



# RUTGERS

New Jersey Agricultural  
Experiment Station

## Utilizing Collaborative Scientist-Industry Partnerships to Monitor a Windfarm off New Jersey

American Fisheries Society, 152<sup>nd</sup> Annual Meeting  
August 21-25, 2022  
Spokane, WA

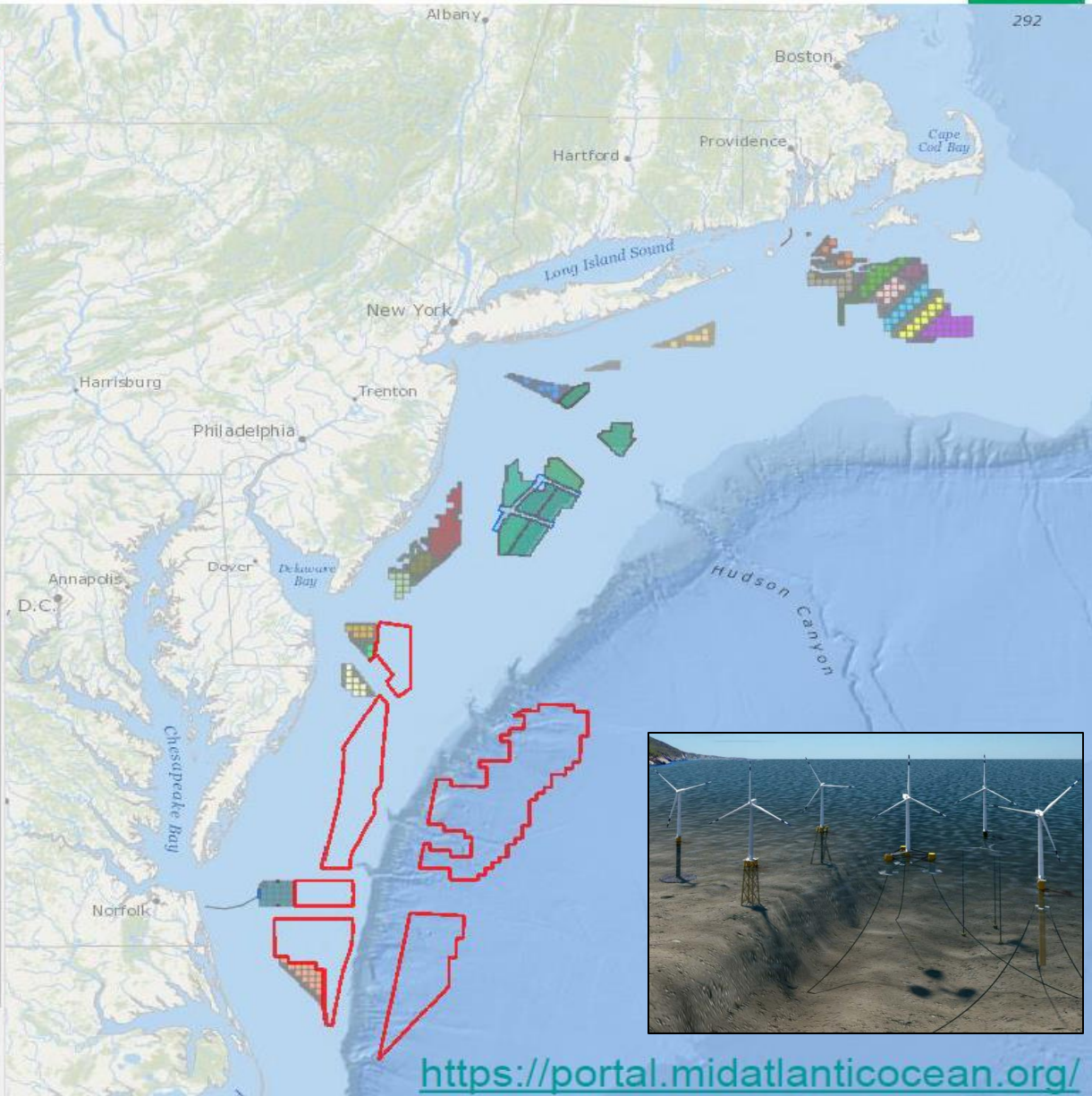
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Kaycee Coleman, Gregory DeCelles, and Thomas Grothues

