



# FIVE YEARS OF FISHERIES MONITORING FOR OFFSHORE WIND: OBSTACLES FACED, LESSONS LEARNED

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# OFFSHORE WIND INVOLVEMENT

- 2018 Vineyard Wind approached SMAST to develop a fisheries monitoring plan for Vineyard Wind 1 Project.
  - Existing Monitoring Guidelines
  - Available fisheries-independent and –dependent data
  - Existing survey methodologies
  - Workshops with fishermen
    - New Bedford, Chatham, West Tisbury, Kingston, RI
    - Paid fishermen to attend
    - Discussed species of interest
    - Suggestions for implementing monitoring plans



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# OFFSHORE WIND INVOLVEMENT

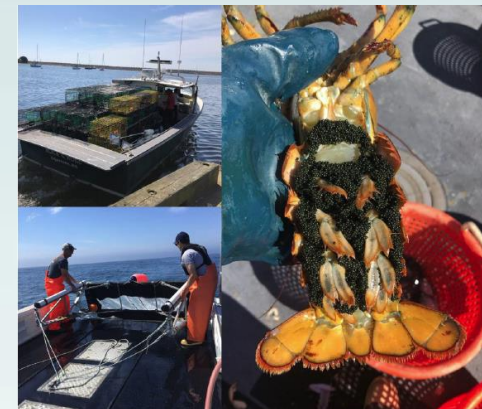
- Vineyard Wind 1 Fisheries Monitoring Plan
  - Based on existing fisheries surveys
    - Demersal Trawl Survey
      - Finfish and squid
      - NEAMAP Regional Trawl Survey
    - Optical Benthic Survey
      - Benthic invertebrates
      - Scallop Resources Assessment
    - Ventless trap survey
      - American lobster and black sea bass
      - MA state survey
    - Acoustic Telemetry
      - Highly Migratory Species
  - This fisheries monitoring plan has served as a template for other regional projects
    - Sunrise Wind, Revolution Wind, SouthCoast Wind, New England Wind and Vineyard Offshore
    - Standardized framework promotes regional consistency
    - Lacks stakeholder engagement



