

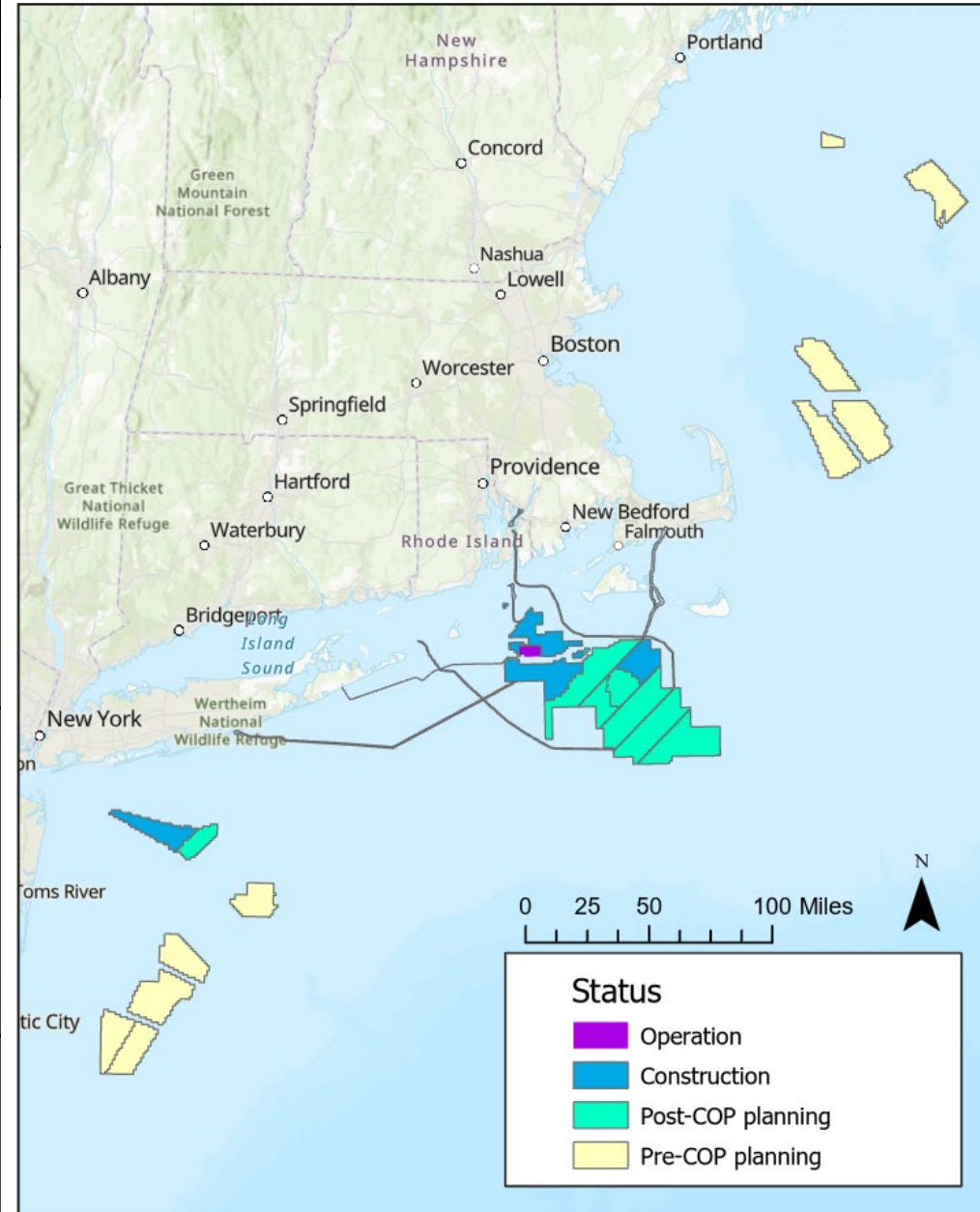
Fisheries Working Group on Offshore Wind