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Search data

Active • 7 MyPlanner **Data** Legend

- ▶ Marine Life
- ▶ Marine Life Library (Species Specific)
- ▶ Maritime
- ▶ Oceanography
- ▶ Recreation
- ▼ Renewable Energy
  - ▼ PLANNING AND LEASE AREAS 
    - BOEM ACTIVE RENEWABLE ENERGY LEASES
    - BOEM WIND PLANNING AREAS
    - BOEM NY BIGHT FINAL SALE NOTICE AREAS (2022)
    - BOEM NY BIGHT PROPOSED TRANSIT CORRIDORS (2.44 NAUTICAL MILE WIDTH)
    - BOEM NY BIGHT PROPOSED WIND ENERGY AREAS FOR 2021 LEASE SALE
    - BOEM CENTRAL ATLANTIC DRAFT CALL FOR INFORMATION AND NOMINATIONS AREA
    - VIRGINIA RESEARCH LEASE AREAS
  - COASTAL ENERGY FACILITIES
  - OFFSHORE WIND ENERGY TECHNOLOGY ZONES
- ▶ Seafloor Habitat



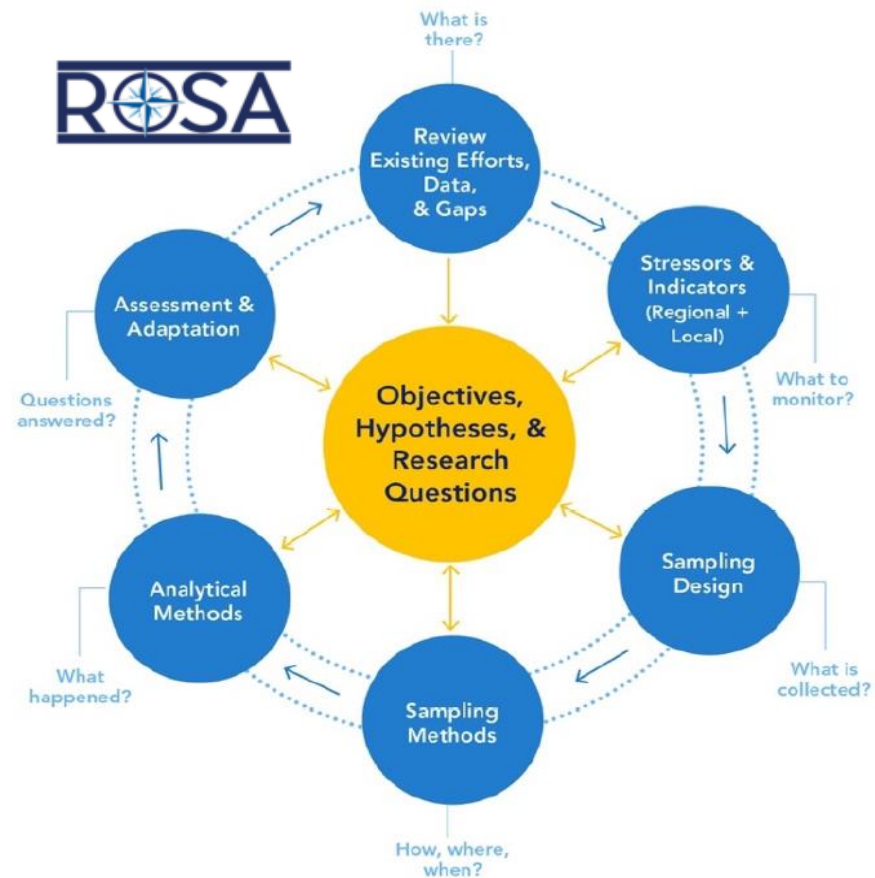
# New Jersey Offshore Wind Solicitations