Demersal Otter Trawl Survey



Optical Benthic Survey



Ventless Trap, Black Sea Bass Pot & Plankton Survey



Acoustic Telemetry  
Highly Migratory Species

# EXPERIMENTAL DESIGN

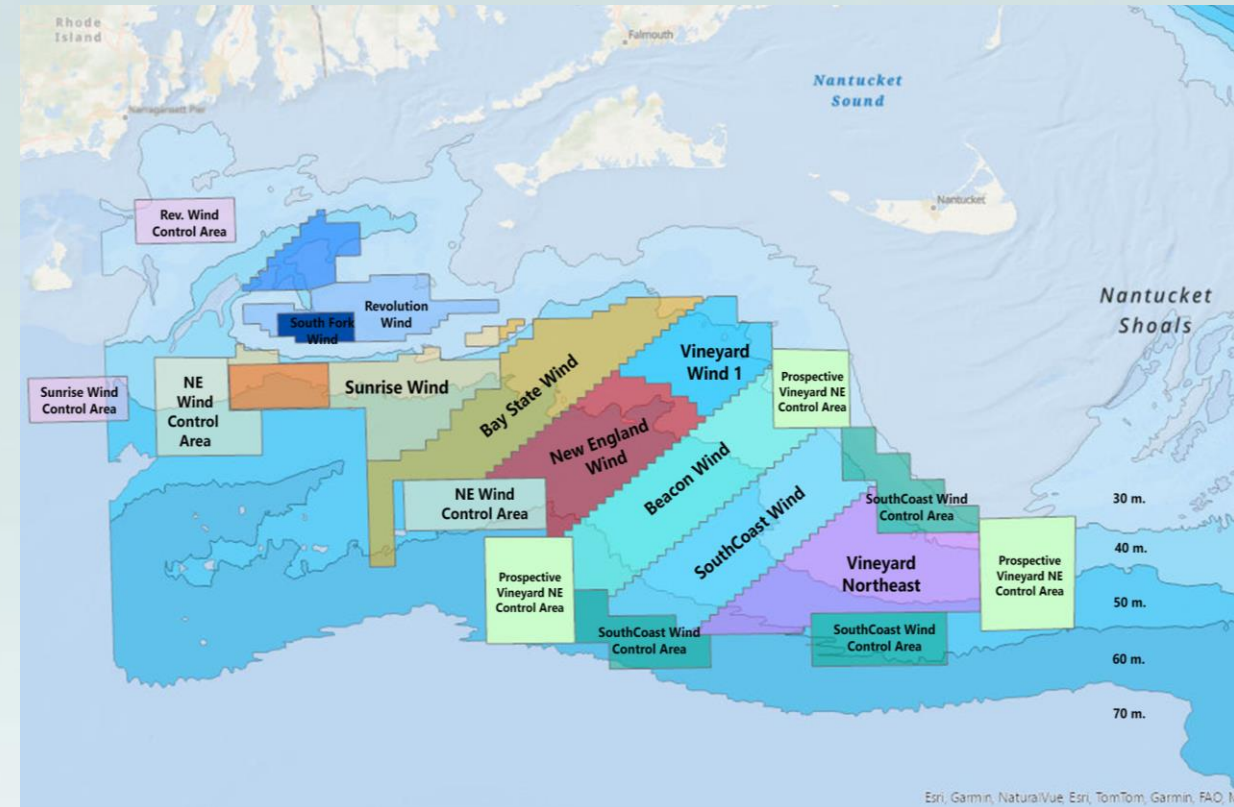
- BACI vs. BAG

- Before-After-Control-Impact

- Long history of use in environmental monitoring.
    - Impact is binary
    - Challenge identifying control areas

- Before-After-Gradient

- Assess the magnitude of the impact
    - Lack of validation of the methods
    - Data suggests most impacts are highly localized around the turbine.
      - Benthic invertebrates (10's meters)
      - EMF (10's meters)
      - Organic enrichment and sedimentation of the seafloor (100's meters)
      - Operational noise (<1,000 m)
    - Assumes stable gradients



Spatiotemporal Distribution of Fish Around Offshore Wind Turbines Revealed by Underwater Video  
4:15 306B

# PERMITTING

- Pre-construction monitoring requires a Letter of Acknowledgement (LOA) from NMFS.
- Not exempt from ESA or MMPA.
- Protected Species Consultation
  - Work Plan Review
  - Project associated Biological Opinion (Section 10)
  - Incidental Take Permit (Section 7) - +2 years
- Missed surveys:
  - VW1: 1 survey
  - Sunrise Wind: 3 surveys
  - Revolution Wind: 5 surveys
- Need to start permitting early.
  - 4-5 years before construction
  - Need an FMP

This letter is separate and distinct from any permit or consultation that may be required under the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), or any other applicable law. Take (e.g., mortality, injury, harassment, incidental capture, etc.) of protected species (i.e., ESA-listed and/or MMPA-protected) is prohibited by law, with limited exemptions. Issuance of this LOA does not provide any exemptions from those prohibitions. **Given this, in order to be exempt from the prohibitions on take, all necessary ESA or MMPA consultations and/or permits must be obtained prior to starting any in-water activities** that are expected to result in take. Contact the Greater Atlantic Region's Protected Resources Division at [nmfs.gar.esa.section7@noaa.gov](mailto:nmfs.gar.esa.section7@noaa.gov) as soon as possible to discuss whether any additional coordination under the ESA or MMPA is required. Protected species interactions are of particular concern where vessel activity and pot/trap, mid-water/bottom trawl, dredge or gillnet gear are planned in locations or times of year when protected species may be present in the area. Note that this list of gear types is not exhaustive, and interactions with protected species can occur with gear types not listed here.



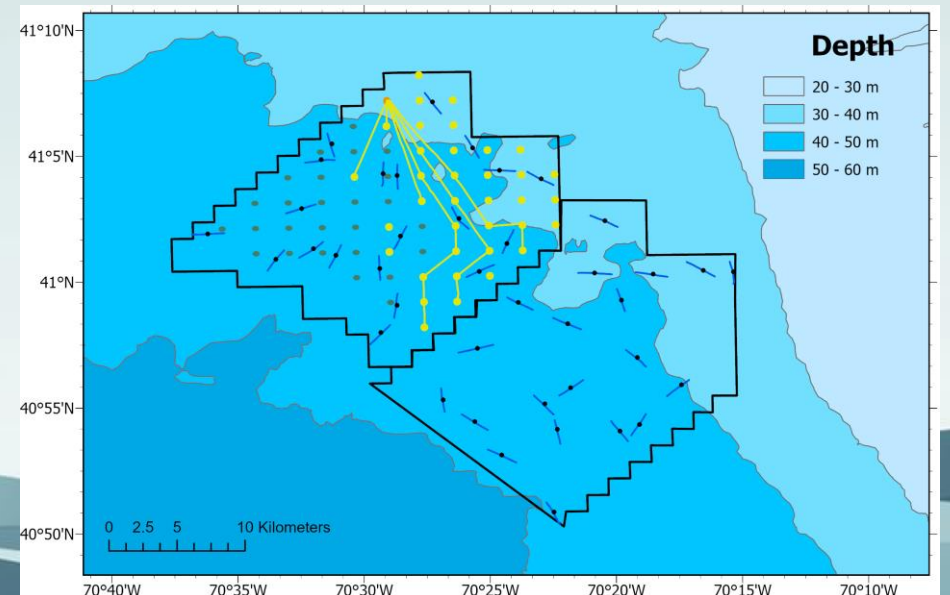
# OFW HEALTH AND SAFETY REQUIREMENT

- Significantly higher requirements for health and safety than traditional cooperative research.
  - Dedicated HSE plans and managers
  - Vessel Inspections
  - USCG Captain's License
  - Crew Training
    - Safety Training (STCW)
    - Protected Species Training
    - Project Inductions
- Prepare fishermen, manage expectations.
- Benefits of having colleagues