Project Updates

December 12, 2025

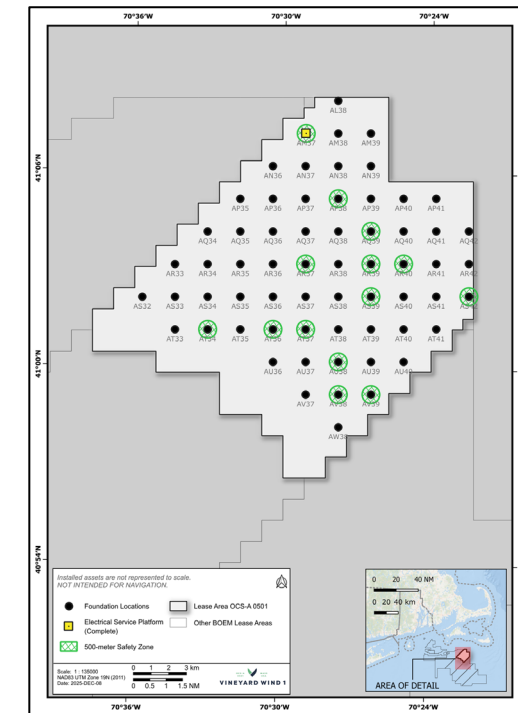
Offshore Wind Project Status

Status	Projects	Activities on the water (lease area and cable routes)
Complete and Operational	South Fork	May see occasional: <ul style="list-style-type: none"> - post-construction surveys - maintenance operations
Under Construction	Vineyard 1 Revolution Sunrise Empire	Likely to see one or more of: <ul style="list-style-type: none"> - seabed preparations (e.g., PLGR, trenching, scour protection) - cable-laying (IAC and Export) - bubble curtains and pile-driving - installation of foundations, monopiles, WTGs and OSSs - commissioning of WTG/OSS
Planning and Permitting (COP is published)	New England 1 & 2 SouthCoast Beacon Starboard Vineyard Northeast Vineyard Mid-Atlantic	May see occasional: <ul style="list-style-type: none"> - habitat/fisheries surveys - geophysical surveys - metocean buoys - new communications plans
Planning and permitting (pre-COP)	New York Bight (5) Gulf of Maine (5)	May see occasional: <ul style="list-style-type: none"> - habitat/fisheries surveys - geophysical surveys - metocean buoys - new communications plans

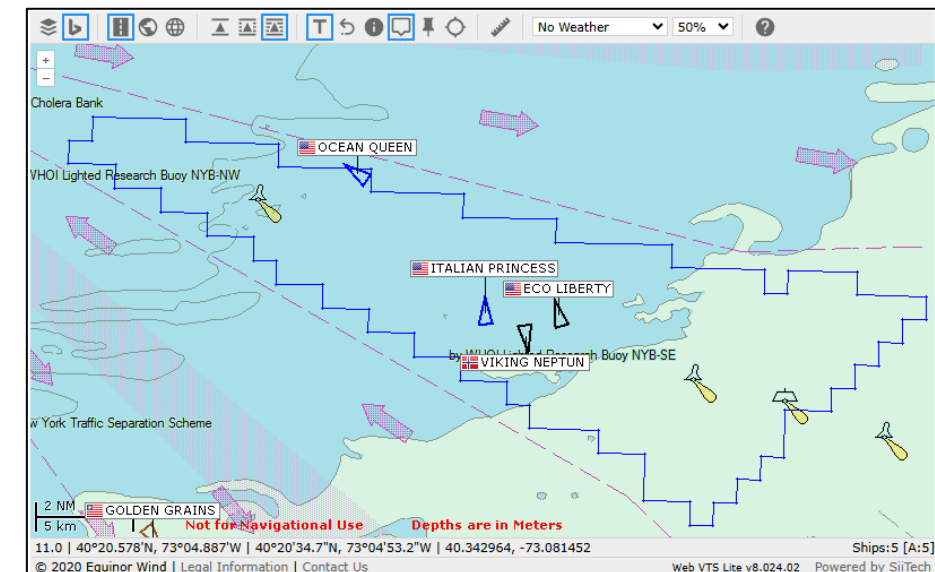


For projects currently Under Construction, activities include:

