of the best available scientific data and where possible utilize site specific data and details. Mitigation measures or project alterations that lack clear scientific support or are based on speculation would be fundamentally at odds with the national policy expressed in NEPA and should not be carried forward.	Comment acknowledged. BOEM is committed to a science-based approach for assessing impacts and identifying appropriate mitigation for proposed offshore wind activity. Based on public comments on the Draft EIS, BOEM has modified and made additions to the proposed mitigation measures included in Table G-2, Appendix G of the Final EIS.
BOEM-2023-0011-0140-0023	We note that many of the proposed monitoring and mitigation plans found in this DEIS are general at this point relying on yet-to-be-developed plans. [Footnote 41: SCW DEIS Appendix G at Tables G-1 and G-2.] We urge BOEM to use the recommendations herein to require protective measures and to allow practices to evolve as monitoring informs impact assessments. Continued robust monitoring of offshore wind projects and commitment to employ adaptive management practices will ensure that BOEM can swiftly minimize damages of unintended or unanticipated impacts to ecosystems or wildlife as well as inform strategies for future wind projects. Responsible development of offshore wind includes applying a framework of avoiding minimizing mitigating and monitoring impacts to wildlife and wildlife habitat. Even with best efforts to gather and consider all relevant information considerable uncertainty exists about how offshore wind will affect habitats and wildlife and we therefore urge SouthCoast to support conservation efforts for potentially impacted species and habitats.	SouthCoast Wind is continuing to develop its monitoring and mitigation plans as the Project progresses. Several plans are included in SouthCoast Wind's COP, including the Marine Mammal and Sea Turtle Monitoring and Mitigation Plan (Appendix O) and the Fisheries Communication Plan (Appendix W). SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework has been included as Attachment G-1 in Appendix G. SouthCoast Wind's Benthic Habitat Monitoring Plan and Fisheries Monitoring Plans has been included in Appendix G of the FEIS. SouthCoast Wind's Boulder Relocation Plan is still under development.
BOEM-2023-0011-0140-0046	Our groups are concerned however with the lack of detail about the mitigation measures mentioned in the DEIS. Several of the mitigation measures described in Appendix G of the DEIS lack specificity or are yet to be finalized. For example	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and

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	rather than require specific monitoring and mitigation measures as part of the DEIS BOEM states that it will require the applicant (1) to prepare and submit a passive acoustic monitoring (PAM) plan describing all equipment procedures and protocols to BOEM and NMFS no later than 180 days prior to buoy deployment and before any foundation pile driving begins; (2) to incorporate measures into COP approval required by the final MMPA Letter of Authorization (LOA) for Incidental Take Regulations; (3) develop and submit an Alternative Monitoring Plan to NMFS and BOEM at least 90 days prior to any pile-driving activities in the event that poor visibility conditions unexpectedly arise and pile-driving cannot be stopped if stopping pile driving would pose risks to human safety or cause pile instability; (4) develop and submit a Pile-Driving Monitoring Plan to BOEM Bureau of Safety and Environmental Enforcement and NMFS at least 90 days prior to any pile-driving activities; and (5) develop and submit a Sound Field Verification Plan to BOEM U.S. Army Corps of Engineers and NMFS at least 90 days prior to any pile-driving activities. [Footnote 105: SCW DEIS Appendix G page G-52.] [Footnote 105: SCW DEIS Appendix G page G-52.] [Footnote 106: SCW DEIS Appendix G page G-62.] [Footnote 107: SCW DEIS Appendix G page G-70.] [Footnote 108: SCW DEIS Appendix G page G-73.] [Footnote 109: SCW DEIS Appendix G page G-75.] The "plans" will not be made available for public comment and the LOA application is still processing. BOEM cannot expect the public to wait until the "plans" and LOA are finalized to understand the impact of proposed activities on marine mammals and sea turtles.	ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS. In January 2024, SouthCoast Wind submitted a "Supplemental North Atlantic Right Whale Monitoring and Mitigation Plan for Pile Driving" to NMFS to clarify mitigation measures intended to protect NARWs. This monitoring plan for pile driving is meant to supplement the existing monitoring and mitigation measures currently described in the request for Incidental Take Regulations (ITRs), which was deemed Adequate and Complete by NMFS on September 19, 2022.
BOEM-2023-0011-0140-0047	Short of entirely eliminating vessels from an area reducing speeds to 10 knots or less for all vessels is currently the only known way to reduce the risk of injury and mortality to marine mammals and sea turtles from vessel strikes. [Footnote 113: Schoeman Renée P. et al. 2020. A global review of vessel collisions with marine animals id.] We therefore urge BOEM to implement a mandatory year-round	A range of applicant- and agency-proposed mitigation measures that have been incorporated in the FEIS are outlined in Appendix G along with BOEM-proposed measures in Appendix G, Table G-2. Among these measures specific to vessel strikes include requiring vessels of all sizes operating port to port to reduce speeds to 10 knots or less between November 1 to April 30. This vessel speed reduction also

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	10 knot speed restriction on all Project vessels associated with SouthCoast Wind at all times (except in Nantucket Sound unless a Dynamic Management Area (DMA) is designated). [Footnote 114: If it is proven through peer-reviewed scientific study that an "Adaptive Plan" which modifies these vessel speed restrictions is equally or more effective than a 10-knot speed restriction BOEM and NMFS may allow SouthCoast Wind to use such a plan as an alternative to a 10-knot speed limit. The Adaptive Plan must be developed in consultation with BOEM and NMFS and must follow a scientific study design using vessels traveling 10 knots or less.] Given that any interaction between a vessel and a right whale poses an unacceptable risk of serious injury or mortality that will have population-level consequences these protections are vital.	applies while operating or transiting in any SMAs, DMAs, or slow zones. Both applicant- and agency-proposed measures require trained lookouts to be posted on all vessel transits during all phases of the Project. A PAM system, as part of the MMPA ITA, will be developed consisting of near real-time monitoring such that NARW or other large whale calls made in or near the transit corridor can be detected and transmitted to the transiting vessel. These measures are particularly protective to NARWs and the strict implementation of such measures would overall reduce the risk of vessel strikes to zero. For more information, please refer to Appendix G and the MMPA ITA (September 2022), Section 11.1.5 under *Vessel Strike Avoidance*.
BOEM-2023-0011-0140-0048	Under the vessel strike avoidance measures provided in the DEIS all Project-associated vessels must travel at 10 knots or less from November 1 through April 30 when transiting to from or within the SouthCoast Wind development area except within Nantucket Sound (unless an active DMA is in place) and except for crew transfer vessels. [Footnote 115: SCW DEIS Appendix G page G-15-16.] [Footnote 116: Page G-45 says through May 30 and page 3.5.6-36 states April 30. Which is correct? The NMFS-designated Block Island Seasonal Management Area (SMA) is proximate to the SDWA and requires vessels 65 feet and greater in length to travel at speeds of 10 knots or less from November 1 through April 30. https://www.fisheries.noaa.gov/national/endangered-species- conservation/reducing-vessel-strikes-north-atlantic-right-whales.] Crew transfer vessels may travel at speeds greater than 10 knots if there is at least one visual observer on duty at all times aboard the vessel to visually monitor for large whales and real-time PAM is conducted. If a right whale is detected via visual observation or PAM within or approaching the transit route all crew transfer vessels must travel at 10 knots or less for the remainder of the day. All Project-associated vessels must also travel at 10 knots or less	Seasonal management areas (SMA) are in effect between November 1 through April 30. Within these SMAs, all vessels greater than 65 ft (19.8 m) in overall length must operate at speeds of 10 knots or less. The Block Island Sound SMA overlaps with the southern portion of the MA WEA and is also active between November 1 and April 30 each year. As the Cape Cod Bay SMA is active between January 1 to May 15, SouthCoast Wind will extend and adhere to vessel speed reductions through May 30. Should any visually- or acoustically- detected NARW occur outside of this period, a dynamic management area (DMA) or Right Whale Slow Zone would be triggered. Vessel operators would then be provided maps and coordinates indicating areas where right whales have been detected. For a period of 15 days after a whale is detected, vessel operators would avoid these areas or reduce speeds to 10 knots or less in order to transit these areas. Thus, active visual and acoustic detection of marine mammals would reduce any collision risks outside of the SMA period.

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	within any DMA Seasonal Management Area or slow zone designated by NMFS year-round. Crew transfer vessels traveling within any designated DMA must travel at 10 knots or less unless NARWs are confirmed to be clear of the transit route and Lease Area for 48 hours as confirmed by either vessel-based surveys conducted during daylight hours and PAM or by an aerial survey conducted once the lead aerial observer determines adequate visibility. If confirmed clear by one of these measures vessels transiting within a DMA must employ at least two visual observers on duty to monitor for NARWs. If a NARW is observed within or approaching the transit route vessels must operate at 10 knots or less until clearance of the transit route for two consecutive days is confirmed by the procedures described above. These measures still leave right whales vulnerable to vessel strike outside of the November 1-April 30 period and are reliant on a consistently high probability of real-time detection of right whales in order to trigger the designation of DMAs which likely cannot be attained at a level that would detect every single animal based on currently available technology. We note that NMFS has proposed a new larger "Atlantic Seasonal Speed Zone (SSZ)" that would completely cover SouthCoast Wind's project Area from November 1 through May 30 as part of a Proposed Rule to amend the Vessel Speed Rule. [Footnote 117: Amendments to the North Atlantic Right Whale Vessel Strike Reduction Rule 87 Fed. Reg. 46921 46926 (Aug. 1 2022).] Several of our groups spoke in strong support of the proposed amendments to the Vessel Speed Rule–with certain improvements as detailed in our letters–because they would significantly reduce the risk of mortality and injury of right whales from vessel strike; however the Proposed Rule is not yet in effect and there is no guarantee it will be finalized as written. [Footnote 118: E.g. Dynamic Speed Zones should be triggered following the confirmed detection of a single North Atlantic right whale.] Moreover even if the Atlantic SSZ is implemented as proposed current evidence demonstrates	

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	that right whales may be at risk of vessel strike year-round including outside of the November 1-May 30 season.	
BOEM-2023-0011-0140-0049	Outside of the enhanced mitigation area near Nantucket Shoals BOEM proposes a four-month seasonal restriction on impact pile driving from January 1 through April 30 to minimize impacts to North Atlantic right whales. [Footnote 120: SCW DEIS page 3.5.6-42.] However these dates do not reflect the best available scientific information for the Project Area and broader region where right whales are often detected outside of this period. Since 2010 the distribution and habitat use of North Atlantic right whales and other large whale species off the U.S. East Coast has shifted in response to climate change-driven shifts in prey availability. [Footnote 121: E.g. Davis G.E. Baumgartner M.F. Bonnell J.M. Bell J. Berchok C. Bort Thornton J. Brault S. Buchanan G. Charif R.A. Cholewiak D. and Clark C.W. 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) p.13460; Davis G.E. Baumgartner M.F. Corkeron P.J. Bell J. Berchok C. Bonnell J.M. Bort Thornton J. Brault S. Buchanan G.A. Cholewiak D.M. and Clark C.W. 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) pp.4812-4840; Meyer-Gutbrod E.L. Greene C.H. Davies K.T. and Johns D.G. 2021. Ocean regime shift is driving collapse of the North Atlantic right whale population. Oceanography 34(3) pp.22-31.] Best available scientific data indicates that North Atlantic right whales now rely heavily on the waters within and in the vicinity of the SouthCoast Wind Project Area year-round and that this area is increasing in habitat importance for the species.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0050	The Project Area is situated within important habitat for socializing and feeding right whales and protection of animals while foraging and mating is essential to the survival of the	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and

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	species. 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 129: Van der Hoop Julie et al. "Foraging rates of ramfiltering North Atlantic right whales." Functional Ecology 33 (2019): 1290-1306; Plourde Stephane et al. "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 (2019): 667-685; Lehoux Caroline Plourde Stephane and Lesage Veronique "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 Katherine et al. "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. As previously noted 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 130: Van der Hoop Julie et al. "Foraging rates of ramfiltering North Atlantic right whales" supra.] Undisturbed access to foraging habitat is therefore necessary to adequately protect the species as is the minimization of disturbance during the species' energetically expensive migration.Virtually all whale species and small cetaceans regularly occurring in this area have been observed feeding in and close to the SouthCoast Wind Project Area. [Footnote 131: Quintana-Rizzo Ester et al. "Residency demographics and movement patterns of North Atlantic right	ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	whales Eubalaena glacialis in an offshore wind energy development in Southern New England USA" supra.] Oceanographic studies in the area which were part of the NLPSC campaigns confirmed the presence of a zooplankton community composition similar to that of Cape Cod Bay which is a known hotspot for right whale feeding. [Footnote 132: Id.; O'Brien Orla et al. "Repatriation of a historical North Atlantic right whale habitat during an era of rapid climate change" supra.] A feeding BIA for fin whales is designated March to October east of Montauk Point and feeding humpback whales are regularly observed particularly during March and April. [Footnote 133: LaBrecque E. et al. (2015). Biologically important areas for cetaceans within U.S. waters – East Coast region supra.] [Footnote 134: Leiter Sarah M. et al. "North Atlantic right whale Eubalaena glacialis occurrence in offshore Wind Energy Areas near Massachusetts and Rhode Island USA" supra.] Courtship behaviors in the area have also been observed by humpback whales. [Footnote 135: Kraus Scott. D. et al (2016). Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles supra.]Based on these above-described findings of right whale habitat use and the importance of the area for multiple age classes socializing animals and most importantly as core foraging habitat we recommend BOEM extend the time period of the proposed seasonal restriction (outside the Nantucket Shoals enhanced mitigation area) to December 1 through April 30 to reflect the period of highest detections of vocal activity sightings and abundance estimates of North Atlantic right whales. [Footnote 136: Enhanced mitigation area refers to the area delineated in Figure G-1 at SCW DEIS Appendix G at G-54.] We also underscore that the species should be expected to be found throughout the year in and close to the Project Area and the most stringent impact avoidance minimization and mitigation are required to protect this species at all times during potentially harmful construction activities.While BOEM must minimize existing	

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	and potential stressors to the North Atlantic right whale the agency must also address potential impacts to other protected large whale and small cetacean species. It is imperative that BOEM fully account for the consequences of any proposed North Atlantic right whale seasonal restriction on other protected species and evaluate alternative risk reduction strategies sufficiently protective of multiple species. Requiring a robust and scientifically proven near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species for use during impact pile driving and potentially other noise-generating activities would support the development of alternatives.	
BOEM-2023-0011-0140-0051	Commencement of Impact Pile Driving During Periods of Darkness or Poor Visibility Must Be Prohibited Following the mitigation hierarchy we believe BOEM should prioritize impact avoidance and support the consideration of Alternatives E-2 or E-3 which would employ quiet foundation technologies that avoid pile driving noise entirely and significantly reduce noise impacts to marine mammals and other marine life overall. As we noted previously in these comments and in our past comments on other projects quiet foundation types can afford developers significant flexibility in the construction schedule including potentially year-round and 24-hour construction in some areas. In our view these incentives should be fully explored by BOEM and industry. Noise impacts pose a serious risk to many marine mammal species and as our groups have previously communicated to BOEM we are extremely concerned that offshore wind developers are proposing to commence pile driving at night. As acoustic models for this and other projects demonstrate impact pile driving generates levels of noise harmful to marine mammals over large distances. It is imperative that no right whale or other marine mammal species is present in the applicable Clearance Zone when pile driving starts. We therefore appreciate BOEM prohibiting SouthCoast Wind	In the Draft EIS, BOEM analyzed the use of foundation types that would not require pile driving, including suction bucket and gravity-based foundations, and would therefore avoid significant noise impacts associated with foundation installation. BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS. Regarding nighttime pile driving, BOEM has clarified the mitigation measure regarding the conditions in which nighttime pile driving could occur and the requirement for a monitoring plan if nighttime pile driving would occur.

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	from initiating impact pile driving within 1.5 hours of civil sunset and this requirement should be carried forth to the Final EIS. [Footnote 137: SCW DEIS at Appendix G Table G-2 at G-71.]We note however that this prohibition is contradicted in the DEIS by an applicant proposed measure to start or continue pile driving at night or in poor visibility conditions "during the period when NARW are less likely to be present" (June 1 through November 30)." [Footnote 138: SCW DEIS at Appendix G Table G-2 at G-44.] These two measures are mutually exclusive and must be clarified in the FEIS. Impact pile driving started at least 1.5 hours prior to civil sunset during good visibility conditions can continue after dark as necessary providing passive acoustic monitoring and the best available infrared technologies are used to support visual monitoring of the clearance and exclusion zones during periods of darkness (see Attachment 1). [Footnote 139: It should be noted that even the best available infrared technologies may still be insufficient given that the majority of detections in dark conditions were within 50 meters. Furthermore mounted infrared camera systems detected marine mammals at a relatively low rate despite the increased effort of Protected Species Observers with these systems compared to night vision devices or passive acoustic monitoring. Smultea Environmental Sciences LLC (Smultea Sciences). 2021. Review of night vision technologies for detecting cetaceans from a vessel at sea. Prepared for Ørsted North America 399 Boylston St. 12th Floor Boston MA 02116 by M.A. Smultea G. Silber P. Donlan D. Fertl and D. Steckler.]In the case that SouthCoast Wind elected to initiate pile driving at night or during low visibility conditions for reasons of safety and operational feasibility BOEM requires the applicant to submit an "alternative monitoring plan" for review and approval by BOEM and NMFS at least 90 days prior to the planned start of pile driving. [Footnote 140: It is our understanding from the DEIS that these are the only two circumstances under which SouthCoast Wind would elect to	

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	pile drive at night or during conditions with impaired visibility but BOEM should clarify this in the Final EIS.] [Footnote 141: SCW DEIS Appendix G Table G-2 at G-74. "Include an Alternative Monitoring Plan that provides for enhanced monitoring capabilities in the event that poor visibility conditions unexpectedly arise and pile driving cannot be stopped. The Alternative Monitoring Plan must also include measures for deploying additional observers using night vision goggles or using PAM with the goal of ensuring the ability to maintain all clearance and shutdown zones in the event of unexpected poor visibility conditions. Describe a communication plan detailing the chain of command mode of communication and decision authority must be described. PSOs as determined by NMFS and BOEM must be used to monitor the area of the clearance and shutdown zones. Seasonal and species-specific clearance and shutdown zones must also be described in the PDM [Pile- Driving Monitoring] Plan including time-of-year requirements for NARWs. A copy of the approved PDM Plan must be in the possession of the lessee representative the PSOs impact-hammer operators and any other relevant designees operating under the authority of the approved COP and carrying out the requirements on site."] We are supportive of this approach only if initiation of impact pile driving at night is prohibited unless the alternative monitoring plan is approved and only if the technologies and methodologies proposed are independently and scientifically proven (i.e. via peer-reviewed scientific study) to have detection rates that are equally or more effective than can be achieved by monitoring during daylight hours with good visibility conditions. BOEM should clearly lay out in the Final EIS what information is required to be provided by the developer and what criteria BOEM and NMFS will use to evaluate its reliability considering the public will not be able to comment on this plan. BOEM should also consider that vessels operating at night may be more likely to strike a right	

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	whale or other large whale species due to a lack of detectability.	
BOEM-2023-0011-0140-0052	Appendix G of the DEIS mentions that the Applicant will employ noise attenuation mitigation during all pile-driving activities. [Footnote 143: SCW DEIS Appendix G pages G-14 and G-18.] However the use of noise attenuation is not anticipated for other noise- producing activities. It is important for BOEM to acknowledge that noise generated by these activities (i.e. vibratory pile driving cofferdam installation etc.) may disturb marine life and for the agency to i) monitor noise generated by all construction activities and ii) require noise reduction and attenuation measures if noise levels exceed that which could potentially harm or disturb marine mammals. We have stressed the most effective way to reduce noise during construction is to install quieter foundation types. Again while we support Alternatives E-2 and E-3 if pile driving cannot be avoided we encourage BOEM to work closely with NOAA Fisheries on activities that could lead to greater levels of noise reduction during impact pile driving for future projects as noise minimizing approaches during discrete phases of development have been identified by experts as the most promising solution to overcoming noise challenges associated with offshore wind development. [Footnote 144: Lee J. and Southall B. Practical Approaches for Reducing Ocean Noise Associated with Offshore Renewable Energy Development. Global Alliance for Managing Ocean Noise Workshop Report. 2022 [hereinafter GAMeON 2022].] Such activities may include the development of a noise reduction standard (akin to the German standard for harbor porpoise) that is tailored to protect species of concern in U.S. waters and designed to account for the larger diameter monopiles planned to be installed as well as other project- and site-specific conditions in the United States. [Footnote 145: Note that building robust regulatory standards for noise reduction and attenuation which can be used internationally was identified by ocean noise experts as an important next	SouthCoast Wind has committed to and BOEM has included additional measures to mitigate impacts on vibratory pile driving (refer to Appendix G) including establishing clearance zones to avoid impacts on sensitive species. In the Draft EIS, BOEM analyzed the use of foundation types that would not require pile driving, including suction bucket and gravity-based foundations, and would therefore avoid significant noise impacts associated with foundation installation. BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	step (GAMeON 2022). Our groups support this recommendation and encourage BOEM's rapid development of this standard.] Given that underwater noise pollution negatively affects species across frequency hearing groups in the pursuance of this standard we encourage BOEM and NOAA Fisheries to consider a hybrid approach where risk is reduced for low- mid- and high frequencies rather than solely at the low frequencies at which right whales are most vulnerable. A hybrid approach would help support overall marine ecosystem health rather than prioritize a single species or species group (i.e. low-frequency hearing cetaceans).	
BOEM-2023-0011-0140-0058	Entanglement in abandoned fishing gear contributes significantly to mortality and serious injury of marine mammals and sea turtles particularly the North Atlantic right whale. In fact mortality due to fishing gear entanglement may actually be higher than estimated due to cryptic mortality. [Footnote 160: Pace 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.] We encourage BOEM and the developer to create a marine debris mitigation plan in addition to the existing requirement that vessel operators employees and contractors complete marine debris awareness training. In addition BOEM should fully describe the mitigation and monitoring measures that the agency intends to require in the Final EIS to reduce entanglement risk posed to sea turtles from fishing gear and marine debris.	BOEM included in the Draft EIS (refer to Appendix G) an agency proposed mitigation measure, BA-29, BA-30, and BA-30, which include marine debris awareness training, reporting requirements, and monitoring. BOEM also included BA-33, which specifically addresses mitigation for sea turtle entanglement.
BOEM-2023-0011-0140-0091	Given that the two cable landfalls will occur where sensitive subaquatic vegetation habitats are present the use of HDD is crucial for avoiding and minimizing environmental impacts. Although SouthCoast Wind has already committed to employing HDD for the project's landfall BOEM should require use of HDD as a condition for project approval.	SouthCoast Wind has proposed the use of HDD at all cable landfall locations in its COP. If BOEM approves the COP, SouthCoast will be required to adhere to the development plans contained in the COP and any other conditions imposed by BOEM.

