PUBLIC VERSION / CONFIDENTIAL INFORMATION REMOVED

EXHIBIT F

Environmental Mitigation Plan for Sunrise Wind

Version 3.0

Prepared pursuant to Agreement No. 231327, May __,2023
with

New York State Energy Research and Development Authority
Albany, NY

Prepared by
Sunrise Wind LLC
437 Madison Avenue, Suite 1903
New York, NY 10022

Sunrise Wind | Powered by Ørsted & Eversource

May __, 2024

Record of Revision

Revision Date	Description of changes	Revision on pages
[1.0; 10/23/2019]	[Original issue]	[page(s)]
2.0; 12/01/2020	Update based on E-TWG comments and COP application	All pages
2.1; 08/20/2021	August 2021	Cover page
3.0	April 2024, Update based on new format included in ORECRFP23-1	All pages

Communication Officers, Contact Information, Links		
Name/Title	**Role**	**Contact Information**
Michael Evans **Permitting Manager**	Permitting manager for Sunrise Wind	Phone: 614-218-4286 Email: MICEV@orsted.com
Steve Chmiel **Manager Offshore Wind**	Responsible for onshore permitting for Sunrise Wind	Phone: 508-397-4258 Email: stephen.chmiel@eversource.com
Sharon Whitesell **Marine Mammal and Sea Turtle Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the Lease Area Marine mammal expert, E-TWG specialist; Member of RWSE planning group.	Email: SHWHI@orsted.com
Kim Peters **Avian Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Lead on avian topics; E-TWG specialist.	Email: KIPET@orsted.com
Chris Sarro **Fisheries Science Specialist**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Member of the ROSA Advisory Council and Interim Fisheries Methods Working Group	Email: CHSAR@orsted.com

Links to project information:

Project Website: https://sunrisewindny.com
Data Portal: Under Construction

Table of Contents

1. Environmental Mitigation Plan Summary

1.1 *Overall philosophy and principles*

This section should describe the overall philosophy and principles the Developer will follow to avoid, minimize, restore, and off-set potential environmental impacts.

- At Orsted, we have a vision of a world that runs entirely on green energy. As one of the world's largest green energy developers, sustainability is deeply rooted in what we do and who we are as a company. As part of our overall philosophy we have built our sustainability targets around the UN's Sustainable Development Goals and assisted with writing the UN Sustainable Ocean Global Principles. Our annual Sustainability report can be found here - https://orstedcdn.azureedge.net/-/media/Annual_2018/Sustainability_report_2018.ashx?la=en&rev=ae72e27749aa4a34a5f2 d91783da7431&hash=75AB7D9FEE750ED5FBB41D7CA5E32980
- All energy infrastructure is built in a unique environment where we aim to do our utmost to protect the natural ecosystems. It is central that we manage environmental impacts on these ecosystems well to acquire permission to build wind farms. In 2018, we adopted a new offshore wind biodiversity policy - (https://orstedcdn.azureedge.net/-/media/WWW/Docs/Corp/COM/Sustainability/Orsted-Offshore-Wind-Biodiversity-Policy.ashx?la=en&rev=be32532eb16a4b20b1f86eed77050e92&hash=D309C9DA9A633E1C 47D168ACBD254797).
- The policy is built on our long-term experience and understanding of the biodiversity challenges we face when building offshore wind farms.
- Sunrise Wind will prioritize avoiding and/or minimizing environmental impacts through siting, design, and real time mitigation, consistent with its environmental stewardship approach under pinned by the Orsted values outlined above.
- Sunrise Wind understands and is committed to early identification of potential impacts, in order to avoid an impact, or to plan for impact mitigation.
- Sunrise Wind will address environmental impacts in siting of the Project components in accordance with all permits and approvals required for the Project, including all permits and approvals from applicable governmental and regulatory authorities charged with protecting the environment.
- Sunrise Wind recognizes the benefits of monitoring activities for this Project as well as the value of project-specific data for informing future aspirations for offshore wind development.
- Sunrise Wind will focus on restoring potentially impacted resources and, to the extent applicable, offsetting the environmental impact when environmental impacts cannot be avoided where possible within the parameters of the Project, in all instances as provided in applicable permits and approvals.

1.2 *Overall approach to incorporating data and stakeholder feedback*

This section should describe how the Developer will use research, data, and stakeholder feedback to update the EMP and support decision-making throughout the life cycle of the project (preconstruction, surveys, site design, construction, operations, and decommissioning).

- Sunrise Wind shall seek consultation and coordinate with relevant stakeholders.
- Sunrise Wind shall review existing research and data and seek input from stakeholders

regarding data gaps to inform decisions made throughout the Project life cycle.

- Sunrise Wind shall review and seek input from stakeholders on proposed and conducted survey rationales and methodologies as well as design, construction and operation, and decommissioning plans for the Project.
- To the extent that the timeline allows, pre- and post-construction monitoring shall be designed to improve the understanding of impacts of offshore wind energy development and operations on wildlife.

Sunrise Wind provides the following additional information related to incorporating data and stakeholder feedback:

- Sunrise Wind has and will continue to work proactively to identify impacts with stakeholders including, but not limited to, federal and state agencies, Native American Tribes, environmental Non-Government Organization ("e-NGOs"), scientific experts, and state groups like the NYSERDA Environmental Technical Working Group ("E-TWG"). This will involve regular update meetings and briefings to those stakeholders identified above. Additionally, Sunrise will endeavor to incorporate feedback from the stakeholders identified to reduce impacts where appropriate.
- Sunrise Wind has and will continue to review existing research and data, seek input from stakeholders, and conduct surveys of the Project Area, which will inform decisions made throughout the design, permitting, construction, operation, and decommissioning of the Project.
- Sunrise Wind has and will continue to review proposed survey rationales and methodologies with regulatory stakeholders, along with surveys already conducted, and seek input on survey work, as well as design, construction, and operation and decommissioning plans for the Project.
- Sunrise Wind has and will continue to host regular progress meetings with agencies (including relevant New York State Agencies) to provide status updates, planned project activities (i.e. field surveys, siting, etc.) and to solicit feedback as required in connection with permitting processes and permit requirements. Sunrise Wind will endeavor to incorporate feedback into Project plans where appropriate.
- Sunrise Wind has and will continue to support collaborative science to further understand the potential impacts of offshore wind and will take the results into account in the development, design, construction, and operation of the Project.

1.3 *Existing guidance and best practices that will be followed*

This section should present a list of existing guidance documents, publications, tools, and/or plans that will be followed to support the EMP. Include links, if available, for all references.

- Sunrise will follow relevant guidance documents and rely on publications, tools and/or plans to support development of the EMP in accordance with applicable permit requirements. Such guidance documents are expected to include, but not be limited to, the following documents. Data sources for resource baseline characterization are listed in the resource-specific sections below.

<u>Guidance Documents:</u>

- Draft Guidance Regarding the Use of a Project Design Envelope in a Construction and Operations Plan (BOEM 2018)

- https://www.boem.gov/Draft-Design-Envelope-Guidance/
- Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (Marine Mammal and Sea Turtle Guidelines; BOEM 2019)
  - https://www.boem.gov/BOEM-Marine-Mammals-and-Sea-Turtles-
    - Guidelines/
- Guidelines for Providing Avian Survey information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 Subpart F (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/newsroom/Avian%20Survey%20Guidelines.pdf
- Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM 2019)
  - https://www.boem.gov/Fishery-Survey-Guidelines/
- Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM 2019)
  - https://www.boem.gov/BOEM-Renewable-Benthic-Habitat-Guidelines/
- Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585 (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/about-boem/Archaeology%20and%20Historic%20Property%20Guidelines.pdf
- Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant to 30 CFR Part 585 (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/about-boem/GG-
    - Guidelines.pdf
- Guidelines for Providing Information on Fisheries Social and Economic Conditions for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/about-boem/Social%20%26amp%3B%20Econ%20Fishing%20Guidelines.pdf
- Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2018)
  - https://www.fisheries.noaa.gov/resource/document/technical-guidance-assessing-effects-anthropogenic-sound-marine-mammal-hearing
- Data Gathering Process: Geotechnical Departures for Offshore Wind Energy (DNVGL 2018)
  - https://www.boem.gov/Data-Gathering-Process/
- Geophysical and Geotechnical Investigation Methodology Assessment for Siting Renewable Energy Facilities on the Atlantic OCS
  - https://www.boem.gov/G-and-G-Methodology-Renewable-Energy-Facilities-on-the-Atlantic-OCS/
- Recommendations for Mapping Fish Habitat (NOAA's National Marine Fisheries Greater Atlantic Regional Fisheries Office Habitat Conservation and Ecosystem Services Division 2020)
- Draft Proposed Guidelines for Providing Information on Lighting and Marking of

Structures Supporting Renewable Energy Development (BOEM 2019)
- https://www.boem.gov/sites/default/files/documents/renewable-energy/Lighting-and-Marking-Guidelines.pdf

Publications:

- U.S. Dept. of Energy *"Tethys"* database for offshore wind energy publications (USDOE-PNNL 2019)
  - https://tethys.pnnl.gov/
- NYSERDA Publications and Technical Reports
  - https://www.nyserda.ny.gov/About/Publications
  - https://www.nyserda.ny.gov/About/Publications/Offshore-Wind-Plans-for-
    - New-York-State
- BOEM Renewable Energy Research (BOEM 2019)
  - https://www.boem.gov/Renewable-Energy-Environmental-Studies/
- Summary Report: Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species (BOEM 2018)
  - https://www.boem.gov/Final-Summary-Report-for-BMP-Workshop-BOEM/
- Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishers on the Atlantic Outer Continental Shelf (BOEM 2013; BOEM 2014)
  - https://www.boem.gov/Draft-Report-on-Fishing-Best-Management-Practices-and-Mitigation-Measures/
  - https://www.boem.gov/OCS-Study-BOEM-2014-654/
- NYSDEC. n.d. New York Bight Whale Monitoring Program (NYSDEC n.d.)
  - https://www.dec.ny.gov/lands/84428.html
- NYSDEC. 2018. Summary Report of the New York Bight Sea Turtle Workshop (NYSDEC 2018)
  - https://www.dec.ny.gov/docs/fish_marine_pdf/dmrturtlereport.pdf

Tools:

- New York Office of Planning and Development Geographic Information Gateway
  - http://opdgig.dos.ny.gov/#/home
- Northeast Ocean Data Explorer (NROC 2019)
  - https://www.northeastoceandata.org/
- Mid-Atlantic Ocean Data Portal (MARCO 2019)
  - https://portal.midatlanticocean.org/
- BOEM/NOAA Marine Cadastre (BOEM & NOAA 2019)
  - https://marinecadastre.gov/
- NOAA Essential Fish Habitat (EFH) Data Inventory
  - https://www.habitat.noaa.gov/application/efhinventory/index.html
- Ocean Biogeographic Information System (OBIS) Mapper and Protected Species Database (OBIS 2019)
  - https://mapper.obis.org/
  - https://mgel.env.duke.edu/projects-old/obis-seamap/
- NOAA-USFWS ESA inventory/mapper and Section-7 Consultation tools – Mapper and IPaC (NOAA 2019; USFWS 2019)
  - https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/i

ndex.html
    - https://ecos.fws.gov/ipac/
- NOAA Marine Mammal Acoustic Technical Guidance (NOAA 2018)
    - https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance
- NOAA Marine Mammal Annual Stock Assessments (NOAA 2019)
    - https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments
- National Oceanic Atmospheric Administration Greater Atlantic Regional Fisheries Office (NOAA GARFO). 2016. GARFO Acoustics Tool: Analyzing the effects of pile driving on ESA-listed species in the Greater Atlantic Region (webpage). National Marine Fisheries Service.
    - https://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html
- Additional sources such as Marine-Life Data and Analysis Team (MDAT; http://seamap.env.duke.edu/models/mdat/ as recommended by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the Bureau of Ocean Energy Management.

Plans:

- Mid-Atlantic Regional Ocean Action Plan (MARCO 2016)
    - http://midatlanticocean.org/ocean-planning/
- Northeast Ocean Plan (NROC 2016)
    - https://neoceanplanning.org/plan/
- New York State Offshore Wind Master Plan (NYSERDA 2017), with corresponding studies/appendices listed below
    - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-in-New-York-State-Overview/NYS-Offshore-Wind-
        - Master-Plan
- New York State Offshore Wind Master Plan Birds and Bats Study (NYSERDA 2017)
    - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-
        - Wind/Studies-and-Surveys
- New York State Offshore Wind Master Plan Fish and Fisheries Study (NYSERDA 2017)
- https://www.nyserda.ny.gov/All-Programs/Programs/Offshore- Wind/Studies-and-Surveys New York State Offshore wind Master Plan Marine Mammals and Sea Turtle Study (NYSERDA 2017)
    - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-
        - Wind/Studies-and-Surveys
- New York State Offshore Wind Master Plan Sand and Gravel Resources Study (NYSERDA 2017)
    - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-
        - Wind/Studies-and-Surveys
- New York State Offshore Wind Master Plan Environmental Sensitivity Analysis (NYSERDA 2017)
    - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-
        - Wind/Studies-and-Surveys
- New York Ocean Action Plan 2017 – 2027 (NYSDEC n.d.)

- https://www.dec.ny.gov/lands/84428.html
- New York State (NYS). 2015. 2015 New York State Energy Plan.
  - https://energyplan.ny.gov/Plans/2015.aspx.

Other:

- New York State Fisheries Technical Working Group (NYSERDA 2019)
  - https://nyfisheriestwg.ene.com/
- New York State Environmental Technical Working Group
  - https://www.nyetwg.com/

2. Communications and Collaboration Approach

2.1. *Overview and communication plan objectives*

This section should provide an overview of the communication plan and objectives and its importance in environmental mitigation.

- Sunrise Wind shall seek methods and processes to allow for a two-way flow of information between key stakeholders and developers, specifically highlighting how Sunrise Wind uses this feedback to inform their decision making.
- Sunrise Wind shall provide updates to environmental stakeholders in an appropriate manner that would be easily accessed and widely distributed.

Sunrise Wind provides the following additional information related to overview and communication plan objectives:

- Sunrise Wind has and will continue to engage with both regulatory (including federal and state agencies) and non-regulatory stakeholders (including the fishing community, environmental groups, and local communities).
- Sunrise Wind has carried out a detailed stakeholder mapping process to promote the Project's awareness of relevant inputs, even from hard to reach groups, and consideration of appropriate information that is applicable to the Project. Stakeholder mapping will be periodically updated with newly identified stakeholders during the Project lifetime.