Project	Most recent update	Specific Activities on the water (lease area and cable routes)
Vineyard 1	December 8, 2025	<ul style="list-style-type: none"> • Installation of final nacelles and remaining blades • Commissioning of WTGs • Surveys to assess export and inter-array cable burials
Empire	December 8, 2025	<ul style="list-style-type: none"> • Deployment/maintenance of fish and oceanographic monitoring instruments • Export cable trenching, laying, burial and survey, from New York Harbor seaward • Installation of WTGs to begin in spring



Source: <https://www.vineyardwind.com/offshore-wind-mariner-updates>



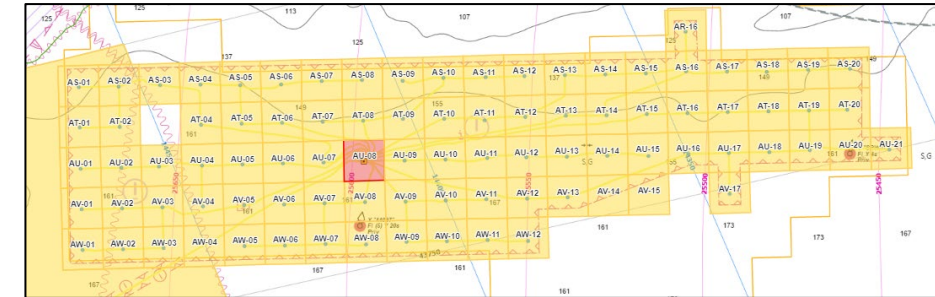
Source: <https://www.empirewind.com/environment-and-sustainability/mariners-and-fisheries/>

For projects currently Under Construction, activities include:

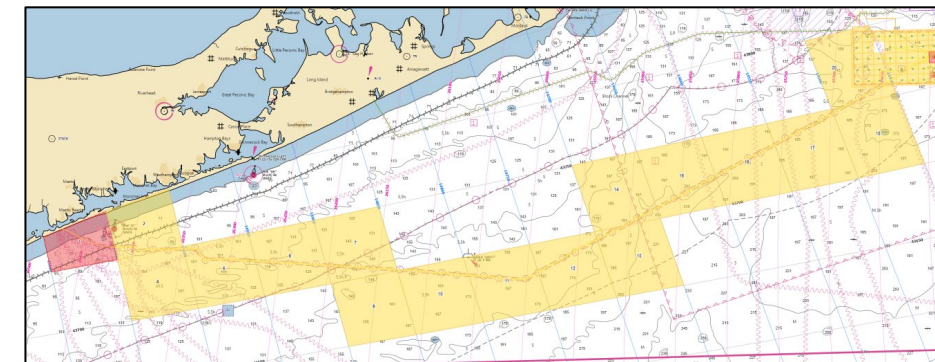
Project	Most recent update	Specific Activities on the water (lease area and cable routes)
Revolution	December 8, 2025	<ul style="list-style-type: none"> • BOEM issued Stop Work Order on 8/22/25 • Preliminary Injunction issued on 9/22/25 and work commenced that day • WTG installation and commissioning • Inter-array cable trenching, laying and burial • 2nd OSS commissioning
Sunrise	December 8, 2025	<ul style="list-style-type: none"> • Installation of monopile WTG foundations • Deployment of bubble curtains, sound monitoring buoys, protected species observers • Installation of WTG transition piece • Commissioning of OSS • Surveying of export cable corridor • Export cable pull-in (at Long Island landfall site) • Cable trenching, laying and burial



