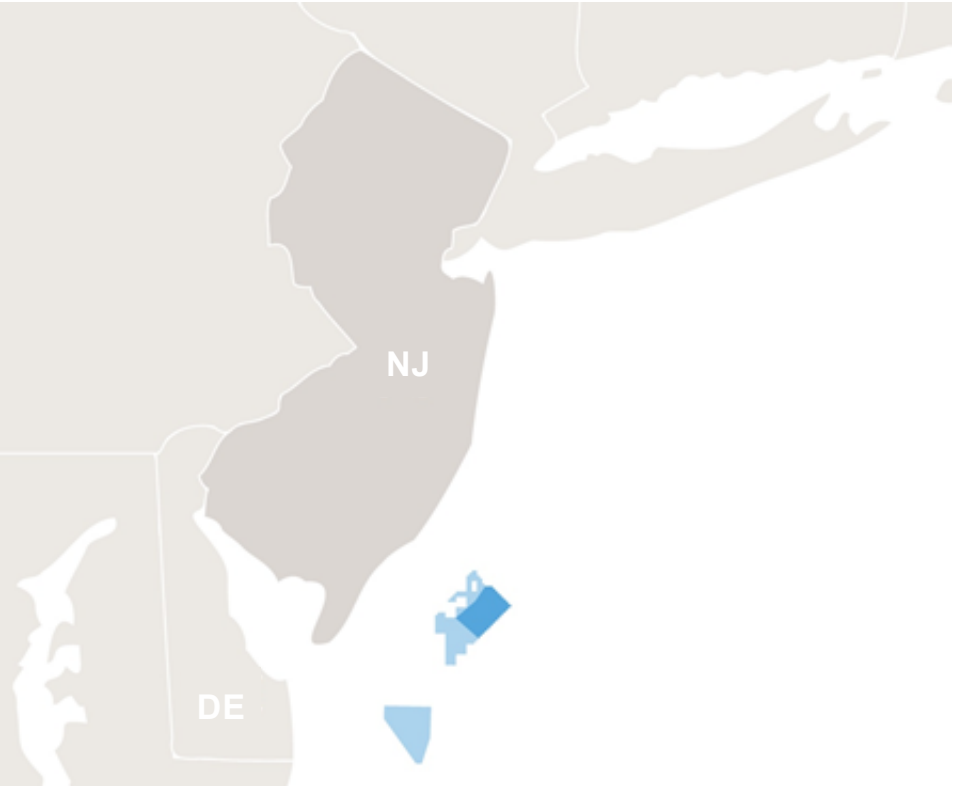
Ocean Wind Overview

MAFMC Meeting
June 9, 2021

Ocean Wind
An Ørsted & PSEG project

Ocean Wind
Awarded by the NJ BPU in June 2019



Project overview

- Ocean Wind is a 75/25 Joint Venture with PSEG.
- Located 15 -27 miles off the coast of Southern New Jersey.
- Up to 98 turbines to be installed.
- 1,100 MW – one of the largest planned offshore wind farm in the U.S. to date.
- Enough power for over 500,000 average homes.
- Commercial operations expected by end of 2024.
- Notice of Intent (NOI) issued March 30, 2021.
- Draft Environmental Impact Statement scheduled May 2022.
- Final Environmental Impact Statement scheduled February 2023.