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BOEM-2023-0011-0140-0095	BOEM should require SouthCoast Wind to develop and implement an anchoring plan as a condition of COP approval. Such a plan should delineate areas of complex and sensitive habitat around each turbine and cable locations and identify areas restricted from anchoring. To further reduce impacts BOEM should require to the extent practicable SouthCoast Wind to employ microrouting of the export cable corridor to avoid siting in complex benthic habitats and other sensitive habitat areas particularly in the area of Muskeget Channel which features a high proportion of complex habitats. Similarly as proposed by BOEM SouthCoast Wind should be required to limit boulder clearance activities in order to avoid minimize and mitigate impacts to complex habitats.	As stated in the Anchoring subsection of Section 3.5.2.5, SouthCoast Wind has committed to avoiding habitat loss to benthic resources during construction by selecting lower impact construction methods, where possible, which would include avoiding anchoring on sensitive habitat such as eelgrass beds and hard-bottom habitats. Table 3.5.2-3 which was added to Section 3.5.2.11 presents BOEM-proposed mitigation measures including one measure that requires that boulder clearance be limited to the extent practicable and best efforts should be made to microsite to avoid these areas. Further, the Cable emplacement and maintenance subsection in Section 3.5.5.5 identifies potential anchoring and boulder clearance areas along the Falmouth and Brayton Point ECCs and efforts to minimize impacts at these locations.
BOEM-2023-0011-0140-0096	As proposed BOEM should also require SouthCoast Wind to undertake pre-construction construction and installation and post-construction monitoring of benthic habitats and fisheries in the Project Area. The Draft EIS provides few details on these monitoring studies. At a minimum BOEM should require SouthCoast Wind to conduct the necessary pre-construction construction and post-construction monitoring of benthic habitats and associated flora and fauna to detect any physical changes and impacts to these habitats and species that occur because of construction activities the presence of WTG structures in the water columns hydrodynamic effects EMF noise and other impacts. Regarding hydrodynamic effects the plan should attempt to monitor hydrodynamic impacts in the area of Nantucket Shoals that is in the vicinity of the lease area as well as the proposed 20-km Nantucket Shoals buffer that overlaps the lease area. Moreover the monitoring plan should require SouthCoast Wind to monitor impacts to sensitive habitats in the export cable corridors including in Muskeget Channel the Sakonnet River and Mount Hope Bay. The monitoring plan should also evaluate impacts to juvenile cod HAPC and	BOEM has proposed mitigation measure BA-3, which would require SouthCoast Wind conduct fisheries and benthic habitat monitoring surveys during pre-construction, construction, and post-construction phases of the Project (refer to Table G-2 in Appendix G), which would include monitoring of sensitive habitat in the Muskeget Channel, Sakonnet River, and Mount Hope Bay. Another BOEM-proposed mitigation measure MA-1, would require that boulder clearance be limited to the extent practicable and best efforts should be made to microsite to avoid these areas. SouthCoast Wind has developed draft monitoring and mitigation plans benthic resources and fisheries. Details on these plans for finfish and benthic species within the Project area are provided under the Gear Utilization IPF of Section 3.5.5.5, *Impacts of Alternative B – Proposed Action on Finfish, Invertebrates, and Essential Fish Habitat*. As part of SouthCoast Wind's NPDES permit application submitted to USEPA (TetraTech and Normandeau Associates, Inc. 2023), the impingement, entrainment, and thermal discharge impacts of the open-loop cooling water intake

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	whether cable protection and/or burial is mitigating impacts to these habitats. [Footnote 374: We note that we have concerns about the route of the Brayton Point export cable corridor up the Sakonnet River because of its designation as juvenile cod HAPC and the presence of boulder fields Crepidula reefs and other complex habitats in the river. While we do not recommend that BOEM select Alternative C–which would avoid siting the export cable corridor in the river–due to questions regarding its feasibility we urge BOEM to require South Coast Wind to utilize microrouting in the Sakonnet River to the greatest extent practicable to avoid these sensitive habitats and to implement robust monitoring to measure any impacts to juvenile cod HAPC and other EFH in the river.] Finally if there is an open loop cooling system at the converter station the monitoring plan should evaluate the impacts from entrainment and impingement of marine organisms as well as the impact of thermal water discharge to the ecosystem.	system were assessed. A summary of these results is presented in the Discharges/intakes subsection of Section 3.5.2.5. Further, SouthCoast Wind plans to monitor the hydrodynamic changes within the Lease Area (Appendix F4 - Nantucket Shoals Hydrodynamic Impacts Study; SouthCoast Wind Incidental Take Application (LGL 2024).
BOEM-2023-0011-0140-0097	Additionally due to the predominance of complex habitat in Muskeget Channel the area may be an Atlantic cod spawning ground. Therefore in advance of construction BOEM should require Atlantic cod spawning surveys and deployment of passive acoustic monitoring capable of detecting the vocalizations of spawning cod in the area of Muskeget Channel to further the understanding of the impacts of offshore wind on cod spawning. Monitoring measures to detect the presence of spawning cod in Muskeget Channel and any impacts from offshore wind development is especially important because of cod spawning site fidelity. Cod spawning monitoring could inform the development of adaptive management mitigation measures to reduce impacts if needed. For example if based on monitoring BOEM determined that time-of-year restrictions on cable emplacement activities in Muskeget Channel would reduce impacts to cod spawning BOEM should require South Coast	A fisheries monitoring plan (SouthCoast Wind 2022) has been developed for the portion of the Brayton Point ECC in Rhode Island state waters in accordance with the Rhode Island Ocean Special Area Management Plan (OSAMP), the Baseline Assessment Requirements in state waters, and other applicable sections of the Rhode Island Code of Regulations to characterize abundance and size structure, as well as, presence, movement, and behavior of key fisheries species during the pre-construction, construction, and post-construction phases of the project. The species targeted by monitoring efforts will include the striped bass (Morone saxatillis), summer flounder (Paralichthys dentatus), tautog (Tautoga onitis), false albacore (Euthynnus alletteratus), channeled whelk (Busycotypus canaliculatus), and knobbed whelk (Busycon carica) with acoustic telemetry and trap surveys as the primary monitoring methodologies. FMPs for other project areas are currently in development.

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	Wind to implement such adaptive restrictions on construction activities in Muskeget Channel.	SouthCoast Wind will conduct acoustic telemetry monitoring along the Brayton Point ECC at the mouth of the Sakonnet River using a 12-receiver array of fixed station acoustic receivers to monitor the movements, presence, and persistence of several commercially and recreationally important species (e.g., striped bass, summer flounder, tautog, and false albacore). Receivers will be deployed in early spring and retrieved in late fall to ensure seasonal overlap with the target species. Target fish species within the area in and around the receiver array will be captured via rod-and-reel, implanted with Vemco acoustic transmitters, and released back into the ocean. Acoustic telemetry methodologies have been used extensively in fisheries research (Hussey et al. 2015; Freiss et al. 2021) and mortality of tagged fish is expected to be low. SouthCoast Wind will also conduct a trap survey to monitor whelk relative abundance and size structure along commercially fished sections of the Brayton Point ECC in the Sakonnet River. The survey will identify potential impacts from the short-term disturbance of submarine cable installation on the localized channeled and knobbed whelk resources. Sampling will occur from May to November to align with the commercial fishery for whelk within Narragansett Bay at four stations to be selected with input from the commercial fishing industry. In the absence of standardized whelk survey practices, SouthCoast Wind has consulted with the local whelk fleet regarding trap design and intends to deploy three six-trap strings that will be laid parallel to the export cable at each of the four sampling locations using a Before-After Gradient (BAG) survey design. One string will be set on top of the cable as the impact gradient, one string will be placed 15-30 m from the impact string, and the third string will be set 50 m or greater from the impact string. Traps will be spaced 30 m apart for a total ground-line length of 150 m. The use of traps could result in unavoidable impacts to habitat-forming invertebrates that

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		comprise an important component of habitat for some EFH species. The extent of habitat disturbance and number of organisms affected could be comparable to and limited in extent relative to the baseline level of impacts from commercial fisheries. All whelk and bycaught species caught will be separated by species, enumerated, and weighed to obtain catch per unit effort (CPUE) estimates on a per trap basis. To maintain a record of all species caught, additional bycaught species will be separated and enumerated. To collect shell measurements for whelk caught, a measuring board fitted with a sliding edge will be used to record shell height, width, and length to the nearest millimeter (mm). Bycaught finfish length sampling will be species dependent and utilize either fork length or total length, depending on the standard for each species to the nearest centimeter (cm). Any American lobster (Homarus americanus) or Jonah crab (Cancer borealis) caught will be sampled in accordance with regional survey sampling protocols. For lobster, these parameters include recording carapace length (to the nearest mm), sex, shell hardness, shell disease state, egg stage for egg-bearing females, cull status, and note the presence/absence of a V-notch. For Jonah crab, these parameters include recording carapace width measurements, sex, presence/absence of eggs, molt condition, and shell disease state.
BOEM-2023-0011-0140-0098	Noise: Quieter foundation technologies such as gravity-based or suction bucket (or “caisson”) foundations eliminate the need for pile driving and thus one of the most impactful offshore wind activities on whales and other marine life. We urge the use of quieter foundations during offshore wind energy project installation and stress the importance of providing full consideration to selecting these options as the preferred alternative. If pile driving must occur effective noise reduction and attenuation technologies are commercially available and near real-time monitoring technologies that can be used to trigger mitigation measures are being tested or are	In the Draft EIS, BOEM analyzed the use of suction bucket and gravity-based foundations. Various mitigation measures are proposed in Appendix G to minimize noise impacts on marine wildlife. SouthCoast Wind is currently considering both direct drive and geared drive WTGs. Operational noise impacts are analyzed in Section 3.5.6.

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	already being used by other sectors. [Footnote 8: See e.g. "AdBm Noise Mitigation System." AdBm Technologies. https://adbmtech.com/][Footnote 9: See e.g. Coutinho R.W. and Boukerche A. (2021). "North Atlantic Right Whales Preservation: A New Challenge for Internet of Underwater Things and Smart Ocean-Based Systems." IEEE Instrumentation & Measurement Magazine 24(3) 61-67; Kowarski K.A. Gaudet B.J. Cole A.J. Maxner E.E. Turner S.P. Martin S.B. Johnson H.D. and Moloney J.E. (2020). "Near real-time marine mammal monitoring from gliders: Practical challenges system development and management implications." The Journal of the Acoustical Society of America 148(3) 1215-1230; Johnson H. Morrison D. and Taggart C. (2021). "WhaleMap: a tool to collate and display whale survey results in near real-time." Journal of Open Source Software 6(62) 3094; Vickers W. Milner B. Risch D. & Lee R. (2021). "Robust North Atlantic right whale detection using deep learning models for denoising." Journal of the Acoustical Society of America 149 3797.] Pending further study we also recommend the use of direct drive turbines as opposed to turbines with a gear box as direct drive turbines may emit lower noise levels and reduce the risk of behavioral disturbance or habitat displacement of North Atlantic right whales and other species during the operation phase of development. [Footnote 10: Stöber U. and Thomsen F. (2021). "How could operation sound from future offshore wind turbines impacts marine life?" The Journal of the Acoustical Society of America 149 1791.] [Footnote 11: While gravity-based and suction bucket 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. As gravity-based and suction bucket foundations are new technologies 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	

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	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 these foundation types are used.]	
BOEM-2023-0011-0140-0099	Section 1. Mitigation recommendations during site assessment and characterization Prohibit site assessment and site characterization activities during times of highest risk (North Atlantic right whales only):1. Site assessment and characterization activities involving high resolution geophysical survey equipment with noise levels that could injure or harass large whales (defined throughout this section as: source levels at frequencies between 7 and 35 kHz) should not occur during periods of highest risk to North Atlantic right whales. These periods are defined as times of highest relative density of animals during foraging and migration and times when mother- calf pairs pregnant females surface active groups (indicative of breeding or social behavior) or aggregations of three or more whales (indicative of feeding or social behavior) are or are expected to be present. Time periods must be defined based on the best available scientific information.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 the system and protocol may be used to dynamically manage the timing of site assessment and characterization activities to ensure those activities are undertaken during times of lowest risk for all relevant large whale species. The development of such a protocol is particularly important where foraging aggregations of other large whale species are observed coincident with the times that pile driving would most likely be undertaken based on times of lower relative risk to North Atlantic right whales.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0100	Require diel restrictions on site assessment and characterization activities:1. Site assessment and characterization activities must not be initiated within 1.5	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and

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	hours of civil sunset or in times of low visibility when the visual “clearance zone” and “exclusion zone” (as defined below) cannot be visually monitored as determined by the lead Protected Species Observer (PSO) on duty. [Footnote 14: The term “PSO” refers to an individual with a current NOAA Fisheries approval letter as a Protected Species Observer.]	ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0101	Require the following clearance zone and exclusion zone distances prior to activities known to injure or harass large whales (large whales only):1. A visual clearance zone and exclusion zone of at least 500 m for all large whale species and 1000 m for North Atlantic right whales must be established around each vessel conducting activities with noise levels that could result in injury or harassment to large whales.2. An acoustic clearance zone and exclusion zone of at least 1000 m must be established for North Atlantic right whales around each vessel conducting activities with noise levels that could result in injury or harassment to large whales.3. If a large whale is detected within the 1000 m clearance zone but the species cannot be identified it must be assumed to be a North Atlantic right whale.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0102	Require shutdown of activities if a large whale is detected visually or acoustically (large whales only):1. If a North Atlantic right whale or other large whale species is visually or acoustically detected within the relevant clearance zone site assessment and characterization activities with noise levels that could result in injury or harassment to large whales must not be initiated.2. If a North Atlantic right whale or other large whale species is visually detected within the visual exclusion zone site assessment and characterization activities with noise levels that could result in injury or harassment to large whales must be halted.3. If a North Atlantic right whale is acoustically detected within the acoustic exclusion zone site assessment and characterization activities with noise levels that could result in injury or harassment to large whales must be halted.4. Once halted site assessment and characterization	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	activities may resume following the methods set forth in subsection (v) and after the lead PSO confirms no North Atlantic right whales or other large whale species have been detected within the relevant acoustic and visual clearance zones.	
BOEM-2023-0011-0140-0103	Require robust monitoring protocols during pre-clearance and when site assessment and characterization activities are underway:1. Monitoring of the acoustic clearance zone must be undertaken using near real-time passive acoustic monitoring (PAM) and must be undertaken from a vessel other than the survey vessel or from a stationary unit to avoid the hydrophone being masked by the survey vessel or development-related noise. [Footnote 15: Throughout this document "PAM" refers to a real-time passive acoustic monitoring system with equipment bandwidth sufficient to detect the presence of vocalizing North Atlantic right whales and/or if available at the time of construction other similar high performance sound monitoring systems and arrays).]2. Monitoring of the visual clearance zone must be undertaken by vessel-based PSOs stationed on the survey vessel to enable monitoring of the entire clearance zones for North Atlantic right whales other large whale species and sea turtles. 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. To effectively monitor the full exclusion zone for sea turtles 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.3. Acoustic and visual monitoring must be required for North Atlantic right whales and monitoring must begin at least 30 minutes prior to the commencement or re-initiation of site assessment and characterization activity and must be conducted throughout the duration of activity	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0104	Require mandatory vessel speed restrictions:1. All Project-associated vessels must adhere to a 10-knot speed restriction	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles

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	at all times except for reasons of safety and in all places except in limited circumstances where the best available scientific information demonstrates that whales do not occur in the area.2. Slowing to 4 knots must be required while transiting through areas of visible jellyfish aggregations or floating vegetation lines or mats to improve protection for sea turtles. The speed must be reduced from an upper limit of 10 knots.3. Project proponents may develop in consultation with National Oceanic and Atmospheric Administration (NOAA) Fisheries an "Adaptive Plan" that modifies these vessel speed restrictions. However the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven 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. [Footnote 16: I.e. via a peer-reviewed scientific study.]	and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0105	Implement other vessel-related measures:1. All personnel working offshore must receive training on observing and identifying North Atlantic right whales other large whale species and sea turtles.2. Vessels must maintain a separation distances of 500 m for North Atlantic right whales and 100 m for other large whale species maintain a vigilant watch for North Atlantic right whales and other large whale species and slow down or maneuver their vessels as appropriate to avoid a potential interaction with a North Atlantic right whale or other large whale species.3. All vessels responsible for crew transport should use thermal detection systems to supplement visual monitoring of marine mammals.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0106	Require underwater noise reduction to the fullest extent feasible:1. The impacts of underwater noise to be minimized to the fullest extent feasible including through the use of technically and commercially feasible and effective noise reduction and attenuation measures. For example project	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	proponents should select and operate sub- bottom profiling systems at power settings that achieve the lowest practicable source level for the objective.	
BOEM-2023-0011-0140-0107	Require mandatory reporting of all North Atlantic right whale other large whale species and sea turtle detections:1. Project proponents must report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the United States 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 pre-set cycle.2. Project proponents must immediately report an entangled or dead North Atlantic right whale other large whale species or sea turtle to NOAA Fisheries the Marine Animal Response Team (1-800-900-3622) or the United States Coast Guard immediately via one of several available systems (e.g. phone app radio). Methods of reporting are expected to advance and streamline in the coming years and projects should commit to supporting and participating in these efforts.3. Quarterly reports of PSO sightings data must be made publicly available to inform marine mammal and sea turtle science and protection.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0108	Prohibit pile driving during times of highest risk (North Atlantic right whales only):1. Pile driving must not occur during periods of highest risk to North Atlantic right whales defined as times of highest relative density of animals during foraging and migration and times when mother-calf pairs pregnant females surface active groups (indicative of breeding or social behavior) or aggregations of three or more whales (indicative of feeding or social behavior) are or are expected to be present. Time periods must be defined based on the best available scientific information.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 the system and protocol may be used	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	to dynamically manage the timing of pile driving and other construction activities to ensure those activities are undertaken during times of lowest risk for all relevant large whale species. The development of such a protocol is particularly important where foraging aggregations of other large whale species are observed coincident with the times that pile driving would most likely be undertaken based on times of lower relative risk to North Atlantic right whales.	
BOEM-2023-0011-0140-0109	Restrict pile driving activity at night and during periods of low visibility (all large whale species and sea turtles):1. Pile driving must 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 and if required night-time monitoring protocols are followed (see subsection (v)). [Footnote 17: Throughout this document "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 (or their alternate) 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.]	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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BOEM-2023-0011-0140-0110	Require underwater noise reduction levels based on best commercially available technology(all large whale species):1. A combination of near field and far field noise mitigation and/or a combination system expected to achieve at least 15dB (re: 1µPa2s) reduction of Sound Exposure Level (SEL) from pile driving operations including pile strikes compressors and operations vessels engaged in construction must be used. [Footnote 18: E.g. reduced blow resonant panel noise abatement system (e.g. AdBm Noise Mitigation System. https://adbmtech.com/) hydrosound damper (e.g. OffNoise-Solutions Hydro-Sound-Damper-System (HSD-System). https://www.offnoise- solutions.com/) isolation casing (Noise Mitigation Screen (NMS)) and dewatered cofferdam (see Koschinski S. and Lüdemann. K. (2020). "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. https://tethys.pnnl.gov/publications/noisemitigation-construction-increasingly-large-offshore-wind-turbines).] [Footnote 19: E.g. single bubble curtain.] [Footnote 20: E.g. double bubble curtain.] [Footnote 21: Sound Exposure Level (SEL) is defined following Bellmann et al. (2020) at 31-32. Bellmann M. A. Brinkmann J. May A. Wendt T. Gerlach S. & Remmers P. (2020) "Underwater noise during the impulse pile-driving procedure: Influencing factors on pile- driving noise and technical possibilities to comply with noise mitigation values." Supported by the Federal Ministry for the Environment Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt Naturschutz und nukleare Sicherheit (BMU)) FKZ UM16 881500. Commissioned and managed by the Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie (BSH)) Order No. 10036866. Edited by the itap GmbH. https://www.itap.de/media/experience_report_underwater_era-report.pdf.] [Footnote 22: Taking as a baseline projections	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	from prior noise measurements of unmitigated piles from Europe and North America. We note that combination systems using best available technology have achieved noise reduction levels 20 dB or more in the field. The goal should be to achieve the greatest noise reduction level possible in line with the principles of the mitigation hierarchy. Greater noise reduction levels could also provide more flexibility for developers. See Bellmann et al. (2020) at Table 4 (p. 106). https://www.itap.de/media/experience_report_underwater_era-report.pdf.] At minimum a 10 dB (re: re: 1µPa2s) reduction of SEL must be attained.2. Field measurements must be conducted on the first pile installed and data must be collected from a random sample of piles throughout the construction period. We do not support field testing using unmitigated piles.3. Sound source validation reports of field measurements must be evaluated by both BOEM and NOAA Fisheries prior to additional piles being installed and be made publicly available.	
BOEM-2023-0011-0140-0111	Require the following clearance zone distances prior to pile driving and exclusion zone distances during pile driving (for a minimum of 10-12 dB noise reduction (see subsection (iii)); North Atlantic right whales only):1. A visual clearance zone and exclusion zone must extend at minimum 5000 m in all directions from the location of the driven pile.2. An acoustic clearance zone must extend at minimum 5000 m in all directions from the location of the driven pile.3. An acoustic exclusion zone must extend at minimum 2000 m in all directions from the location of the driven pile.4. Clearance and exclusion zone distances for other large whale species must be designed in a manner that eliminates Level A take and minimizes behavioral harassment to the full extent practicable.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0112	Require shutdown of activities if a large whale is detected visually or acoustically (for a minimum of 10-12 dB noise reduction (see subsection (iii)); North Atlantic right whales	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and