2.2. *Communication officers/positions, responsibilities, and contact information*

This section will provide a list of communication officers, their role, and name and contact information. The list should provide stakeholders with an understanding of who should be called for a particular issue or question. It will also include links to the project website so readers know where to find additional information.

Name/Title	Role	Contact Information
Michael Evans **Permitting Manager**	Permitting manager for Sunrise Wind	Phone: 614-218-4286 Email: MICEV@orsted.com
Steve Chmiel **Manager Offshore Wind**	Responsible for onshore permitting for Sunrise Wind	Phone: 508-397-4258 Email: stephen.chmiel@eversource.com
Sharon Whitesell **Marine Mammal and Sea Turtle Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the Lease Area Marine mammal expert, E-TWG specialist; Member of RWSE planning group.	Email: SHWHI@orsted.com
Kim Peters **Avian Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Lead on avian topics; E-TWG	Email: KIPET@orsted.com

Name/Title	Role	Contact Information
	specialist.	
Chris Sarro **Fisheries Science Specialist**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Member of the ROSA Advisory Council and Interim Fisheries Methods Working Group	Email: eHSAR@orsted.com

Project website: https://sunrisewindny.com/

2.3. *Identification of stakeholders*

This section should describe the process by which stakeholders relevant to environmental issues will be identified and classified by stakeholder group.

- Sunrise Wind is continuing to work on its engagement and consultation strategy. In developing a consultation and stakeholder strategy, Sunrise Wind has taken into account the following essential requirements:
    - the groups and individuals interested in or affected by the proposed development are identified;
    - Information issued to the public and consultees is accurate, understandable, issued at the appropriate time and does not overwhelm recipients;
    - Dialogue is held between those affected by the decisions and those responsible for making the decisions;
    - The comments provided by the public and consultees are incorporated within the final decision-making process and final decision;
    - Feedback is provided to all consultees, including the public, explaining the actions taken and how the final decision has been influenced by the process.
- Sunrise Wind has and will continue to identify stakeholders based on a detailed and overarching approach to assessing all those interested parties including information collected from the following areas:
    - Commissioned studies that identify federal, state, and local permits, approvals, and consultations required for the Project;
    - List of potential agencies and associated authorizations required for the Project;
    - NYSERDA's recommendations;
    - E-TWG and F-TWG recommendations;
    - Attendees of Project open house events;
    - Interest groups of potentially impacted resources;
    - Recommendations provided at local community meetings;
    - Prior experience during outreach for the South Fork Wind Farm Project;

2.4. *Participation in stakeholder and technical working groups*

2.4.1. Communication with E-TWG

This should describe the communication and collaboration approach with members of the

E-TWG and consultations.

- Sunrise Wind shall dedicate Project-specific technical resources to the E-TWG.
- To the extent practicable, Sunrise Wind shall work with the E-TWG and shall attend E-TWG meetings and workshops.
- Sunrise Wind shall identify specific individuals to serve at least one-year terms in the role of primary and secondary core members.
- Sunrise Wind shall work with NYSERDA to plan and host Project-specific EMP consultations.

Sunrise Wind provides the following additional information related to communication with E-TWG:

- Sunrise Wind and its affiliates have been active participants in the E-TWG and associated work groups since their inception.
- Ørsted has actively participated in the organizing committees for the 2018 and 2020 State of the Science workshop, and Ørsted's Sophie Hartfield Lewis was a keynote speaker in 2018 and Ørsted's Madeline Hodge participated in a panel on cumulative impacts in 2020.
- Sunrise Wind has dedicated Project-specific resources to the E-TWG, Liz Gowell and Michael Evans.
- Sunrise Wind has dedicated specialists contributing to the Specialist Committees, including the Marine Mammal and Sea Turtle Specialist Committee and the Bird and Bat Specialist Committee.
- Sunrise Wind will continue working with the E-TWG and attend future meetings and workshops. Specifically, Sunrise Wind will participate and engage relevant stakeholders participating in the E-TWG pursuant to Section 12.04 of the OREC Agreement.

2.4.2. *Communication with other New York State agencies*

This should describe communication with New York State agencies during each phase of the project.

- Sunrise Wind has hosted inter-agency Project kick-off meetings with federal and New York state regulators, and federally recognized tribes. The meetings introduced the Project and team and key components.
- Sunrise Wind has hosted and will continue to host Project update meetings with federal and New York state regulators, and federally recognized tribes to provide status updates on Project activities and design.
- Sunrise Wind will continue to consult with the Consulting New York State Agencies at the request of such agencies to provide status updates on planned Project activities (i.e. field surveys, siting, etc.) and to solicit feedback.
- Sunrise Wind will continue to consult with the Consulting New York State Agencies pursuant to Section 12.03 of the OREC Agreement.

2.4.3. *Communication with other stakeholder and working groups*

This should describe any relevant participation with other stakeholder groups that would help inform the EMP.

- Sunrise Wind shall seek to collaborate with other regulatory agencies and stakeholder groups and participate in such collaborative efforts (e.g., E-TWG, F-TWG, ROSA, RWSC, etc.).
- Sunrise Wind shall include communication activities in Quarterly Reports.

Sunrise Wind provides the following additional information related to communication with other stakeholder and working groups:

- Sunrise Wind has developed a Community Outreach Plan for the Project to identify and engage various interests including local communities, environmental groups, fishing communities, recreational boating groups, low income populations, and labor and local business interest.
- In development of the Community Outreach Plan, Sunrise Wind has and will continue to leverage its affiliates' experience implementing successful community outreach and engagement plans for many offshore wind projects in the US, Europe, and Asia.
- Sunrise Wind has developed a Project Involvement Plan specifically for outreach to communities on Long Island where the onshore portions of the Project will be located.

2.4.4. *Communication and collaboration with other developers*

This should describe any relevant participation and collaboration with other developers in the offshore space, with a focus on communication and collaboration with adjacent leaseholders. This may include but is not limited to shared research efforts, coordination of survey methods, or standardization of navigational and safety protocols.

- Sunrise Wind shall seek to maximize the impact of research efforts such as data collection, methodology, analysis and dissemination by collaborating with other developers, particularly those in adjacent lease areas, taking on similar initiatives.

2.5. *Communication methods and tools by phase*

This section should describe the communication and outreach methods and tools that will be

employed for each stakeholder group during each phase of the project.

- Sunrise Wind will continually refine its Community Outreach Plan during each phase of the Project, subject to applicable permitting requirements.

Proposed Outreach Method/Tools	Phase*			
	1	2	3	4
Outreach to local communities through informational meetings	X	X	X	X
Press releases	X	X	X	X
Website promotion	X	X	X	X
Social media	X	X	X	X
Notice to Mariners	X	X	X	X
**Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission*				

3. Supporting Other Research

3.1. *Support of collaborative research*

This section should describe how opportunities for developing or investing in collaborative research with the environmental community to collect ecological data will be identified and undertaken. The description must account for the need to coordinate with members of the E-TWG during data gathering and assessment.

- Sunrise Wind shall commit to being an active member of regional science organizations (e.g. Regional Wildlife Science Collaborative, Responsible Offshore Science Alliance).

Sunrise Wind provides the following additional information related to collaborative research:

- Sunrise Wind is committed to supporting third party research associated with development of the Project and intends to take a collaborative approach to science. Sunrise Wind has committed to providing funds to support third party research as outlined in Section 3.5.
- Sunrise Wind will engage with the E-TWG, in accordance with Section 12.04 of the OREC Agreement, regarding potential research topics, scopes and methodologies.
- Sunrise Wind and its affiliates support, and Ørsted is actively involved in, the Regional Wildlife Science Collaborative (RWSC) and the Responsible Offshore Science Alliance (ROSA), which establishes science priorities collaboratively with agencies and the fishing industry and maximizes the value of the investment spent on fisheries science.
- Sunrise Wind is employing a Science Coordinator to facilitate reasonable requests for data and other forms of participation in science initiatives designed to enhance understanding of impacts from offshore wind.

3.2. *Handing/processing requests*

This section should describe how requests for coordination with third-party supported scientists will be processed - including providing reasonably-requested Project data and access to the Project area for independent scientists examining environmental sensitivities and/or the impacts of offshore wind energy development on the environment for the purpose of publication in peer-reviewed journals or other scientifically rigorous products.

- Sunrise Wind will employ a designated Science Coordinator to receive, process and collaborate on requests for Project data.
- Sunrise Wind will establish a workspace to coordinate and facilitate data sharing.
- Sunrise Wind will coordinate with non-Project vessels, including research vessels, for independent scientists to examine any environmental sensitivities as a result of the Project.

3.3. *Data availability*

This section should describe how data will be made available in accordance with Section 2.2.8 of the RFP

- Sunrise Wind will make environmental data available in accordance with Section 12.07 of the OREC Agreement.
- Sunrise Wind will set up a data portal or similar data sharing website. This site will provide information on available non-proprietary data that is either publicly available or available upon request. This portal is intended to integrate with existing platforms (including Northeastern Regional Association of Coastal Ocean Observing System [NERACOOS], Southeast Coastal

Ocean Observing Regional Association [SERACOOS], Mid-Atlantic Coastal Ocean Observing System [MARACOOS], Northeast Regional Ocean Council [NROC], and Mid- Atlantic Ocean Data Portal [MARCO]) and will serve as :

- A central guide to available Sunrise Wind environmental data
- A link to portals/website where data is visualized live
- A link to available and archived data sets or a link to request access to available data

- Sunrise Wind will use meta-data standards, where they are established, set by NOAA and NCEI for met/ocean data and biological data (https://www.ncei.noaa.gov/resources/metadata).
- Sunrise Wind will engage with U.S. Integrated Ocean Observing System (IOOS), NERACOOS, NROC and trust agencies to address any meta-data gaps and ensure future consistency of environmental data collection.
- Sunrise Wind will coordinate with NERACOOS to make available any non -proprietary data from met-ocean instruments (e.g. FLIDAR) in near real-time once deployed for use by mariners as well as the National Weather Service for forecast modelling as applicable.
- Sunrise Wind participated in a joint Regional Ocean Observing Systems (NERACOOS/MARACOOS) and Ocean Data Portals (NROC/MARCO) Coordination of data platforms webinar on October 2, 2020.

3.4. *Proposed restrictions*

This section should describe any restrictions on data provision or access that may be required to protect trade secrets or maintain site security.

- Sunrise Wind shall seek to explain why identified data types are considered commercially sensitive.

Sunrise Wind provides the following additional information related to proposed restrictions:

- Sunrise Wind will use a 3rd party Science Coordinator who will in coordination with Sunrise Wind staff consider and, as appropriate, implement, any restrictions on data provision or access that Sunrise Wind believes may be required to protect trade secrets or maintain site security as part of that process.

3.5. *Financial commitment for third party research*

This section should provide a level of financial commitment, if elected, that will be appropriated to leverage third-party environmental research funding, including federal or State-supported research. Or, if elected, provide the level of commitment to a general fund for supporting third-party research into potential environmental effects of offshore wind energy development. These financial commitments are outside those identified in Section 2.2.7 of the RFP and beyond those identified to fulfill state and federal regulatory permitting requirements.

- Sunrise Wind has made commitments to third-party environmental research funding for marine mammals and fisheries concerns. The details of these commitments are being finalized and will be announced at a future date.
- Sunrise Wind and its affiliates have provided funding for 10 Vemco VR16-4H tags to the University of Massachusetts Dartmouth to support telemetry research at Cox Ledge.

3.6. *Proposed or existing commitments/collaborations*

This section should describe proposed or existing commitments and collaborations with third-party researchers in support of monitoring activities and assessing impacts.

- Sunrise Wind and its affiliates have agreed to sharing available PSO data collected to date with New England Aquarium and NMFS GARFO for analysis funded by the Marine Mammal Commission. This data will be compared to ongoing aerial surveys conducted by New England Aquarium in the RI-MA-WEA and MA-WEA.
- Sunrise Wind's affiliates have presented some summary PSO data results and data collection methods, including data collected during geophysical and geotechnical surveys for Sunrise Wind, at the 2019 World Marine Mammal Conference, including:
  - Steckler et al., 2019: New Technology Instantly Shares Sightings to Prevent Vessel Strikes.
  - Smultea et al., 2019: Review of Night Vision Technologies for Detecting Cetaceans from Vessels at Sea
  - Smultea LLC is drafting a paper for publication with a more detailed review of thermal camera systems used during Geophysical and Geotechnical surveys and based on Orsted PSO data including Sunrise Wind data.
- Sunrise Wind and its affiliates will continue to voluntarily report any and all North Atlantic Right whales and maintain ongoing engagement with WhaleAlert, New England Aquarium (NEAQ), and NMFS GARFO and Northeast Fisheries Science Center (NEFSC) to enhance and improve on real-time sharing of information across multiple data platforms.
- Orsted's Ocean Wind project recently launched the ECO-PAM project (https://orsted-eco- pam-web-portal.srv.axds.co/). The project includes deployment of a buoy (the Martha's Vineyard Buoy) in the vicinity of the Sunrise Wind project and near real-time sightings from the buoy are directly fed to the Mysticetus data entry platform for PSOs' awareness. Currently all active real-time passive acoustic sensors (5) south of Cape Cod are funded by offshore wind developers: http://dcs.whoi.edu/.
- Sunrise Wind is developing site-specific studies which would examine fisheries and benthic resource topics, such as larval distributions, benthic habitat quality, distribution of nonindigenous/invasive species, and distribution and abundance of selected commercially and recreationally important fisheries species within the region of influence of the Project. The studies would be developed around clear research questions and testable hypotheses. The analytical methods and the data analyses will be clearly stated in the monitoring plan.
- To the extent practicable, Sunrise Wind will aim to employ techniques that integrate with ongoing data collection efforts and will consider having spatial and temporal overlap with existing surveys when possible.
- To the extent practicable, Sunrise Wind will strive to coordinate with fisheries monitoring being carried out by other developers.
- Sunrise Wind will coordinate with non-Project vessels, including research vessels, for independent scientists to examine fishery sensitivities and other environmental topics.
- Sunrise Wind will use commercial fishing vessels for the research it conducts whenever feasible, available, and appropriate.
- Sunrise Wind and its affiliates are developing additional commitments and collaborations with third-party researchers which will be announced when details of the collaborations are finalized.
- Sunrise Wind and its affiliates will share some results of monitoring completed for the Block Island Wind Farm at a future E-TWG meeting in 2021.

4. Proposed Mitigation of Impacts to Marine Mammals and Sea Turtles

4.1. *Baseline characterization*

4.1.1. Available information

Describe existing key literature and datasets that are available for baseline characterization.