# WORKING IN WIND FARMS

- Successfully completed 4 seasonal trawl surveys in Vineyard Wind 1 in 2023/2024.
  - Dropcam and Lobster Survey
- Two seasonal surveys in Revolution Wind.
- Good communication is essential
  - Meeting with engineering team
  - Send out sail plans a month in advance.
  - Scour protection, turbine and cable locations installed on vessel chart plotters.
  - Fishermen on construction and survey vessels.
  - Conversation with fishermen.



# UNCERTAIN TIMELINES

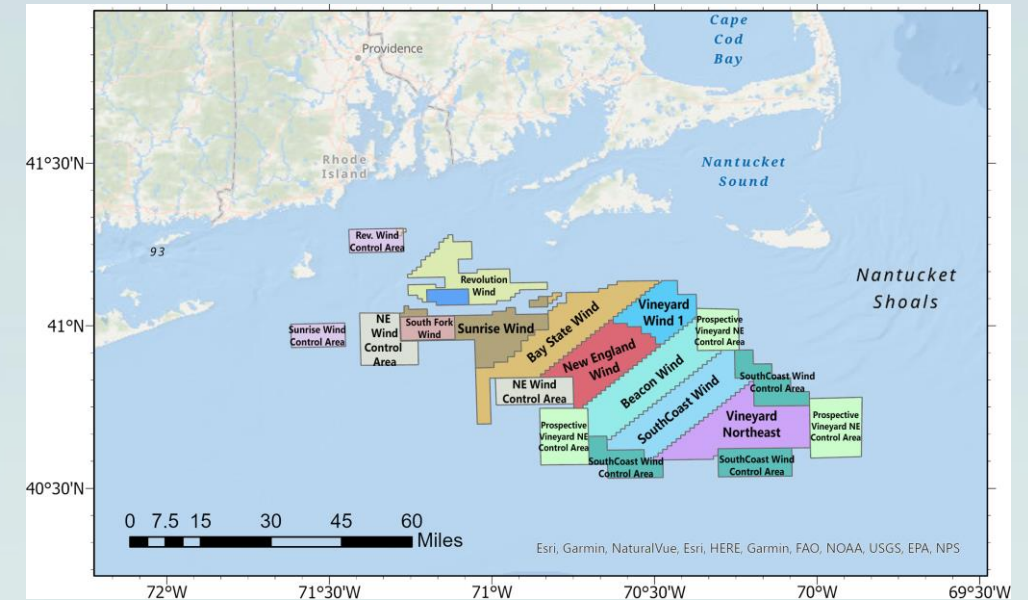
- Vineyard Wind – Surveys missed:
  - Spring 2020
  - Summer 2021
  - Spring 2022
  - Spring, Summer, Fall 2024
  - 2025?
- REV & SRW
  - Supposed to start in Summer 2022
  - REV started Summer 2023
  - SRW started Fall 2023
- SouthCoast Wind/New England Wind
- Challenges for maintaining scientific staff and relationships with fishermen.
- Challenge for data analysis.
  - Need for regional monitoring





# REGIONAL MONITORING

- Project-based permitting and regulations
- Several states are requiring “regional monitoring”
- Standardized methodologies will allow for an “integrated” approach.
- SMAST proposal to SNE developers:
  - Regional network of shared control areas.
  - Data sharing agreement
  - Issues with regulatory requirements, long-term funding commitments, timelines



# CHALLENGES FACED, LESSONS LEARNED

## Challenges

- What and how do we monitor fisheries resources?
- Permitting and HSE Requirements
- Uncertainties in projects

## Recommendations

- Don't try to reinvent the wheel.
  - Benefits of existing methodologies.
  - Multi-survey methods
- We should attempt to standardize data collection methodologies.
  - General will from developers
  - Requires a push from regulators, consultants, NGO's
- Start early, budget accordingly, manage expectations.

We don't work in bubble.  
There is a general desire to do it right.

# Thank You!

UMassD SMAST  
Fishing Community  
OFW Developers  
Scientific Community