Revolution Wind Construction Zones



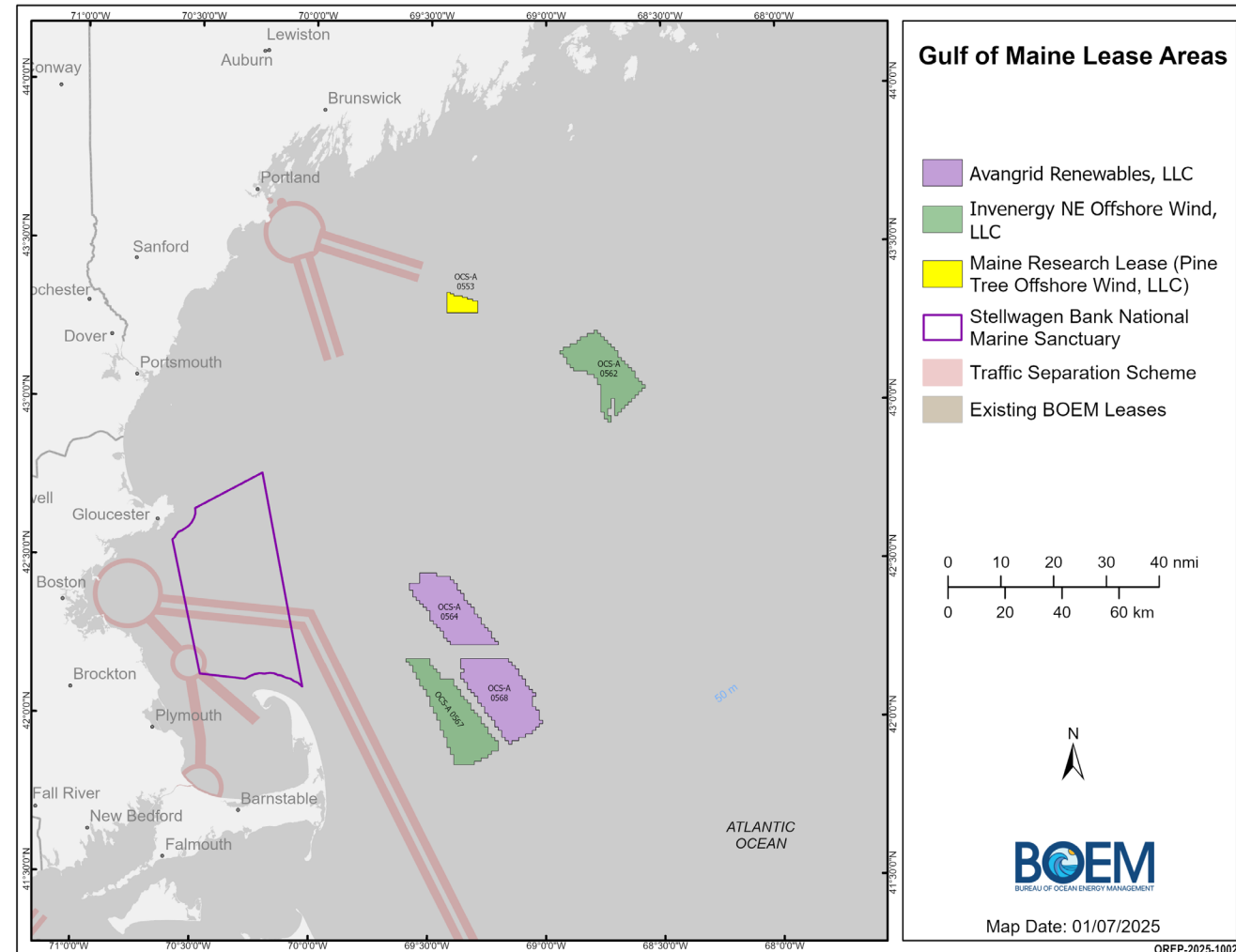
Sunrise Wind Construction Zones

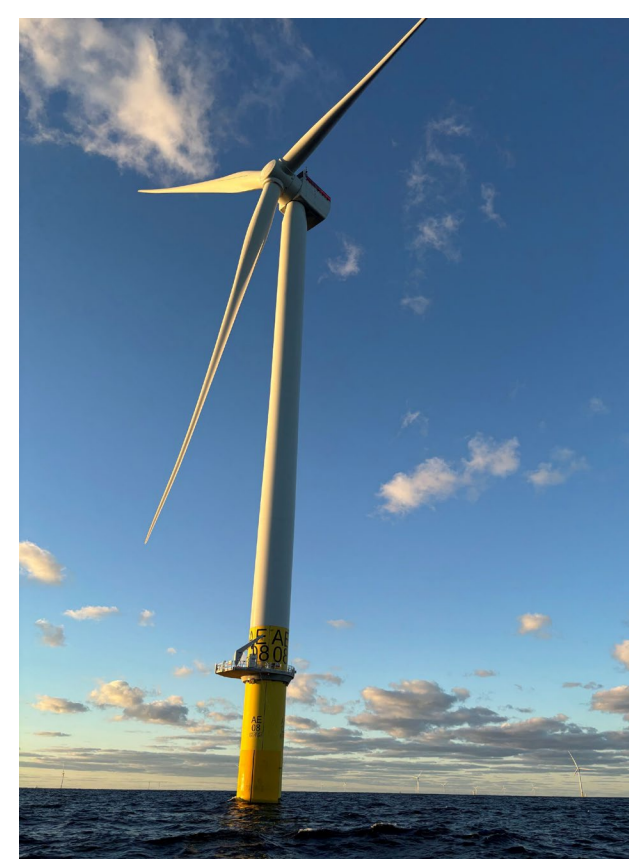


Sunrise Wind Export Cable Corridor Construction Zones

For GOM projects currently planning and permitting, activities include:

Project	Specific Activities
Avangrid OCS-A 0564 OCS-A 0568	<u>Communications Plans</u> <ul style="list-style-type: none"> Agency Native American Tribal Fisheries <u>Project Websites</u> <ul style="list-style-type: none"> www.ocs-a0564.com www.ocs-a0568.com
Invenergy OCS-A 0562 OCS-A 0567	<u>Communications Plans</u> <ul style="list-style-type: none"> Pending <u>Project Website</u> <ul style="list-style-type: none"> www.gulfofmaine.invenergy.com/
Maine Research Array OCS-A 0553	Conducting survey and monitoring work





MADMF Sampling Trip to Revolution Wind

- October 10 trip out of Westport, MA with Capt. Ray Jarvis
- Gain experiences and impressions from fishing in a wind farm
- Better understand recreational fishing interactions and concerns

Takeaways from DMF Staff

- New(ish) foundations were well-populated by structure-oriented fish (BSB, scup, cunner)
- Impressive biodiversity, especially for late-season visit (6 species caught)
- No interactions with construction or safety vessels
- Spacing seemed adequate for recreational fishing
- Navigating in low-vis/at night will require vigilance, modern electronics and updated charts