- Studies are available to assess the baseline characteristics for marine mammals and sea turtles potentially occurring within the Project Area. Such studies include, but are not limited to, the following documents. The full list of data sources used for baseline characterization is located in the Sunrise Wind Construction and Operations Plan (COP).
- NYSERDA and/or NYSDEC studies on marine wildlife and whales, including:
    - New York State Department of Environmental Conservation (NYSDEC). 2015. List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State. Accessed July 2020.
    - New York State Department of Environmental Conservation (NYSDEC). 2020. Seagrass Management. Accessed June 2020.
        - https://www.dec.ny.gov/lands/110813.html.
    - New York State Energy Research and Development Authority (NYSERDA). 2017. Offshore Wind Master Plan. July 2020
        - https://www.nyserda.ny.gov/All%20Programs/Programs/Offshore%20Wind/About%20Offshore%2 0Wind/Master%20Plan
    - New York Bight Whale Monitoring Program Aerial Survey (NYSDEC 2020)
        - https://www.dec.ny.gov/lands/113818.html#Methods
    - Normandeau and APEM 2019a. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy. Second Annual Report Summer 2016 – Spring 2018 Fourth Interim Report. Accessed August 2020.
        - https://remote.normandeau.com/docs/NYSERDA_2016-2018_4th_Semi-Annual_report.pdf
    - Normandeau and APEM 2019b. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy, Summer 2018 Taxonomic Analysis Summary Report. Accessed August 2020.
        - https://remote.normandeau.com/docs/NYSERDA_Summer_2018_Taxonomic_Analysis_Summary_Report.pdf
    - Normandeau and APEM 2019c. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy, Fall 2018 Taxonomic Analysis Summary Report. Accessed August 2020.
        - https://remote.normandeau.com/docs/NYSERDA_Fall_2018_Taxonomic_Analysis_Summary_Report.pdf
    - Normandeau and APEM 2019d. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy. Accessed August 2020.

- https://remote.normandeau.com/docs/NYSERDA_Spring_2019_Taxonomic_Analysis_Summary_Report.pdf.

- Normandeau and APEM. 2020. Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy Winter 2018-2019 Taxonomic Analysis Summary Report. Accessed August 2020.
  - https://remote.normandeau.com/docs/NYSERDA_Winter_2018_19_Taxonomic_Analysis_Summary_Report.pdf
  - https://www.dec.ny.gov/animals/7494.html

- BOEM studies on whales, sea turtles, and marine species, including:
  - Bureau of Ocean Energy Management (BOEM). 2013. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts, Revised Environmental Assessment. Office of Renewable Energy Programs. OCSEIS/EA. BOEM 2013-1131.
  - Bureau of Ocean Energy Management (BOEM). 2014. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, Revised Environmental Assessment. OCS EIS/EA, BOEM 2014-603.
  - Bureau of Ocean Energy Management. 2018. Summary Report: Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species (2017). Sterling (VA): US Department of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Washington, D.C. OCS Study BOEM 2018-015.
    - https://www.boem.gov/sites/default/files/renewable-energy-program/Final-Summary-Report-for-BMP-Workshop-BOEM-2018- 015-%281%29.pdf
  - Bureau of Ocean Energy Management (BOEM). 2019. Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585. Accessed June 2020.
    - https://www.boem.gov/sites/default/files/renewable-energy-program/Regulatory-Information/BOEM-Marine-Mammals-and-Sea-Turtles-Guidelines.pdf.
  - Bureau of Ocean Energy Management (BOEM). 2019. Vineyard Wind Offshore Wind Energy Project Biological Assessment. December 2018 (Revised March 2019) For the National Marine Fisheries Service. Accessed June 2020.
    - https://www.boem.gov/sites/default/files/documents//Revised%20Biological%20Assessment%20Submitted%20to%20the%20U.S.%2 0Fish%20and%20Wildlife%20Service.pdf
  - Bureau of Ocean Energy Management (BOEM). 2020. National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological

Opinion. Construction, Operation, Maintenance and Decommissioning of the Vineyard Wind Offshore Energy Project (Lease OCS-A 0501) GARFO- 2019-00343. September 2020.
- https://www.boem.gov/sites/default/files/documents/renewable-energy/Final%20Biological%20Opinion%20from%20NOAA%20Fisheries.pdf

- Bureau of Ocean Energy Management (BOEM). 2020. Vineyard Wind 1 Offshore Wind Energy Project Supplement to the Draft Environmental Impact Statement. OCS EIS/EA BOEM 2020-025.
  - https://www.boem.gov/sites/default/files/documents/renewableenergy/Vineyard-Wind-1-Supplement-to-EIS.pdf.

- NOAA studies on marine mammals and marine turtles, including:
  - NOAA Fisheries 2017. 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.
    - https://www.nefsc.noaa.gov/psb/AMAPPS/docs/AMAPPS%202017%20annual%20report_final.pdf
  - NOAA Fisheries. 2020. Office of Protected Resources, Marine Mammal Stock Assessment Reports. (SARs) by Species/Stock
    - https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock
  - National Oceanic Atmospheric Administration (NOAA) Fisheries. 2020. The Greater Atlantic Region ESA Section 7 Mapper. Accessed July 2020.
    - https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper
  - National Oceanic Atmospheric Administration (NOAA) Fisheries. n.d.[a]. ESA Threatened and Endangered Species Directory. Accessed July 2020.
    - https://www.fisheries.noaa.gov/speciesdirectory/threatenedendangered?title=&species_category=1000000031&species_status=any&regions=1000001111&items_per_page=25&sort=

- Atlantic Marine Conservation Society (AMCS). 2020. AMSEAS Responds to Three Whales in Two Days. Accessed July 2020.
  - https://www.amseas.org/source-blog-2/2020/7/20/amseas-responds-tothree-whales-in-two-days

- Baumgartner, M. F., Bonnell, J., Van Parijs, S. M., Corkeron, P.J., Hotchkin, C., Ball, K., Pelletier, L-P., Partan, J., Peters, D., Kemp, J., Pietro, J., Newhall, K., Stokes, A., Cole, T. V. N., Quintana, E., & Kraus, S. D. 2019. Persistent near real-time passive acoustic monitoring for baleen whales from a moored buoy: system description and evaluation. Methods in Ecology and Evolution.
  - https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/2041-210X.13244

- Baumgartner, M. F., Bonnell, J., Corkeron, P. J., Van Parijs, S. M., Hotchkin, C, Hodges, B. A., Bort Thornton, J., Mensi, B. L., & Bruner, S. M. 2020. Slocum gliders provide accurate near real-time estimates of baleen whale presence from human- reviewed passive acoustic detection information. Frontiers in Marine Science 7:100.
  - https://www.frontiersin.org/articles/10.3389/fmars.2020.00100/full
- 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.
- CETAP (Cetacean and Turtle Assessment Program) (1982): A characterization of marine mammals and turtles in the mid- and north Atlantic areas of the U.S. outer continental shelf. Cetacean and Turtle Assessment Program, University of Rhode Island. Final Report #AA551-CT8-48 to the Bureau of Land Management, Washington, DC, 538 pp.
- Curtice C., Cleary J., Shumchenia E., Halpin P.N. 2019. Marine-life Data and Analysis Team (MDAT) technical report on the methods and development of marine-life data to support regional ocean planning and management. Prepared on behalf of the Marine-life Data and Analysis Team (MDAT).
  - http://seamap.env.duke.edu/models/mdat/MDAT-Technical-Report.pdf
- Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R.D. Kenney, C.W. Clark, A. N. Rice, B. Estabrook and J. Tielens. 2016. Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.
  - https://www.boem.gov/RI-MA-Whales-Turtles/
- Kraus, S.D., R.D. Kennet and L. Thomas. 2019. A Framework for Studying the Effects of Offshore Wind Development on Marine Mammals and Turtles. Report prepared for the Massachusetts Clean Energy Center, Boston, MA 02110, and the Bureau of Ocean Energy Management. May 2019.
  - https://www.boem.gov/sites/default/files/environmental-stewardship/Environmental-Studies/Renewable-Energy/A-Framework-for-Studying-the-Effects.pdf
- Halpin, P.N., Read, A.J., Fujioka, E., Best., B.D., Donnelly, B., Hazen, L.J., Kot, C., Urian, K., LaBrecque, E., Dimatteo, A., Cleary, J., Good, C., Crowder, L.B., and Hyrenbach, K.D. 2009. OBIS-SEAMAP: The World Data Center for Marine Mammal, Sea Bird, and Sea Turtle Distributions. Oceanography 22(2):104–115, doi:10.5670/oceanog.2009.42.
  - http://www.tos.org/oceanography/assets/docs/22-2_halpin.pdf

- Roberts, J. J., Best, B. D., Mannocci, L., Fujioka, E., Halpin, P. N., Palka, D. L., Garrison, L.P., Mullin, K. D., Cole, T. V. N., Khan, C. B., McLellan, W. A., Pabst, A., and Lockhart, G.G. 2016a. Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico. Scientific Reports 6, 22615 (2016).
  - https://www.nature.com/articles/srep22615
- Roberts J.J., L. Mannocci, and P.N. Halpin. 2016b. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2015-2016 (Base Year). Document version 1.0. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.
- Roberts J.J., Mannocci L, Halpin P.N. 2017. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2016-2017 (Opt. Year 1). Document version 1.4. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.
  - https://www.greateratlantic.fisheries.noaa.gov/protected/whaletrp/trt/meetings/April%202019/Duke%20Model%20Information/aftt_update_2016_2017_final_report_v1.4_excerpt.pdf
- Roberts J.J., L. Mannocci, R.S. Schick, and P.N. Halpin. 2018. Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2017-2018 (Opt. Year 2). Document version 1.2. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC.
  - http://seamap.env.duke.edu/resources/dsm/references/USECGOM/AFTT_Update_2017_2018_Final_Report_v1.2_excerpt.pdf
- Other state and regional studies on marine mammals and sea turtles, including:
  - Coastal Research and Education Society of Long Island, Inc. (CRESLI). 2020. CRESLI Seal Research. Accessed August 2020.
  - https://www.cresli.org/common/news/articles/article_detail.cfm?QID=10936&clientID=12000&topicID=0&subsection=sidebar%20/.
  - 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. University of Rhode Island. Ocean

- Special Area Management Plan Technical Report #10. pp 337.Sunrise Wind will comply with
- BOEM's site characterization requirements in 30 CFR § 585.626(3).

4.1.2. *Data being collected*

Describe data collected, or will be collected, to support baseline characterization.

- Observations of all right whales and dead, entangled, or distressed marine mammals shall be communicated to federal authorities as soon as is practicable, and no later than 24 hours after occurrence.

Sunrise Wind provides the following additional information related to data collection:

- Sunrise Wind will continue to conduct appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area.
- The surveys conducted by Sunrise Wind to support baseline characterization have included and will continue to include PSO sightings data derived from HRG and geotechnical surveys conducted in the Project Area.
- Sunrise Wind will rely on baseline data from NYSERDA's 3-year fine scale aerial survey of marine wildlife as well as the existing literature and datasets described in Section 4.1.1, and other published scientific literature.
- Sunrise Wind has completed a Project-specific Marine Mammal, Sea Turtle, and ESA-Listed Fish Assessment and a comprehensive underwater acoustic assessment to include modeling in support of evaluation of potential impacts due to noise generated during construction of the Project.
- Sunrise Wind will apply best available marine mammal densities as provided by the Duke University MDAT project.

In addition to this, Sunrise Wind has collected the following to address data gaps:

- Sunrise Wind will continue to collect PSO sightings data derived from HRG and geotechnical surveys conducted in the relevant Lease Area(s).Sunrise Wind is considering development of potential study topics following a review of the literature on existing offshore wind farms (including the baseline materials described), regional and local stakeholder concerns, and data gaps identified by resource managers in the Project Area and vicinity. Need for additional data collection will be determined through coordination with the jurisdictional federal and state agencies through the permitting process.
- Sunrise Wind will support funding for collection of data related to the impact of noise on communication of marine and terrestrial animals for baseline characterization and impacts analysis. The details of this funding will be announced at a later date.

4.2. *Species at risk*

Describe which species the Developer believes to be of greatest concern and why.

- Sunrise Wind believes, of all the marine mammals and sea turtle species that have the potential to occur within the Project Area, the five ESA-listed whales and the four ESA-listed sea turtles are of greatest concern because of their currently low population status.
- Sunrise Wind notes that 36 marine mammal species (cetaceans and pinnipeds) and five sea turtle species are known to occur within the north Atlantic OCS region. All 36 marine mammal species are protected by the Marine Mammal Protection Act (MMPA), and some are additionally protected by the Endangered Species Act (ESA). All of the identified sea turtle species are protected by the ESA.
- Sunrise Wind identified 14 MMPA protected species considered to have regular or common occurrence in the waters surrounding the Project area, at least seasonally:
    - harbor porpoise (*Phocoena phocoena*),
    - Atlantic white-sided dolphin (*Lagenorhynchus acutus*),
    - Atlantic spotted dolphin (*Stenella frontalis*),
    - short-beaked common dolphin (*Delphinus delphis*),
    - bottlenose dolphin (*Tursiops truncatus*),

  - long-finned pilot whale (*Globicephala melas*),
  - humpback whale (*Megaptera novaeangliae*),
  - fin whale (*Balaenoptera physalus*),
  - North Atlantic right whale (*Eubalaena glacialis*),
  - sei whale (*Balaenoptera borealis*),
  - minke whale (*Balaenoptera acutorostrata*),
  - sperm whale (*Physeter catodon*),
  - harbor seal (*Phoca vitulina*), and
  - gray seal (*Halichoerus grypus*).
- Sunrise Wind identified five ESA-listed whale species known to occur within the waters of the north Atlantic OCS region:
  - North Atlantic right whale (*Eubalaena glacialis*),
  - blue whale (*Balaenoptera musculus*),
  - fin whale (*Balaenoptera physalus*),
  - sei whale (*Balaenoptera borealis*), and
  - sperm whale (*Physeter macrocephalus*)
- Sunrise Wind identified four ESA-listed sea turtle species that are considered possible to occur in the Project area:
  - Leatherback (most likely to be encountered in the waters surrounding the Lease Area and export cable);
  - Loggerhead (most likely to occur in the nearshore water surrounding the Lease Area and export cable during summer and fall);
  - Atlantic (Kemp's) ridley (documented presence in nearshore waters during summer and fall); and
  - green sea turtle (documented presence around seagrass beds in nearshore waters during the summer and fall, however, considered to be uncommon).
- The presence and/or absence of marine mammals within these waters can be affected by a variety of parameters including water temperature, movements or availability of prey, and human presence or disturbance.