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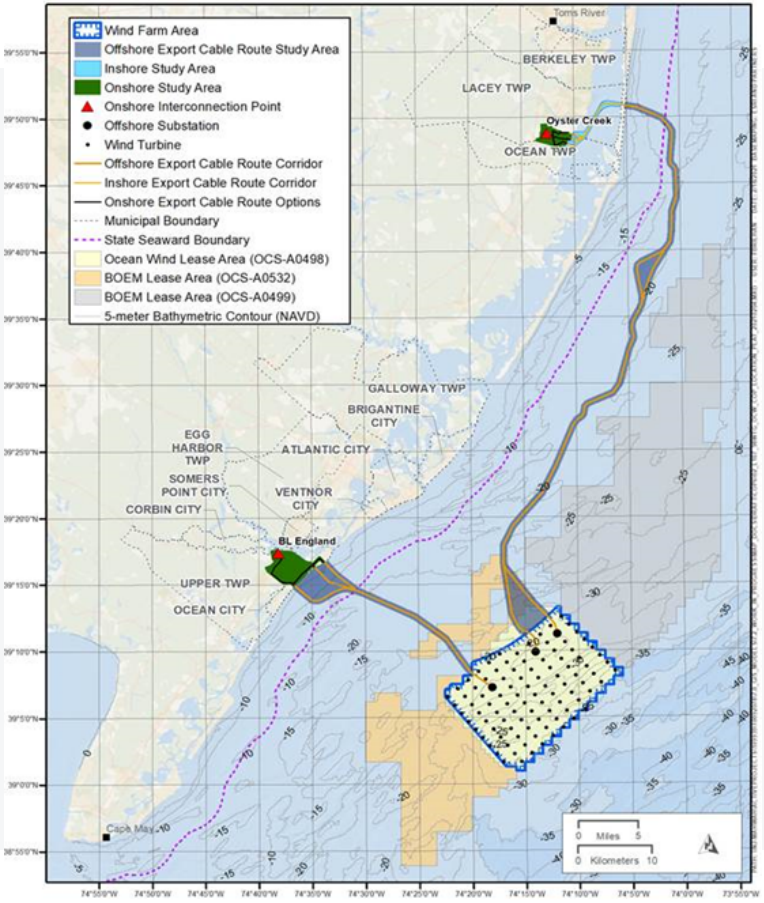
Project Route Overview



Offshore Project Description:

- Up to 98 turbines and three offshore substations located in federal waters.
- Up to three offshore export cables buried under the seabed floor within two cable corridors.
- Northern cables cross Island Beach State Park and will be installed underground using trenchless technology to minimize disturbance on the barrier island.

Onshore Project Description:

- Project requires two points of interconnection.
  - Oyster Creek (Lacey Township) ~636 MW.
  - BL England (Upper Township) ~450 MW.
- Onshore cable routes were developed to utilize existing, disturbed rights of way. Majority of cables will be buried.
- Routes developed in discussion with local township officials.
- Several indicative routes were developed and will continue to be refined.

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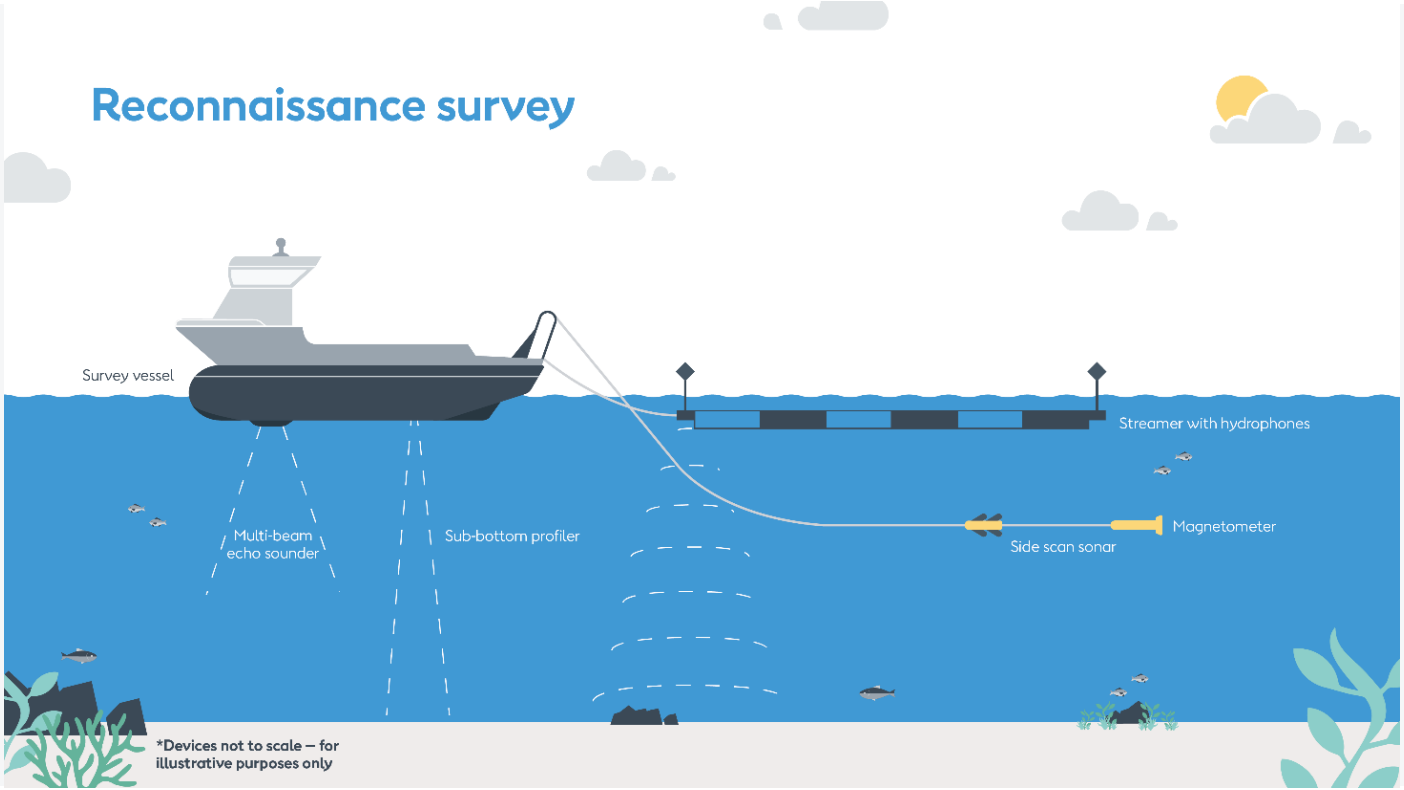
Geophysical Surve y