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	only):1. Pile driving must not be initiated when monitoring methods defined in subsection (vi) result in either an acoustic detection within the acoustic clearance zone or a visual detection within the visual clearance zone of one or more North Atlantic right whales.2. Pile driving must not be initiated or if already underway must be shut down unless continued pile driving activities are necessary for reasons of human safety or installation feasibility when monitoring methods defined in subsection (vi) result in acoustic detection within the acoustic exclusion zone or a visual detection within the visual exclusion zone of one or more North Atlantic right whales.3. Pile driving must be shut down unless continued pile driving activities are necessary for reasons of human safety or installation feasibility if a North Atlantic right whale is visually detected by PSOs at any distance from the pile.4. Once halted pile driving may resume only after using the methods set forth in subsection(vi) 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.	ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0113	Require robust near real-time monitoring protocols during pre-clearance and when pile driving activity is underway (all large whale species):1. Monitoring of the acoustic clearance and exclusion zone must be undertaken using near real-time PAM assuming a detection range of at least 10000 m and must 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 must be undertaken by vessel based PSOs stationed at the pile driving site and on additional vessels circling the pile driving site as needed. 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. To effectively monitor the full exclusion zone for sea turtles multiple PSOs must be	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	stationed at several vantage points at the highest level to allow each to continuously scan a section of the exclusion zone. Additional vessels must survey the clearance and exclusion zones at speeds of 10 knots or less.3. Acoustic and visual 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 monitoring must continue until 30 minutes after cessation of pile driving.4. Infrared technology must be used to support visual monitoring during any pile driving activities that extend into periods of darkness.5. Additional observers and monitoring technologies (e.g. infrared drones hydrophones) must be deployed as needed to ensure the ability to monitor the established clearance and exclusion zones including during periods of darkness or poor visibility.	
BOEM-2023-0011-0140-0114	Require mandatory vessel speed restrictions (all large whale species and sea turtles):1. All Project-associated vessels must 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. Slowing to 4 knots must be required while transiting through areas of visible jellyfish aggregations or floating vegetation lines or mats to improve protection for sea turtles. The speed must be reduced from an upper limit of 10 knots.3. Project proponents may develop in consultation with NOAA Fisheries an “Adaptive Plan” that modifies these vessel speed restrictions. However the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven 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. [Footnote 23: I.e. via a peer-reviewed scientific study.]	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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BOEM-2023-0011-0140-0115	Implement other vessel-related measures (all large whale species and sea turtles):1. All personnel working offshore must receive training on observing and identifying North Atlantic right whales other large whale species and sea turtles.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 use automated thermal detection systems to assist monitoring efforts while vessels are in transit maintaining a speed of 10 knots.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0116	Require mandatory reporting of all North Atlantic right whale other large whale species and sea turtle detections:1. Project proponents must report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the United States 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 pre-set cycle.2. Projects must immediately report an entangled or dead North Atlantic right whale other large whale species or sea turtle to NOAA Fisheries the Marine Animal Response Team (1- 800-900-3622) or the United States Coast Guard immediately via one of several available systems (e.g. phone app radio). Methods of reporting are expected to advance and streamline in the coming years and BOEM should require projects to commit to supporting and participating in these efforts.3. Quarterly reports of PSO sightings data must be made publicly available to inform marine mammal and sea turtle science and protection.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0117	Require clearance zone and exclusion zone distances that will eliminate Level A take and minimize behavioral harassment	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles

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	(large whale species only):1. Clearance and exclusion zone distances for North Atlantic right whales and other large whale species must be designed to eliminate Level A take and minimize behavioral harassment to the full extent practicable during the installation of gravity-based or suction bucket foundations considering noise levels expected to be generated during installation.	and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0118	Require shutdown of activities if a large whale is detected visually or acoustically (large whale species only):1. Installation of gravity-based and suction bucket foundations must not be initiated 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)).2. Installation of gravity-based and suction bucket foundations must be halted unless continued installation activities are necessary for reasons of human safety or installation feasibility when the application of monitoring methods defined in subsection (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)).3. Once halted installation may resume after use of the methods set forth in subsection (iii) and the lead PSO confirms no North Atlantic right whales or other large species have been detected within the relevant clearance zones.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0119	Require robust near real-time monitoring protocols during clearance and installation:1. Monitoring of the clearance and exclusion zones must be undertaken using near real-time PAM 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 must be undertaken by vessel based PSOs stationed at the installation site. On each vessel there must be	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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	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 or suction bucket foundation installation location. To effectively monitor the full exclusion zone for sea turtles 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.3. Acoustic and visual monitoring must be required and monitoring must begin at least 60 minutes prior to the commencement or installation activity and must be conductedthroughout the duration of installation. Visual monitoring must continue until 30 minutes after installation.4. Additional observers and monitoring technologies (e.g. infrared drones hydrophones) must be deployed as needed to ensure the ability to monitor the established clearance and exclusion zones including during periods of darkness or poor visibility.	
BOEM-2023-0011-0140-0120	Require mandatory vessel speed restrictions:1. All Project-associated vessels must adhere to a 10-knot speed restriction at all times except in limited circumstances where the best available scientific information demonstrates that whales do not occur in the area.2. Slowing to 4 knots must be required while transiting through areas of visible jellyfish aggregations or floating vegetation lines or mats to improve protection for sea turtles. The speed must be reduced from an upper limit of 10 knots.3. Project proponents may develop in consultation with NOAA Fisheries an “Adaptive Plan” that modifies these vessel speed restrictions. However the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven 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. [Footnote 24: I.e. via a peer-reviewed scientific study.]	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.

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BOEM-2023-0011-0140-0121	Implement other vessel-related measures:1. All personnel working offshore must receive training on observing and identifying North Atlantic right whales other large whale species and sea turtles.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. They must maintain a vigilant watch for North Atlantic right whales and other large whale species and slow down or maneuver their vessels as appropriate to avoid any potential interaction with them.3. All vessels responsible for crew transport (i.e. service operating vessels) should use automated thermal detection systems to assist monitoring efforts while vessels are in transit maintaining a speed of 10 knots.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0122	Require mandatory reporting of all North Atlantic right whale other large whale and sea turtle detections:1. Project proponents must report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the United States 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. Project proponents must immediately report an entangled or dead North Atlantic right whale other large whale species or sea turtle to NOAA Fisheries the Marine Animal Response Team (1-800-900- 3622) or the United States Coast Guard immediately via one of several available systems (e.g. phone app radio). Methods of reporting are expected to advance and streamline in the coming years and agencies should require projects to commit to supporting and participating in these efforts.3. Quarterly reports of PSO sightings data must be made publicly available to inform marine mammal and sea turtle science and protection.	BOEM has considered all public and agency comments regarding mitigation for marine mammals and sea turtles and has worked with NMFS through the NEPA process and ESA Section 7 consultation to select the appropriate mitigation measures to carry forward in the Final EIS.
BOEM-2023-0011-0140-0127	As a condition of project approval BOEM should require SouthCoast Wind to locate the converter station outside of the 10-km buffer from Nantucket Shoals. BOEM should also	All measures committed to by SouthCoast Wind would become binding if BOEM approves the COP, including SouthCoast Wind's commitment to site the northernmost

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	consider whether requiring SouthCoast Wind to locate the converter station at a distance greater than the proposed 10-km buffer from Nantucket Shoals is feasible and would further mitigate impacts to finfish and invertebrates in the lease area. Specifically BOEM should consider the possibility of requiring SouthCoast Wind to locate the converter station outside a 20-km buffer from Nantucket Shoals which at least one NOAA scientist has asserted is a preferable buffer that should be established to reduce impingement entrainment and hydrodynamic impacts to zooplankton–that provide prey for marine mammal species–from offshore wind projects. [Footnote 361: See Letter to BOEM NOAA (May 2022)https://docs.google.com/viewerng/viewer?url=https://newbedfordlight.org/wp- content/uploads/2022/11/UR1-2023-000009_10_17_2022.pdf.]	HVDC converter OSP outside of a 10-kilometer buffer of the 30-meter isobath from Nantucket Shoals. In addition, BOEM is proposing to require NS-1, which would prohibit open-loop cooling systems in the enhanced mitigation area of the Lease Area (refer to Figure G-1 in Appendix G). SouthCoast Wind has identified the location of one HVDC converter OSP, which would be within 20 km of Nantucket Shoals, as identified in SouthCoast Wind's NPDES permit application (TetraTech and Normandeau Associates, Inc. 2023). BOEM does not concur that a measure requiring HVDC converter OSPs to be avoided outside a 20-kilometer buffer of Nantucket Shoals is necessary.
BOEM-2023-0011-0157-0004	And another kind of question/comment something that I had not seen in reviewing other projects is the notion of the developer entering into the contract for the power with private entities. So far we have only seen that with contracts with the State so I wasn't sure if that would lead to differences in terms of like how mitigation approaches would be designed and so I think explaining that better what that would look like and how that might relate to mitigation I think would be helpful.	The EIS evaluates the environmental impacts from the construction, O&M, and decommissioning of the Project and identifies mitigation measures to avoid, reduce, mitigate, and monitor impacts on resources discussed in Chapter 3. If the COP is approved, the mitigation measures selected in the ROD would be binding, regardless of whether SouthCoast Wind has private or public power purchase agreements.

N.6.24 Cumulative Impacts

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BOEM-2023-0011-0007-0003	Although offshore wind will help reach our targets for renewable generation the more pressing priority should be to upgrade our electric utility infrastructure to actually be able to accept that generation. Currently no power grid in New England is capable of accepting the combined output of all the MA lease area projects but if we improved the grid and laid the previously mentioned central trunk cable it would be	The development of an improved electrical grid in New England is outside the scope of analysis for this EIS. The purpose of the SouthCoast Wind Project EIS is to assess the reasonably foreseeable environmental, social, economic, historic, and cultural impacts that could result from the construction and installation, O&M, and conceptual

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	much more efficient and less impactful than the current proposed operations.	decommissioning of the Project proposed by SouthCoast Wind in its COP.
BOEM-2023-0011-0065-0004	The DEIS depicts the two offshore export cable corridors with landfalls at Falmouth and Brayton Point are depicted in "Figure 2-1. Mayflower Wind project area" on page 2-6 of the DEIS. What is missing from that chart are all the other export cable routes already approved (Vineyard Wind and South Fork Wind) as well as proposed (Revolution Wind Sunrise Wind New England Wind etc). Cables are a major hazard for mobile bottom tending gear vessels such as ours. The Mayflower/South Coast Wind export cables both appear to cross the Vineyard Wind export cable which will create the need for cable armoring in those places creating hangs for our vessel's gear when operating in the area as well as a spiderweb of cables that will potentially be unburied by storm and other activity. We remind BOEM as we detailed in our Vineyard Wind SEIS comments that Muskeget Channel was the site of a proposed tidal power plant in 2006 due to its strong currents; it is likely that the export cables for these multiple projects will become exposed.	SouthCoast Wind has conducted a Cable Burial Risk Assessment to calculate the target cable-lowering depth to minimize risks to the offshore export cables from damage, and to mitigate potential conflicts between commercial or recreational fishermen and the new structure. Additionally, to minimize interference with fishing activities, SouthCoast Wind has sited the export cable corridors (ECC) to minimize overlap with known areas of high fishing activity. Where applicable, SouthCoast Wind will record required cable protection on electronic charts to be distributed to fishermen (Table G-1, Final EIS Appendix G, *Mitigation and Monitoring*). Furthermore, BOEM has proposed mitigation measure CF-3, which would require cable protection measures to reflect the pre-existing conditions at the site and ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear, and CF-1, which establishes a gear loss and damage compensation program (Table G-2, Final EIS Appendix G). The cumulative impacts of the offshore export cables for the Proposed Action in combination with cables from ongoing and planned offshore wind activities in the region are included in Section 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*, and Section 3.6.7, *Other Uses*, of the Final EIS.
BOEM-2023-0011-0065-0005	Due to their hazardous impacts to mobile bottom tending gear commercial fishing vessels the primary type of commercial fishing vessel operating in the vicinity of the Mayflower/South Coast export cables as well as the Vineyard Wind export cable and due to the cumulative impact of multiple cable export routes not only in the MA and MA/RI WEA but all up and down the coast where projects are being planned BOEM must conduct a cumulative impacts analysis on the cables themselves. It cannot allege that all the cables	Please refer to response to comment BOEM-2023-0011-0065-0004. A separate cumulative analysis of cable routes along the entire Atlantic Coast is outside the scope of the SouthCoast Wind Project EIS, which is focused on the impacts from the construction, O&M, and decommissioning of the SouthCoast Wind Project.

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	will remain unburied. This is not rational and has not been borne out in practice in other regions. Many of the cables cross each other in various places necessitating cable armoring which will also affect our ability to fish in the area. We have asked BOEM previously for charts of all approved and potential cable routes for all projects as a cumulative impact chart. We ask again here. We also ask for a cumulative impact analysis on cables. BOEM cannot continue to allege as it did in the Vineyard Wind project that impacts from cables will be temporary and minor. [Footnote 3: Vineyard Wind FEIS p. 3-213.] They will not. We remind BOEM again of our comments on the Vineyard Wind project regarding cables including warnings from offshore wind developers themselves that "In the interests of fishing safety and to prevent damage to subsea structures fishermen are advised to exercise caution when fishing in the vicinity of subsea cables and renewable energy structures. Loss of gear fishing time and catch can result if a trawler snags a subsea structure and there is serious risk of loss of life."	
BOEM-2023-0011-0086-0003	If BOEM plans to develop 22 million acres of the Outer Continental Shelf have the cumulative effects of multiple wind turbine generators been reviewed and assessed? Please refer to a recent review by Galparsoro from 2022. I would recommend no additional developments on the Continental Shelf until a cumulative assessment of the interactions between the development of all leased properties can be reviewed. BOEM must be transparent regarding all impacts of a project of this nature.	The CEQ NEPA Implementing Regulations require NEPA impact analysis to include cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to other past, present, and reasonably foreseeable actions. The cumulative impact analysis for the No Action Alternative considers the impacts of ongoing activities and other reasonably foreseeable planned activities, excluding the Proposed Action, as described in Appendix D, *Planned Activities Scenario*, of the Final EIS. The cumulative impact analysis of the Proposed Action considers approval of the SouthCoast Wind Project in combination with other reasonably foreseeable planned activities, including offshore wind activities, within the geographic analysis area for each Chapter 3 resource topic.
BOEM-2023-0011-0091-0011	The DEIS that has been developed and submitted to the BOEM is thus by itself just a small portion of the overall	Please refer to response to comment BOEM-2023-0011-0086-0003.

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	impact of this proposed new development. So by design the DEIS is biased towards depicting a lower impact in an essentially pristine and vibrant ecosystem. Therefore the EIS should evaluate the impact of the entire project as envisioned not just 1/7th thereof. So the design and body of the DEIS is not appropriate for the purpose it is being applied to and shouldn't be accepted in its current form nor its conclusions accepted.	
BOEM-2023-0011-0117-0004	Cumulative Impacts: Most glaringly the DEIS fails to include interactions between multiple pressures in the cumulative impact assessment. A recent review of the literature stresses the significance of this gap in our knowledge (Galparsoro 2022). BOEM needs to prepare a programmatic EIS to examine the entire wind development of the outer continental shelf including all interactions. Individual stressors do not act in isolation and can have a negative synergistic effect that can accumulate and exponentially increase environmental damage. Given that BOEM plans to develop 22 million acres of the Outer Continental Shelf (BOEM Draft strategy for the NARW p. 3) an assessment that considers interactions seems particularly important. No further developments should occur until a cumulative impact assessment includes a complete programmatic review and a full assessment of interactions.	As described in Chapter 1, *Introduction*, of the Final EIS, BOEM has completed multiple regional analysis and planning steps to evaluate the effects of wind development offshore Massachusetts and Rhode Island prior to the finalizing the lease areas and preparation of individual COP EISs. In December 2010, BOEM published a Request for Interest (RFI) in the *Federal Register* to gauge commercial interest in wind energy development offshore Massachusetts (75 *Federal Register* 82055) and to invite the public to comment and provide information on environmental issues and data that should be considered in the development of the area. After consideration of public comments and input from BOEM's intergovernmental Massachusetts Renewable Energy Task Force, BOEM modified the area of interest for commercial development offshore Massachusetts. In February 2012, BOEM published a Call for Information and Nominations for commercial leasing for wind power on the OCS offshore Massachusetts in the *Federal Register* (77 *Federal Register* 5820) and solicited comments from the public. After considering comments received, BOEM excluded an area of high sea duck concentration, as well as an area of high-value fisheries to reduce conflict with commercial and recreational fishing activities. In June 2014, BOEM published in the *Federal Register* a Notice of Availability of a Revised Environmental Assessment and Finding of No Significant Impact for commercial wind lease issuance and site assessment activities on the Atlantic OCS offshore Massachusetts (79 *Federal Register* 34781).