4.3. *Potential impacts and mitigation measures by phase*

The table below should list the potential impacts to marine mammals and sea turtles and proposed mitigation measures. To this end, a description of proposed measures to minimize the impacts of sound on marine mammals and sea turtles during all phases to Project development should be included. In addition, provide a description of the anticipated pre- and post- construction survey techniques to establish an ecological baseline and changes to that baseline within the Project site; the minimum size of exclusion zone intended to be monitored during geophysical surveys and construction; planned approaches to understanding marine mammal and sea turtle presence and absence within development site exclusion zone during site assessment and construction (e.g. a combination of visual monitoring by protected species observers and passive acoustic monitoring, the use of night vision and infra-red cameras during nighttime activities, etc.); proposed temporal constraints on construction activities and geophysical surveys with noise levels that could cause injury to harassment in marine mammals (e.g., seasonal restrictions during periods of heightened vulnerability for priority species; commencing activities during daylight hours and good visibility conditions, dynamic adjustments following the detection of a marine mammal); and proposed equipment and technologies the Developer would use to reduce the amount of sound at the source, if any.

Sunrise Wind provides additional information related to impacts/risks and mitigation measures by project stage in this table.

Potential Impacts	Proposed Mitigation Measures[1]	Phase*			
		1	2	3	4
Underwater noise impacts from geophysical survey equipment	• Exclusion, clearance, and monitoring zones shall be maintained around noise-generating activities to help measure and mitigate potential noise-related effects on marine mammals • Monitoring during noise-generating activities shall be done through an integrated monitoring approach, including the use of PAM, NMFS-approved PSOs, and other proven technologies, as appropriate, to the extent practicable and in compliance with federal regulation • Noise generating geophysical survey work shall not commence after dark or at other times of low visibility that would prevent sufficient monitoring of exclusion zones, to the extent compatible with practicability and worker safety • Exclusion and monitoring zones for marine mammals and sea turtles during all site assessment surveys, including: o A 1,640-foot (ft) (500-meter [m]) separation distance for the North Atlantic right whale and a 328-ft (100-m) separation distance for all other marine mammal species and sea turtles. o Pre-clearance of exclusion zones as defined by NOAA Fisheries o Ramp-up and shut-down procedures • A visual monitoring program conducted by NOAA Fisheries-approved PSOs • Environmental training for all vessel personnel regarding animal identification and protocol when sightings occur • Require Project vessels to comply with NOAA ship speed regulations and BOEM lease conditions specific to vessel speeds • Tow passive acoustic monitoring equipment (PAM) during geophysical surveys, pursuant to regulatory concurrence for current approved surveys** Use of night vision binoculars and infrared technology during period of poor visibility	X	X	X	

Potential Impacts	Proposed Mitigation Measures[1]	Phase*			
		1	2	3	4

Underwater noise impacts from construction and installation activities	• Sunrise Wind shall seek to use noise attenuation technologies to reduce sound from pile driving of foundations (if such methods are used)
	• Monitoring during noise-generating activities shall be done through an integrated monitoring approach, including the use of PAM, NMFS-approved PSOs, and other proven technologies, as appropriate, to the extent practicable
	• Sunrise Wind shall not commence impact pile driving for foundation installation during poor visibility conditions such as darkness, fog, and heavy rain, unless an alternative mitigation monitoring plan that does not rely on visual observation has been determined to be effective, to the extent compatible with practicability and worker safety
	• The Project will implement the following mitigation measures, pursuant to ongoing dialogue with BOEM and NOAA Fisheries. Each of these methods and tools has been successfully applied by Orsted, Sunrise Wind, and/or its affiliates in support of geophysical surveys and/or the construction and operation of offshore wind projects across the globe. A protected species mitigation and monitoring plan (PSMMP) will be developed in phases and will describe these measures and will be included within the Incidental Harassment Authorization (IHA) and further expanded as for the COP:
	  • Exclusion and monitoring zones
	  • Ramp-up/soft-start procedures
	  • Shutdown procedures (if technically feasible)
	  • Qualified and NOAA Fisheries-approved protected species observers (PSOs)
	  • Noise attenuation technologies
	  • Passive Acoustic Monitoring systems (fixed and mobile)
	  • Reduced visibility monitoring tools/technologies (e.g., night vision, infrared and/or thermal cameras)
	  • Adaptive vessel speed reductions
	  • Utilization of software to share visual and acoustic detection data between platforms in real time.
	• Use of passive acoustic monitoring equipment (PAM) to measure the sound field during foundation installation, pursuant to regulatory concurrence
	• Committed to noise attenuation technologies to reduce sound from pile driving of foundations, pursuant to regulatory concurrence
			X		

Potential Impacts	Proposed Mitigation Measures[1]	Phase*			
		1	2	3	4
	• Will evaluate attenuation of noise from a range of methods and will assess their effectiveness, commercial viability, safety risk, and practicability • Has conducted an underwater acoustic assessment in support of evaluation of potential impacts to marine mammals due to noise generated during construction and operation of the Project, particularly with regard to pile driving activities. The assessment followed NOAA Fisheries' 2018 revised Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Construction and Operations Plan Fisheries 2018a) and NOAA Fisheries' Greater Atlantic Regional Fisheries Office tool for assessing the potential effects to ESA-listed fish and sea turtles exposed to elevated levels of underwater sound from pile driving. Potential zones of influence described in this assessment will be reflected in the proposed mitigation measures in the mitigation and monitoring plan.				
Vessel strikes on marine mammals and sea turtles	• Sunrise Wind shall ensure that all vessel personnel are trained regarding animal identification and protocols when sightings occur • Sunrise Wind shall provide reference materials on board all project vessels for identification of marine mammals and sea turtles • Provide training for all vessel personnel regarding animal identification and protocol when sightings occur • Training for personnel onboard Project vessels will include marine mammal sighting and reporting that will stress individual responsibility for marine mammal awareness and protection. • Use of trained Protected Species Observers (PSOs) as required by the Project-specific Protected Species Mitigation and Monitoring Plan (PSMMP) • Require Project vessels to comply with NOAA ship speed regulations and BOEM lease conditions specific to vessel speeds: o 10 knots for vessels 65 ft (19.8 m) or greater during the period of November 1 through April 30. o 10 knot (<18.5 km per hour [km/h]) speed restrictions in any Dynamic Management Area (DMA) Or will implement alternative mitigation measures pursuant to engagement with BOEM	X	X	X	X

Potential Impacts	Proposed Mitigation Measures[1]	Phase*			
		1	2	3	4
	and NOAA Fisheries • Require operational automatic identification system (AIS) on all vessels associated with the construction, O&M, and decommissioning of the Project, pursuant to USCG and AIS carriage requirements. AIS will be used to monitor the number of vessels and traffic patterns for analysis and compliance with vessel speed requirements. • Adhere to NOAA Fisheries Operational Guidelines when in sight of marine mammals (NOAA Fisheries & NOS 2013), unless doing so would compromise human or environmental health and safety of Project personnel • Adhere to NOAA Fisheries' Vessel Strike Avoidance Measures and Reporting for Mariners (NOAA Fisheries 2008). Support the Whale Alert network to enhance awareness of and reduce the risk of ship strikes in the maritime community (http://www.whalealert.org/)				
Electromagnetic Fields (EMF), resulting in potential disturbance to marine mammals/sea turtles and/or their prey resource	• Sunrise Wind shall use proper shielding to reduce EMF impacts. • Sunrise Wind shall conduct EMF modeling and assessments to identify potential mitigation requirements. • Cable shielding as well as cable burial, where feasible, will limit EMF exposure.	X	X	X	
Direct or indirect effects from changes in water quality due to contamination or spills	Require all construction and O&M vessels to comply with applicable International Convention for the Prevention of Pollution from Ships (IMO MARPOL), federal (USCG and EPA), and state regulations and standards for the management, treatment, discharge, and disposal of onboard solid and liquid wastes and the prevention and control of spills and discharges.			X	X
**Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission*					

4.4. *Monitor for potential impacts during each phase*

Describe how potential impacts will be monitored on marine mammals and sea turtles during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

- Sunrise Wind shall seek to collaborate with other regulatory agencies and stakeholder groups to identify research needs and opportunities.

4.4.1. *Assess and quantify changes*

Describe how changes to environmental resources will be quantified using statistically sound methods.

- Ideally, specific questions and focal taxa shall be chosen for the Project either based on site-specific fisheries risk assessment, or in relation to broader regional efforts to assess variation between sites and understand cumulative impacts for sensitive species.
- Monitoring will, to the extent practicable, use appropriate study designs and methodologies to effectively analyze risk prior to construction and evaluate impacts during construction and operation by testing hypotheses and helping to assure statistical power for meaningful data analysis.
- Outside expertise will, if practicable, be consulted during study design and data analysis processes.

Sunrise Wind provides the following additional information related to assessing and quantifying changes:

- Sunrise Wind is considering development of study topics and methodologies for pre- and post-construction monitoring of marine mammals and sea turtles. A decision to undertake pre- during and post-construction monitoring would be based on requirements from federal and state agencies. Sunrise Wind proposes to undertake a strategic process to develop methodologies and study topics, based on requirements from federal and state agencies, and utilizing a scientific advisory committee composed of technical experts, to provide objective scientific guidance for Project consideration. The final plans would be subject to additional review and input by federal and state parties during the regulatory review processes for the Project.
- Sunrise Wind will evaluate other technologies to support adaptive mitigation and monitoring to increase Project flexibility through enhanced situational awareness, including: autonomous real time marine mammal acoustic detectors (i.e., buoys and gliders); and
- real time marine mammal sightings data software/platform to share data.

4.4.2. *Address data gaps*

Describe how data gaps will be addressed.

- Sunrise Wind shall work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting applications.

Sunrise Wind provides the following additional information related to data gaps:

- Sunrise Wind will work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting

applications.

- Sunrise Wind will work with regulatory agencies when developing the monitoring and mitigation plan in an effort to address existing data gaps through pre- and post-construction monitoring in accordance with applicable permit requirements.

4.5. *Strategies for developing alternate protocols*

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted marine mammals and sea turtles in an alternative location.

- As necessary, Sunrise Wind shall explore this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.

Sunrise Wind provides the following additional information related to strategies for developing alternate protocols:

- Sunrise Wind will work with federal and state agencies to determine appropriate and practicable marine wildlife monitoring and mitigation methods during the construction, operation, and decommissioning phases of the Project.
- Sunrise Wind will continue to engage with BOEM, NOAA Fisheries, USFWS, and other stakeholders to identify and implement appropriate and practicable measures to avoid, minimize, and/or mitigate impacts throughout all phases of the Project as required by applicable permits.
- Following identification of potential impacts, Sunrise Wind will work with regulators to establish processes for evaluating the effectiveness of selected mitigation strategies. Additionally, it will coordinate with federal and state agencies to identify additional mitigation strategies or potential modifications to selected mitigation measures that may be implemented in the event the base mitigation strategies are determined to be insufficient by relevant regulatory agencies

5. Proposed Mitigation of Impacts to Birds and Bats

5.1. *Baseline characterization*

Describe how baseline data will be established on the presence of bird and bat assemblages, temporal and spatial use of the site by key species within the area of the proposed Project.

5.1.1. *Available information*

Describe key existing literature and datasets that are available for baseline characterization.

- Studies are available to assess the baseline characteristics for birds and bats potentially occurring within the Project Area. Such studies include, but are not limited to, the following documents. The full list of data sources used for baseline characterization is located in the Sunrise Wind COP.
    - NYSERDA and/or NYSDEC studies on marine wildlife and birds and bats;
        - Jennings, K. 2018. Presentation: 2018 Long Island Colonial Waterbird & Piping Plover Update. Harbor Herons & Other Waterbirds of the Greater NY/NJ Harbor Working Group (December 11, 2018). Prepared by New York State Department of Environmental Conservation.
        - NYSERDA. 2017. New York State Offshore Wind Master Plan: Birds and Bats Study. NYSERDA Report 17-25q.
            - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan
        - NYSERDA. 2017. New York State Offshore Wind Master Plan: Cable Landfall Permitting Study. NYSERDA Report 17-25q.
            - https://www.nyserda.ny.gov/All%20Programs/Programs/Offshore%20Wind/About%20Offshore%20Wind/Master%20Plan
        - Normandeau and APEM. 2019. Remote Marine and Onshore Technology Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy. Prepared for New York State Energy Research and Development Authority.
            - https://remote.normandeau.com/portal_data.php?pj=6&public=1
    - BOEM and USFWS studies on marine species, seabirds, and bats;
        - Dowling, Z., P.R. Sievert, E. Baldwin, L. Johnson, S. von Oettingen, and J. Reichard. 2017. Flight Activity and Offshore Movements of Nano-Tagged Bats on Martha's Vineyard, MA. OCS Study BOEM 2017-054. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, VA. 39 pp.
        - Johnson, J.A., J. Storrer, K. Fahy, and B. Reitherman. 2011. Determining the Potential Effects of Artificial Lighting From Pacific Outer Continental Shelf (POCS) Region Oil and Gas Facilities on Migrating Birds. OCS Study BOEMRE2011-047. US Department of the Interior, Bureau of Ocean Energy Management, Regulations and Enforcement, Camarillo, CA, 20+ pp.
        - Loring, P.H., J.D. McLaren, P.A. Smith, L.J. Niles, S L. Koch, H.F. Goyert, H. Bai. 2018. Tracking movements of threatened migratory rufa Red Knots in U.S. Atlantic Outer Continental Shelf Waters. Sterling (VA): US Department of the

Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2018-046. 145 p.

- Loring, P., P.W.C. Paton, J.D. McLaren, H. Bai, R. Janaswamy, H.F. Goyert, C R. Grif f in, P.R. Sievert. 2019. Tracking Offshore Occurrence of Common Terns, Endangered Roseate Terns, and Threatened Piping Plovers with VHF Arrays. Sterling (VA): US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2019-017. 140 p.
- Pelletier, S.K., K. Omland, K.S. Watrous, and T.S. Peterson. 2013. Information Synthesis on the Potential for Bat Interactions with Offshore Wind Facilities – Final Report. U.S. Dept of the Interior, Bureau of Ocean Energy Management, Headquarters, Herndon, VA. OCS Study BOEM 2013-01163. 119 pp.
- Spiegel, C.S., A.M. Berlin, A.T. Gilbert, C.O. Gray, W.A. Montevecchi, I.J. Stenhouse, S.L. Ford, G.H. Olsen, J.L. Fiely, L. Savoy, M.W. Goodale, and C.M. Burke. 2017. Determining Fine-scale Use and Movement Patterns of Diving Bird Species in Federal Waters of the Mid-Atlantic United States Using Satellite Telemetry. OCS Study BOEM 2017-069. US Department of the Interior, Bureau of Ocean Energy Management, Sterling, VA.
- Veit, R.R., T.P. White, S.A. Perkins, S. Curley. 2016. Abundance and Distribution of Seabirds off Southeastern Massachusetts, 2011-2015. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-067. 82 pp.