Solicitation	Capacity Target (MW)	Capacity Awarded (MW)	Issue Date	Submittal Date	Award Date	Estimated COD
1	1,100	1,100	Q3 2018	Q4 2018	Q2 2019	2024-25
2	1,200-2,400	2,658	Q3 2020	Q4 2020	Q2 2021	2027-29
3	1,200		Q1 2023	Q2 2023	Q4 2023	2030
4	1,200		Q2 2024	Q3 2024	Q1 2025	2031
5	1,342		Q2 2026	Q3 2026	Q1 2027	2033
<b>Total Awarded + Target</b>	<b>7,500</b>					

# Fisheries Monitoring Plans

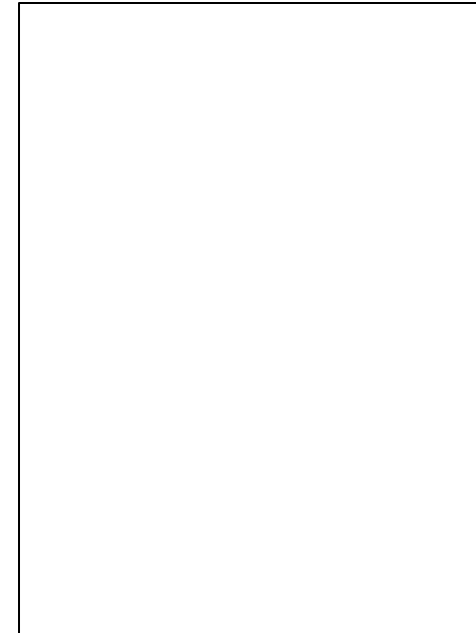


- Surveys are needed to evaluate the impacts of offshore wind development on fisheries resources.
- Several sets of guidelines and priorities have been developed:
  - Bureau of Ocean Energy Management (BOEM)
  - Responsible Offshore Science Alliance (ROSA)
  - Responsible Offshore Development Alliance (RODA)
  - Other state and federal agencies, working groups, workshops, etc.



# Scientist-Industry Collaborations

- Industry involvement is a critical element of executing successful surveys, particularly for offshore wind monitoring.
  - Quality
  - Credibility
  - Transparency
  - Utility



# Cooperative Research Challenges

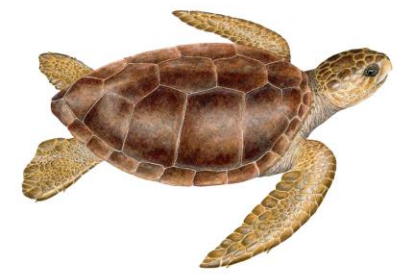
- Executing offshore wind monitoring surveys with industry members has presented additional challenges beyond those commonly experienced with cooperative research:
  1. Surrounding Conflicts and Politics
  2. Health, Safety, and Environmental (HSE) Requirements
  3. Permitting (i.e., Protected Species Issues)



North Atlantic Right Whale  
(*Eubalaena glacialis*)



Atlantic Sturgeon  
(*Acipenser oxyrinchus*)