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		Based on BOEM's experiences permitting offshore wind projects off Massachusetts and Rhode Island and other areas along the Atlantic Coast, BOEM has decided to pursue a programmatic EIS for six lease areas in the New York Bight (see 87 *Federal Register* 42495). BOEM is considering programmatic reviews for lease areas in other geographic locations as well. As project-level environmental reviews have commenced in the Atlantic OCS off Massachusetts and Rhode Island, environmental impacts are being considered at a project level, consistent with NEPA requirements.
BOEM-2023-0011-0123-0001	The geographic area analysis for the analysis does not include adjacent leases. Therefore prospective effects the area of interest has on adjacent areas and vice versa are not considered. This notion follows a similar concern of not evaluating the cumulative effects of development on these areas.	The geographic analysis area is defined by the anticipated geographic extent of impacts for each resource and is described and mapped in the introduction to each Chapter 3 resource section. For example, for the mobile resources—bats, birds, finfish, and invertebrates; marine mammals; and sea turtles—the geographic analysis area for these mobile resources is the general range of the species. The purpose is to capture the impacts on each of those resources that would be affected by the Proposed Action as well as cumulative impacts from the Proposed Action in combination with ongoing and planned activities. Therefore, depending on the resource, the geographic analysis area and the cumulative impact analysis may include only the SouthCoast Wind Lease Area and neighboring leases, or it may include the full build-out of all lease areas along the U.S. Atlantic Coast.
BOEM-2023-0011-0128-0013	Moreover the DEIS fails to incorporate best practices and minimum guidelines that would apply to all offshore wind developments near the Town of Nantucket. In specifically requiring cumulative impacts analyses NEPA recognizes the significant effect that reasonably foreseeable projects can have on the surrounding landscape beyond the scope of a single development. BOEM's analysis and methodology for assessing cumulative impacts in the DEIS are confusing and unclear. Consulting parties and the public have a right to	Through the SouthCoast Wind Project NEPA process, BOEM cannot require measures or minimum guidelines that would apply to projects other than the Project. The EIS analyzes the Project as proposed in the COP and identifies mitigation measures in Appendix G that would apply to the Project. BOEM has established requirements in its regulations related to the offshore wind leasing and development process that apply to all projects and include typical requirements in its leasing documents; other regulatory agencies, such as FAA

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	understand BOEM's conclusions and how it arrived at them. Currently no reasonable person can interpret them.	and USCG, have established minimum requirements for lighting and other standards that would apply to all projects. BOEM's approach for analyzing cumulative impacts is consistent with the NEPA statute and CEQ's implementing regulations. The approach for analyzing cumulative impact is described in Section 1.6, *Methodology for Assessing Impacts*, and in the introduction to Chapter 3. BOEM has vetted the language with cooperating agencies and believes it is accurately and clearly described.
BOEM-2023-0011-0132-0001	The document lays out many Impact Producing Factors (IPFs) and attempts to explain them in four different scenarios a "no action alternative" a "cumulative no action alternative" the "proposed action" and the "cumulative impacts of the proposed action". The manner that these scenarios are laid out seems to change from section to section with an amorphous "future baseline" described as varying between ~900 and ~3000 WTGs depending on the section. The method used to layout cumulative and no action alternatives is confusing indecipherable appears designed to minimize or hide the impacts of the proposed action and fails at its fundamental purpose of informing the public about the myriad serious environmental consequences of the SouthCoast (Mayflower) Wind project and its additive impact on the wind lease area.	The geographic analysis area varies for each resource as described in the individual resource sections of Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS. Depending on the size of the geographic analysis area, more or fewer WTGs from ongoing and planned offshore wind activities are included in the analysis for the No Action Alternative and cumulative impacts analysis for the No Action Alternative and Proposed Action.
BOEM-2023-0011-0132-0003	The document repeatedly dismisses IPFs for the proposed action as occurring regardless of whether the action takes place or not. This is simply not true. As of the writing of the document only 5 WTGs exist in the North Atlantic and these are much smaller than what is being proposed and much closer to shore. The cumulative impacts were not adequately evaluated for either the Vineyard Wind or the South Fork Wind projects and thus including those as already having been built is misleading confusing and inaccurate.	Ongoing activities that would contribute to baseline conditions, including offshore wind activities but excluding the Proposed Action, are described under the No Action Alternative. Offshore wind activities that have already been constructed (Block Island Wind Farm offshore Rhode Island and Coastal Virginia Offshore Wind Pilot Project offshore Virginia) or that have an approved COP (e.g., Vineyard Wind 1, South Fork Wind Farm, Revolution Wind) are considered ongoing activities and have been included in the No Action Alternative. The projects with an approved COP are analyzed for ongoing construction as well as future O&M. These

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		offshore wind activities have completed the environmental review process and the public has had the opportunity to comment on them.
BOEM-2023-0011-0132-0121	In Chapter 4 the following statement is made in introducing Table 4.1-1 [Text in Blue: "All impacts from planned activities are still expected to occur as described in the No Action Alternative analysis in this EIS regardless of whether the Proposed Action is approved."] This is once again a questionable statement as the only approved projects are in dispute and construction has not commenced on any projects other than the near shore Block Island Wind.	Please refer to response to comment BOEM-2023-0011-0132-0003.
BOEM-2023-0011-0132-0126	Section 4.3 discusses the long-term benefits of the offshore wind projects; both the project being analyzed and the cumulative impacts.- The first benefit is [Text in Blue: "Promotion of clean and safe development of domestic energy sources and clean energy job creation."] The document provides no back up for "clean" or 'safe". The sourcing of rare earths is never discussed nor is reliance on US adversaries needed to secure them. Nor are the tons of steel fiberglass and concrete needed to build the wind power plants discussed in terms of environmental impacts. The millions of gallons of diesel fuel oil firefighting foam and other substances are not put into context of how they will impact the environment. It is not enough to "state" that this is a clean source of energy. It must be shown and the DEIS does not have the data to support that this is a clean energy source especially when compared to dual cycle natural gas that is delivered via pipeline.- The next bullet [Text in Blue: "Promotion of renewable energy to help ensure geopolitical security reduce GHG emissions to combat climate change and provide electricity that is affordable reliable safe secure and clean."] Is also not supported when compared to domestically sourced natural gas. The US will be dependent on adversaries to secure the necessary parts and rare earths to build and repair the WTGs.- This statement is not a benefit. [Text in	The Final EIS is used as a public disclosure document and a decision-making tool to determine if BOEM should approve, disapprove, or approve the SouthCoast Wind COP with modifications. A discussion of whether the Proposed Action is a clean source of energy or potential geopolitical impacts is outside of the scope of analysis for this action. Mining or fabricating materials is not part of the Proposed Action; mines or manufacturing plants that may be used to produce material used by the Proposed Action would be subject to their own environmental review and permitting. Analysis of potential impacts on birds, bats, marine mammals including NARWs, invertebrates, and finfish can be found in Chapter 3 of the Final EIS.

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	Blue: “Delivery of power to the Massachusetts (and broader northeast U.S.) energy grid to contribute to the state’s renewable energy requirements.”] This is merely a political statement with no data to back up that offshore wind will be “renewable”. In fact offshore wind turbines have not been shown to last the 35 years provided for in the DEIS.- The last bullet [Text in Blue: “Increased habitat for certain fish species”] is a minor/trivial benefit that is does nothing to offset the harm to many more species of birds bats marine mammals including NARWs invertebrates and fish.	
BOEM-2023-0011-0134-0001	We are concerned by and oppose the Bureau of Ocean Energy Management’s (BOEM’s) use of separate National Environmental Policy Act (NEPA) documents for the development of offshore wind (OSW) projects off the coast of Rhode Island and Massachusetts. This approach fails to properly address the combined and cumulative negative environmental impacts of OSW developments located in proximity and with similar construction and operation schedules.	BOEM’s regulations at 30 CFR 585.628 require BOEM to conduct environmental review of the lessee’s COP. For each offshore wind project with a COP, including the SouthCoast Wind Project, BOEM is appropriately analyzing the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations. Appendix D of the Final EIS describes other past, present, and reasonably foreseeable actions analyzed in the cumulative effects analysis.
BOEM-2023-0011-0134-0002	BOEM should assess the full and cumulative impacts of OSW development in the Rhode Island and Massachusetts Wind Energy Area (164750 acres) and the Massachusetts Wind Energy Area (742974 acres) through a tiered EIS or a Programmatic Environmental Impact Statement (PEIS). The Council on Environmental Quality’s NEPA Implementing Regulations encourage the use of tiering to eliminate redundancy by disclosing the impacts of large-scale programs followed by subsequent analysis of individual projects which make up the larger program. See 40 C.F.R. 1508.1(ff) (defining “tiering” as “coverage of general matters in broader environmental impact statements or environmental assessments … with subsequent narrower statements or environmental analyses … incorporating by reference the	Please refer to response to comment BOEM-2023-0011-0117-0004 and BOEM-2023-0011-0134-0001.

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	general discussions and concentrating solely on the issues specific to the statement subsequently prepared."); see also 40 C.F.R. 1501.11.The OSW projects in this area and associated status of each project's NEPA review are listed below: • Revolution Wind (Draft EIS published 2022) • South Fork Wind (Record of Decision approved 2021) • Sunrise Wind (Draft EIS published 2022) • Bay State Wind (Not started) • New England Wind (formerly Vineyard Wind South; Draft EIS published 2022) • Vineyard Wind 1 (Record of Decision approved 2021) • Beacon Wind (Not started) • SouthCoast (formerly Mayflower) Wind (Draft EIS published 2023) These projects are adjacent to each other and individually and cumulatively negatively impact the exact same communities and ecosystems. By segmenting the environmental review for this area into smaller component parts the full scope and scale of the negative environmental consequences of these projects has not been fully evaluated or disclosed and appropriate avoidance or mitigation solutions are not being considered holistically. Further this misguided segmentation approach is placing an undue burden on the Tribes that are struggling to keep up with the flow of information.	
BOEM-2023-0011-0134-0003	A PEIS is currently being prepared for the New York Bight area which consists of 488000 acres with multiple lease areas under consideration. [Footnote 1: Notice of Intent To Prepare a Programmatic Environmental Impact Statement for Future Wind Energy Development in the New York Bight (87 FR 42495)] The Rhode Island and Massachusetts WEA and Massachusetts WEA when combined are almost twice as large as the New York Bight area. Why has BOEM elected to take a holistic approach to environmental analysis of the New York Bight area but has allowed the improper segmentation of the	Please refer to response to comment BOEM-2023-0011-0117-0004 and to BOEM-2023-0011-0134-0001. Impacts on cultural and other environmental resources important to Tribal Nations from the Project and the Project in combination with other offshore wind and non-offshore wind projects are analyzed in various sections of Chapter 3, including Section 3.6.2, *Cultural Resources*, and Section 3.6.4, *Environmental Justice*.

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	Rhode Island and Massachusetts WEA and Massachusetts WEA Projects into EIGHT separate EIS processes? We question and challenge this arbitrary decision. Despite the Tribe's continued request that BOEM take a consolidated review approach BOEM has failed to incorporate this request into their process. Preparation of a PEIS will provide for more rigorous analysis of project alternatives a more accurate assessment for the disclosure of cumulative direct and indirect negative effects definitive options for avoidance or comprehensive mitigation planning and Tribal engagement opportunities. The Tribe is concerned with the combined or cumulative potential negative impacts to biological cultural and visual resources. The projects will harm the larger ecosystem and disturb views of the eastern horizon and celestial events and will destroy any submerged archeological resources all of which are of immense traditional cultural and spiritual importance to the Tribe.	
BOEM-2023-0011-0134-0006	The existing evaluation and treatment of potential cumulative impacts is woefully inadequate and does not consider the full scope of reasonably foreseeable development of 907724 acres of OSW projects off the coast of Rhode Island and Massachusetts. [Footnote 3: "Reasonably foreseeable" means "sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision" 40 C.F.R. 1508.1(aa).] These cumulative or combined impacts need to be fully assessed and disclosed to the Tribe in order to allow for a truly informed decision- making process with a full understanding of the entire scope of the potential negative environmental consequences. Without this cumulative assessment the Tribe and other reviewers have been deprived of the "big picture" or a true perspective of the entire scope of negative impacts in terms of the environmental consequences viable alternatives and feasible mitigation. The impacts and mitigation associated with the projects are interconnected and the full impact of all the collective projects combined has not been disclosed. The	The EIS appropriately analyzes the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations. The geographic scope of the cumulative analysis depends on the anticipated geographic extent of impacts for each resource. For example, for the mobile resources—bats, birds, finfish, and invertebrates; marine mammals; and sea turtles—the geographic analysis area for these mobile resources is the general range of the species. Therefore, depending on the resource, the geographic analysis area and the cumulative impact analysis may include only the SouthCoast Wind Lease Area and neighboring leases, or it may include the full build-out of all lease areas along the U.S. Atlantic Coast.

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	significance of the potential negative impacts cannot be avoided by breaking an action down into small component parts.	
BOEM-2023-0011-0136-0003	While the DEIS provides content related to cumulative impacts of ongoing and planned activities they fail to take a holistic view of the potential impacts from large-scale buildout of offshore wind developments on the Atlantic OCS. 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 planning and 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 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 EIS appropriately analyzes the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations. The geographic scope of the cumulative analysis depends on the anticipated geographic extent of impacts for each resource. For example, for the mobile resources—bats, birds, finfish, and invertebrates; marine mammals; and sea turtles—the geographic analysis area for these mobile resources is the general range of the species. Therefore, depending on the resource, the geographic analysis area and the cumulative impact analysis may include only the SouthCoast Wind Lease Area and neighboring leases, or it may include the full build-out of all lease areas along the U.S. Atlantic Coast. The consideration of broadscale offshore wind planning and leasing is outside the scope of the SouthCoast Wind Project EIS.
BOEM-2023-0011-0136-0005	The Supplemental Environmental Impact Statement (SEIS) completed in 2020 for the Vineyard Wind I project was intended to serve as a cumulative impacts analysis for multiple projects in the region. However the SEIS was only incorporated into the record of that project as BOEM used an entirely different—and grossly insufficient—approach for the South Fork project just weeks later. It is unclear what if any approach BOEM plans to use going forward 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 impacts of	For the EIS, BOEM largely followed the approach to the cumulative impact analysis of the Vineyard Wind 1 EIS, with some changes based on subsequent cooperating agency and public input. BOEM intends to use a similar approach for current and future offshore wind EISs. Based on BOEM's experience permitting offshore wind projects off Massachusetts and Rhode Island and other areas along the Atlantic Coast, BOEM has decided to pursue a programmatic EIS for six lease areas in the New York Bight (see 87 *Federal Register* 42495). BOEM is considering programmatic reviews for lease areas in other geographic locations as well. As project-level environmental reviews have commenced in the Atlantic OCS off Massachusetts and

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	potentially 3000 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.	Rhode Island, environmental impacts are being considered at a project level, consistent with NEPA requirements.
BOEM-2023-0011-0136-0007	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 or geographic region. 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 inconsistent NEPA reviews. While state processes have limitations these are more transparent and allow for some amount of oversight and avenues for mitigation strategies there is no clear guidance on how agreements with private entities would fulfill the public engagement and protection needs. 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.	The scope of the EIS, per BOEM's regulations, is to analyze the COP SouthCoast Wind submitted for Lease Area OCS-A 0521. The EIS appropriately analyzes the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations. While a power purchase agreement or private offtake agreement may influence the alternatives that BOEM analyzes in the EIS (refer to Section 2.2, *Alternatives Considered but not Analyzed in Detail*), BOEM is required to analyze each project as proposed in its COP and follows the same NEPA procedural steps for each project, regardless of offtake agreement status.
BOEM-2023-0011-0136-0008	Additionally, since the Notice of Intents to prepare the DEIS BOEM has taken action on many other relevant activities in the region. There have been multiple DEISs a regional USCG Port Access Route Study an auction for six additional leases in the New York Bight publication of several more Draft WEAs (Central Atlantic WEAs) and identification of Draft Call Areas in the Gulf of Maine. The DEIS includes an Appendix entitled Planned Activities Scenario. [Footnote 10: See Appendix D of the SouthCoast DEIS.] This estimates the total number of operational turbines in the Atlantic OCS to be 3101 by 2029. [Footnote 11: It is worth noting that this number varies from Planned Activities Scenarios in DEISs published within one month of the SouthCoast DEIS: NE Wind Coastal Virginia Offshore Wind and Sunrise Wind.] This does not include areas which have been identified for potential development	The details for other planned offshore wind activities included in Table D2-1 in Appendix D, *Planned Activities Scenario*, of the Final EIS have been updated throughout the development of this NEPA document as the PDEs for these projects are refined, and therefore there may be inconsistencies between offshore wind EISs based on when updates have been made. Regardless, the number of turbines and other parameters of other offshore wind projects analyzed in the cumulative impact assessment provides a reasonable approximation of the scale of offshore wind development planned on the Atlantic Coast. The EIS does not include development of the wind energy areas included in the Central Atlantic or the Gulf of Maine, as these regions do not yet have executed leases.

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	(Central Atlantic and Gulf of Maine) which could increase that number significantly. Yet BOEM has not sufficiently evaluated the cumulative impacts of prospective activity in the region. This must be remedied immediately and should be incorporated into all future analyses conducted by BOEM.	
BOEM-2023-0011-0137-0044	Additionally State Governments Energy Developers and BOEM have continued to disregard the individual and cumulative effect of covering millions of acres of ocean with wind turbine power plants. Operation in the U.S. Atlantic of the planned-for thousands of immense (roughly thousand- foot-tall) infrasound-generating machines one nautical mile apart spanning millions of acres is expected to constitute a major systems disruptor to natural systems that have evolved over geologic timescales including those adaptations essential to migration by which migrating animals use infrasound to perceive and map their environment or guide migration and which have evolved independently in major taxonomic groups including aves.	The Wind EIS appropriately analyzes the individual effects and the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations.
BOEM-2023-0011-0138-0001	South Coast Wind is one of nine proposed offshore wind projects in the BOEM lease area south of Southern New England. It is impossible to assess the environmental impact of each of these projects independent of the others. They will have cumulative environmental impacts and to attempt to describe these impacts individually has no scientific merit without considering them cumulatively. Furthermore if each proposed project is going to advocate bringing generated power ashore in its own cables the potential adverse environmental impact is going to be multiplied and will impact multiple communities as well as the marine habitat. It appears that instead of consolidating cable routes to come ashore in fewer locations each project is proposing their own route(s).	The EIS appropriately analyzes the individual effects and the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations. BOEM analyzes each offshore wind project as proposed in its COP, including offshore cables. As part of the cumulative analysis of each offshore wind COP EIS, BOEM analyzes the combined impacts of offshore cables.
BOEM-2023-0011-0140-0021	We are concerned about the inconsistencies in the cumulative impacts analyses across Atlantic offshore wind projects. While these cumulative impact analyses generally include the same list of anticipated offshore wind projects (e.g. as seen in Table	Impact determinations are assessed for each COP EIS. While some differences may exist, the cumulative impact determinations of the Final EIS are largely in agreement with other recently published Final EISs and consistent with the

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	ES-2) we find significant variability in the cumulative impacts by resource even for the no action alternatives. [Footnote 31: SCW DEIS at Table ES-2.] For example the cumulative effects of the no action alternative in SouthCoast Wind's DEIS on demographics are minor adverse minor beneficial. For environmental justice the cumulative effects of the no action alternative are minor adverse minor beneficial. These are not aligned with the relatively nearby Revolution Wind's DEIS which found cumulative effects of the no action alternative to be moderate to major adverse and minor to moderate beneficial on demographics and major adverse and negligible to moderate beneficial on environmental justice. [Footnote 32: See SCW DEIS at ES-2 and Revolution Wind DEIS at Table ES-2.] Similarly cumulative impacts of the no action alternative on marine mammals are considered moderate to major adverse minor beneficial in SouthCoast's DEIS but moderate to major adverse for the no action alternative of the Coastal Virginia Offshore Wind Commercial Project (CVOW-C). [Footnote 33: See SCW DEIS at Table ES-2 and CVOW-C DEIS at Table S-2.] Similar inconsistencies exist for the cumulative impact analyses for the Proposed Alternatives (e.g. SouthCoast wind's DEIS finds moderate adverse impacts in environmental justice where New England Wind's DEIS finds minor adverse minor beneficial cumulative impacts on environmental justice for the Proposed Actions; SouthCoast Wind's DEIS finds negligible to major adverse minor beneficial cumulative impacts on marine mammals whereas CVOW-C finds moderate to major adverse impacts for the Proposed Actions). [Footnote 34: See SCW DEIS at Table ES-2 Revolution Wind DEIS at Table ES-2 CVOW-C DEIS at Table S-2.]	impact level definitions within each resource section of Chapter 3, *Affected Environment and Environmental Consequences*. The explanation for each impact level determination can be found in the resource-specific section of Chapter 3. For instance, in Section 3.6.4.4, BOEM explains the reasoning behind the determination of minor beneficial impacts on environmental justice populations for the cumulative effects of the No Action Alternative.

N.6.25 National Environmental Policy Act/Public Involvement Process

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BOEM-2023-0011-0139-0038	Page 1-5 within Section 1.2 states that a Section 408 permission will be required pursuant to Section 14 of the Rivers and Harbors Act (33 USC 408). Please note that on December 16 2022 USACE confirmed that the SouthCoast Wind Project will not require Section 408 permission.	Text has been revised to clarify this.
BOEM-2023-0011-0076-0001	Further more the Applicant's request for the proposed alterations permission under USACE Section 408 should be denied because it would be injurious to the public interest and would impair the usefulness of the USACE project.	Text has been revised to clarify this.

N.6.26 USACE Permitting

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BOEM-2023-0011-0132-0006	In Table 2-4 impacts on birds are listed as moderate to major and then dismissed as the document suggests birds could be attracted to the area. Common sense would tell us that birds attracted to wind turbines most likely would end up dead. The document also does not say how this will be studied or mitigated. It just says these things will happen. This is not the full disclosure that the NEPA requires. If mitigation were to happen by turning turbines off at certain times when birds are present (as is the practice for onshore wind) then the air quality numbers are meaningless as less power would be created by the wind turbines and more single cycle natural gas would need to be burned to balance the turning off the turbines in the presence of various bird species.	Impacts on bird collisions are addressed in Final EIS Section 3.5.3, including assessment of potential bird strikes. Based on the current understanding of bird presence in the offshore environment, BOEM anticipates that bird collisions with offshore wind infrastructure will be lower than with onshore wind infrastructure. This is because bird presence in the offshore environment is much lower than onshore. Within the Atlantic Flyway along the North American Atlantic Coast, much of the bird activity is concentrated along the coastline. Waterbirds use a corridor between the coast and several kilometers out onto the OCS, while land birds tend to use a wider corridor extending from the coastline to tens of kilometers inland. While both groups may occur over land or water within the flyway and may extend considerable distances from shore, the highest diversity and density are centered on the shoreline (Final EIS Figure 3.5.3-1). Also refer to Final EIS Section 3.5.3.9, which includes a number of proposed mitigation measures, including deterrence, reporting, and adaptive mitigation measures.