Between 2019 – 2020, the geophysical survey effort has covered over 6,000 miles of survey lines.

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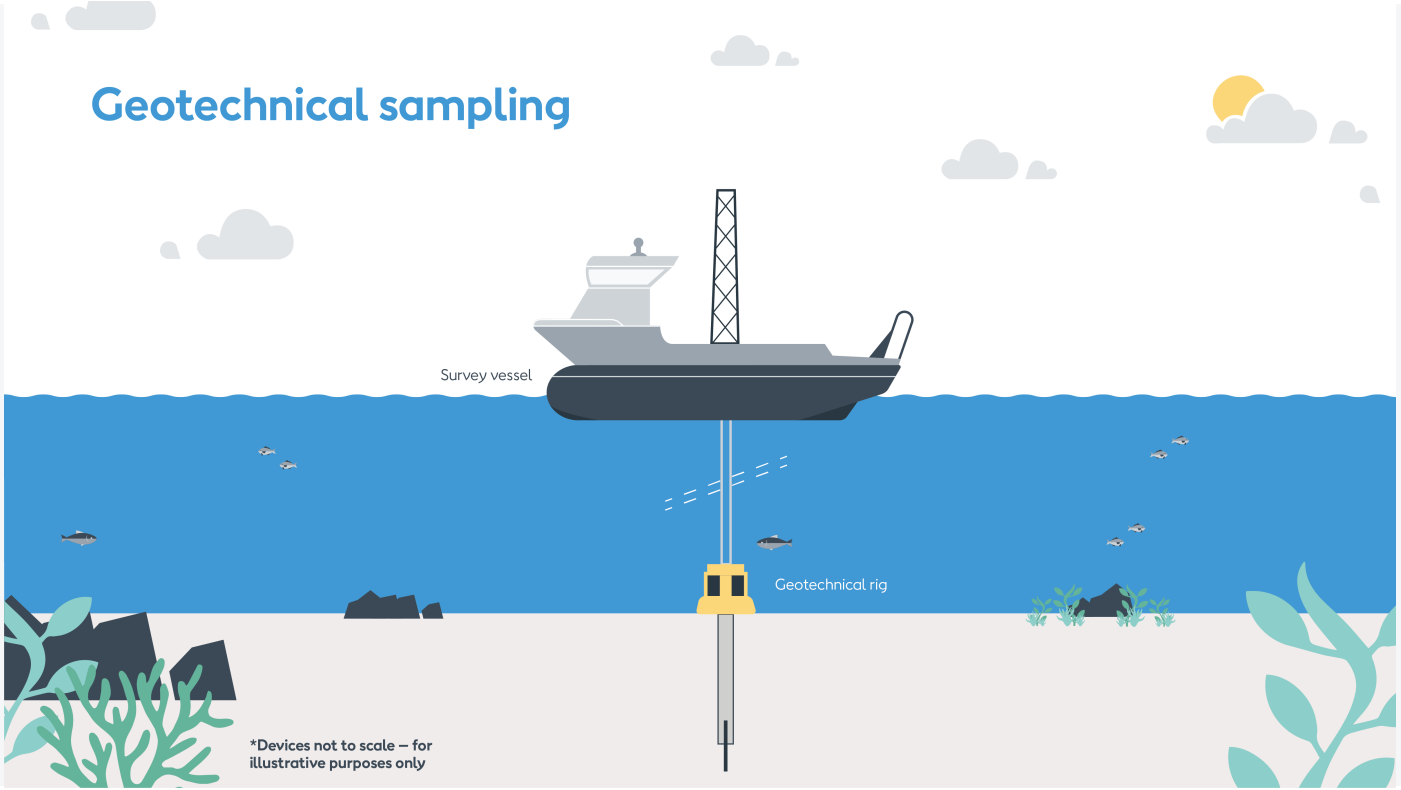
Geotechnical Survey