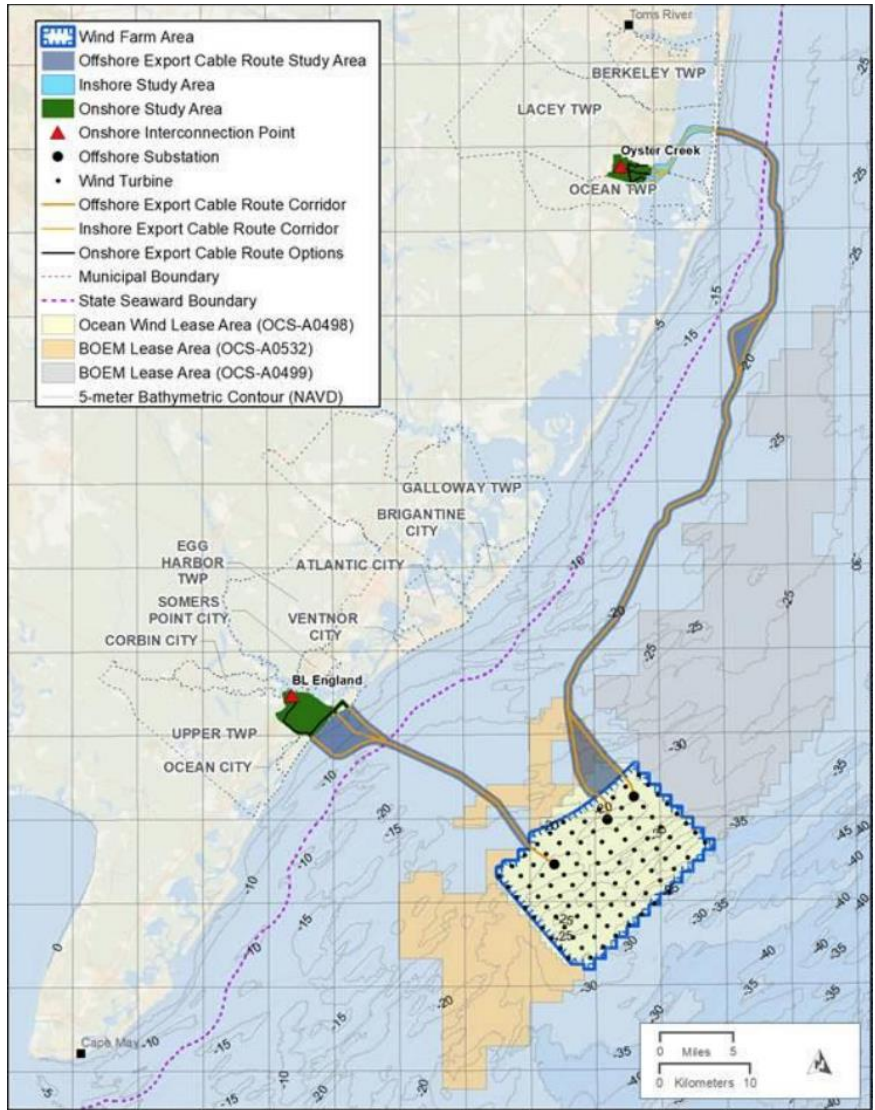


Loggerhead Turtle  
(*Caretta caretta*)

# Ocean Wind 1

## Ocean Wind 1

An Ørsted & PSEG project



# Ocean Wind 1 - Fisheries Monitoring Plan

- Multiple coordinated and complementary surveys are being conducted before (2022–2023), during (2024–2025), and after (2026 –2027) windfarm construction, including:
  1. **Bottom Trawl Survey**
  2. Environmental DNA Sampling
  3. **Structured Habitat Survey**
  4. **Atlantic Surfclam Dredge Survey**
  5. Pelagic Fish Survey
  6. Acoustic Telemetry
  7. Oceanographic Data