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BOEM-2023-0011-0132-0076	The impact to birds has simply not been laid out. The document makes many statements about potential peril to birds including those listed through the ESA such as Piping Plovers. We read that at nighttime some species use the aircraft lighting to avoid turbines however ADLS is proposed. We read that birds can be attracted to the turbine areas as more prey "may" be available. However collisions seem to be a bigger problem. This statement is particularly egregious [Text in Blue: "It is generally assumed that inclement weather and reduced visibility cause changes to migration altitudes (Ainley et al. 2015) and could potentially lead to large-scale mortality events."] The DEIS promises only to monitor for bird impacts providing very little detail on said monitoring or potential mitigation. Since mitigation procedures involve shutting off turbines when migrating birds are present the greenhouse gas analysis cannot possibly be correct or thorough.	The impacts of the Proposed Action on birds are detailed in the seven IPFs in Draft EIS Section 3.5.3.5, which include lighting and the presence of structures. Details on mitigation for potential bird impacts are described in Final EIS Table 3.5.3-4, and include a number of proposed measures (e.g., deterrence, reporting, adaptive mitigation). Furthermore, to support the advancement of the understanding of bird interactions with offshore wind farms, SouthCoast Wind has developed a Draft Avian and Bat Post-Constructing Monitoring Framework (included as Attachment G-2 of Appendix G of the Final EIS) that outlines an approach to post-construction monitoring. BOEM addresses piping plover and other federally listed birds in detail in the USFWS BA that BOEM developed for ESA Section 7 compliance. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations.
BOEM-2023-0011-0132-0077	After explaining how the proposed action "B" would impact birds the document states [Text in Blue: "The cumulative impacts on birds would likely be moderate because although bird abundance on the OCS is low there could be unavoidable impacts offshore and onshore; however BOEM does not anticipate the impacts to result in population-level effects or threaten overall habitat function. In the context of reasonably foreseeable environmental trends the Proposed Action would contribute an undetectable increment to the cumulative impacts on birds."] This statement makes no sense. The impact is moderate or undetectable - it can't be both and it seems moderate is the correct answer.	Throughout the Final EIS, cumulative and incremental impacts of the Proposed Action are separately addressed. This approach is necessary given the numerous on- and offshore activities that are expected to proceed even if the Proposed Action is not approved. As stated in Final EIS Section 3.5.3.5, BOEM anticipates that the cumulative impacts from the Proposed Action on birds in the geographic analysis area are moderate because, although bird abundance in the OCS is low, there could be unavoidable impacts offshore and onshore; however, BOEM does not anticipate the impacts to result in population-level effects or threaten overall habitat function. Therefore, in the context of reasonably foreseeable environmental trends, the Proposed Action would contribute an undetectable increment to the cumulative impacts on birds.
BOEM-2023-0011-0132-0078	As far as birds covered by the ESA the DEIS states that the analysis for impacts to these three species has not yet been	BOEM has continually consulted with USFWS throughout the NEPA process to address the Proposed Action's impacts on federally species protected under the ESA. BOEM addresses

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	conducted. This is unacceptable and is in violation of NEPA and ESA.	federally listed birds in detail in the USFWS BA that BOEM developed for ESA Section 7 compliance. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations. BOEM concluded its ESA Section 7 obligations on September 1, 2023, when USFWS issued its Biological Opinion for the Project. As stated in the Biological Opinion, USFWS does not anticipate significant reduction in the reproduction, numbers, or distribution of piping plover and rufa red knot, and concluded that the Project is not likely to jeopardize the continued existence of the species. For roseate tern, USFWS concurred with BOEM's determination of "not likely to adversely affect."
BOEM-2023-0011-0137-0045	Storm cells produce infrasound. Large-size turbines produce high levels of infra sounds. The U.S. Offshore Wind program and the subject project is reasonably expected to interfere with the ability of migratory birds to avoid storms (and storm-caused mortality) and interferes with essential migration. Disruption in migratory bird's ability to use infrasound by operating thousands of large infrasound-generating machines over a vast expanse (millions of acres) of Outer Continental Shelf which serves as the Atlantic Flyway (in layman's terms a bird migration super highway) occurs from the profound disruption of essential behaviors and processes. Such impact of the U.S. Offshore Wind Program goes beyond habitat degradation to whole systems degradation for several orders and families of migratory aves which use infrasound to guide migration.	Noise impacts are covered in Final EIS Section 3.5.1, *Bats*, as well as Final EIS Section 3.5.3, *Birds*. Best available information on bird presence in the geographic analysis area has been used to prepare the EIS. BOEM will continue to collect information on bird presence in the offshore environment to help inform the assessment of potential impacts on birds from construction and operation of offshore wind farms. Based on current information, bird presence in the offshore environment is relatively low (as described in Final EIS Section 3.5). To support the advancement of the understanding of bird interactions with offshore wind farms, SouthCoast Wind has developed a Draft Avian and Bat Post-Constructing Monitoring Framework (included as Attachment G-2 of Appendix G of the Final EIS) that outlines an approach to post-construction monitoring.
BOEM-2023-0011-0137-0046	Operating thousands of infrasound-generating turbines spanning the entire Outer Continental Shelf will disrupt natural migratory processes of millions of birds and is expected to cause mortality in millions of birds by interfering with their natural ability to detect storms. Large-rotor-diameter wind turbines are substantial infrasound generators.	As described in Draft EIS and Final EIS Section 3.5.3, bird presence in the offshore environment is relatively low. The effects of offshore wind farms on bird movement ultimately depends on bird species, size of the offshore wind farm, spacing of the turbines, and the extent of extra energy cost incurred by the displacement of the flying birds (relative to

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	The effect of 147 turbines of the subject project as well as the cumulative effect of the U.S. Atlantic Offshore Wind Program build in the forseeable future constitutes a major systems disruptor for migrating birds.	normal flight costs pre-construction) and their ability to compensate for this degree of added energy expenditure. Little quantitative information seems available on how offshore wind farms may act as a barrier to movement, but a modeling effort by Madsen et al. (2012) looked at bird movement through offshore wind farms based on bird movement data collected at the Nysted offshore wind farm in the western Baltic Sea. A summary of this study is included in Draft EIS Section 3.5.3, *Cumulative Impacts of the No Action Alternative*, under the *Presence of Structures* IPF. In short, the modeling effort indicates that Project turbine spacing would be wide enough to allow bird movement and would not act as an impediment to migration. BOEM notes that turbine spacing in offshore wind farms in Europe is generally more compressed than what is being proposed on the Atlantic OCS. For example, the distances between turbines for the Nysted and Horns Rev (North Sea) wind farms are shown below, which, based on the Madsen et al. (2012) modeling, indicates they would have some level of impediment to bird migration. These distances are much narrower than distances proposed between turbines on the Atlantic OCS. • Horns Rev 1: turbines are 560 meters (0.3 nautical mile [nm]) from each other in both directions. • Horns Rev 2: turbine spacing is 500 meters (0.27 nm) in both directions. • Nysted: turbine spacing 480 meters (0.26 nm) (east/west) and 900 meters (0.48 nm) (north/south). However, BOEM identified a newer study by Vattenfall (2023) that looked at meso- and micro-avoidance movements in an offshore wind farm off Scotland. The study concluded that, together with the recorded high levels of micro-avoidance in all species (>0.96), it is now evident that seabirds will be exposed to very low risks of collision in offshore wind farms during daylight hours. This was

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		substantiated by the fact that no collisions or even narrow escapes were recorded in over 10,000 bird videos during the 2 years of monitoring covering the April–October period. The study's calculated micro-avoidance rate (>0.96) is similar to that of Skov et al. (2018), which is also mentioned in the Draft EIS and Final EIS. The Vattenfall (2023) information has been added to the Final EIS.
BOEM-2023-0011-0139-0024	SouthCoast Wind would like to highlight that to support the Avian Exposure Risk Assessment (Appendix I1 to the COP) SouthCoast Wind conducted Project-specific surveys of the Lease Area. These surveys included aerial high- definition surveys that were completed monthly from November 2019 through October 2020. Sampling effort was increased during the migratory period (e.g. April May and August 2020) for terns and other species of concern in coordination with the MassWildlife Natural Heritage and Endangered Species Program (NHESP).Survey methods consisted of flying an aircraft over the Lease Area and capturing digital still life imagery with a high-resolution camera using a grid-based survey design. A minimum of 40 percent coverage of the Lease Area was attained per survey. Third-party experts analyzed the images to enumerate birds and another third-party reviewer provided quality assurance of the data to identify any missed individuals. Third party experts were in most cases able to discern among tern species (e.g. roseate tern versus common tern) based on tail length wind structure and plumage. Additionally SouthCoast Wind employed an onboard professional avian observer who recorded all birds observed during geophysical and geotechnical surveys completed in the Lease Area between September and November 2019.SouthCoast Wind feels that it is important to highlight these site-specific Project surveys that were completed to support the COP Avian Exposure Risk Assessment and the findings of the impacts to birds in the DEIS in addition to the publicly available datasets listed by BOEM in the DEIS.	Thank you for your comment. BOEM has added to Final EIS Section 3.5.3.1 a reference to the Project-specific surveys that were conducted for the SouthCoast Wind Project and that are included in COP Appendix I1, Section 2.2.3.

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BOEM-2023-0011-0140-0059	Unlike other nearby regional offshore projects (e.g. New England Wind) the SouthCoast COP makes no mention of adding Motus tagging for seabirds or nocturnal passerine migrants nor does the COP indicate that the operator intends to install Motus receivers on turbines as part of its post-construction monitoring plan. [Footnote 172: New England Wind (NEWP) DEIS Appendix H Minimization and Monitoring p. H-3.] We recommend optimizing the number and/or the dispersion of Motus stations at SouthCoast using a design tool being developed under a New York State Energy Research and Development Authority (NYSERDA) project. [Footnote 173: Sunrise Wind Farm COP Appendix P2: Post-construction Avian and Bat Monitoring Framework p. 3.]	SouthCoast Wind's Draft Post-Construction Avian and Bat Monitoring Framework Avian and Bat Monitoring Framework has been added to Final EIS Appendix G as Attachment G-2. This plan refers to Motus tracking. SouthCoast Wind plans to install Motus receivers within the Lease Area to determine the present/absence of ESA-listed species.
BOEM-2023-0011-0140-0060	Yet unlike other offshore wind energy projects in the region having robust monitoring protocols SouthCoast has only signaled intent to coordinate with Mass Wildlife RIDEM and USFWS to identify appropriate mitigation measures to avoid noise-related impacts to nesting Piping Plovers from activities such as ground disturbance avoidance and displacement that may occur during the construction phase for the Falmouth and Brayton Point export cable corridors. [Footnote 175: See the following: NEWP COP Volume III Appendix III-R Draft Piping Plover Protection Plan pp. 1–3.] SouthCoast must detail those measures that are to be taken to protect this state-listed species and its habitats during the nesting season (April 1 – August 31). A contingency plan should be designed and implemented for any problems that arise during horizontal directional drilling cable installation. [Footnote 176: Id.] We strongly endorse plan monitoring by qualified biologists from an accredited organization or an individual with at least one year of experience at an accredited organization conducting shorebird monitoring for Piping Plovers. [Footnote 177: Id. at 2.] Monitoring and mitigation for listed birds should cover all aspects of the project throughout its operational life not just the cable installation near coastal waterbird breeding sites	Onshore components of the Proposed Action are mostly within existing, highly disturbed industrial areas that are unlikely to provide important bird habitats. As outlined in the USFWS BA Section 4.4.2, piping plovers have been reported in the vicinity of the onshore Action Areas. The summary of the 2021 Massachusetts Piping Plover Census documented breeding piping plovers at 188 sites, with one pair recorded in the vicinity of the Shore Street (Falmouth, Massachusetts) landfall site under consideration for the Proposed Action. Please refer to BOEM's ESA compliance documents at the following link: https://www.boem.gov/environmental-consultations. In addition, BOEM concluded its ESA Section 7 obligations on September 1, 2023, when USFWS issued its Biological Opinion for the Project. As stated in the Biological Opinion, "piping plovers are not likely to be adversely affected by onshore portions of the project due to lack of suitable habitat and avoidance of coastal habitat disturbance via HDD methods."

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BOEM-2023-0011-0140-0061	We note that to date no bird species including any pelagic marine or ESA-listed species has been identified as the explicit subject in the SouthCoast monitoring framework. [Footnote 178: SCW COP Volume II at 16.4–16.6.] This lack of proposed monitoring measures for bird species around the offshore wind energy infrastructure is a serious deficiency in the DEIS and COP for this project. [Footnote 179: For example and in addition to other measures Dominion Power is sponsoring a study of Whimbrel a non-listed species at that wind energy area. See: CVOW-C COP at 4-202.] Besides better addressing the needs of listed species other species also should be a focus of this project's monitoring plan. Recent tracking studies of White-winged Scoters in southern New England for example have revealed frequent commuting flights between Nantucket Sound and Long Island Sound and medium-high relative use of offshore habitats in the Project Area. [Footnote 180: Figure 4 in Meattey DE McWilliams SR Paton PW et al. 2019. Resource selection and wintering phenology of White-winged Scoters in southern New England: Implications for offshore wind energy development. The Condor: Ornithological Applications 121: duy014.] Other candidates for monitoring purposes can be found among those species designated as having higher annual exposure scores (2-3) or species having higher annual exposure (moderate-high). [Footnote 181: Table 3-1 in SCW COP Appendix I1 at 87–89.]	As stated in Final EIS Section 3.5.3, *Birds*, SouthCoast Wind has developed a Draft Post-Construction Avian and Bat Monitoring Framework included in Final EIS Appendix G, Attachment G-2. As part of the framework, SouthCoast Wind is committing to an Adaptive Management approach in which ongoing bird and bat data collection in offshore wind lease areas will be used to inform Project operations and conservation mitigation strategies, as available and applicable. In addition, BOEM has included an adaptive management mitigation measures (see Table G-2 in Appendix G) to address potential future impacts during offshore operations. Furthermore, the USFWS Biological Opinion on ESA-listed species requires the aforementioned monitoring framework and adaptive management described in the Final EIS to be implemented.
BOEM-2023-0011-0140-0062	The monitoring framework for SouthCoast does not address how acoustic disturbances from construction and related operations might cause harm to diving marine birds. [Footnote 185: Monitoring and mitigation for diving birds are not even mentioned in conjunction with acoustic disturbances e.g. SCW COP Appendix O. Marine Mammal and Sea Turtle Monitoring and Mitigation Plan.] We refer specifically to lethal or sublethal injury from sound pressure waves caused by high intensity acoustic pulses not to avoidance or temporary displacements that arise solely from avian changes in behavior. Because seabird taxa sensitive to this impact are	Disturbance impacts, including noise impacts, on diving birds from the Proposed Action as well as from other on- and offshore projects are addressed within Final EIS Sections 3.5.3.3 and 3.5.3.5, under the *Noise* IPF. As described, noise transmitted through water has the potential to result in temporary displacement of diving birds in a limited space around each pile and can cause short-term stress and behavioral changes ranging from mild annoyance to escape behavior. Because impacts would be temporary and birds would be able to avoid the disturbance, BOEM anticipates negligible impacts. Applicant-proposed measures to

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	more prevalent during winter minimization activities like curtailment may be justified to abate harm in this season. Capable of diving to 180 m depths Razorbills especially are already known to flush readily from loud noises they are prevalent during winter in waters of the Project Area and like other alcids they are vulnerable to displacement and macro-avoidance. [Footnote 186: Piatt JF Nettleship DN. 1985. Diving depths of four alcids. The Auk 102:293–297.] [Footnote 187: Lavers J Hipfner JM Chapdelaine G. 2009. Razorbill (Alca torda) version 2.0. In The Birds of North America (P.G. Rodewald editor). Cornell Lab of Ornithology Ithaca New York USA. https://doi.org/10.2173/bna.635.] [Footnote 188: Table 3-3 in SCW COP Appendix I1 at 90.] [Footnote 189: Robinson Willmott JC Forcey G Kent A. 2013. The Relative Vulnerability of Migratory Bird Species to Offshore Wind Energy Projects on the Atlantic Outer Continental Shelf: An Assessment Method and Database. Final Report to the U.S. Department of the Interior Bureau of Ocean Energy Management Office of Renewable Energy Programs. OCS Study BOEM 2013-207. 275 pp.]Densities of diving birds are typically highest during winter months on inner and middle shelf habitats at least in this portion of the Atlantic OCS. [Footnote 190: E.g. see Figure 4–2 p. 39 in Robinson Willmott J Forcey G Vukovich M McGovern S Clerc J Carter J. 2020. Ecological Baseline Studies of the US Outer Continental Shelf: Final Report. Gainesville FL. OCS Study BOEM 2021–079.] Therefore shifting the construction season for pile-driving and other noisy operations may eliminate altogether any underwater acoustic disturbance to diving birds. If time/area closures are not practical other methods for sound abatement may include: (1) establishing safety zones monitored by visual observers or passive acoustics and that trigger shut-down or low-power operations if large diving marine bird flocks enter these zones (2) using noise reduction gear like bubble curtains around pile driving when diving marine birds are present and (3) deploying other noise-source modifications or changes to operational	minimize impacts on marine life, such as soft-start procedures for pile driving, would also minimize the potential for noise exposure to diving birds, as they can depart the area when noisy activity begins.

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	parameters such as soft starts (currently included in the DEIS). [Footnote 191: Erbe C Dunlop R Dolman S. 2018. Effects of noise on marine mammals. Pp. 277–309 in Effects of anthropogenic noise on animals. Springer New York NY.]Noise monitoring and abatement during impulsive pile driving operations for monopile installation has been an established practice in other Atlantic wind energy project areas. [Footnote 192: https://media.fisheries.noaa.gov/2021-01/Dominion_CVOW_2020IHA_MonRep_OPR1.pdf?null=] Distances to injury-causing sound levels measured in one study varied from 0.7 to 3.1 km for marine mammals during installation activities. [Footnote 193: Id. p. 32.] Consequently adequate spatial buffers or suitable observation distances may be required for incorporation into study designs that are used to monitor avian reactions to subsurface acoustic disturbance.	

Comment No.	Comment	Response

N.7 General Comment Summaries and Responses

N.7.1 General Support or Opposition

Table N.7.1-1. Responses to general support or opposition comments

General Comment Summaries and Responses
Comment Summary 1: Many commenters expressed support for the Project and urged BOEM to not select the No Action Alternative, stating that doing so would produce negative effects. Many commenters felt that the benefits of the Project would outweigh the negative impacts. Commenters stated that the Project would provide high-quality jobs; numerous benefits to the economy and other local industries like hospitality, tourism, and retail; and create supply chains, boosting economic development. Multiple commenters stated that offshore wind, and this Project specifically, would contribute to state, regional, and federal renewable energy, decarbonization, and net-zero emission goals; provide environmental benefits; and help combat the effects of climate change. Many commenters expressed support for the Project's location, stating that New England has favorable renewable resources and is close to large population centers. Some commenters stated that offshore wind specifically would provide health and safety benefits and advance social justice. Others indicated that the Project would increase electricity supply and security, as well as the energy grid's diversity and reliability.
Response: Thank you for your comment. BOEM acknowledges your support for the Project.
Submission IDs contributing to comment summary: BOEM-2023-0019-0001; BOEM-2023-0019-0003; BOEM-2023-0020-0001; BOEM-2023-0028-0001; BOEM-2023-0031-0001; BOEM-2023-0032-0001; BOEM-2023-0036-0001; BOEM-2023-0037-0001; BOEM-2023-0040-0001; BOEM-2023-0041-0001; BOEM-2023-0042-0001; BOEM-2023-0044-0001; BOEM-2023-0048-0001; BOEM-2023-0050-0001; BOEM-2023-0052-0003; BOEM-2023-0054-0001; BOEM-2023-0057-0001; BOEM-2023-0060-0001; BOEM-2023-0066-0001; BOEM-2023-0067-0001; BOEM-2023-0073-0001; BOEM-2023-0082-0001; BOEM-2023-0084-0001; BOEM-2023-0087-0001; BOEM-2023-0092-0001; BOEM-2023-0097-0001; BOEM-2023-0100-0001; BOEM-2023-0111-0001; BOEM-2023-0113-0001; BOEM-2023-0113-0002; BOEM-2023-0113-0003; BOEM-2023-0114-0001; BOEM-2023-0115-0001; BOEM-2023-0120-0001; BOEM-2023-0123-0027; BOEM-2023-0130-0001; BOEM-2023-0130-0016; BOEM-2023-0135-0001; BOEM-2023-0135-0002; BOEM-2023-0141-0001; BOEM-2023-0141-0002; BOEM-2023-0148-0001; BOEM-2023-0149-0001; BOEM-2023-0152-0001; BOEM-2023-0154-0001; BOEM-2023-0156-0001; BOEM-2023-0159-0001; BOEM-2023-0161-0002; BOEM-2023-0162-0001; BOEM-2023-0164-0001; BOEM-2023-0168-0001; BOEM-2023-0169-0001; BOEM-2023-0170-0001; BOEM-2023-0174-0001; BOEM-2023-0179-0001; BOEM-2023-0181-0001
Comment Summary 2: Many commenters expressed opposition to the Project, stating that the negative impacts outweigh the benefits, and asked that BOEM not approve the Project. Many commenters felt that there was not enough information, specifically on the impacts of the Project, and too many unknowns remained.