- Curtice, C., J. Cleary, E. Shumchenia, and P.N. Halpin. 2019. Marine-life Data and Analysis Team (MDAT) technical report on the methods and development of marine-life data to support regional ocean planning and management.
  - http://seamap.env.duke.edu/models/mdat/MDAT-Technical-Report.pdf
- Loring, P.H., P. Paton, J. Osenkowski, S. Gilliland, J. Savard, and S. Mcwilliams. 2014. Habitat use and selection of black scoters in southern New England and siting of offshore wind energy facilities. The Journal of Wildlife Management. Vol 78.4.
  - https://wildlife.onlinelibrary.wiley.com/doi/abs/10.1002/jwmg.696
- Paton, P., K. Winiarski, C. Trocki, and S. McWilliams. 2010. Spatial Distribution, Abundance, and Flight Ecology of Birds in Nearshore and Offshore Waters of Rhode Island. Interim Technical Report for the Rhode Island Ocean Special Area Management Plan 2010. June 17, 2010.
- New York State Breeding Bird Atlas (NYS BBA). 2007. [Internet] 2000–2005. Release 1.0. Albany (New York): New York State Department of Environmental Conservation [updated June 11, 2007].
  - http://www.dec.ny.gov/animals/7312.html.
- NPS. 2018. Fire Island National Seashore Bat Population Monitoring and White-nose Syndrome. October 2018.
- Winiarski, K, P. Paton, S. McWilliams, and D. Miller. 2012. Rhode Island Ocean Special Area Management Plan: Studies Investigating the Spatial Distribution and Abundance of Marine Birds in Nearshore and Offshore Waters of Rhode Island Department of Natural Resources Science, University of Rhode Island. October 10, 2012.
- Published data of bats in offshore and nearshore environments:
  - Cryan, P.M. and A.C. Brown. 2007. Migration of bats past a remote island of fers clues toward the problem of bat fatalities at wind turbines. Biological Conservation 139:1-11.Hatch, S.K., E.E. Connelly, T.J. Divoll, I.J. Stenhouse, and

K.A. Williams. 2013. Offshore observations of eastern red bats (Lasiurus borealis) in the Mid-Atlantic United States using multiple survey methods. PLoS ONE 8: e83803.

- Sjollema, A.L., J. E. Gates, R.H. Hilderbrand, and J. Sherwell. 2014. Offshore activity of bats along the mid-Atlantic coast. Northeastern Naturalist 21: 154– 163.
- Stantec. 2018. Long Island Roost Study: Northern Long-eared Bats. Prepared for Cassadaga Wind LLC. August 22, 2018. 21 pp + appendices.

- Agency coordination and communication:
  - USFWS. 2020. Information for Planning and Consultation, Letter Re: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project. March 11, 2020.New York Natural Heritage Program (NYNHP). 2020. Letter, Re: Sunrise Offshore Wind Farm. March 27, 2020.

5.1.2. *Data collected*

Describe data collected, or will be collected, to support baseline characterization.

- Sunrise Wind will continue to conduct appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area. The surveys conducted by Sunrise Wind or its affiliates to support baseline characterization of birds and bats include:
  - Biodiversity Research Institute (BRI). 2018. Assessment of the Potential Effects of the Bay State Wind Offshore Wind Farm on Birds: Lease Area OCS-A 0500. Report to Tetra Tech Inc. Biodiversity Research Institute, Portland, ME. 229 pp.
- 10 offshore avian boat-based surveys (conducted every 2 weeks) of a relevant Lease Area between June and October 2017 in an effort to fill a data gap for roseate terns. Over 6,500 birds from 31 species were observed in the Lease Area. Two common terns (*Sterna hirundo*) and one unidentified tern were observed, however no roseate terns were observed.
  - Bay State Wind. 2019. Construction and Operations Plan, Volume II: Site Characterization and Assessment of Impact-Producing Factors and List of References. Submitted to BOEM March 15, 2019, Revised June 28, 2019.
  - Stantec Consulting Services Inc. (Stantec) 2016. Vessel-based Acoustic Bat Monitoring: Block Island Wind Farm, Rhode Island. Prepared for: Deepwater Wind Block Island, LLC. October 5, 2016.
- Stantec. 2018. Vessel-based Acoustic Bat Monitoring: South Fork Wind Farm and South Fork Export Cable. Prepared for: Deepwater Wind Block Island, LLC. March 19, 2018.
  - Stantec. 2018. 2017 Acoustic Monitoring: Block Island Wind Farm, Rhode Island. Prepared for: Deepwater Wind Block Island, LLC. March 19, 2018.
  - Stantec. 2019. Draft Seacor Supporter Vessel-Based Acoustic Bat Monitoring. South Fork Wind Farm. Prepared for Deepwater Wind South Fork, LLC.
  - Stantec. 2019. Draft Fugro Discovery Vessel-Based Acoustic Bat Monitoring. South Fork Wind Farm. Prepared for Deepwater Wind South Fork, LLC.
  - Stantec. 2019. Draft Conti Vessel-Based Acoustic Bat Monitoring. South Fork Wind Farm. Prepared for Deepwater Wind South Fork, LLC.
  - Stantec. 2020. Draft Fugro Discovery Vessel-based Acoustic Bat Survey Sunrise Wind Farm. Prepared for Sunrise Wind LLC.
  - Stantec. 2020. Draft 2019 Fugro Discovery Vessel-based Acoustic Bat Survey Revolution Wind Farm. Prepared for Revolution Wind, LLC.

  - Stantec. 2020. Draft Fugro Enterprise and Fugro Searcher Vessel-Based Acoustic Bat Survey Sunrise Wind Farm. Prepared for Sunrise Wind LLC.
- Sunrise Wind will also rely on baseline data from NYSERDA's aerial baseline survey of the NY Offshore Planning Area as well as the existing literature and datasets described in Section 5.1.1, and other published scientific literature.
- Sunrise Wind has completed a Project-specific Avian and Bat Risk Assessment to evaluate Project construction and operations and maintenance impacts on avian and bat species.
- Sunrise Wind may conduct additional avian surveys within New York state nearshore waters, including nesting bird surveys along the landing location on Long Island, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind will conduct bat surveys for the onshore areas of the Project, if appropriate, pending consultation with state and federal wildlife agencies and applicable permit requirements.

In addition to this, additional data being collected to address data gaps includes:

- Sunrise Wind may conduct additional avian surveys to be conducted onshore, including nesting bird surveys along the landing location on Long Island, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind will conduct a pre-construction bat survey for the onshore areas of the Project, if appropriate, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind has completed a pre-construction avian and bat risk assessment to assess construction and operation impacts. Baseline data for the assessment included, but was not limited to, data sources described in Section 5.1.1 and 5.1.2. The avian and bat risk assessment covers:

Marine birds (petrels and shearwaters, loons and grebes, gannets, cormorants, sea ducks, skuas and jaegers, kittiwakes and gulls, terns and skimmers, and alcids)

  - Coastal birds (shorebirds, waterfowl [geese, bay ducks, dabblers], and wading birds)
  - Land birds (raptors and passerines, woodpeckers and game birds)
  - Cave-dwelling bats (*Myotis, Perimyotis*, and *Eptesicus species*)
  - Migratory tree-roosting bats (*Lasiurus* and *Lasionycteris* species)
  - Sunrise Wind is developing a post-construction monitoring plan for the Project (described further in Section 5.4.1) which will identify data gaps unique to the region and Project area that will be addressed through monitoring.

5.2. *Species at risk*

Describe which species the Developer believes to be of greatest concern and why.

- Sunrise Wind identified the following ESA-listed bird species at greatest risk/concern:
  - northwestern Atlantic Ocean population of Roseate Tern (only species observed by Veit et al (2016 study in relevant Lease Area(s)));
  - Atlantic Coast population of the piping plover (*Charadrius melodus*); and
  - rufa subspecies of red knot (*Calidris canutus rufa*).
- Sunrise Wind identified the northern long-eared bat, which is listed as threatened by the ESA and NYSDEC, as of greatest concern.
  - Ahlen et al (2009) shows evidence of bats visiting wind farms located relatively close

to shore (2.5 to 4.3 mi [4 to 7 km]) in Europe, however, the Project is located 18.9 mi from Martha's Vineyard and 30.5 mi from Montauk, New York.
    - Bat occurrence in offshore waters appears to be relatively low, with highest activity exhibited by migratory tree bat species.
    - Migratory tree bat activity would be limited to migration period (May, August, September).
    - NYSDEC has indicated that Long Island is generally an important area for the northern long-eared bat.
- Sunrise Wind has identified the following avian species to likely be present in the Project Area based on observations made during the Bay State Wind boat-based surveys (BRI 2018), MassCEC aerial surveys (Veit et al. 2016), and NYSERDA survey (Normandeau and APEM 2019):
    - 2 species of loon;
    - 2 species of grebes;
    - 9 species of petrels and shearwaters;
    - 2 species of wading birds;
    - 2 species of swans and geese;
    - 1 species of gannet;
    - 1 species of cormorants;
    - 7 species of ducks
    - 7 species of sea ducks;
    - 2 species of raptors;
    - 11 species of shorebirds and phalaropes;
    - 4 species of skuas and jaegers;10 species of gulls;
    - 6 species of terns and skimmers;
    - 6 species of auks;
    - 1 species of nightjars; and
    - 4 species of passerines;

5.3. *Potential impacts/risks and mitigation measures by project stage*

The table below should list the potential impacts and mitigation measures to understand and minimize the Project's risk to birds and bats. At a minimum this should include the steps the Developer will pursue to minimize risk to birds and bats (e.g. lighting), and identification of technological approaches to assess impacts or any Proposals for other research or mitigations relating to birds or bats planned or under consideration at this time.

Sunrise Wind provides additional information related to impacts/risks and mitigation measures by project stage in this table.

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Collision risk to marine birds and bats	• To avoid and minimize attraction- and disorientation-related impacts to birds and bats, artificial lighting on offshore wind projects shall be reduced to the extent practicable while maintaining human safety and compliance with FAA, USCG, BOEM and other regulations. • Monitoring shall be conducted to determine if there is a need for perching-related deterrents to reduce attraction and minimize potential perching and loafing opportunities for birds. • Physical deterrents to perching (e.g. such as spikes and netting or other best available technology) shall be implemented if there is demonstrated risk at the site (e.g., perching and roosting on infrastructure is a common occurrence) and to the extent that they do not represent a human safety hazard. • Wind Turbine Generators (WTGs) will have air gaps from MSL to minimum blade swept height of at least 98 ft (30 m) which minimizes collision risk to marine birds given that many seabirds fly below this height. • Committed to an indicative layout scenario with Project structures sited in an east- west/north-south oriented grid with 1.15- by 1.15-mi (1- by 1-nm; 1.85- by 1.85-km) spacing that aligns with other proposed adjacent offshore wind projects in the RI-MA WEA and MA WEA. This wide spacing of WTGs may allow avian and bat species to avoid individual WTGs and minimize risk of potential collision. • Sunrise Wind will take measures to reduce perching opportunities at operating turbines, if appropriate based on further consultations with state and federal agencies. • Sunrise Wind will use ADLS or related means (e.g., dimming or shielding) to limit visual impact, pursuant to approval by the FAA and BOEM and commercial and technical feasibility at the time of FDR/FIR approval, and dialogue with stakeholders. In addition to limiting visual impact, reducing lighting will also reduce the potential for impacts to birds and bats that can be attracted to light sources. • Construction and operational lighting will be limited to the minimum necessary to ensure safety and compliance with applicable regulations. Limiting lighting to that which is required for safety and compliance with applicable regulations is expected to minimize impacts on avian and bat species. • The Project onshore cables will not include any overhead utility lines, thus minimizing potential impacts to birds and bats associated with collision with overhead lines. • Sunrise Wind will document any dead (or injured) birds or bats found incidentally on vessels and structures during construction, O&M, and decommissioning and provide an annual report to BOEM and USFWS.		X	X	

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Displacement of birds and bats from habitat in offshore environment	• Committed to an indicative layout scenario with Project structures sited in an east- west/north-south oriented grid with 1.15- by 1.15-mi (1- by 1-nm; 1.85- by 1.85-km) spacing that aligns with other proposed adjacent offshore wind projects in the RI-MA WEA and MA WEA. This wide spacing of WTGs may reduce risk of barrier effects and/or displacement.			X	
Habitat impacts, including breeding and nesting areas	• Siting and construction of nearshore and onshore project components for offshore wind farms (including but not limited to nearshore export cable routes, landfall sites, onshore cable routes, and onshore substations) shall be conducted in such a way as to avoid or minimize the loss or alteration of bird and bat habitat, as well as avoid or minimize disturbance and direct and indirect effects to bird and bat populations and their prey. Specifically, onshore infrastructure (i.e., landfall site, cable routes, substations) and development activities should 1) maximize the use of previously developed or disturbed areas, and 2) avoid unique or protected habitats, as well as habitat for key species, where feasible. • Project has sited onshore facilities and associated work spaces on previously disturbed lands (e.g. roadways, ROWs, developed industrial/commercial areas) to the extent reasonably feasible, thereby minimizing impacts to undisturbed avian habitat. • Onshore vegetation clearance and cable landing activity, where reasonably practicable, will occur outside the breeding or nesting periods. If not reasonably practicable, the area will be surveyed prior to clearance, and Sunrise Wind will work with state and federal agencies to develop construction monitoring and impact minimization plans • The distance of the Project offshore (greater than 15 mi [13 nm, 24.1 km]) avoids coastal and nearshore areas, which are areas that are known to concentrate birds, particularly shorebirds and sea ducks. • An Invasive Species Management Plan will be implemented to manage the spread of invasive plant species that could negatively impact native plants and impact avian habitat. • Accidental spill or release of oils or other hazardous materials will be managed offshore through an Emergency		X	X	X

	Response Plan /Oil Spill Response Plan and onshore through a Spill Prevention Control and Countermeasure Plan. • Will take measures to reduce perching opportunities (e.g., install anti-perching devices), if appropriate based on further consultations with state and federal agencies • Onshore Project facilities are primarily sited within previously disturbed and developed areas (e.g., roadways, ROWs, developed industrial/commercial areas) to the extent feasible, thereby minimizing impacts to undisturbed bat habitat. • The distance of the Project offshore (greater than 15 mi [13 nm, 24.1 km]) avoids coastal and nearshore areas, which are areas where bats typically occur. • Will work with USFWS and NYSDEC and endeavor to employ protection measures for the northern long-eared bat, including: • from November 1 to March 31, no cutting of trees within a quarter mile of a hibernaculum; • from April 1 to October 31, no cutting of known and documented roost trees within five miles of known hibernacula, and no cutting of trees within 150 feet of a documented summer occurrence; and from April 1 to October 31, no cutting of trees within a quarter mile of a hibernaculum unless for protection of human life and property. If work is anticipated to occur outside of these time-of-year restriction periods, Sunrise Wind will work with state and federal agencies to develop construction monitoring and impact minimization plans. • An Invasive Species Management Plan will be implemented to manage the spread of invasive plant species that could negatively impact native plants and impact bat habitat. • Accidental spill or release of oils or other hazardous materials will be managed offshore through an Emergency Response Plan /Oil Spill Response Plan and onshore through a Spill Prevention Control and Countermeasure Plan.				
*Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission					

5.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on birds and bats during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

5.4.1. *Pre/Post monitoring to assess and quantify changes*

Describe how changes to environmental resources will be quantified using statistically sound methods.