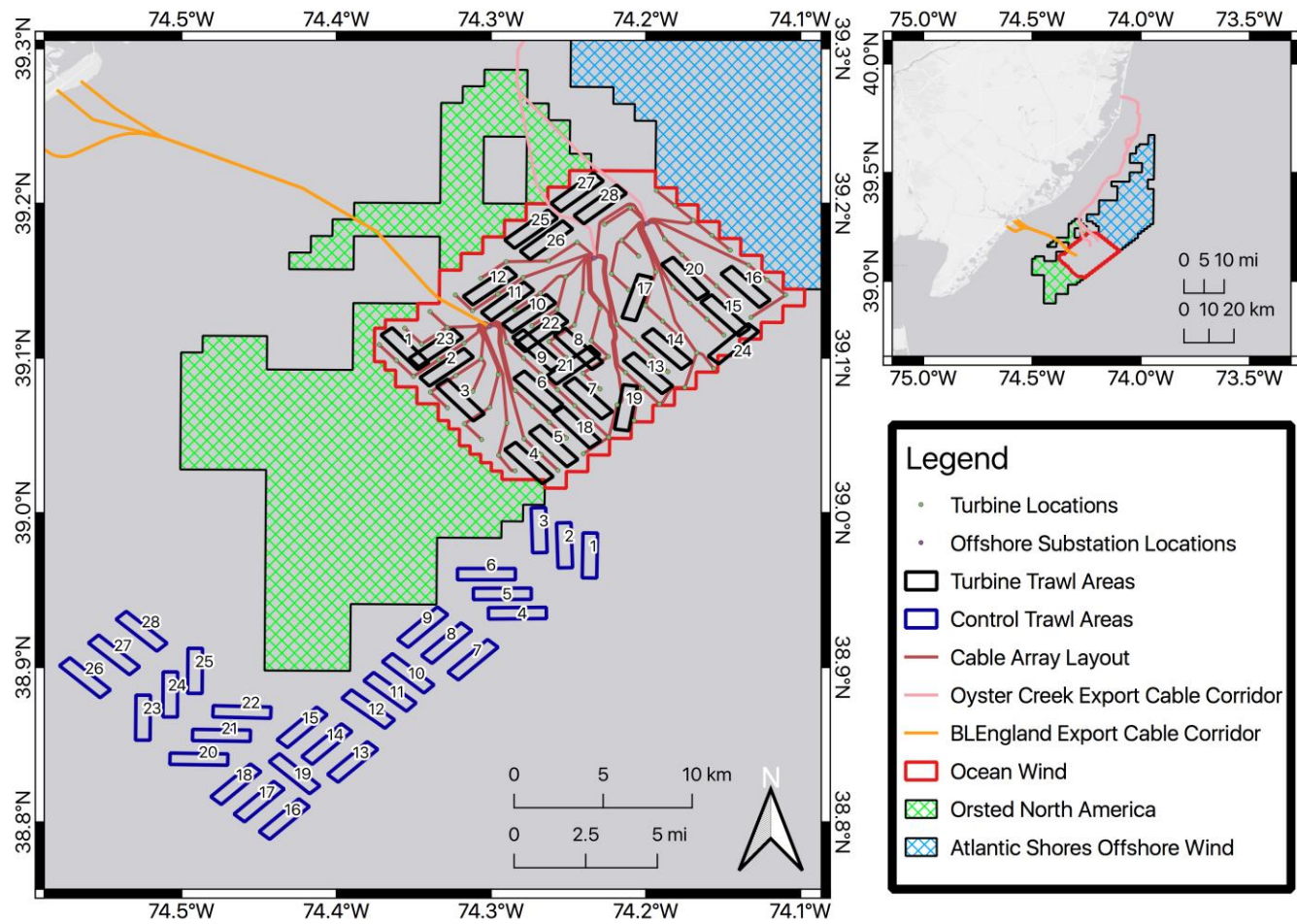
# Bottom Trawl Survey

Co-PIs: Jason Morson and Doug Zemeckis

- Seasonal surveys (Winter, Spring, Summer, Fall)
- Twenty 20-minute tows within the lease and control areas during each seasonal survey for six years



F/V *Darana R*  
Captains Jimmy and Robert Ruhle



**Legend**

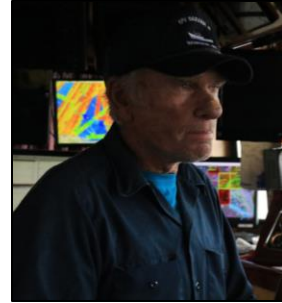
- Turbine Locations
- Offshore Substation Locations
- ▭ Turbine Trawl Areas
- ▭ Control Trawl Areas
- Cable Array Layout
- Oyster Creek Export Cable Corridor
- B-England Export Cable Corridor
- ▭ Ocean Wind
- ▭ Orsted North America
- ▭ Atlantic Shores Offshore Wind