General Comment Summaries and Responses
Many commenters were concerned about negative impacts on marine life including whales, dolphins, sharks, sea turtles, and fowl, specifically that the Project would interfere with echolocation and displace or kill species. Commenters were also concerned about negative environmental impacts, including degradation of air and water quality, loss of biodiversity, warming ocean water temperatures, and waste. Some commenters expressed concern for the potential for oil, fuel, or chemical leaks, stating that wind turbines should not be placed in the ocean. Several commenters were concerned about the locations of the transmission lines on beaches and in residential areas and were concerned that they would corrode in the ocean. Some commenters claimed that the wind turbines would pose negative health effects, stating that the turbine noise and vibration would cause illness. Others stated that the Project would negatively affect defense systems, navigation, and co-use of the ocean. Some commenters argued that alternative forms of energy production would be more efficient and reliable, require less O&M, and have fewer negative impacts. One commenter stated that the Project would provide negligible benefits due to the expected lifetime of the Project. Other commenters expressed concern about the cost of the Project, how taxpayer money was being used, and the potential for increased electrical costs. Numerous commenters stated that the Project would cause negative impacts on the fishing and tourism industry and negatively affect the economy. Commenters stated that the Project would produce negative visual impacts, light pollution, and sound pollution that would decrease tourism and property values. Some commenters expressed that they felt the process had not been transparent enough and was moving too fast. One commenter felt that BOEM would approve the Project regardless of public input.
Response: Thank you for your comments. More detailed and specific comments were provided on many of these topics and are included and addressed within those topics. BOEM acknowledges your opposition to the Project based on these general concerns.
Submission IDs contributing to comment summary: BOEM-2023-0005-0001; BOEM-2023-0008-0001; BOEM-2023-0008-0002; BOEM-2023-0009-0001; BOEM-2023-0011-0001; BOEM-2023-0012-0001; BOEM-2023-0012-0002; BOEM-2023-0013-0001; BOEM-2023-0016-0001; BOEM-2023-0017-0001; BOEM-2023-0018-0001; BOEM-2023-0045-0001; BOEM-2023-0046-0001; BOEM-2023-0058-0001; BOEM-2023-0061-0001; BOEM-2023-0063-0001; BOEM-2023-0064-0001; BOEM-2023-0067-0001; BOEM-2023-0068-0001; BOEM-2023-0069-0001; BOEM-2023-0072-0001; BOEM-2023-0075-0001; BOEM-2023-0078-0001; BOEM-2023-0081-0015; BOEM-2023-0085-0005; BOEM-2023-0086-0010; BOEM-2023-0090-0001; BOEM-2023-0094-0001; BOEM-2023-0098-0001; BOEM-2023-0099-0001; BOEM-2023-0101-0001; BOEM-2023-0102-0001; BOEM-2023-0102-0002; BOEM-2023-0103-0001; BOEM-2023-0104-0001; BOEM-2023-0105-0001; BOEM-2023-0107-0001; BOEM-2023-0108-0001; BOEM-2023-0109-0001; BOEM-2023-0116-0001; BOEM-2023-0132-0007; BOEM-2023-0132-0008; BOEM-2023-0144-0001; BOEM-2023-0144-0004; 0155-0001; BOEM-2023-0182-0001; BOEM-2023-0183-0001

N.7.2 Purpose and Need

General Comment Summaries and Responses
Comment Summary 1: One commenter voiced concerns regarding uninterrupted reliability of service, especially during winter storms, while one commenter asserted that the Project would increase energy reliability, especially during the winter when winds are strongest.
Response: Potential impacts of severe storms are described in Final EIS Section 2.4, *Non-Routine Activities and Low-Probability Events*. The engineering specifications of the WTGs and their ability to sufficiently withstand weather events is independently evaluated by a certified verification agent when

General Comment Summaries and Responses
reviewing the Facility Design Report and Fabrication and Installation Report according to international standards, which include withstanding hurricane-level events.
Submission IDs contributing to comment summary: BOEM-2023-0011-0055, BOEM-2023-0011-0139
Comment Summary 2: Several commenters questioned the purposed of the Project and voiced concerns that the energy and carbon impacts to produce the WTGs would not be offset by the carbon emissions saved and electricity generated by the Project.
Response: As stated in Section 1.2, the project purpose is grounded in BOEM's authority under the OCSLA to authorize renewable energy activities on the OCS, EO 14008, the shared goals of the federal agencies to deploy 30 GW of offshore wind energy capacity in the United States by 2030 while protecting biodiversity and promoting ocean co-use, and consideration of the goals of the Project applicant. Analysis of the impact of carbon and other air emissions and avoided emissions as a result of the Proposed Action can be found in Section 3.4.1.5, *Impacts of Alternative B – Proposed Action on Air Quality*.
Submission IDs contributing to comment summary: BOEM-2023-0011-0085, BOEM-2023-0011-0086

N.7.3 Proposed Action and Alternatives

General Comment Summaries and Responses
Comment Summary 1: Several commenters expressed general support for alternatives that maximize power generation and are cost-efficient while ensuring environmentally responsible development.
Response: Comment noted.
Submission IDs contributing to comment summary: BOEM-2023-0011-0130, BOEM-2023-0011-0122, BOEM-2023-0011-0127
Comment Summary 2: Some commenters indicated that they did not support Alternative A – No Action Alternative because the region would not see the economic benefits and reduced greenhouse gas emissions that would result from the Project.
Response: The commenters' opposition to Alternative A is noted.
Submission IDs contributing to comment summary: BOEM-2023-0011-0122, BOEM-2023-0011-0130
Comment Summary 3: Several commenters indicated their support for Alternative B – Proposed Action because it would create jobs and economic growth and would reduce greenhouse gas emissions.
Response: The commenters' support of Alternative B is noted.
Submission ID contributing to comment summary: BOEM-2023-0011-0122
Comment Summary 4: Several commenters indicated their support for Alternative C – Fisheries Habitat Impact Minimization because it addresses concerns about the potential impact of the offshore export cable on fisheries and habitat areas.
Response: The commenters' support of Alternative C is noted.

Submission IDs contributing to comment summary: BOEM-2023-0011-0122, BOEM-2023-0011-0126
Comment Summary 8: A commenter indicated that they did not support Alternative C – Fisheries Habitat Impact Minimization because of technical, financial, and environmental challenges as a result of the onshore export cable route.
Response: The commenter's opposition to Alternative C is noted.
Submission IDs contributing to comment summary: BOEM-2023-0011-0135, BOEM-2023-0011-0127
Comment Summary 5: Several commenters indicated that they did not support Alternative D – Nantucket Shoals Alternative because there was a lack of evidence of adverse impacts on the Nantucket Shoals ecosystem and that it would lead to project delays.
Response: The commenters' opposition to Alternative D is noted.
Submission IDs contributing to comment summary: BOEM-2023-0011-0122, BOEM-2023-0011-0127, BOEM-2023-0011-0127, BOEM-2023-0011-0135
Comment Summary 6: Several commenters indicated their support for Alternative E – Foundation Structures Alternative, which would use quiet foundation types and avoid impacts of pile-driving noise on marine mammals and sea turtles.
Response: The commenters' support of Alternative E is noted.
Submission IDs contributing to comment summary: BOEM-2023-0011-0122, BOEM-2023-0011-0130
Comment Summary 9: A commenter indicated that they did not support Alternative E – Foundation Structures Alternative because they felt the developer should retain decision-making when it comes to selecting the best foundation design given the area conditions.
Response: The commenter's opposition to Alternative E is noted.
Submission ID contributing to comment summary: BOEM-2023-0011-0127
Comment Summary 10: A commenter indicated their support for Alternative F – Muskeget Channel Cable Modification Alternative because it would provide the best opportunity to minimize impacts on natural and cultural resources, respond to the needs of coastal communities, and proceed in a safe, efficient, and responsible manner.
Response: The commenter's support of Alternative F is noted.
Submission ID contributing to comment summary: BOEM-2023-0011-0125
Comment Summary 7: A commenter felt that the EIS did not include the high-quality baseline data necessary to make a determination.
Response: Please refer to response to comment BOEM-2023-0011-0091-0014.
Submission ID contributing to comment summary: BOEM-2023-0011-0089
Comment Summary 11: A commenter asked to clarify the total kilovolt output as a result of the conversion from alternating current (AC) to direct current (DC) and reducing from five cables to three under Alternative F.
Response: Please refer to response to comment BOEM-2023-0011-0091-0005.
Submission ID contributing to comment summary: BOEM-2023-0011-0175

N.7.4 Air Quality

General Comment Summaries and Responses
Comment Summary 1: Commenters generally affirmed the purpose and need for the Project, noting that the Project provides an opportunity for the Northeast United States to transition away from the use of fossil fuels and toward the generation and use of renewable, clean offshore wind energy to meet energy demand while reducing GHG emissions. Commenters noted the essential role of this transition in meeting applicable climate goals and preventing worsening impacts of climate change. Some commenters highlighted the potential for offshore wind to provide cost-effective and reliable electricity while reducing GHG emissions.
Response: Thank you for your comment. Section 3.4.1 outlines the Project's anticipated air pollutant emissions, including criteria pollutants, VOCs, air toxics or hazardous air pollutants, and GHGs, and resulting air quality impacts. As discussed in EIS Section 3.4.1.5, once operational, the Proposed Action would result in annual avoided emissions of 692 tons of NO_X, 313 tons of SO_2, and 4,038,482 tons of carbon dioxide (CO_2). The avoided CO_2 emissions represent about 8 percent of the required GHG emissions reduction from 1990 levels by 2030 in Massachusetts or about 72 percent of the required GHG emissions reduction from 1990 levels by 2035 in Rhode Island. In addition, the avoided CO_2 emissions are equivalent to the emissions generated by about 800,000 passenger vehicles in a year. Even when accounting for construction, maintenance, and decommissioning emissions, the Proposed Action would result in a net decrease in overall emissions over the region compared to installing a traditional fossil-fueled power facility. Please refer to Chapter 1, *Introduction*, regarding the purpose and need for the Proposed Action, including to provide a commercially viable offshore wind energy project for offshore wind energy generation, supporting the attainment of the goals outlined by Executive Order (EO) 14008, "Tackling the Climate Crisis at Home and Abroad," issued January 27, 2021. Please refer to EIS Section 3.6 regarding the impacts related to socioeconomic conditions and cultural resources, including demographics, employment, and economics, respectively.
Submission IDs contributing to comment summary: BOEM-2023-0011-0028-0002; BOEM-2023-0011-0028-0004; BOEM-2023-0011-0139-0001.
Comment Summary 2: Commenters generally questioned the conclusions of the air quality analysis contained in the EIS. Some commenters noted that implementation of the Proposed Action would generate air pollutant and GHG emissions. Other commenters challenged the EIS' analysis of accidental releases.
Response: Thank you for your comment. Section 3.4.1 outlines the Project's anticipated air pollutant emissions, including criteria pollutants, VOCs, air toxics or hazardous air pollutants, and GHGs, and resulting air quality impacts. As discussed in Section 3.4.1.5, although there would be some short-term air quality impacts due to various activities associated with construction, maintenance, and eventual decommissioning, these emissions would be relatively small and limited in duration. Moreover, the Proposed Action would provide up to 2,400 MW of clean, renewable wind energy to the northeast United States, thereby potentially avoiding some GHG emissions associated with fossil-fueled energy generation. Although there is no standard technical definition for clean energy, the term generally refers to sources of energy that result in minimal or no effect with respect to air pollutant or GHG emissions. As a result, operation of the Proposed Action would offset emissions related to its construction and eventual decommissioning (within different time periods of operation depending on the pollutant), and the Proposed Action would result in air quality-related health effects avoided in the region. When compared to the installation of a traditional fossil-fueled power facility, the Proposed Action would result in a net decrease in overall emissions over the region. To further minimize air pollutant emissions,

General Comment Summaries and Responses
SouthCoast Wind has also proposed measures to reduce emissions through compliance with applicable fuel-efficiency, fuel sulfur content, and emissions standards. Furthermore, as described in Section 3.4.1.5, air quality impacts from accidental releases would be short term and limited to the local area at and around the accidental release location. BOEM anticipates that a major spill is very unlikely due to vessel and offshore wind energy industry safety measures, as well as the distributed nature of the material. Impacts from accidental releases would also be reduced through implementation of a Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention, Control, and Countermeasure (SPCC) Plan. Impacts from accidental releases are therefore anticipated to be negligible. As stated in Section 3.4.1.5, because of the amounts of emissions, the fact that emissions would be spread out in time (7 years for construction and then lesser emissions annually during operation), and the large geographic area over which they would be dispersed (throughout the 127,388-acre [51,552-hectare] Lease Area and the vessel routes from the onshore facilities), air pollutant concentrations associated with the Proposed Action are not expected to exceed the national and Massachusetts ambient air quality standards.
Submission IDs contributing to comment summary: BOEM-2023-0011-0132-0017; BOEM-2023-0011-0132-0020; BOEM-2023-0011-0132-0024; BOEM-2023-0011-0132-0030; BOEM-2023-0011-0132-0066; BOEM-2023-0011-0137-0118.
Comment Summary 3: Commenter highlighted the need for an assessment of SF_6 emissions resulting from the Proposed Action.
Response: Thank you for your comment. The EIS has been revised to include an assessment of SF_6 emissions resulting from switchgear on the OSPs.
Submission ID contributing to comment summary: BOEM-2023-0011-0132-0030.

N.7.5 Water Quality

General Comment Summaries and Responses
Comment Summary 1: A few commenters asked about the risk minimization planned for accidental releases and if funding has been set aside for potential cleanup.
Response: SouthCoast Wind has developed an OSRP to address rapid spill response, cleanup, and other measures to minimize any potential impact on affected resources from spills and accidental releases, including spills resulting from catastrophic events. Please refer to Appendix AA, *Oil Spill Response Plan (OSRP)*, of the COP to review the OSRP in full.
Submission IDs contributing to comment summary: BOEM-2023-0011-0015, BOEM-2023-0011-0073
Comment Summary 2: Commenters voiced concern about how the placement of Project components, including export cables and WTG foundations, would affect water quality through leaching or resuspension of toxic compounds as a result of dredging. A commenter also voiced concern about the effects of the proposed HVDC cooling system.
Response: As described in Section 3.4.2.5, *Impacts of Alternative B – Proposed Action on Water Quality*, of the Final EIS, resuspension of sediment as a result of cable emplacement activities is anticipated to be localized adjacent to the trench and temporary in nature due to the known hydrodynamic conditions

General Comment Summaries and Responses
within the Project area and the use of best management practices associated with jet plowing technologies. Impacts on water quality as a result of potential leaching and weathering of Project components is discussed in Section 3.4.2.3, *Impacts of Alternative A – No Action on Water Quality*, of the FEIS under the *Presence of Structures* IPF. Additional information on the potential effects of the HVDC converter OSP was added to Section 3.4.2.5, *Impacts of Alternative B – Proposed Action on Water Quality*, of the Final EIS under the *Discharges/Intakes* IPF.
Submission IDs contributing to comment summary: BOEM-2023-0011-0083, BOEM-2023-0011-0086, BOEM-2023-0011-0107
Comment Summary 3: A commenter indicated that conclusion in the Draft EIS that effects would only exist for the duration of the Proposed Action was incorrect because the intention is to leave foundations in the seabed after the Project has been decommissioned.
Response: As described in the COP Volume I, Section 3.3.1.7, SouthCoast Wind anticipates removal of scour protection during decommissioning. Prior to the end of the life of the Project, a detailed decommissioning application would be submitted to BSEE for review, which would describe the facilities SouthCoast Wind plans to remove or proposes to leave in place. As required by 30 CFR 285.910, all facilities must be removed to 15 feet below the mudline unless otherwise authorized by BSEE. BOEM's regulations have a broad definition of what constitutes a facility: "Facility means an installation that is permanently or temporarily attached to the seabed of the OCS. Facilities include any structures; devices; appurtenances; gathering, transmission, and distribution cables; pipelines; and permanently moored vessels. Any group of OCS installations interconnected with walkways, or any group of installations that includes a central or primary installation with one or more satellite or secondary installations, is a single facility. BOEM and BSEE may decide that the complexity of the installations justifies their classification as separate facilities."
Submission ID contributing to comment summary: BOEM-2023-0011-0132

N.7.6 Bats

General Comment Summaries and Responses
Comment Summary 1: Commenters voiced concerns that the WTGs may significantly reduce bat populations through turbine strikes and altering the flight paths.
Response: Migration disturbance and turbine strikes are impacts on bats that could result from the presence of structures in the OCS and are described in detail in Final EIS Section 3.5.1.3, *Impacts of Alternative A – No Action on Bats*. The presence of structures on the OCS is anticipated to have a negligible impact on bat populations because bat presence in the Lease Area is limited.
Submission IDs contributing to comment summary: BOEM-2023-0011-0081, BOEM-2023-0011-0132

N.7.7 Benthic Resources

General Comment Summaries and Responses
Comment Summary 1: Commenters asked for additional information on the impacts on fish and shellfish as a result of burying the offshore export cable and if the cable placement would disrupt heavy metals or destroy benthic habitat that serves as fish sanctuaries.
Response: Additional information on the impacts of cable emplacement as a result of the Proposed Action was added to Section 3.5.5.5, *Impacts of Alternative B – Proposed Action on Finfish, Invertebrates, and Essential Fish Habitat*.
Submission IDs contributing to comment summary: BOEM-2023-0011-0015, BOEM-2023-0011-0107
Comment Summary 2: A commenter expressed concern about the long-term cumulative impact of EMF on marine life and migratory birds.
Response: A detailed analysis of the long-term cumulative impacts of EMFs and cable emplacement on marine life and birds are included in Sections 3.5.3, 3.5.5, 3.5.6, and 3.5.7 of the Final EIS.
Submission ID contributing to comment summary: BOEM-2023-0011-0091
Comment Summary 3: A commenter asked for additional justification about why offshore structures were being placed in sandy environments.
Response: Sediment samples from within the Lease Area were primarily classified as Coastal and Marine Ecological Classification Standard Subclass Fine Unconsolidated Substrate, or dominated by sand or finer sediment size (< 5 percent gravel). Sand waves within the Lease Area and export cable corridors may be disturbed during cable emplacement; however, due to their mobility, it is expected that the sand wave profiles would rapidly return after cable installation. Additionally, mitigation measures have been proposed to limit save wave leveling and boulder clearance during construction through micrositing to avoid these areas.
Submission ID contributing to comment summary: BOEM-2023-0011-0132
Comment Summary 4: A commenter indicated they were concerned that the wind energy area would not be restored to its prior condition after decommissioning and that large amounts of materials could remain in the ocean, representing a permanent conversion of soft sediment areas to those with hard structure.
Response: As described in the COP Volume I, Section 3.3.1.7, SouthCoast Wind anticipates removal of scour protection during decommissioning. Prior to the end of the life of the Project, a detailed decommissioning application would be submitted to BSEE for review, which would describe the facilities SouthCoast plans to remove or proposes to leave in place. As required by 30 CFR 285.910, all facilities must be removed to 15 feet below the mudline unless otherwise authorized by BSEE. BOEM's regulations have a broad definition of what constitutes a facility: "Facility means an installation that is permanently or temporarily attached to the seabed of the OCS. Facilities include any structures; devices; appurtenances; gathering, transmission, and distribution cables; pipelines; and permanently moored vessels. Any group of OCS installations interconnected with walkways, or any group of installations that includes a central or primary installation with one or more satellite or secondary installations, is a single facility. BOEM and BSEE may decide that the complexity of the installations justifies their classification as separate facilities."
Submission ID contributing to comment summary: BOEM-2023-0011-0136

N.7.8 Birds

General Comment Summaries and Responses
Comment Summary 1: Many commenters voiced concerns about how WTGs would affect birds through bird strikes and changing the spatial distribution of prey. Commenters asked how those impacts, including bird mortality, would be monitored.
Response: As described in Draft EIS and Final EIS Section 3.5.3, bird presence in the offshore environment is relatively low. The primary impacts of the Proposed Action that would affect birds are habitat loss and collision-induced mortality from rotating WTGs, and permanent habitat loss and conversion from onshore construction (see Final EIS Section 3.5.3.5, *Impacts of Alternative B – Proposed Action on Birds*). SouthCoast Wind has developed a Draft Avian and Bat Post-Constructing Monitoring Framework (included as Attachment G-2 of Appendix G of the Final EIS). However, if the reported post-construction bird monitoring results indicate bird impacts deviate substantially from the impact analysis included in this EIS, then SouthCoast Wind must make recommendations for new mitigation measures or monitoring methods as part of the adaptive bird and bat mitigation measure.
Submission IDs contributing to comment summary: BOEM-2023-0011-0039, BOEM-2023-0011-0085, BOEM-2023-0011-0091, BOEM-2023-0011-0132, BOEM-2023-0011-0132
Comment Summary 2: Commenters indicated that the Draft EIS does not adequately address the direct, indirect, or cumulative impacts of the Proposed Action on birds and does not adequately support the conclusion that the Proposed Action would have beneficial impacts on birds.
Response: The cumulative impact analysis for the No Action Alternative considers the impacts of ongoing activities and other reasonably foreseeable planned activities, excluding the Proposed Action, as described in Final EIS Appendix D, *Planned Activities Scenario*. The cumulative impact analysis of the Proposed Action considers approval of the SouthCoast Wind Project in combination with other reasonably foreseeable planned activities, including planned offshore wind activities, within the geographic analysis area for each Chapter 3 resource topic. For mobile resources, including birds, the geographic analysis area for these mobile resources is the general range of the species. The purpose is to capture the cumulative impacts on each of those resources that would be affected by the Proposed Action, as well as the impacts that would still occur under the No Action Alternative. As summarized in Final EIS Section 3.5.3.5, the Proposed Action is anticipated to result in potential minor adverse and minor beneficial impacts on birds.
Submission IDs contributing to comment summary: BOEM-2023-0011-0117, BOEM-2023-0011-0158, BOEM-2023-0011-0137, BOEM-2023-0011-0175

N.7.9 Coastal Habitat and Fauna

None.