- Pre- and post-construction monitoring shall be designed in such a way that it improves understanding of the impacts of offshore wind energy development on birds and bats, including identifying specific questions and taxa on which to focus monitoring efforts for the proposed project, or in relation to broader regional efforts to assess variation between sites and understand cumulative impacts for sensitive species.
- Monitoring will, to the extent practicable, use appropriate study designs and methodologies to effectively analyze risk prior to construction and evaluate impacts during construction and operation by testing hypotheses and helping to assure statistical power for meaningful data analysis.
- Outside expertise will, if practicable, be consulted during study design and data analysis processes.

Sunrise Wind provides the following additional information related to pre/post monitoring to assess and quantify changes:

- Sunrise Wind and its affiliates have conducted a pre-construction offshore avian and bat boat-based surveys, which are described in Section 5.1.2.
- Sunrise Wind has completed an avian and bat risk assessment to assess construction and operation impacts, as described in Section 5.1.3.
- Sunrise Wind anticipates additional pre-construction avian surveys to be conducted onshore, including nesting bird surveys at the landing location on Long Island, and surveys for bat species for the onshore portions of the Project, if appropriate, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind is developing an avian post-construction monitoring plan for the Project that will summarize the approach to monitoring; describe overarching monitoring goals and objectives; identify the key avian species, priority questions, and data gaps unique to the region and Project area that will be addressed through monitoring; and describe methods and time frames for data collection, analysis, and reporting. Post-construction monitoring will assess impacts of the Project with the purpose of filling select information gaps and supporting validation of the avian risk assessment completed for the Project. Focus may be

  placed on improving knowledge of ESA-listed species occurrence and movements offshore, avian collision risk, species/species group displacement, or similar topics. Where possible, monitoring conducted by Sunrise Wind will build on and align with post-construction monitoring conducted by the other Orsted/Eversource offshore wind projects in the Northeast region. Sunrise Wind will engage with state and federal agencies and eNGOs to identify appropriate monitoring options and technologies, and to facilitate acceptance of a final plan.

5.4.2. *Address data gaps*

Describe how data gaps will be addressed.

- Sunrise Wind shall work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting applications.

Sunrise Wind provides the following additional information related to addressing data gaps:

- Sunrise Wind will work with stakeholders, including regulatory agencies and local groups, in the

design phase of the Project to identify data gaps to be addressed through surveys or permitting applications.

- Sunrise Wind will work with regulatory agencies when developing the monitoring and mitigation plan in an effort to meet existing data gaps through pre- and post-construction monitoring in accordance with applicable permitting requirements.

5.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted birds and bats in an alternative location.

- As necessary, Sunrise Wind will explore this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.

Sunrise Wind provides the following additional information related to strategies for developing alternate protocols:

- Following identification of potential impacts, Sunrise Wind will work with regulators to establish processes for evaluating the effectiveness of selected mitigation strategies. Additionally, it will coordinate with federal and state agencies to identify additional mitigation strategies or potential modifications to selected mitigation measures that may be implemented in the event the base mitigation strategies are determined to be insufficient by relevant regulatory agencies.

6. Proposed Mitigation of Impacts to Fish, Invertebrates and their Habitats

6.1. *Baseline characterization*

Describe what is known about the proposed site in terms fish and invertebrate assemblage, and temporal and spatial variations in fish, invertebrates and their habitats at the proposed site. The use of collaborative monitoring models with the fishing community is encouraged to develop trusted baseline data.

6.1.1. *Available information*

Describe key existing literature and datasets that are available for baseline characterization.

- Studies are available to assess the baseline characteristics for fish, invertebrates and their habitats occurring within the Project Area. Such studies include, but are not limited to, the following documents. The full list of data sources used for baseline characterization is located in the Sunrise Wind COP.
    - NYSERDA and/or NYSDEC studies on marine wildlife;
        - New York State Department of Environmental Conservation (NYSDEC). 2008. Coastal Fish & Wildlife Habitat Assessment Form – Carmans River. December 15.
            - https://www.dos.ny.gov/opd/programs/consistency/Habitats/Long Island/Carmans_River.pdf.
        - NYSERDA. 2017a. New York State Offshore Wind Master Plan: Fish and Fisheries Study. NYSERDA Report 17-25q.
            - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan
    - BOEM studies on marine habitats and lobsters and crabs;
        - Collie, J.S. and J.W. King. 2016. Spatial and Temporal Distributions of Lobsters and Crabs in the Rhode Island Massachusetts Wind Energy Area.
    - U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Sterling, Virginia. OCS Study BOEM 2016-073.
    - Guida, V., A. Drohan, H. Welch, J. McHenry, D. Johnson, V. Kentner, J. Brink, D. Timmons, and 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.NOAA and Northeast Fisheries Science Center studies and stock assessment reports, including:
        - Cargnelli, L.M., S.J. Griesbach, P.L. Berrien, W.W. Morse, and D.L. Johnson. 1999a. Essential fish habitat source document: Haddock, Melanogrammus aeglefinus, life history and habitat characteristics. NOAA Tech Memo NMFS-NE-128. 31 p.
        - Cargnelli, L.M., S.J. Griesbach, D.B. Packer, P.L. Berrien, D.L. Johnson, and W.W. Morse. 1999b. Essential Fish Habitat Source Document: Pollock, Pollachius virens, Life History and Habitat Characteristics. NOAA Tech Memo NMFS-NE-131. 38 p.
        - Cargnelli, L.M., S.J. Griesbach, D.B. Packer, P.L. Berrien, W.W. Morse, and D.L. Johnson. 1999c. Essential Fish Habitat Source Document: Witch Flounder, Glyptocephalus cynoglossus, Life History and Habitat Characteristics. NOAA Tech Memo NMFS-NE-139. 38 p.

- Cargnelli, L.M., S.J. Griesbach, D.B. Packer, and E. Weissberger. 1999d. NOAA Tech Memo NMFS-NE-142.22 p.
- Cargnelli, L.M., S.J. Griesbach, D.B. Packer, and E. Weissberger. 1999e. Essential Fish Habitat Source Document: Ocean Quahog, Arctica islandica, Life History and Habitat Characteristics. NOAA Tech Memo NMFS-NE-148. 20 p.
- National Oceanic and Atmospheric Administration (NOAA). 2009. Consolidated Atlantic Highly Migratory Species Fishery Management Plan, Amendment 1, Chapter 5.
- National Marine Fisheries Service (NOAA Fisheries). 2017. Amendment 10 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan: Essential Fish Habitat. Office of Sustainable Fisheries, Atlantic Highly Migratory Species Management Division. 442 p. Accessed July 2019.
    - https://www.habitat.noaa.gov/application/efhinventory/docs/a10
- _hms_efh.pdf.
- National Marine Fisheries Service (NOAA Fisheries). 2019. 2019 Stock Assessment and Fishery Evaluation Report for Atlantic Highly Migratory Species.
    - https://www.fisheries.noaa.gov/resource/document/2019-stock-assessment-and-fishery-evaluation-report-atlantic-highly-migratory.
- National Marine Fisheries Service (NOAA Fisheries). 2020a. Essential Fish (EFH) Habitat Mapper. Accessed June 2020.
    - https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.
- NOAA Fisheries. 2020. Species Directory. Accessed June 2020.
    - https://www.fisheries.noaa.gov/species-directory
- Northeast Fisheries Science Center (NEFSC). 2016. 61st Northeast Regional Stock Assessment Workshop (61st SAW) Assessment Summary Report. Northeast Fisheries Science Center Reference Document 16-13. 26 p. Accessed June 2020.
    - https://www.nefsc.noaa.gov/publications/crd/crd1613/crd1613.pdf
- Northeast Fisheries Science Center (NEFSC). 2017a. Operational Assessment of 19 Northeast Groundfish Stocks, Updated Through 2016. Northeast Fisheries Science Center Reference Document 17-17. 259 p. Accessed June 2020.
    - https://www.nefsc.noaa.gov/publications/crd/crd1717/.
- Northeast Fisheries Science Center (NEFSC). 2017b. 62nd Northeast Regional Stock Assessment Workshop (62nd SAW) Assessment Report. Northeast Fisheries Science Center Reference Document 17-03. 822 p. Accessed June 2020.
    - https://www.nefsc.noaa.gov/publications/crd/crd1703/.
- Northeast Fisheries Science Center (NEFSC). 2017c. Scup Stock Assessment Update for 2017. Accessed June 2020.
    - https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac

6/t/596fb26bc534a5fa937b2c07/1500492396171/5Scup_2017_Assesssment_Update.pdf.

- Northeast Fisheries Science Center (NEFSC). 2017d. 63rd Northeast Regional Stock Assessment Workshop (63rd SAW) Assessment Report. Northeast Fisheries Science Center Reference Document 17-10. 409 p. Accessed June 2020.
  - https://www.nefsc.noaa.gov/publications/crd/crd1710/.
- Northeast Fisheries Science Center (NEFSC). 2018a. 65th Northeast Regional Stock Assessment Workshop (65th SAW) Assessment Summary Report. Northeast Fisheries Science Center Reference Document 18-08. 38 p. Accessed June 2020.

- https://www.nefsc.noaa.gov/publications/crd/crd1808/.
  - Northeast Fisheries Science Center (NEFSC). 2018b. 64th Northeast Regional Stock Assessment Workshop(64th SAW) Assessment Summary Report. Northeast Fisheries Science Center Reference Document 18-03. 27 p. Accessed June 2020.
- https://www.nefsc.noaa.gov/publications
  - Northeast Fisheries Science Center (NEFSC). 2020. Operational assessment of the black sea bass, scup, bluefish, and monkfish stocks, updated through 2018. NEFSC Ref Doc 20-01; 160 p. Available from:
    - http://www.nefsc.noaa.gov/publications/

- Additional state and regional studies and other published data for the waters of the northeast Atlantic related to of offshore wind development:
- Atlantic States Marine Fisheries Commission (ASMFC). 2012. Habitat Addendum IV to Amendment 1 to the Interstate Fishery Management Plan for Atlantic Sturgeon. Accessed July 2020.
  - http://www.asmfc.org/uploads/file/sturgeonHabitatAddendumIV_Sept2012.pdf
- Atlantic States Marine Fisheries Commission (ASMFC). 2017. 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report. Accessed July 2020.
  - http://www.asmfc.org/uploads/file//59f8d5ebAtlSturgeonBenchmarkStockAssmt_PeerReviewReport_2017.pdf.
- Atlantic States Marine Fisheries Commission (ASMFC). Species. Accessed July 2020.
  - http://www.asmfc.org/fisheries-management/program-overview
- Atlantic Sturgeon Status Review Team. 2007. Status Review of Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus). Accessed July 2020.
  - https://www.nao.usace.army.mil/Portals/31/docs/civilworks/JamesRiver/NMFS_Atlantic_sturgeon_status_review_2007.pdf
- Breece, M., Fox, D.A., Dunton, K.J., Frisk, M.G., Jordaan, A., and Oliver, M.J. 2016. Dynamic seascapes predict the marine occurrence of an endangered species. Methods in Ecology and Evolution.
- Collette, B.B. and G. Klein-MacPhee, ed. 2002. Bigelow and Schroeder's Fishes of the Gulf of Maine. 3rd Edition. Washington, DC: Smithsonian Institution Press.
- Dadswell, Michael. 2006. A Review of the Status of Atlantic Sturgeon in Canada, with Comparisons to Populations in the United States and Europe. Fisheries. 31. 218-229. 10.1577/1548-8446(2006)31[218:AROTSO]2.0.CO;2.

- Dimond J. and E. Carrington E. 2007. Temporal variation in the symbiosis and growth of the temperate scleractinian coral Astrangia poculata. Mar Ecol Prog Ser 348:161-172.
- Dunton, Keith J., Adrian Jordaan, Kim A. McKown, David O. Conover, and Michael G. Frisk. 2010. Abundance and distribution of Atlantic sturgeon (*Ascipenser oxyrinchus*) within the Northwest Atlantic Ocean, determined from five fishery-independent surveys. Fishery Bulletin, 108: 450-466.
- Dunton, K.J., Chapman, D., Jordaan, A., Feldheim, K., O'Leary, S.J., McKpwn, K.A., and Frisk, M.G. 2012. Genetic mixed-stock analysis of Atlantic Sturgeon *Ascipenser oxyrinchus oxyrinchus* in a heavily exploited marine habitat indicates the need for routine genetic monitoring. Journal of Fish Biology, 80: 207-217.
- Dunton, Keith J., Adrian Jordaan, David O. Conover, Kim A. McKown, Lisa A. Bonacci, and Michael G. Frisk. 2015. Marine Distribution and Habitat Use of Atlantic Sturgeon in New York Lead to Fisheries Interactions and Bycatch, Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science. 7:1, 18-32.
- Gotceitas, V. and J.A. Brown. 1993. Substrate selection by juvenile Atlantic cod (Gadus morhua): effects of predation risk. Oecologia 93: 31-37.
- Greene, J.K., Anderson, M.G., Odell, J., and Steinberg, N., eds. 2010. The Northwest Atlantic Marine Ecoregional Assessment: Species, Habitats and Ecosystems. Phase One. The Nature Conservancy, Eastern U.S. Division, Boston, MA.
- Griswold, C.A. and J. Prezioso. 1981. In-situ observations on reproductive behavior of the long- finned squid, Loligo pealei. Fishery Bulletin 78: 945–947.
- Ingram, E.C., Cerrato, R.M., Dunton, K.J., and Frisk, M.G. 2019. Endangered Atlantic Sturgeon in the New York wind energy area: implications of future development in an offshore wind energy site. Scientific Reports, Nature Research, 9:12432.
- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2014. Report of the 2014 ICCAT East and West Atlantic Skipjack Stock Assessment Meeting. Accessed July 2019.
  - https://www.iccat.int/Documents/Meetings/Docs/2014_SKJ_ASSESS_ENG.pdf.
- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2016a. Report of the 2016 ICCAT North and South Atlantic Albacore Stock Assessment Meeting. Accessed July 2019.
  - https://www.iccat.int/Documents/Meetings/Docs/2016_ALB_REPORT_ENG.pdf
- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2016b. Report of the 2016 ICCAT Yellowfin Tuna Stock Assessment Meeting. Accessed July 2019.
  - https://www.iccat.int/Documents/SCRS/DetRep/YFT_SA_ENG.pdf.
- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2017. Report of the Standing Committee on Research and Statistics (SCRS). Accessed July 2019.
  - https://www.iccat.int/Documents/Meetings/Docs/2017_SCRS_REP_ENG.pdf.
- O'Hara, C.J. and R.N. Oldale. 1980. Maps showing geology and shallow structure of eastern Rhode Island Sound and Vineyard Sound, Massachusetts: U.S. Geological Survey Miscellaneous Field Studies Map MF-1186, 41 p.