# Bottom Trawl Survey

Co-PIs: Jason Morson and Doug Zemeckis

## Cooperative Research Challenges

1. Surrounding Conflicts and Politics
  - Perceptions among other fishing industry members
  - Designing survey to be able to sample post-construction
2. Health, Safety, and Environmental (HSE) Requirements
  - Updates to requirements from Ørsted
  - Required trainings and certifications
  - Vessel in another state with very busy calendar
3. Permitting (i.e., Protected Species Issues)
  - Interaction risks with sturgeon and sea turtles
  - Mitigating measures and trainings
  - Prolonged timeline for permitting



*F/V Darana R*  
Captains Jimmy and Robert Ruhle

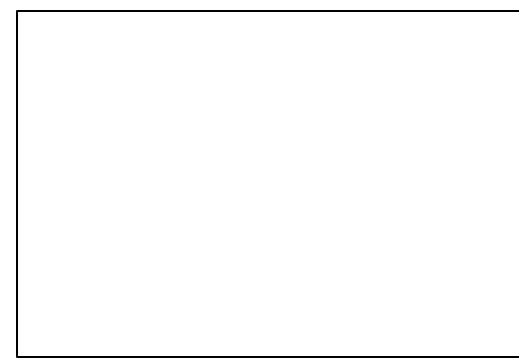
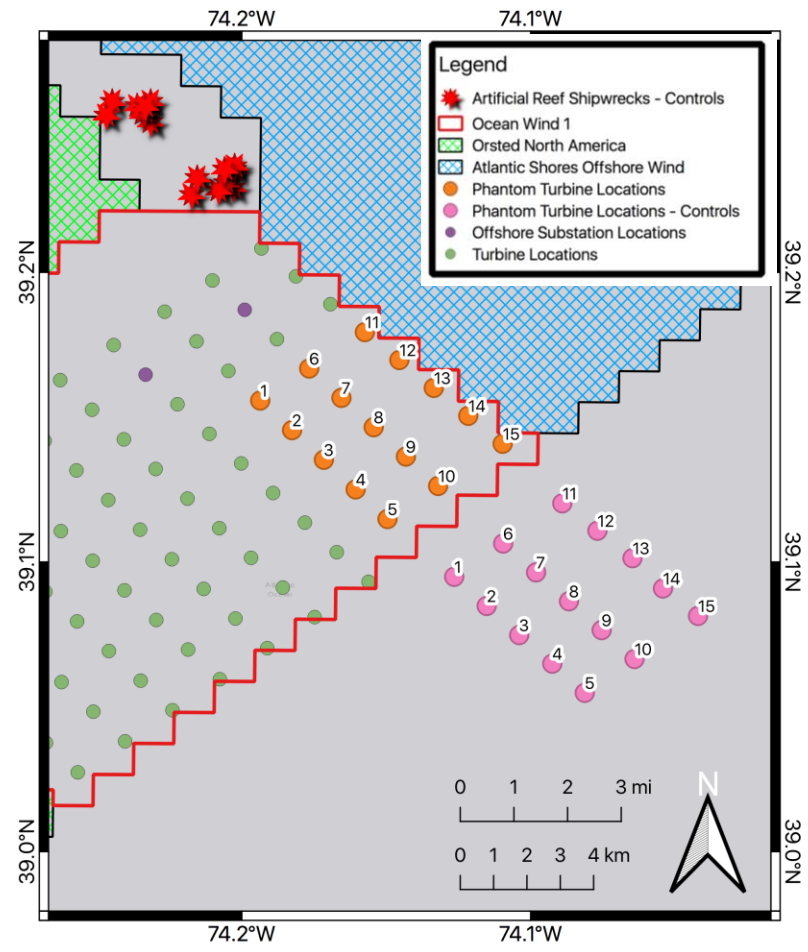
# Structured Habitat Survey

Co-PIs: Doug Zemeckis and Jason Morson

- Six years of seasonal surveys (Winter, Spring, Summer, Fall) in the windfarm and nearby control sites
- Chevron traps, benthic and pelagic videos (BRUVs), and rod-and-reel