N.7.10 Finfish, Invertebrates, and Essential Fish Habitat

General Comment Summaries and Responses
Comment Summary 1: Several commenters expressed their concern with the impact of noise and soundwaves resulting from construction and installation activities, including pile driving.
Response: Final EIS Section 3.5.5.5 has been expanded to include discussions on the effects of noise on behavior, communication, and spawning of fish and invertebrate species. As described in that section, geophysical surveys, vessel activity, seabed preparation, UXO removal, pile driving, and WTG operation are expected to produce noise effects during the pre-construction, construction, and operational phases of the project. However, no population-level impacts on finfish, invertebrate, and EFH resources from noise associated under the Proposed Action are anticipated.
Submission IDs contributing to comment summary: BOEM-2023-0011-0137, BOEM-2023-0011-0107, BOEM-2023-0011-0132
Comment Summary 2: A commenter recommended that the project footprint be limited within the foraging area.
Response: As described in FEIS Section 3.5.5.5, direct impacts on foraging habitat are expected to be localized to the immediate project footprint. Indirect impacts on EFH could occur as a result of sediment suspension, temporarily decreasing foraging success due to increased turbidity. Normal foraging behavior would be expected to resume following completion of installation and settlement of suspended sediments. Additionally, BOEM is analyzing Alternative D, which would result in the removal of WTG positions in the northeastern portion of the Lease Area, which abuts the Nantucket Shoals, and would avoid impacts on foraging finfish in the Nantucket Shoals.
Submission IDs contributing to comment summary: BOEM-2023-0011-0163
Comment Summary 3: A commenter asked for clarification on how species distribution, including micro-organisms, would change as a result of the Proposed Action.
Response: Please refer to response to comment BOEM-2023-0011-0117-0011.
Submission IDs contributing to comment summary: BOEM-2023-0011-0132

N.7.11 Marine Mammals

General Comment Summaries and Responses
Comment Summary 1: Numerous comments raised general concerns regarding adverse effects on marine mammals due to the Proposed Action. Specifically, concerns were raised that the Project would have negative impacts on whales, dolphins, sharks, and bats. Commenters felt that potential oil leaks, use of sonar, increased vessel traffic, turbines and machinery, generators, pile driving, and construction of the Project would negatively impact species' breeding stock, migration patterns, ability to navigate, and cause disorientation, deafness, and mortality. Many commenters expressed concern over the recent dead whales and dolphins washing ashore, claiming that their deaths are likely tied to ongoing surveys. Some commenters stated that NOAA should not consider granting Incidental Harassment Authorization (IHAs) under these circumstances. Others stated that any take of the North Atlantic Right Whale was unacceptable under the current circumstances, specifically given the species' population decline.

General Comment Summaries and Responses
Many commenters expressed that they were concerned that there is not enough existing information or completed studies, including studies analyzing similar scenarios in term of wind turbine generator number, size, and density, allowing for too many unknowns. Commenters specifically expressed that there was not enough information as to how the Project would impact the marine environment and marine mammals, specifically the North Atlantic Right Whale. Several commenters expressed that what information is known shows that the Project would result in negative impacts and that negative impacts are already being seen. A number of commenters expressed that more studies need to be conducted before the Project moves forward. Some commenters asked that the Project be either slowed down or stopped completely. A few commenters stated that the proposed mitigation measures were inadequate and that negative impacts did not appear to be adequately addressed. One commenter asked that the project schedule be altered to avoid construction during the North Atlantic Whale migration season and another stated that the benefits of the project did not outweigh the negative impacts.
Response: Thank you for your comments. Draft EIS Section 3.5.6, *Marine Mammals*, discusses potential impacts on marine mammals from the Proposed Action, alternatives, and ongoing and planned activities in the geographic analysis area. BOEM addressed impacts on marine mammals through the following IPFs: noise, presence of structures, traffic, accidental releases, EMF and cable heat, cable emplacement and maintenance, port utilization, lighting, and gear utilization. These IPFs address the direct and indirect impacts on marine mammals. Included in the analysis for the proposed Project are applicant-proposed avoidance, minimization, and mitigation measures (AMMs) to avoid, reduce, mitigate, or monitor impacts on marine mammals. These AMMs are included in Table G-1 of Appendix G, as well as described in detail in section 3.5.6.8 of the Draft EIS, and are assessed as part of the Proposed Action. Potential effects on federally listed threatened and endangered species, including the North Atlantic Right Whale (NARW), are discussed in Section 3.5.6 of the Draft EIS. In addition to working in consultation with NOAA Fisheries, BOEM is preparing a Biological Assessment (BA) pursuant to Section 7 of the Endangered Species Act (ESA) that will provide a detailed discussion of ESA-listed species and potential impacts of the Project. Results of ESA consultation with the U.S. Fish and Wildlife Service (USFWS) will be included in the Final EIS. BOEM also continues to consult with NMFS on potential impacts on federally listed threatened and endangered marine mammals.
Submission IDs contributing to comment summary: 0006-0001; 0010-0001; 0015-0001; 0015-0005; 0015-0011; 0015-0012; 0021-0001; 0049-0001; 0051-0002; 0051-0004; 0055-0007; 0059-0001; 0071-0002; 0074-0001; 0077-0001; 0081-0005; 0085-0003; 0086-0007; 0088-0003; 0089-0002; 0089-0003; 0091-0008; 0091-0010; 0093-0001; 0095-0001; 0107-0005; 0122-0011; 0132-0036; 0132-0037; 0132-0038; 0132-0039; 0132-0044; 0132-0050; 0132-0052; 0132-0058; 0132-0059; 0138-0002; 0142-0002; 0150-0001; 0158-0001; 0163-0003; 0171-0001; 0175-0003
Comment Summary 2: One commenter expressed that they felt the Project would have a positive impact on marine mammals, including the North Atlantic Right Whale, stating that renewable energy projects like the SouthCoast Wind Project would contribute to the transition away from fossil fuels, in turn helping to stop the negative impacts of climate change felt by marine mammals. Another expressed that they believed the mitigation measures outlined in the Project's proposal were sufficient in minimizing negative impacts, specifically to the North Atlantic Right Whale.
Response: Thank you for your comment. BOEM acknowledges your support for the Project.
Submission IDs contributing to comment summary: 0027-0001; 0135-0004

N.7.12 Sea Turtles

None.

N.7.13 Wetlands

None.

N.7.14 Commercial Fisheries and For-Hire Recreational Fishing

General Comment Summaries and Responses
Comment Summary 1: Commenters expressed general concern for the level of potential impacts on commercial fisheries as a result of the Proposed Action. Commenters also highlighted specific space use conflicts between commercial trawl gear and offshore export cables and concerns regarding diminished catch levels.
Response: As described in Section 3.6.1.5, *Impacts of Alternative B – Proposed Action on Commercial Fisheries and For-Hire Recreational Fishing*, the Proposed Action could affect port and fishing access, as well as transit and harvesting activities, fishing gear interactions, and target species catch. BOEM anticipates the adverse impacts of the Proposed Action on commercial fisheries and for-hire recreational fishing would vary by fishery and fishing operation due to differences in target species abundance in the Offshore Project area, gear type, and predominant location of fishing activity. For potential impacts on commercial trawl gear as a result of offshore export cables, please refer to response to comment BOEM-2023-0011-0106-0003.
Submission IDs contributing to comment summary: BOEM-2023-0011-0081, BOEM-2023-0011-0106, BOEM-2023-0011-0132
Comment Summary 2: A commenter emphasized the need to incorporate mitigation measures under consideration fully as part of alternatives analysis.
Response: All proposed mitigation measures by BOEM and developed through agency coordination are included in the Final EIS. Section 3.6.1.11, *Proposed Mitigation Measures*, was added to describe mitigation measures and analyze their potential to avoid or lessen impacts on commercial fisheries and for-hire recreational fishing.
Submission ID contributing to comment summary: BOEM-2023-0011-0136

N.7.15 Cultural Resources

General Comment Summaries and Responses
Comment Summary 1: Several commenters cite the analysis of IPFs and impact levels on the Nantucket Historic District National Historic Landmark.
Response: Please refer to responses to comments BOEM-2023-0011-0132-0084, BOEM-2023-0011-0132-0086, and BOEM-2023-0011-0128-0014.
Submission IDs contributing to comment summary: BOEM-2023-0011-0132-0083, BOEM-2023-0011-0132-0087, BOEM-2023-0011-0132-0088

N.7.16 Demographics, Employment, and Economics

General Comment Summaries and Responses
Comment Summary 1: Commenters expressed the benefits of the Project ranging from lower utility rates from renewable energy to the positive addition to the economy.
Response: BOEM agrees that this Project will have a positive economic impact.
Submission IDs contributing to comment summary: BOEM-2023-0011-0027, BOEM-2023-0011-0139
Comment Summary 2: Individuals commented that the Project would add many jobs to the Massachusetts economy.
Response: Information regarding the number of jobs added by this Project can be found in EIS Section 3.6.3.5. FTE job-years created in Massachusetts for this Project are 14,860 direct jobs, 4,300 indirect jobs, and 7,780 induced jobs, totaling 26,940.
Submission IDs contributing to comment summary: BOEM-2023-0011-0019, BOEM-2023-0011-0117, BOEM-2023-0011-0139, BOEM-2023-0011-0143, BOEM-2023-0011-0147, BOEM-2023-0011-0164, BOEM-2023-0011-0173
Comment Summary 3: Commenters expressed some potential negatives associated with the Project such as that property values may decline, historic neighborhoods would be negatively affected, tourism jobs will be lost, dark skies may be compromised, and popular beaches may need to be temporarily shut down.
Response: The closest WTG to the shore is approximately 23 miles and could theoretically affect shore-side property values; however, the WTG would not dominate the view even in the best atmospheric conditions (COP Volume II, Section 12.2; SouthCoast Wind 2024). Neighborhoods and beaches within the landfalls may be temporarily affected during construction in the short term. Impacts on night skies would depend on if an ADLS is implemented. SouthCoast Wind proposes to implement an ADLS to automatically turn the aviation obstruction lights on and off in response to the presence of aircraft in proximity to the wind farm. Such a system may reduce the amount of time that the lights are on, thereby potentially minimizing the visibility of the WTGs from shore and related effects on land use (COP Volume 1, Section 3.3.12; SouthCoast Wind 2024).
Submission IDs contributing to comment summary: BOEM-2023-0011-0011, BOEM-2023-0011-0091, BOEM-2023-0011-0132, BOEM-2023-0011-0133, BOEM-2023-0011-0144

N.7.17 Environmental Justice

General Comment Summaries and Responses
Comment Summary 1: BOEM should discuss methods for continued public engagement and include any requests made by the public in the Final EIS, and SouthCoast Wind should publish employment opportunities as they become available over the course of the Project to environmental justice communities.
Response: BOEM has facilitated effective public outreach throughout the EIS process as demonstrated through broad participation in scoping meetings and public hearings and substantial public input received through comments submitted on regulations.gov or through verbal testimony at public meetings during scoping and the public review period for the Draft EIS. Any comments made by the public in reference to the Project can be found on regulations.gov by

General Comment Summaries and Responses
searching on docket number BOEM-2021-0062 for scoping comments and docket number BOEM-2023-0011 for Draft EIS public comments. SouthCoast Wind's webpage (https://southcoastwind.com/) includes a "Work With Us" link that contains information on employment opportunities for the Project.
Submission IDs contributing to comment summary: BOEM-2023-0011-0121-0016, BOEM-2023-0011-0121-0020, BOEM-2023-0011-0100-0004
Comment Summary 2: The Final EIS should consider effects on environmental justice communities outside of the United States.
Response: EO 12898, which directs the conduct of environmental justice analyses, does not direct analyses to include considerations of communities in countries outside of the United States.
Submission ID contributing to comment summary: BOEM-2023-0011-0137-0062
Comment Summary 3: The Final EIS should ensure environmental justice communities are not disproportionately adversely affected by IPFs, including impacts on subsistence fishing and pollutants.
Response: Sections 3.4.1, *Air Quality*, 3.6.1, *Commercial Fisheries and For-Hire Recreational Fishing*, and 3.6.3, *Demographics, Employment, and Economics,* discuss the baseline conditions and potential impacts of the Project on factors including fishing and pollutants. Section 3.6.4, *Environmental Justice*, discusses these impacts in relation to environmental justice communities, and finds no major disproportionately adverse impacts on environmental justice communities with the exception of major impacts on Tribally important TCPs.
Submission IDs contributing to comment summary: BOEM-2023-0011-0140-0024, BOEM-2023-0011-0117-0024

N.7.18 Land Use and Coastal Infrastructure

General Comment Summaries and Responses
Comment Summary 1: Commenters raised concerns about adverse health impacts from cables and electrical fluids associated with the Project.
Response: Discussion on adverse human health impacts from cables can be found in Section 3.6.5 under the *EMF* IPF discussion of the Proposed Action. There are no anticipated adverse effects on human health.
Submission IDs contributing to comment summary: BOEM-2023-0011-0004, BOEM-2023-0011-0047, BOEM-2023-0011-0144, BOEM-2023-0011-0167
Comment Summary 2: Commenters stated that the onshore wind cables may need a Special Permit and approval from the Falmouth Zoning Board, and that SouthCoast Wind has not complied with local zoning requirements.
Response: As described in Final EIS Section 3.6.5.5, SouthCoast Wind has applied for an exemption from the operation of the zoning bylaws of the Town of Falmouth.
Submission IDs contributing to comment summary: BOEM-2023-0011-0004, BOEM-2023-0011-0029, BOEM-2023-0011-0073
Comment Summary 3: Commenters stated that the proposed landfall site in Falmouth is on deeded parkland from the town's founders and is protected under Article 97 from obstruction. Commenters also raised concern about the HVDC lines across Aquidneck Island.

General Comment Summaries and Responses
Response: EIS section 3.6.5 states that the three proposed Falmouth landfalls are in locations zoned as Public Use by the Town of Falmouth, including Worcester Park, Central Park, and the Surf Drive Beach public parking area. This zoning designation does not allow the installation of electrical transmission infrastructure, and any landfall option would likely require obtaining an easement from the Town of Falmouth and a zoning exemption from the state of Massachusetts. Regarding the lines across Aquidneck Island, a majority of the transmission route options are in existing ROWs and are not anticipated to present any zoning issues.
Submission IDs contributing to comment summary: BOEM-2023-0011-0034, BOEM-2023-0011-0091, BOEM-2023-0011-0138, BOEM-2023-0011-0163, BOEM-2023-0011-0166

N.7.19 Navigation and Vessel Traffic

General Comment Summaries and Responses
Comment Summary 1: Commenters expressed concerns about how the presence of WTGs and their impact on vessel radar systems would affect navigational safety in the region, especially during periods of inclement weather.
Response: Please refer to response to comment BOEM-2023-0011-0065-0019 regarding potential impacts on vessel radar systems. Information has been added to Section 3.6.6.3 under the *Presence of Structures* IPF in the Final EIS.
Submission IDs contributing to comment summary: BOEM-2023-0011-0085, BOEM-2023-0011-0107

N.7.20 Other Uses

None.

N.7.21 Recreation and Tourism

General Comment Summaries and Responses
Comment Summary 1: Commenters expressed concern with the proposed location of the onshore export cables, indicating that tourism will be affected by the construction activities at Falmouth Beach and that routes will cut through parks and a ballfield that are used for recreational activities.
Response: As described in Section 3.6.8.5, *Impacts of Alternative B – Proposed Action on Recreation and Tourism*, construction of onshore components is expected to result in temporary road and/or lane closures (and potential traffic congestion) during installation. SouthCoast Wind will work with the towns of Falmouth, Somerset, and Portsmouth (and others as may be needed) to develop and implement a construction period traffic management plan to avoid and/or minimize disruptions to residents, visitors, commercial uses, and recreational areas in the vicinity of construction activities (Table G-1, Appendix G). Such a traffic management plan will help identify/implement detours where needed.

General Comment Summaries and Responses
Submission IDs contributing to comment summary: BOEM-2023-0011-0167; BOEM-2023-0011-0004
Comment Summary 2: Several commenters expressed concern about potential impacts on tourism as a result of the presence of WTGs and associated lighting.
Response: The potential impacts on recreation and tourism from visual changes to the landscape as a result of WTGs and lighting are discussed throughout Final EIS Section 3.6.8, *Recreation and Tourism*. Additional information specific to anticipated impacts of the Proposed Action on visual resources can be found in Final EIS Section 3.6.9, *Visual Resources*.
Submission IDs contributing to comment summary: BOEM-2023-0011-0081; BOEM-2023-0011-0132
Comment Summary 3: A commenter indicated that there is a space-use conflict between the WTGs associated with the Proposed Action and recreational activities such as sailing regattas and recreational fishing activities.
Response: Please refer to response to comment BOEM-2023-0011-0117-0020. Information was added to the Final EIS regarding sailing and recreational fishing activities.
Submission ID contributing to comment summary: BOEM-2023-0011-0081

N.7.22 Scenic and Visual Resources

General Comment Summaries and Responses
Comment Summary 1: Commenters discussed that FAA lighting may be obtrusive, that red lights may be flashing at night, and that an ADLS is promised, but there are no instances in the United States where an ADLS has been successfully implemented near an airport.
Response: Field observations associated with visibility of FAA hazard lighting under clear-sky conditions indicate that FAA hazard lighting may be visible at a distance of 40 miles or more from the viewer. However, SouthCoast Wind has committed to using an ADLS on WTGs, which would only activate the hazard lighting when aircraft are present, resulting in shorter impacts on seascape, open ocean, landscape, and viewers. Additionally, it is estimated that the reduced time of FAA hazard lighting resulting from an implemented ADLS would reduce the duration of potential impacts of nighttime aviation lighting to less than 1 percent of the normal operating time that would occur without using an ADLS. BOEM has added a visual monitoring requirement to the Final EIS, which would require SouthCoast Wind to monitor the visual effects of the wind farm during construction and O&M (daytime and nighttime) and monitor the effectiveness of the ADLS (refer to measure SV-1 in Table G-2 of Appendix G, *Mitigation and Monitoring*). This measure would ensure that the ADLS is being implemented effectively and would determine whether the actual visual lighting impacts from the Project during construction and O&M correspond to the impacts described in the COP and EIS.
Submission IDs contributing to comment summary: BOEM-2023-0011-0074, BOEM-2023-0011-0081, BOEM-2023-0011-0132
Comment Summary 2: Commenters expressed that the simulations are concerning and that they are only taken from one vantage point at ground level even though property owners, the public, and visitors to NHL properties such as lighthouses experience different vantage points.

General Comment Summaries and Responses
Response: As stated in Appendix T of the COP, KOPs were selected to adequately represent views of the Project from multiple angles, distances, vantages, and viewer types (residents, tourists, economic interests), and that simulation viewpoints were selected to represent key views that highlight a diversity of viewer experiences from different vantage points, view angles, or site characteristics.
Submission IDs contributing to comment summary: BOEM-2023-0011-0085, BOEM-2023-0011-0128
Comment Summary 3: One commenter said that they have no concerns about the visual impact they may experience at Mount Hope Bay. Other commenters, however, suggested visual impacts on other areas such as Nantucket will be major, not moderate or minor; that the view will be obstructed; and that anything other than placing WTGs 43 miles offshore is unacceptable from a visual standpoint.
Response: Impact levels for the Proposed Action range from minor to major. Some IPFs may have minor impacts on visual and scenic resources, such as land disturbance or accidental releases, while others may have major impacts, such as presence of structures or lighting. Impact levels are also defined in Table 3.6.9-12, and the impacts for individual IPFs and the conclusions are consistent with the impact level definitions listed in this table.
Submission IDs contributing to comment summary: BOEM-2023-0011-0100, BOEM-2023-0011-0128, BOEM-2023-0011-0132, BOEM-2023-0011-0132

N.7.23 Project Design Envelope

General Comment Summaries and Responses
Comment Summary 1: Commenters requested additional information on the Project decommissioning process. Specific questions included how the operational lifespan of the Project was determined and which entity would pay for removal of Project components.
Response: SouthCoast Wind's lease with BOEM (Lease OCS-A 0521) has an operational term of 33 years that commences on the date of COP approval (https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/MA/Lease-OCS-A-0521.pdf; see also 30 CFR 585.235(a)(3)). SouthCoast Wind would need to request an extension of its operational term from BOEM to operate the proposed Project for 35 years. For the purposes of the maximum-case scenario and to ensure NEPA coverage if BOEM grants such an extension, the Final EIS analyzes a 35-year operational term. The lessee would be responsible for all decommissioning costs. If the COP is approved or approved with modifications, SouthCoast Wind would have to submit a bond (or another form of financial assurance) prior to installation that would be held by the U.S. government to cover the cost of decommissioning the entire facility in the event that SouthCoast Wind would not be able to decommission the facility. Please refer to response to comment BOEM-2023-0011-0065-0024 and Final EIS Chapter 2 for additional information on the decommissioning process.
Submission IDs contributing to comment summary: BOEM-2023-0011-0015, BOEM-2023-0011-0055, BOEM-2023-0011-0132, BOEM-2023-0011-0136, BOEM-2023-0011-0153, BOEM-2023-0011-0158
Comment Summary 2: A commenter expressed concern regarding the estimated number of vessel trips anticipated as a result of the Proposed Action and asked how NARW and recreation would be affected as a result.