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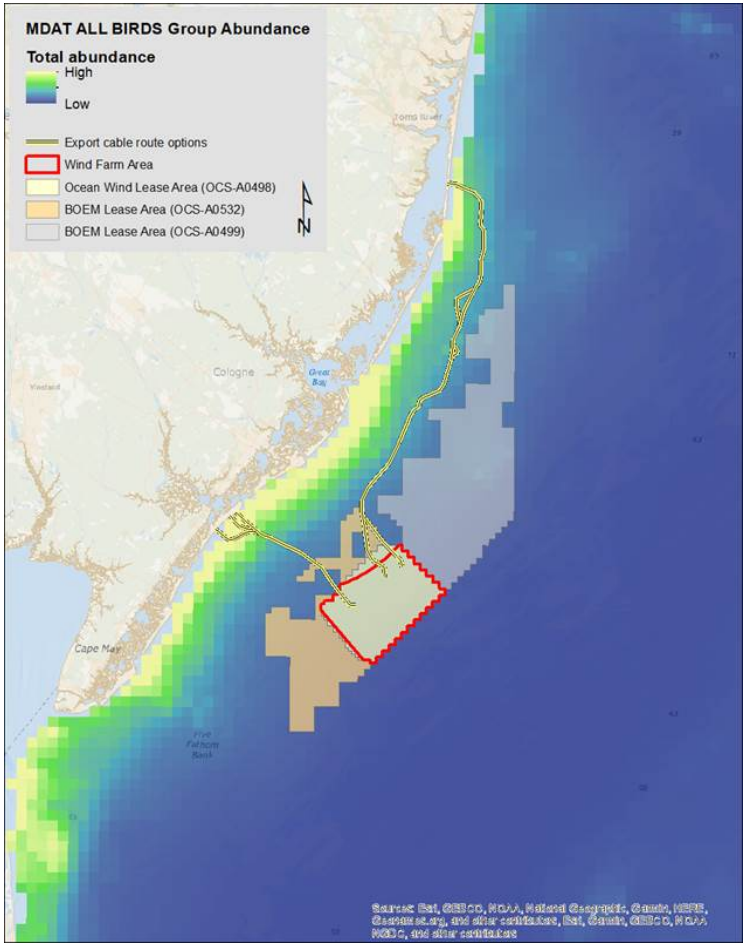
Avian Assessment for Ocean Wind

Available data include:

- NJDEP Ecological Baseline Survey Avian Boat - based Surveys
  - 23 monthly surveys over two years (2008 – 2009).
- Marine Bird Abundance Models, Marine -Life Data and Analysis Team (MDAT)
  - Regional -scale seasonal predictions of density for 47 species (1978 -2016).
- Northwest Atlantic Seabird Catalog
  - Survey records from 1978 -2017.
- Tracking studies
  - On diving birds, falcon, listed species.



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Marine Mammal Detection System:
Ecosystem and Passive Acoustic Monitoring (ECO -PAM) Project

A three -year project designed to:

- Better understand the habitat and behavior of the North Atlantic right whale in offshore wind lease areas.
- Provide better protection of the North Atlantic right whale during the survey, construction, and operation phases of its U.S. offshore wind projects.
- Work jointly with Rutgers University, the University of Rhode Island (URI), and the Woods Hole Oceanographic Institution (WHOI).
- The project will use data from two sound detection buoys deployed by the WHOI and one experimental buoy deployed by URI. In addition, a glider deployed by Rutgers will provide real -time oceanographic data and detections of marine mammal vocalizations.