*F/V Dana Christine II*  
Captain Kevin Wark



# Structured Habitat Survey

Co-PIs: Doug Zemeckis and Jason Morson

## Cooperative Research Challenges

### 1. Surrounding Conflicts and Politics

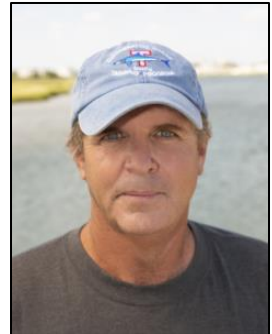
- Perceptions among other fishing industry members
- Executing multi-method survey around structured habitats

### 2. Health, Safety, and Environmental (HSE) Requirements

- Updates to requirements from Ørsted
- Required trainings and certifications
- Cumulative stressors on vessel Captain

### 3. Permitting (i.e., Protected Species Issues)

- Evaluation of potential risks for interactions with protected species
- Prolonged timeline for permitting



*F/V Dana Christine II*  
Captain Kevin Wark

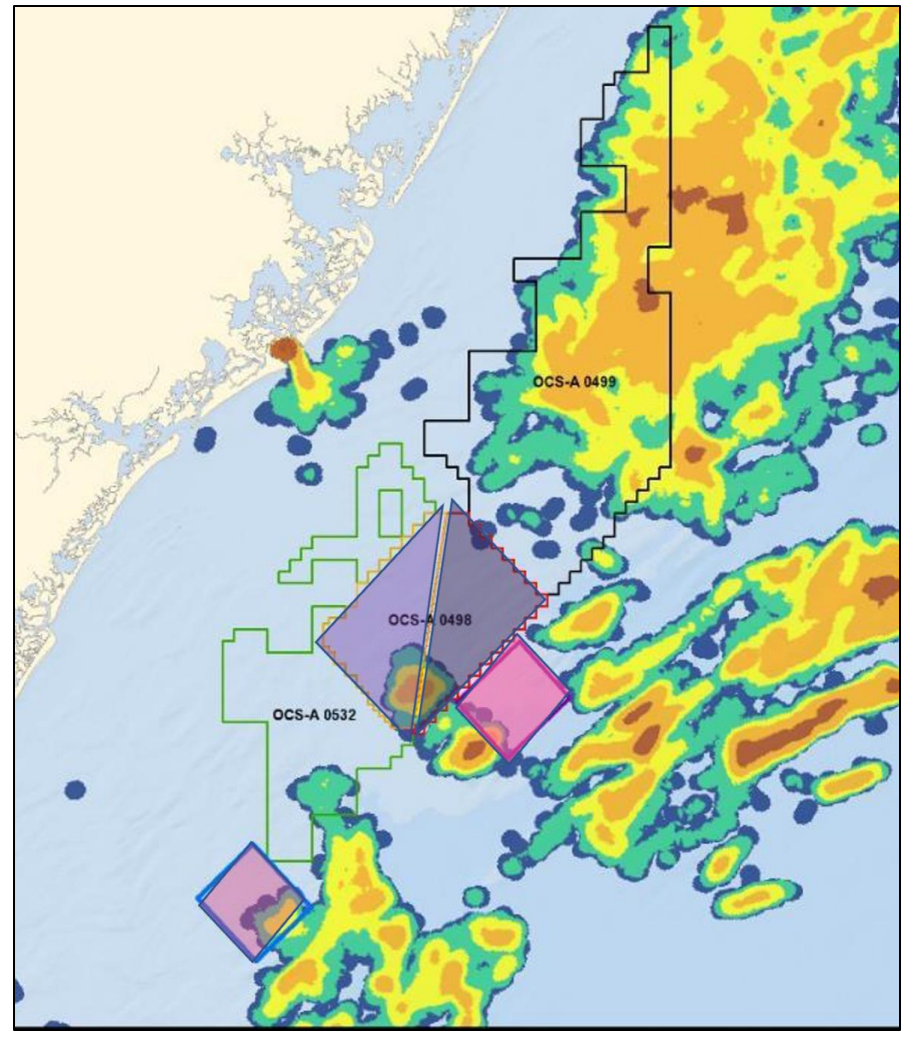
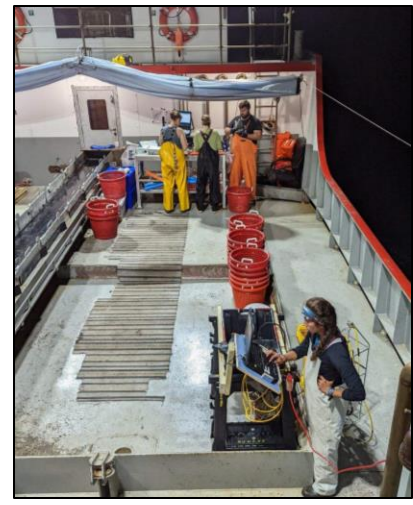
# Atlantic Surfclam Dredge Survey