General Comment Summaries and Responses
Response: Please refer to response to comment BOEM-2023-0011-0132-0031. An analysis of the potential impacts of vessel trips associated with construction and O&M of the Project on NARW and recreation is included in Final EIS Section 3.5.6, *Marine Mammals*, and Section 3.6.8, *Recreation and Tourism*.
Submission ID contributing to comment summary: BOEM-2023-0011-0132
Comment Summary 3: A commenter expressed concern regarding potential security vulnerabilities of the Project infrastructure.
Response: A description of potential impacts of terrorist attacks on Project infrastructure is included in Section 2.4, *Non-Routine Activities and Low-Probability Events*, of the Final EIS.
Submission ID contributing to comment summary: BOEM-2023-0011-0085
Comment Summary 4: A commenter pointed out that existing onshore infrastructure is not capable of transmitting the amount of electricity that would be generated by the Project.
Response: The comment is noted; however, BOEM has received no information from SouthCoast Wind that its proposed POIs are incapable of receiving the power that would be produced by the Project. However, due to uncertainty around ISO-NE grid capacity and the extent and timing of necessary grid upgrades on Cape Cod where the Falmouth POI is located, SouthCoast Wind revised its COP following the release of the Draft EIS to identify Brayton Point as the preferred POI for both Project 1 and Project 2 and Falmouth as the variant POI for Project 2. In the event that technical, logistical, grid interconnection, or other unforeseen challenges arise during the design and engineering phase that prevent Project 2 from making interconnection at Brayton Point, Project 2 will make landfall and interconnect in Falmouth, Massachusetts, under the Falmouth variant scenario. This change is reflected in the Final EIS.
Submission ID contributing to comment summary: BOEM-2023-0011-0055
Comment Summary 5: A commenter expressed support for ecological design elements, such as using ecological concrete, to be incorporated into the offshore wind infrastructure, specifically of scour and cable protection, to encourage the growth of marine flora and fauna.
Response: Comment noted. The PDE, as provided in the COP, currently includes rock, concrete mattresses, sandbags, artificial seaweed/reefs/frond mats, or self-deploying umbrella systems (typically used for suction-bucket jackets) as types of scour protection considered.
Submission ID contributing to comment summary: BOEM-2023-0011-0024
Comment Summary 6: A commenter asked how maintenance issues would be addressed.
Response: As described in Final EIS Chapter 2, *Alternatives*, the proposed Project would include a comprehensive maintenance program, including preventative maintenance based on statutory requirements, original equipment manufacturers' guidelines, and industry best practices. SouthCoast Wind would inspect WTGs, OSPs, foundations, interarray cables, submarine and onshore export cables, and other parts of the proposed Project using methods appropriate for the location and element.
Submission ID contributing to comment summary: BOEM-2023-0011-0015
Comment Summary 7: A commenter asked that the impacts of pile driving into the ocean floor to secure turbines and offshore substations be described.

General Comment Summaries and Responses
Response: An analysis of the potential impacts from pile driving can be found throughout Final EIS Chapter 3, including in Section 3.5.3, *Birds*; Section 3.5.2, *Benthic Resources*; Section 3.5.5, *Finfish, Invertebrates, and Essential Fish Habitat*; Section 3.5.6, *Marine Mammals*; and Section 3.6.4, *Environmental Justice*.
Submission ID contributing to comment summary: BOEM-2023-0011-0015

N.7.24 Mitigation and Monitoring

General Comment Summaries and Responses
Comment Summary 1: Commenters expressed support for employing an adaptive ecosystem-based management approach and mitigation measures that support the health of marine mammals and the marine ecosystem.
Response: Many best practices are described in Appendix G, *Mitigation and Monitoring*, regarding benthic resources and shellfish, finish and invertebrates, wetlands and waterbodies, coastal habitats, and sea turtles, among others.
Submission IDs contributing to comment summary: BOEM-2023-0011-0023, BOEM-2023-0011-0038, BOEM-2023-0011-0052
Comment Summary 2: Science-based best-practice mitigation measures were mentioned as needed, especially as the permitting process moves forward to protect NARW and other species.
Response: Appendix G, *Mitigation and Monitoring*, describes the mitigation measures proposed to minimize impacts on wildlife species.
Submission IDs contributing to comment summary: BOEM-2023-0011-0130, BOEM-2023-0011-0135
Comment Summary 3: A commenter requested that speed restrictions include all Project-related vessels.
Response: Mitigation measures regarding speed restrictions are in place for all vessel operators.
Submission ID contributing to comment summary: BOEM-2023-0011-0132

N.7.25 Cumulative Impacts

General Comment Summaries and Responses
Comment Summary 1: Commenters felt that analysis in the Draft EIS did not properly take into account the totality of all proposed offshore wind developments in the area and emphasized that the SouthCoast Wind Project is just one of many planned wind farms in the region.
Response: The EIS appropriately analyzes the individual effects and the cumulative effects from the Project when added to other past, present, and reasonably foreseeable actions, including offshore wind and non-offshore wind activities, consistent with the CEQ NEPA implementing regulations.
Submission IDs contributing to comment summary: BOEM-2023-0011-0053, BOEM-2023-0011-0080, BOEM-2023-0011-0081, BOEM-2023-0011-0088, BOEM-2023-0011-0091, BOEM-2023-0011-0128, BOEM-2023-0011-0132

General Comment Summaries and Responses
Comment Summary 2: A commenter asked how the cumulative analysis for Vineyard Wind 1 compared to the analysis completed for the SouthCoast Wind Project and if the same data were used for both projects.
Response: The methodology for developing the planned activity scenario for the Project described in Appendix D is the same as for the Vineyard Wind 1 project and details of the scenario development are described in the Vineyard Wind 1 Final EIS. The details for other planned offshore wind activities included in Table D2-1 in Appendix D, *Planned Activities Scenario*, of the Final EIS have been updated throughout the development of this NEPA document as the PDEs for these projects are refined.
Submission ID contributing to comment summary: BOEM-2023-0011-0091

N.7.26 National Environmental Policy Act/Public Involvement Process

General Comment Summaries and Responses
Comment Summary 1: One commenter expressed concern with the Project's location, stating that it was poorly sited with regard to NARW populations. The commenter stated that the Project area is the only known year-round habitat and winter foraging grounds for NARWs; therefore, critical habitat should be established to protect the NARW population.
Response: Thank you for your comment. Section 3.5.6, *Marine Mammals*, of the Draft EIS analyzes impacts on marine mammals, including NARW, in more detail. Appendix G identifies measures to mitigate impacts from the Proposed Action and alternatives on marine mammals. Critical habitat is a designation under the ESA that, in the case of NARW, would be established by NMFS. There is currently no designated critical habitat for NARW overlapping the Project area. Establishing critical habitat is outside the scope of this EIS.
Submission ID contributing to comment summary: 0132-0040; 0132-0042
Comment Summary 2: Multiple commenters urged BOEM to ensure the Project is developed responsibly and that benefits are maximized and negative impacts are minimized. Commenters stated that positive impacts, including jobs, community benefits, and domestic manufacturing expansion, must be delivered equitably and with special attention given to environmental justice communities and that the Project uses the best available science to inform decision making and minimize, mitigate, and avoid negative impacts on marine life. Commenters also requested that the Project meaningfully engage communities and stakeholder groups, including underrepresented and disadvantaged communities and Tribal Nations.
Response: Thank you for your comment. BOEM has analyzed the Project according to NEPA implementing regulations to consider reasonably foreseeable environmental, social, economic, historic, and cultural impacts that could result from the construction and installation, O&M, and conceptual decommissioning of the Project. Appendix A, *Required Environmental Permits and Consultations*, provides an overview of BOEM's public and agency outreach, including public scoping, cooperating agency involvement, and distribution of the Draft EIS for public review and comment.
Submission IDs contributing to comment summary: 0121-0004; 0121-0022; 0130-0003; 0172-0001
Comment Summary 3: One commenter expressed concern with the fact that SouthCoast Wind is a limited liability corporation, stating that they do not believe the company has a track record of trustworthiness or that the areas affected by the Project will benefit from interaction with the company.

General Comment Summaries and Responses
Response: Thank you for your comment.
Submission ID contributing to comment summary: 0182-0003

N.7.27 USACE Permitting

None.

N.8 List of Commenters by Commenter Type and Submission Number

Table N.8-1. Federal agencies

Submission No.	Agency
BOEM-2023-0011-0056	U.S. Environmental Protection Agency
BOEM-2023-0011-0062	U.S. Coast Guard
BOEM-2023-0011-0184	U.S. Army Corps of Engineers New England District
BOEM-2023-0011-0185	National Marine Fisheries Service

Table N.8-2. Tribes and Native Organizations

Submission No.	Tribe or Native Organization
BOEM-2023-0011-0134	Wampanoag Tribe of Gay Head (Aquinnah)

Table N.8-3. State agencies

Submission No.	Agency
BOEM-2023-0011-0070	The Massachusetts Office of Coastal Zone Management
BOEM-2023-0011-0119	Rhode Island Historical Preservation and Heritage Commission (RISHPO)
BOEM-2023-0011-0123	Rhode Island Department of Environmental Management

Table N.8-4. Local government/agencies

Submission No.	Government/Agency
BOEM-2023-0011-0048	Cape Cod Chamber of Commerce
BOEM-2023-0011-0126	New Bedford Port Authority
BOEM-2023-0011-0128	Town of Nantucket, MA

Table N.8-5. Colleges and universities

Submission No.	Government/Agency
BOEM-2023-0011-0087	Bristol Community College - Institution of Higer Education/National Offshore Wind Institute

Table N.8-6. Businesses and organizations

Submission No.	Business/Organization
BOEM-2023-0011-0024	ECOncrete
BOEM-2023-0011-0032	US Sailing
BOEM-2023-0011-0035	National Wildlife Federation et al.
BOEM-2023-0011-0037	Millwrights Local 1121, North Atlantic States Regional Council of Carpenters (NASRCC)
BOEM-2023-0011-0050	North Atlantic Regional Council of Carpenters (Carpenters Union)
BOEM-2023-0011-0052	Association to Preserve Cape Cod, Inc.

Submission No.	Business/Organization
BOEM-2023-0011-0053	The Town Dock
BOEM-2023-0011-0054	SouthCoast Community Foundation
BOEM-2023-0011-0057	Iron Workers Local 37
BOEM-2023-0011-0060	International Brotherhood of Electrical Workers Local Union 223
BOEM-2023-0011-0065	Seafreeze Shoreside, Seafreeze Ltd.
BOEM-2023-0011-0066	Battleship Cove
BOEM-2023-0011-0082	Renewable Energy Vermont
BOEM-2023-0011-0091	Falmouth Heights - Maravista Neighborhood Association
BOEM-2023-0011-0092	Local Union 56 Pile Drivers and Divers
BOEM-2023-0011-0096	The American Waterways Operators
BOEM-2023-0011-0097	Massachusetts Building Trades Unions
BOEM-2023-0011-0106	Long Island Commercial Fishing Association
BOEM-2023-0011-0112	New England Fishery Management Council and Mid-Atlantic Fishery Management Council
BOEM-2023-0011-0117	Green Oceans
BOEM-2023-0011-0121	BlueGreen Alliance
BOEM-2023-0011-0122	TurbineHub
BOEM-2023-0011-0124	Oceana
BOEM-2023-0011-0125	Ocean Winds North America
BOEM-2023-0011-0127	Business Network for Offshore Wind
BOEM-2023-0011-0129	Marine Mammal Commission
BOEM-2023-0011-0130	New England for Offshore Wind
BOEM-2023-0011-0131	Massachusetts American Federal of Labor and Congress of Industrial Organizations (AFL-CIO) and Climate Jobs Massachusetts
BOEM-2023-0011-0132	Nantucket Residents Against Turbines
BOEM-2023-0011-0133	Nantucket Maria Mitchell Association
BOEM-2023-0011-0139	SouthCoast Wind Energy LLC
BOEM-2023-0011-0135	Shell New Energies US LLC
BOEM-2023-0011-0136	Responsible Offshore Development Alliance
BOEM-2023-0011-0137	Sea Life Conservation, Save the Whales, Ocean Conservation Research
BOEM-2023-0011-0140	National Wildlife Federation, Natural Resources Defense Council, Conservation Law Foundation, et al.
BOEM-2023-0011-0143	Local 56
BOEM-2023-0011-0149	Millwrights Local 1121
BOEM-2023-0011-0156	Mass Audubon
BOEM-2023-0011-0159	Environmental League of Massachusetts

Submission No.	Business/Organization
BOEM-2023-0011-0161	Creation Care Ministry at First Baptist Church Chelmsford
BOEM-2023-0011-0164	Local 56
BOEM-2023-0011-0165	Oak Grove Cemetery
BOEM-2023-0011-0172	Blue Green Alliance
BOEM-2023-0011-0175	Falmouth Heights Vista Neighborhood Association
BOEM-2023-0011-0179	Millwrights Local 1121
BOEM-2023-0011-0180	Sea Freeze

Table N.8-7. Individuals

Submission No.	Government/Agency
BOEM-2023-0011-0004	Frank Haggerty
BOEM-2023-0011-0005	Jean Publieee
BOEM-2023-0011-0006	Jeffrey Cameron
BOEM-2023-0011-0007	Seth Engelbourg
BOEM-2023-0011-0008	Peter Laird
BOEM-2023-0011-0009	Trev Doyl
BOEM-2023-0011-0010	Jeffrey Cameron
BOEM-2023-0011-0011	Cheryl Severini
BOEM-2023-0011-0012	Alexis Michel
BOEM-2023-0011-0013	Anonymous
BOEM-2023-0011-0014	Dianna Harris
BOEM-2023-0011-0015	Whitney Stanbury
BOEM-2023-0011-0016	Dave Baldwin
BOEM-2023-0011-0017	Regina Littwin
BOEM-2023-0011-0018	Lynn Petrulio
BOEM-2023-0011-0019	Carl Borchert
BOEM-2023-0011-0020	Randi Allfather
BOEM-2023-0011-0021	Renee Cameron
BOEM-2023-0011-0022	Charlotte DuHamel
BOEM-2023-0011-0023	Glen Rokicki
BOEM-2023-0011-0025	Mary Martin
BOEM-2023-0011-0026	Charlotte DuHamel
BOEM-2023-0011-0027	Andrew Reed
BOEM-2023-0011-0028	Jackie Apel
BOEM-2023-0011-0029	Jim Barrile
BOEM-2023-0011-0030	Daniela Faibes

Submission No.	Government/Agency
BOEM-2023-0011-0031	Daniel Webb
BOEM-2023-0011-0033	Gregory Mazmanian
BOEM-2023-0011-0034	Edward Jalowiec
BOEM-2023-0011-0036	Dennis DiTullio
BOEM-2023-0011-0038	David Dow
BOEM-2023-0011-0039	Amitie Davis
BOEM-2023-0011-0040	William Harney
BOEM-2023-0011-0041	Marita Ducharme
BOEM-2023-0011-0042	Eleanor Ling
BOEM-2023-0011-0043	Wendell Bishop
BOEM-2023-0011-0044	Larry D'Oench
BOEM-2023-0011-0045	Elizabeth Dobricki
BOEM-2023-0011-0046	Robert Michler
BOEM-2023-0011-0047	Moira Powers
BOEM-2023-0011-0049	Mara Laird
BOEM-2023-0011-0051	Edward Jalowiec
BOEM-2023-0011-0055	Ann Capozzi
BOEM-2023-0011-0058	David Shanker
BOEM-2023-0011-0059	William Spring
BOEM-2023-0011-0061	Allan LaFrance
BOEM-2023-0011-0063	Hilary Cunniff
BOEM-2023-0011-0064	Renata Shapovalova
BOEM-2023-0011-0067	K Tyree
BOEM-2023-0011-0068	Anonymous
BOEM-2023-0011-0069	D Gricus
BOEM-2023-0011-0071	Mary Chalke
BOEM-2023-0011-0072	Michael Kane
BOEM-2023-0011-0073	Ken Peal
BOEM-2023-0011-0074	Tom Harty
BOEM-2023-0011-0075	Patrice Tullai
BOEM-2023-0011-0076	Carl van Warmerdam
BOEM-2023-0011-0077	Michelle Jones
BOEM-2023-0011-0078	Mary Ellen Martin
BOEM-2023-0011-0079	Samuel Dahl
BOEM-2023-0011-0080	Edward Jalowiec

Submission No.	Government/Agency
BOEM-2023-0011-0081	E. A. Pedro
BOEM-2023-0011-0083	Chris Carceller
BOEM-2023-0011-0084	Clayton Commons
BOEM-2023-0011-0085	Katherine Scott
BOEM-2023-0011-0086	Karen Gleason
BOEM-2023-0011-0088	Bruce Buch
BOEM-2023-0011-0089	Kenan Foley
BOEM-2023-0011-0090	Anonymous
BOEM-2023-0011-0093	Sylvia Lockwood
BOEM-2023-0011-0094	Susan Ayd
BOEM-2023-0011-0095	Colleen Oconnell
BOEM-2023-0011-0098	Anonymous
BOEM-2023-0011-0099	Dennis Koski
BOEM-2023-0011-0100	Lloyd Mendes
BOEM-2023-0011-0101	Anonymous
BOEM-2023-0011-0102	Nancy Erikson
BOEM-2023-0011-0103	Otto Graves
BOEM-2023-0011-0104	Anne Graves
BOEM-2023-0011-0105	Jennifer Sarafin
BOEM-2023-0011-0107	Anthony and Carolyn Moutinho
BOEM-2023-0011-0108	Jean Publiee
BOEM-2023-0011-0109	Pamela Erwin
BOEM-2023-0011-0110	Donald Burnham
BOEM-2023-0011-0111	Christine Gadbois
BOEM-2023-0011-0113	Joyce McMahon
BOEM-2023-0011-0114	Peter Pappas
BOEM-2023-0011-0115	Amy Kvistad
BOEM-2023-0011-0116	Paul Ouellette
BOEM-2023-0011-0118	Carlos Munoz Royo
BOEM-2023-0011-0120	Doug Rose
BOEM-2023-0011-0138	David Howard
BOEM-2023-0011-0141	Pendery Haines
BOEM-2023-0011-0142	Frank Haggerty
BOEM-2023-0011-0144	Larry Cali
BOEM-2023-0011-0145	Jim Kendall

Submission No.	Government/Agency
BOEM-2023-0011-0146	Sharon McGinnis
BOEM-2023-0011-0147	Lori Favata
BOEM-2023-0011-0148	Susan Richman
BOEM-2023-0011-0150	Walter Kazmierczak
BOEM-2023-0011-0151	Jeanne Seligowski
BOEM-2023-0011-0152	Sherrie Trefry
BOEM-2023-0011-0153	Chris Mutti
BOEM-2023-0011-0154	Rosemary Carey
BOEM-2023-0011-0155	Costello Nodd
BOEM-2023-0011-0157	Michelle Bachman
BOEM-2023-0011-0158	Larry Cali
BOEM-2023-0011-0160	Gary Breitbord
BOEM-2023-0011-0162	Julia Costello
BOEM-2023-0011-0163	Doug Brown
BOEM-2023-0011-0166	David Buzanoski
BOEM-2023-0011-0167	James Barrile
BOEM-2023-0011-0168	Taylor Pettine
BOEM-2023-0011-0169	Danielle D
BOEM-2023-0011-0170	Eleanor Ling
BOEM-2023-0011-0171	Chris Mutti
BOEM-2023-0011-0173	Brett Sexton
BOEM-2023-0011-0174	Todd Jackson
BOEM-2023-0011-0176	Stephen Buckley
BOEM-2023-0011-0177	Veronica Bonnet
BOEM-2023-0011-0178	Jim Kendall
BOEM-2023-0011-0181	Tom David
BOEM-2023-0011-0182	Jeanne Seligowski
BOEM-2023-0011-0183	Jane and William Doyle

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N.9.1 Cooperating and Participating Agency Comments

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