- Mid-Atlantic Fishery Management Council (MAFMC). 1998. Amendment 12 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan. Mid-Atlantic Fishery Management Council in cooperation with the National Marine Fisheries Service, and the New England Fishery Management Council, October 1998.
- Mid-Atlantic Fishery Management Council (MAFMC). 1998a. Amendment 12 to the to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP). Published in cooperation with National Marine Fisheries Services (NOAA Fisheries). 7 October 1998.
- Mid-Atlantic Fishery Management Council (MAFMC). 1998b. Amendment 1 to the Bluefish Fishery Management Plan, Mid-Atlantic Fishery Management Council Atlantic States Marine Fisheries Commission, in cooperation with the National Marine Fisheries Service, the New England Fishery Management Council, and the South Atlantic Fishery Management Council, October 1998.
- Mid-Atlantic Fishery Management Council (MAFMC). 1998c. Amendment 12 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan. Mid-Atlantic Fishery Management Council in cooperation with the National Marine Fisheries Service, and the New England Fishery Management Council, October 1998.
- Mid-Atlantic Fishery Management Council (MAFMC). 2011. Amendment 11 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. Mid-Atlantic Fishery Management Council. May 2011.
- Mid-Atlantic Fishery Management Council (MAFMC). 2014. Amendment 3 to the Spiny Dogfish Fishery Management Plan, Includes Environmental Assessment (EA). Mid-Atlantic Fishery Management Council in cooperation with the National Marine Fisheries Service. May 27, 2014.
- Mid-Atlantic Fishery Management Council (MAFMC). 2016. Regional Use of the Habitat Area of Particular Concern (HAPC) Designation. May 2016.
- Mid-Atlantic Fishery Management Council and the National Marine Fisheries Service (NOAA Fisheries). 2018. Squid Amendment: Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. 224 p. Accessed July 2019.
    - https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5c1 13b1f70a6ad290cf75cfd/15446 33161550/20181018_Squid-Amendment-Final+EA.pdf.
- Rhode Island Coastal Resources Management Council (RI CRMC). 2010. Rhode Island Ocean Special Area Management Plan Adopted by the RI CRMC on October 19, 2010.
    - http://seagrant.gso.uri.edu/oceansamp/documents.html
- Roper, C.F.E., M.J. Sweeney, and C.E. Nauen. 1984. FAO Species Catalogue, Vol. 3 Cephalopods of the world. An annotated and illustrated catalogue of species of interest to fisheries. FAO Fisheries Synopsis 125 (3):1–277.
- Scott, J.S. 1982. Selection of bottom type by groundfishes of the Scotian Shelf. Can.J. Fish. Aquat. Sci. 39: 943-947.
- South Atlantic Fishery Management Council. 2003. Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic Including a Final Environmental Impact Statement, Regulatory Impact Review, Initial Regulatory Flexibility Analysis, and Social Impact Assessment/Fishery Impact Statement.
- Stokesbury, K.D.E. 2012. Report: SMAST video survey of Western portion of the offshore Windfarm area, School for Marine Science and Technology,

Dartmouth.

- Stokesbury, K.D.E. 2014. Final Report: SMAST video survey of Western portion of the offshore Windfarm area, School for Marine Science and Technology, Dartmouth.
- Truesdale, C.L., Dalton, T.M., and McManus, C.M. 2019. Fishers' knowledge and perceptions of the emerging southern New England Jonah crab fishery. North American Journal of Fisheries Management, 39(5): 951-963.
- USGS. 2020. usSEABED: Coastal and Marine Geology Program.
  - https://walrus.wr.usgs.gov/usseabed/ Accessed: 6/30/2020

- Studies that Sunrise Wind and its affiliates have conducted in the Project Area and surrounding waters of the north Atlantic as outlined in Section 6.1.2. Additionally, there are several fishery-independent trawl surveys that have collected information from the Lease Area and surrounding waters which can be used to characterize the baseline for fish and invertebrate communities. For example, there are biannual trawl surveys conducted by the NOAA Northeast Fisheries Science Center and the Northeast Area Monitoring and Assessment Program (NEAMAP). The New York State Department of Environmental Conservation also conducts a near shore trawl survey from Breezy to Block Island Sound.

6.1.2. *Data being collected*

Describe data collected, or will be collected, to support baseline characterization.

- Since August 2016, Sunrise Wind and its affiliates have been completing geophysical, geotechnical, and benthic surveys, as well as desktop analyses, to identify areas of sensitive benthic habitat in the Project area in accordance with the relevant BOEM guidelines.
- Sunrise Wind has and will continue to conduct appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area.
- Sunrise Wind has and will continue to conduct high resolution geophysical surveys (HRG) and geotechnical surveys in the Project Area in accordance with BOEM's *Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant to 30 CFR Part 585* (BOEM 2020).
- Sunrise Wind has completed several surveys to characterize the benthic habitat in the Project Area. The survey protocols were reviewed in several rounds and meetings by federal and state agencies, including BOEM, NOAA, NPS, NYSDEC, NYSDOS, NYSERDA, and RI and MA state agencies, and feedback was incorporated into the survey plan. The surveys included:
  - Benthic habitat surveys, consisting of Sediment Profile Imaging (SPI) and Plan View (PV) images throughout the Project area and grab samples in New York State waters, to characterize the benthic habitat in the Lease Area and along the export cable in accordance with BOEM's *Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585* (BOEM 2019);
  - A targeted video survey of habitat areas of interest within the Lease Area based on benthic habitat survey results and geophysical survey results; and
  - A submerged aquatic vegetation survey in the intracoastal waterway north of Fire Island.
- Sunrise Wind will complete comprehensive benthic habitat mapping which will integrate the results of the benthic surveys and final geophysical data in accordance with NOAA's

Recommendations for Mapping Fish Habitat (NOAA's National Marine Fisheries Greater Atlantic Regional Fisheries Office Habitat Conservation and Ecosystem Services Division 2020)

- Sunrise Wind has utilized the benthic survey information collected by affiliates of Sunrise Wind for the South Fork Wind Project, Revolution Wind Project, Bay State Wind Project, and Block Island Wind Farm to provide additional information on the regional benthic environment of the Northwest Atlantic Outer Continental Shelf off Southern New England. These surveys include:
    - Bay State Wind LLC. 2019. Construction and Operations Plan, Bay State Offshore Wind Farm. Submitted to Bureau of Ocean Energy Management. Submitted by Bay State Wind LLC. Submitted March 2019, Revised July 2019.
    - Deepwater Wind South Fork, LLC. 2019. Construction and Operations Plan, 30 CFR Part 585. Submitted to Bureau of Ocean Energy Management. Submitted by Deepwater Wind South Fork, LLC. Submitted June 2018, Revised September 2018, Revision 2 Submitted May 2019.
    - DWW Rev I, LLC. 2020. Construction and Operations Plan, Revolution Wind Farm. Prepared by VHB, Providence, RI. Submitted to the Bureau of Ocean Energy Management, Sterling, VA. March 2020.CoastalVision and Germano & Associates. 2010. Sediment Profile & Plan View Imaging Report: Evaluation of Sediment and Benthos Characteristics along Potential Cable Routes and Turbine Locations for the Proposed Block Island Wind Farm. Report prepared for Deepwater Wind, Providence, RI.
- Sunrise Wind has completed a Project-specific Essential Fish Habitat Assessment that describes the species and life stages with designated EFH that may occur within the Project Area and assesses the potential impacts from construction and operation and maintenance of the Project on EFH.
- Sunrise Wind will incorporate additional data from the Massachusetts Division of Marine Fisheries (MADMF) and other agencies that have proposed conducting regional studies on the impacts of offshore wind development along the northern Atlantic OCS.

- Additional data being collected to address data gaps includes:
    - Sunrise Wind will continue consulting with federal and state agencies and other stakeholders (universities, commercial and recreational fishermen, etc.) to build a baseline understanding of fisheries resources and to identify sensitive habitats and areas of particular concern in the Lease Area.
    - Sunrise Wind has completed benthic surveys in the Project Area and Sunrise Wind's affiliates have completed benthic surveys in the region, as outlined in Section 6.1.2, to address data gaps related to the benthic habitats existing in the Project Area and regional environment of the Northwest Atlantic Outer Continental Shelf off Southern New England.
    - Sunrise Wind has identified potential Project site-specific studies relevant to fisheries and benthic resources to include larval distributions, benthic habitat quality, distribution of nonindigenous/invasive species, and distribution and abundance of selected commercial fisheries species within the region of influence of the Project. These study topics were selected following a review of the literature on existing offshore wind farms, regional and local stakeholder concerns, and data gaps. Fisheries monitoring will be performed in

accordance with Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30CFR Part 585 (BOEM 2019). As the timeline allows, the monitoring will commence at least two years prior to offshore construction. Monitoring will continue during construction, and at least two years of post-construction monitoring will be carried out, in accordance with applicable permitting requirements.

6.2. *Species at risk*

Describe which species the Developer believes to be of greatest concern and why.

- Sunrise Wind identified the following essential fish habitat (EFH) species with various life stages that may occur or are expected to occur within the Project Area to be of greatest concern. These species include:
    - **New England Finfish**: American Plaice (*Hippoglossoides platessoides*); Atlantic Cod (*Gadus morhua*); Atlantic Herring (*Clupea harengus*); Atlantic Wolffish (*Anarhichas lupus*); Haddock (*Melanogrammus aeglefinus*); Monkfish (*Lophius americanus*); Ocean Pout (*Zoarces americanus*); Offshore Hake (*Merluccius albidus*); Pollock (*Pollachius virens*); Red Hake (*Urophycis chuss*); Silver Hake (*Merluccius bilinearis*); White Hake (*Urophycis tenuis*); Windowpane Flounder (*Scophthalmus aquosus*); Winter Flounder (*Pseudopleuronectes americanus*); Witch Flounder (*Glyptocephalus cynoglossus*); Yellowtail Flounder (*Limanda ferruginea*)
    - **Mid Atlantic Finfish**: Atlantic Butterfish (*Peprilus triacanthus*); Atlantic Mackerel (*Scomber scombrus*); Black Sea Bass (*Centropristis striata*); Bluefish (*Pomatomus saltatrix*); Scup (*Stenotomus chrysops*); Summer Flounder (*Paralichthys dentatus*)
    - **Invertebrates**: Atlantic Sea Scallop (*Placopecten magellanicus*); Atlantic Surfclam (*Spisula solidissima*); Longfin Inshore Squid (*Doryteuthis pealeii*); Northern Shortfin Squid (*Illex illecebrosus*); Ocean Quahog (*Arctica islandica*)
    - **Highly Migratory Species**: Albacore Tuna (*Thunnus alalonga*); Bluefin Tuna (*Thunnus thynnus*); Skipjack Tuna (*Katsuwonus pelamis*); Yellowfin Tuna (*Thunnus albacares*)
    - **Skates**: Barndoor Skate (*Dipturis laevis*); Little Skate (*Leucoraja erinacea*); Winter Skate (*Leucoraja ocellate*).
    - **Sharks:** Basking Shark (*Cetorhinus maximus*); Blue Shark (*Prionace glauca*); Common Thresher Shark (*Alopias vulpinus*); Dusky Shark (*Carcharhinus obscurus*); Porbeagle Shark (*Lamna nasus*); Sandbar Shark (*Carcharhinus plumbeus*); Sand Tiger Shark (*Carcharias Taurus*); Shortfin Mako Shark (*Isurus oxyrinchus*); Smoothhound Shark Complex (Atlantic stock) (*Mustelus canis*); Spiny Dogfish (*Squalus acanthias*); Tiger Shark (*Galeocerdo cuvier*); and White Shark (*Carcharodon carcharias*)
- Sunrise Wind identified the following five ESA listed fish species that may occur within the Project Area as also of greatest concern due to their listed status:
    - Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*);
    - Giant Manta Ray (*Manta birostris*);
    - Oceanic Whitetip Shark (*Carcharhinus longimanus*);
    - Shortnose Sturgeon (*Acipenser brevirostrum*); and
    - Cusk (*Brosme brosme*)

6.3. *Potential impacts/risks and mitigation measures by project stage*

The table below should list the potential impacts to fish, invertebrates, and their habitats and

proposed mitigation measures. To this end, this section should describe how the Developers will minimize risk to fish, invertebrates and their habitats (e.g., foundation type, scour protection, cable shielding for electromagnetic fields, construction windows, siltation/turbidity controls, use of dynamic-positioning vessels and jet plow embedment).

Sunrise Wind provides additional information related to impacts/risks and mitigation measures by project stage in this table.