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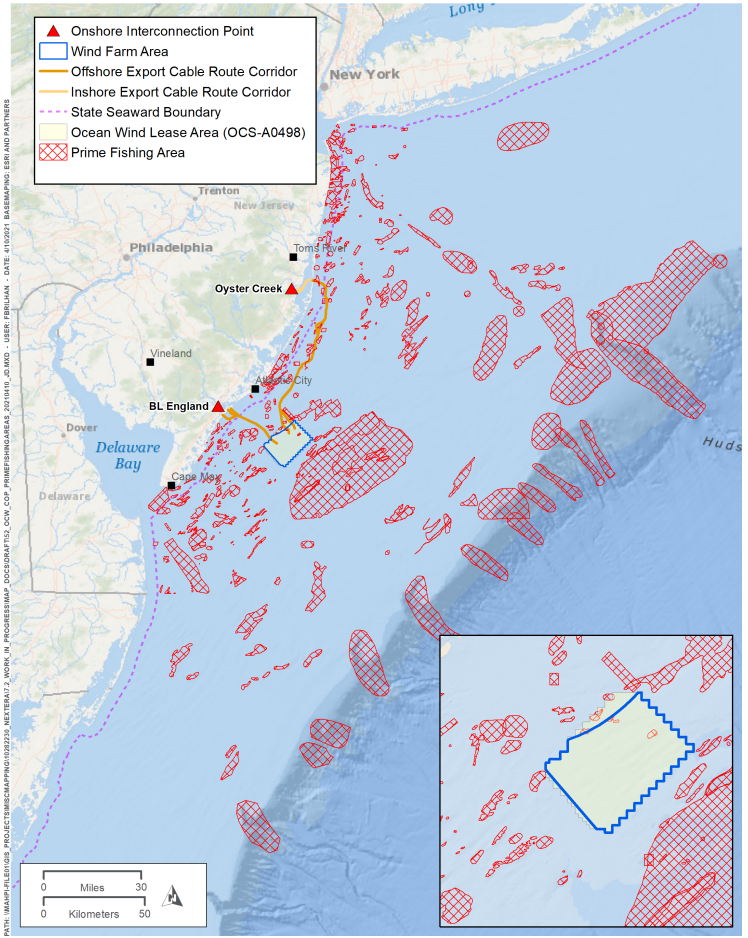
Fisheries Reviews

Available data include:

- Northeast Fisheries Science Center Seasonal Trawl Studies
  - Conducted between 2003 and 2016.
- USACE Otter Trawl Surveys
  - Surveys conducted from 1994 to 1999.
- Virginia Institute of Marine Science
  - Seasonal nearshore bottom trawl surveys have been conducted annually since 2007.
- National Marine Fisheries Service
  - Seasonal annual bottom trawl surveys since 1999.
- NJ Ocean Trawl Program
  - Seasonal trawl surveys conducted annually for last 30 years.
- Available GIS data
  - Prime fishing areas, artificial reefs, shellfish habitat, migratory finfish pathways, etc.



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Recreation and Tourism

Ocean Wind considers impacts which may affect tourism including:

- potential seabed / land disturbance.
- habitat conversion / noise / traffic.
- visible structures / lighting.

During Construction Ocean Wind will:

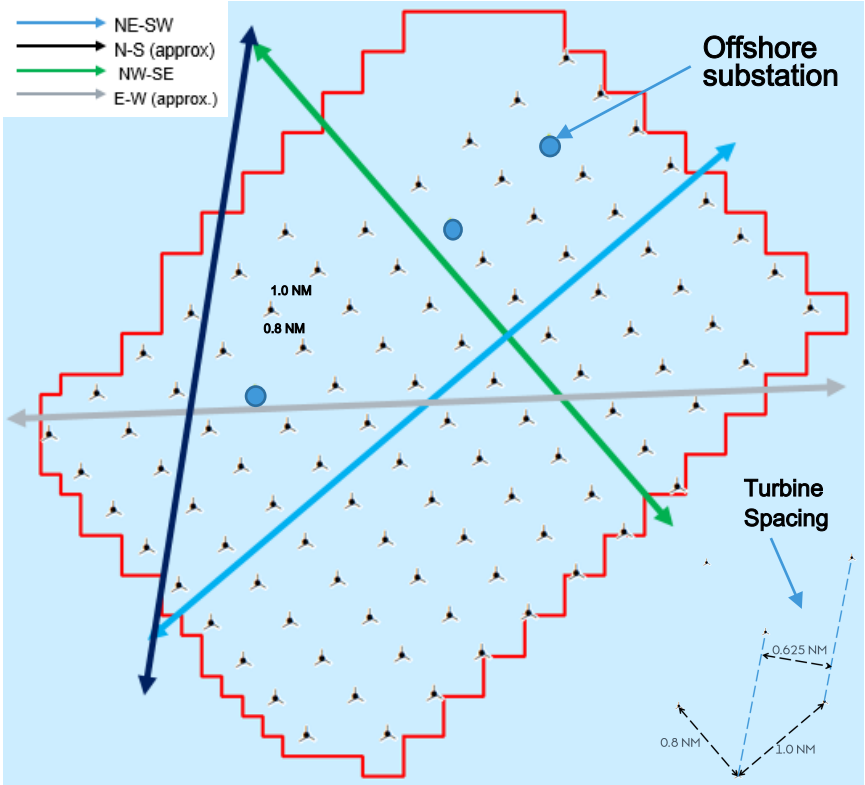
- Onshore: Minimize construction activities during summer recreation and tourism season.
- Offshore: Inform recreational boating and fishing communities in advance of activities.