PI: Daphne Munroe

- Samples collected with a modified commercial hydraulic dredge
- Ten tows each in wind lease area and in control area per year
- Before-After-Control-Impact (BACI) design



F/V Joey D



# Atlantic Surfclam Dredge Survey

PI: Daphne Munroe

## Cooperative Research Challenges

1. Surrounding Conflicts and Politics
  - Perceptions among other fishing industry members
  - Designing gear and survey for sampling post-construction
2. Health, Safety, and Environmental (HSE) Requirements
  - Updates to requirements from Ørsted
  - Required trainings and certifications
3. Permitting (i.e., Protected Species Issues)
  - Large (and loud) hydraulic dredge does not interact with protected species



*F/V Joey D*

# Discussion

- Our experiences provide valuable lessons learned for cooperative research in offshore wind monitoring, and other areas of research:

## 1. Surrounding Conflicts and Politics

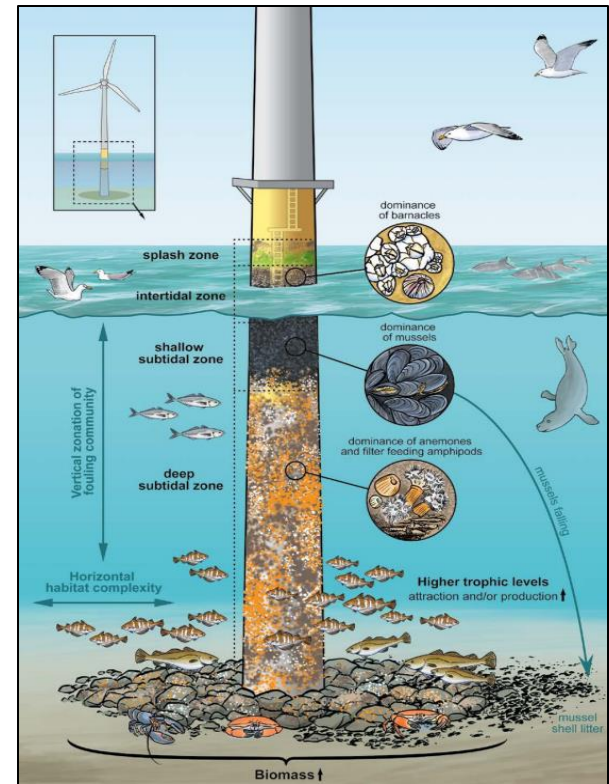
- Frequent, open communications and collaborations guided by the need for objective, robust research
- Designing surveys to be capable of sampling pre- and post-construction

## 2. HSE Requirements

- Designated HSE (Co-)Managers within research team and vessel crews
- Adequate funding, including financial compensation for industry collaborators and potentially multiple boats

## 3. Permitting (i.e., Protected Species Issues)

- Initiate the process early in coordination with appropriate agencies and collaborators



Degraer et al. (2020)

# Acknowledgements

- Thanks to all of the collaborating Captains and Crews among our fishing industry collaborators.
- Thank you to all of the technicians and staff from Rutgers University and Monmouth University.
- Funding for the fisheries monitoring plan of Ocean Wind 1 has been provided by Ørsted North America, LLC.

## **Rutgers Offshore Wind Living Resources Studies (ROWLRS)**

<https://rowlrs.marine.rutgers.edu/>

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■ Cooperative Extension

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