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Micro-siting conflicts with habitats and fishery resources	• Sunrise Wind shall seek input from regulatory authorities, the fishing industry, and maritime industry to locate foundations and cable routes in the least impactful manner that is practicable. • Conducting geophysical and geotechnical surveys, benthic surveys, and desktop analyses to inform site design and layout • Seeking input from regulatory, the fishing industry, and maritime industry to locate foundations and cable routes in the least impactful manner that is practicable • Project infrastructure will be sited to avoid and minimize impacts to sensitive habitats (e.g., hard bottom habitats) to the extent practicable.	X			
Temporary, alteration of the seabed and localized increases in noise and turbidity	• Sunrise Wind shall seek to use noise attenuation technologies to reduce sound from pile driving of foundations (if such methods are used) • To the extent feasible, installation of the Project cables will be buried using equipment such as mechanical plow, jet plow, and/or mechanical cutter. These equipment options would result in less habitat modification than dredging options. The feasibility of cable burial equipment will be determined based on an assessment of seabed conditions and the Cable Burial Risk Assessment. • A plan for vessels will be developed prior to construction to identify no-anchorage areas to avoid documented sensitive resources. • DP vessels will be used for installation of the Project cables to the extent practicable. DP vessels minimize seafloor impacts, as compared to use of a vessel relying on multiple anchors. Mobile fish and invertebrates are expected to temporarily leave the area in response to construction or decommissioning activity. Soft-start/ramp up procedures utilized for pile driving for marine mammals and sea turtles are expected to benefit fish and invertebrates and allow them to temporarily leave the area of activity. Because identical or similar habitat is widely available in the immediate area as identified in Project surveys and existing studies, the temporary displacement is not considered significant.	X	X	X	X

	• Committed to noise attenuation technologies to reduce sound from pile driving of foundations, pursuant to regulatory requirements • Time of year in-water restrictions on construction will be employed to the extent feasible to avoid or minimize direct impacts on species of concern, such as Atlantic sturgeon or winter flounder, during construction.. Time of year restrictions will be pursuant to regulatory requirements. If work is anticipated to occur outside of these time-of-year restriction periods, Sunrise Wind will work with state and federal agencies to develop appropriate construction monitoring and impact minimization plans.				

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Long-term changes to seabed and habitat	• Sunrise Wind shall, to the extent possible, avoid sensitive benthic habitats. • Populations of benthic organisms would not be significantly diminished by the small area of sea floor that will be disturbed by the Project construction. • Use of horizontal direction drill at the landfall to minimize impacts to sensitive shoreline vegetation and shellfish resources. • Construction and operational lighting will be limited to the minimum necessary to ensure safety and compliance with applicable regulations. Limiting lighting to that which is required for safety and compliance with applicable regulations is expected to minimize impacts on essential fish habitat.	X	X	X	X
EMF Impacts	• Sunrise Wind shall use proper shielding to reduce EMF. • Sunrise Wind shall conduct EMF modeling and assessments to identify potential mitigation requirements. • Cable shielding as well as cable burial, where feasible, will limit EMF exposure.		X	X	
Cable burial	• Sunrise Wind shall bury export and interarray cables to an appropriate minimal depth to reduce exposure risk. If depth cannot be reached, Sunrise Wind shall add protective materials over the cable. • Sunrise Wind shall conduct routine surveys or inspections of sub-sea cables, and shall conduct a survey or inspection to ensure and correct for cable exposure following hurricane or other major events causing disturbance to the seabed.	X	X	X	
Turbine Scour Protection	• Sunrise Wind shall seek collaboration with state and federal regulatory authorities and key stakeholders to assess the use of ecological enhancements for turbine scour protection to provide offsets from potential adverse impacts. • Sunrise Wind shall consult scour protection consistent with New York State's goals and the Ocean Action Plan to ensure the ecological integrity.	X	X	X	X
Changes to water quality from accidental spills and/or releases, and erosion and run-off during onshore construction	• Require all construction and O&M vessels to comply with applicable International Convention for the Prevention of Pollution from Ships (IMO MARPOL), federal (USCG and EPA), and state regulations and standards for the management, treatment, discharge, and disposal of onboard solid and liquid wastes and the prevention and control of spills and discharges. • Implementation of a Stormwater Pollution Prevention Plan (SWPPP), including erosion and sedimentation control BMPs and revegetation measures, to minimize potential water quality impacts from construction and O&M of the onshore portions of the Project. • Implementation of an Erosion and Sediment Control Plan		X	X	X

	through the SWPPP. • Accidental spill or release of oils or other hazardous material will be managed onshore through implementation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan. • Accidental spill or release of oils or other hazardous materials will be managed offshore through an Emergency Response Plan/ an Oil Spill Response Plan (OSRP).				
Colonization of encrusting invertebrates on wind turbine generators (WTG), which will quickly lead to the development of biogenic habitat and associated communities centered on the structures	• The shift toward a structure-based community may be considered desirable by some user groups, including commercial and recreational fishermen, because it supports higher trophic level fish that are of commercial and recreational value (e.g. Reubens et al., 2013).		X	X	X
Distribution of mobile species, including lobsters, groundfish, and pelagic predators	• Within several months of completion of construction, the abundance and distribution of benthic invertebrates is expected to return to pre-construction conditions (e.g., Roach, M. 2019) • Methods under evaluation to limit impacts, pursuant to regulatory concurrence, include: o Micrositing WTG and export cable locations to avoid sensitive habitats where feasible; o Burying cables wherever feasible using the most appropriate tools and methods; o Conducting pre- and post- construction o fisheries monitoring surveys; Slow start (ramp up) of pile driving equipment; o Emplacement of scour protection; and o Reduction of marine debris; and • Time of Year (TOY) restrictions.		X	X	X
*Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission					

6.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on these types of fish and invertebrates during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

6.4.1. *Pre/Post monitoring to assess and quantify changes*

Describe how changes to environmental resources will be quantified using statistically sound methods.

- Ideally, specific questions and focal taxa shall be chosen for the Project either based on site-specific fisheries risk assessment, or in relation to broader regional efforts to assess variation between sites and understand cumulative impacts for sensitive species.

- Monitoring will, to the extent practicable, use appropriate study designs and methodologies to effectively analyze risk prior to construction and evaluate impacts during construction and operation by testing hypotheses and helping to assure statistical power for meaningful data analysis.
- Outside expertise will, if practicable, be consulted during study design and data analysis processes.
- Sunrise Wind shall seek to collaborate with other regulatory agencies and stakeholder groups to identify research needs and opportunities.

Sunrise Wind provides the following additional information related to pre/post monitoring to assess and quantify changes:

- Sunrise Wind and its affiliates has and will continue to conduct pre-construction studies to supplement existing baseline information that contribute to evaluating the long-term impacts.
- Sunrise Wind will conduct a pre-construction water quality assessment and has conducted sediment transport assessment to determine the spatial and temporal impacts of potential increased sediment within the water column and identify which species may be affected by these changes during construction.
- Sunrise Wind has conducted a pre-construction EMF analysis to determine the EMF exposure levels fisheries resources would experience. The EMF analysis indicated that EMF strong enough to potentially disturb marine life are not likely to extend more than a few feet into the water column. EMF modeling results and the results of previous scientific studies suggest that EMF will be below levels detectable by finfish but may be detectable by elasmobranchs and some invertebrate species. Detection of EMF is not expected to induce population level changes.
- Sunrise Wind is committed to collaborative science with the commercial and recreational fishing industries prior to, during, and following construction. Fisheries monitoring studies are being planned to assess the impacts associated with the Project on economically and ecologically important fisheries resources within the Project Area. These studies will be conducted in collaboration with the local fishing industry and will build upon monitoring efforts being conducted by affiliates of Sunrise Wind at other wind farms in the region. A number of monitoring techniques (e.g., trawl survey, ventless trap survey, dredge survey, optical surveys) can be utilized to evaluate changes to environmental resources in the Project area. As practicable, the survey designs used by Sunrise Wind will be made compatible with other regional surveys (e.g., NEFSC trawl survey) to facilitate information integration with, and compared to, information from existing data collection efforts.
- Sunrise Wind is developing study topics and methodologies through an iterative process and will include input from various stakeholders and agencies from multiple states, including New York, Rhode Island, and Massachusetts. Sunrise Wind will examine fisheries and benthic resource topics such as larval distributions, benthic habitat quality, distribution of nonindigenous/invasive species, distribution and abundance of selected commercial fisheries species, and impacts to resources from climate change within the region of influence of the Project. As the timeline allows, surveys will commence at least 2 years prior to offshore construction and will be conducted in order to collect sufficient pre-construction baseline data. Surveys will continue throughout construction and operation of the Project, in accordance with applicable permitting requirements. The research question(s), hypotheses, sampling design, and statistical analyses will be clearly described for each survey. The sampling designs for the monitoring surveys (e.g., Before-After-Control-Impact, or Before-After-Gradient) will be based

on published methodologies that have been used to investigate the impacts associated with offshore wind development. Monitoring guidance being developed through the ROSA 'Interim Fisheries Methods Working Group will also be considered in the design and implementation of fisheries monitoring studies.

6.4.2. *Addressing data gaps*

Describe how data gaps will be addressed.

- Sunrise Wind shall seek to work with stakeholders, including regulatory agencies, to identify data gaps to be addressed through surveys or permitting applications.

Sunrise Wind provides the following additional information related to addressing data gaps:

- Sunrise Wind has and will continue to work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting applications in accordance with applicable permitting requirements.
- Sunrise Wind will work with regulatory agencies when developing the monitoring and mitigation plan in an effort to meet existing data gaps through pre- and post-construction monitoring in accordance with applicable permitting requirements.

6.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted fisheries in an alternative location or when the provision of compensation of some form may be appropriate.

- As necessary, Sunrise Wind shall explore this further in consultation with the E-TWG, regulatory agencies and relevant stakeholders.

Sunrise Wind provides the following additional information related to strategies for developing alternate protocols:

- Sunrise Wind has and will continue to engage the fishing community and other relevant stakeholders including Federal and State agencies regarding mitigation measures that should be implemented to reduce potential impacts to both biological and socioeconomic resources.

7. Considerations for Subsea and Overland Cables

7.1. *Mitigation strategies for subsea and overland cables*

This section should describe any additional environmental mitigation strategies for proposed subsea and overland cable routes that support the offshore wind project.

Sunrise Wind provides the following additional information related to proposed subsea and overland cable routes:

- Sunrise Wind conducted assessment of multiple offshore cable routes, landfall sites, and onshore cable routes, as described in Section 2 of the COP.
- Sunrise Wind has and will continue to engage with local community in Brookhaven, NY and other relevant stakeholders, including Federal and State agencies regarding mitigation strategies that should be implemented to reduce potential impacts to local communities.

8. Additional Considerations

8.1. *Additional mitigation strategies and EMP refinement*

This section should describe any additional mitigation strategies not otherwise described herein that would improve the Plan and reduce impacts on wildlife. In addition, describe how the EMP will be updated and refined based on additional information and stakeholder feedback.

- Sunrise Wind will support collaborative research on potential mitigation strategies and best management practices, with other developers, agencies and stakeholders.

Sunrise Wind provides the following additional information related to mitigation strategies and EMP refinement:

- Sunrise Wind will update and refine the EMP, pursuant to Section 12.06 of the OREC Agreement, as outreach with stakeholders, including regulatory agencies and local communities and groups, continue and as information on the Project Area is collected through additional survey work and development of permit applications and permits.

8.2. *Process for updating the EMP*

This section should describe how feedback from environmental stakeholders, E-TWG, and other agencies and working groups will be incorporated and updated in the EMP.

- Sunrise Wind will continuously evaluate and evolve this EMP so that all the components of the EMP are complete and sufficient.
- Sunrise Wind expects that additional guidance and information will become available throughout the planning and regulatory process and as such will continue to consider its relevance to the EMP at the appropriate intervals.
- Updates to the EMP are intended to reflect the results of iterative exchanges with members of the E-TWG, F-TWG and relevant stakeholders.
- Sunrise Wind shall update the EMP in a timely manner that reflects changes made based on key regulatory project deliverable dates.

Sunrise Wind provides the following additional information related to process for updating the EMP:

- Sunrise Wind anticipates that stakeholder feedback will play an integral role in shaping study scopes and protocols to support environmental assessments, as well as mitigation measure that may be needed in response to assessment findings.
- Updates to the EMP are anticipated on an ad-hoc basis in connection with milestone events, such as preparation for permitting filings or finalization of study plans.
- Updates to the EMP are intended to reflect the results of iterative exchanges with members of the E-TWG, F-TWG, and relevant stakeholders.

9. Project Decommissioning

9.1 *Potential impacts on marine wildlife, birds, bats, and fisheries*

This section should describe potential impacts to marine mammals, sea turtles, birds, bats, and fisheries and habitats from decommissioning the project, based on available information and relevant experience (if any).

- Sunrise Wind's waste handling processes during decommissioning shall focus on re-use or recycling, with disposal as the last option.
- Sunrise Wind shall collaborate with regulatory authorities and key environmental stakeholder groups better understand the effects and potential impacts associated with decommissioning.

Sunrise Wind provides the following additional information related to potential impacts on marine wildlife, birds, bats, and fisheries:

- In March 2017, Ørsted became the first developer to decommission an offshore wind project, the Vindeby Offshore Wind Farm near Lolland, Denmark (Vindeby Project).
- Sunrise Wind waste handling processes during decommissioning will focus on re-use or recycling, with disposal as the last option.
- Sunrise Wind anticipates that impacts to marine mammals, sea turtles, birds, bats and fisheries would be expected to be similar to the construction phase but to a lesser extent.

9.2 *Approach for decommissioning plan and coordination with stakeholders*

This section should describe how a decommissioning plan will be developed to identify and mitigate potential impacts, including coordination with stakeholders, and any elements of its contemplated decommissioning plan that can be identified at this stage.

- Sunrise Wind shall decommission the Project in accordance with all necessary laws and regulations and generate a detailed Project-specific decommissioning plan.
- Sunrise Wind shall seek input on the detailed Project-specific decommissioning plan from regulatory agencies, fisheries and marine stakeholders, and local communities.
- Sunrise Wind shall use "lessons learned" from the construction and operations activities and apply them when appropriate to the decommissioning plan.

Sunrise Wind provides the following additional information related to decommissioning and coordination with stakeholders:

- Sunrise Wind understands that all facilities will need to be removed to a depth of 15 ft (4.6 m) below the mudline, unless otherwise authorized by BOEM (30 CFR § 585.910(a)).
- Sunrise Wind will decommission the Project in accordance with a detailed Project-specific decommissioning and removal plan that will be developed in compliance with applicable

laws, regulations, and generally accepted industry practices that exist at the end of the Project's operational life. This plan will account for changing circumstances during the operational phase of the Project and will reflect new discoveries particularly in the areas of marine environment, technological change, and any relevant amended legislation.

- Sunrise Wind will develop the decommissioning plan in coordination with stakeholders including regulatory agencies, fisheries and marine stakeholders, and local communities.