Wind Farm Operations studies suggest:

- No loss of property values, tourism revenue, or recreational fishing opportunities.
- Block Island Wind Farm an "enhanced fishing destination" for recreational fisheries.
- Researchers using AirBnB data from Block Island concluded that offshore wind farms can act as an attractive feature of a location.

Vessel Navigation

- Grid layout with turbine spacing 1nm x 0.8nm.
  - Clear lines of transit NW – SE, NE– SW, E– W, and N – S.
  - Northern -most corridor greater than 1nm.
- Turbine spacing provides for vessels moving through and fishing within the array.
  - Developed with input from fishing community in New Jersey.
- Consistent turbine marking and lighting to aid navigation and safety operations in accordance with USCG guidelines.
- Navigational Safety Risk Assessment included in the Ocean Wind Construction and Operations Plan.



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Windfarm Lighting

Aircraft Lighting

- Aircraft warning lights will be located on the top of each turbine.
- Ocean Wind intends to incorporate an Aircraft Detection and Lighting System (ADLS). This system activates the aircraft warning lights only when an aircraft is within the vicinity of the wind farm during low light and night conditions.
- To understand how often the aircraft warning lights would be activated, Ocean Wind has studied historical air traffic data for flights passing within the vicinity of the wind farm.
- During the operational phase, it is estimated the lights would be active for a total of only a few hours spread over a one -year period.
- The use of ADLS is contingent on BOEM approval and compliant with Federal Aviation Administration (FAA) guidelines.

Navigation Safety Lighting

- For marine navigation purposes, the structures will be lit in accordance with USCG offshore structure Private Aids to Navigation marking guidance. The structures will be equipped with continuous amber flashing lights that will be visible for a maximum distance of 5 nm (not visible from shore).

Fisheries Monitoring Plan

- Ocean Wind is partnering with researchers at Rutgers University and Monmouth University to execute the fisheries monitoring activities.
- Meetings with regulatory agencies and stakeholders are planned starting in June to discuss and review the technical elements of the monitoring plan.
- Multidisciplinary sampling approach plan to include:
  - **Trawl Survey** using NEAMAP protocols on the F/V Darana R. **eDNA sampling** will occur during the trawl survey to evaluate potential changes in the community composition.
  - **Surf clam survey** will occur on the F/V Joey D using a modified clam dredge.
  - **Multi-method survey for structure-oriented fish species** such as black sea bass, tautog, mahi mahi, and others.

    1) Chevron Traps, 2) Rod and Reel, and 3) Baited Remote Underwater Video (BRUV's).
  - **Acoustic telemetry monitoring** for summer flounder, black sea bass, clearnose skate, smooth dogfish and horseshoe crabs.
  - **Pelagic fish sampling** using echosounders mounted on a glider and towed cameras.
  - **Oceanographic data** (e.g., stratification, temperature) will be considered in the analysis of all fisheries monitoring data.

Thank you

Marine Affairs Contacts:

- Ross Pearsall: Fisheries Relations Manager
  ROSPE@ orsted.com
- Chris Sarro: Northeast Fisheries Liaison
  CHSAR@ orsted.com
- Kara Gross: Mid-Atlantic Fisheries Liaison
  KARGR@ orsted.com