A wide-angle photograph of an offshore wind farm and an oil rig in the ocean. The sky is a clear, bright blue with scattered, thin white clouds. The water is a deep, dark blue with small, choppy waves. On the horizon, a line of wind turbines is visible on the left side, and a large, complex oil rig structure is on the right side. The overall scene is a vast, open expanse of water under a clear sky.

Questions?

Break slide

Massachusetts Fisheries Innovation Fund Background

\$1.75m mitigation fund created in 2020 by Vineyard Wind to:

- “support programs and **projects that ensure safe and profitable fishing continues** as Vineyard Wind and future offshore wind projects are developed in Northern Atlantic waters”¹
- “Conduct **studies on the impacts of offshore wind development on fishery resources** and the recreational and commercial fishing industries”¹
- “Provide **grants for technology and innovation upgrades for fishery participants** (and vessels) actively fishing within a wind energy area”¹

Where “the **criteria used to guide the disbursement** of funds from The [Fund] **will be developed in consultation with the [Advisory] Panel**”²

➡ DMF drafts RFP ➡ CZM/DMF staff review RFP ➡ May 2025 meeting of Advisory Panel

FIF Advisory Panel refines RFP → prioritize projects that benefit and collaborate with fishing industry, and de-emphasize research and monitoring (funds available elsewhere)

FIF Solicitation 1 Priorities:

Fishing Innovation

Community

Safety



¹VW-EEA Agreement

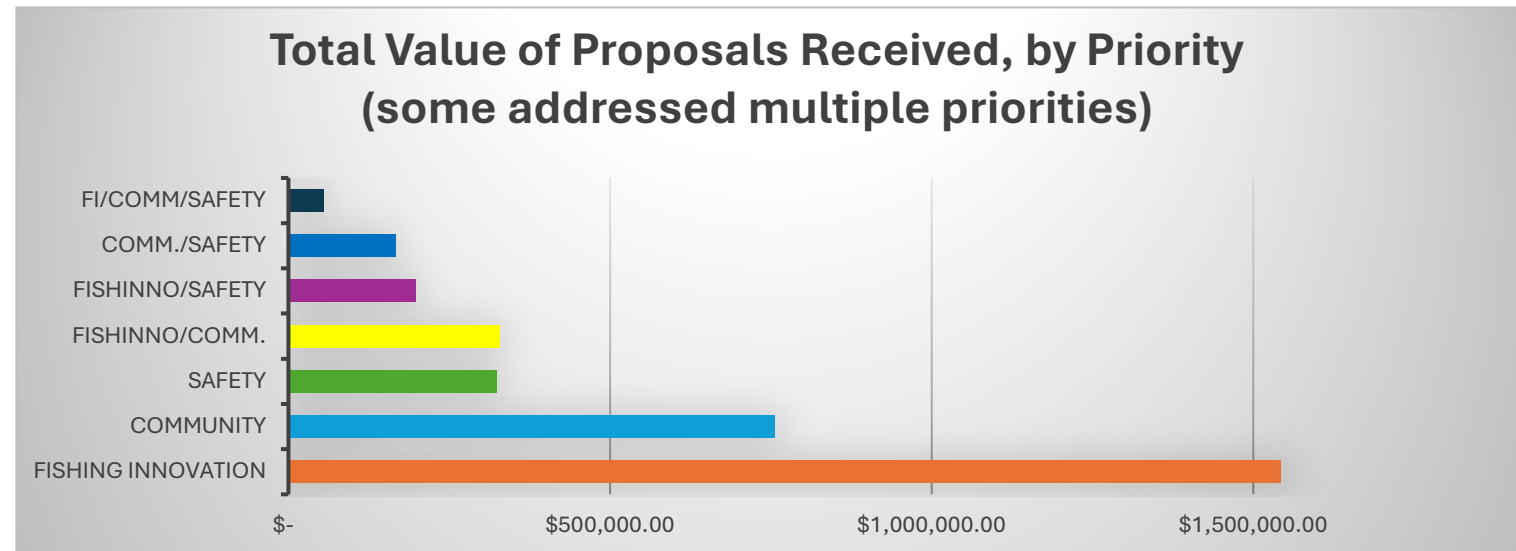
²VW-EEA Declaration of Trust

Massachusetts Fisheries Innovation Fund Update

Progress Update

- Request for Proposals published July 7th, closed August 29th
 - Grants applied to, reviewed and managed digitally
 - Initial and Final Review Panels (two rounds)
 - Ethics statements, NDAs and COI forms
 - Approved by EEA/Gov's Office

**Received 20 Proposals
seeking \$3.37m**



- Proposals reviewed over 2 rounds by nine content experts from diverse backgrounds (including all eligible/willing members of FIF Advisory Panel)
- Recommendation for funding presented to Trustee and accepted

Six projects and nearly \$1.2m awarded



Massachusetts Fisheries Innovation Fund Awards

Priority	Awardee	Project Title	Funding
Fishing Innovation	FV Martha Elizabeth	Fishermen Led Gear Innovation in Southern New England	\$ 174,908
Fishing Innovation	Commercial Fisheries Research Foundation	Advancing Mechanical Jigging to Strengthen Squid Fishery Resilience Amid Offshore Wind Development	\$ 261,443
Fishing Innovation	UMass Dartmouth - SMAST	Novel fish potting with lights for black seabass and scup: Developing innovative fishing gear for safe and efficient operation in offshore wind farm areas	\$ 265,984
Community	Eating with the Ecosystem	Reelsilience: Strengthening Markets for Massachusetts Seafood through Video and Public Engagement	\$ 156,533
Community	New Bedford Port Authority	New Bedford Seafood Study, Marketing and Promotional Campaign	\$ 250,000
Safety	Commercial Fisheries Research Foundation	Evaluating the Hazard of Trawling Over Cable Protection Mattresses	\$ 60,768

Solicitation 1 awards up to \$1,169,635 to six projects



Fisheries Innovation Fund Awarded Project Details

(1/3)

Fishing
Innovation

Fishermen Led Gear Innovation in Southern New England

Project Lead: FV Martha Elizabeth/Wes Brighton/Menemsha MA

Project Partners: Coonamessett Farm Foundation, Falmouth MA

- Develop, test and monitor lighted traps for finfish, scallops and possibly squid
 - Goal is to produce viable gear solutions that can sustain and supplement fishing opportunities in or alongside offshore wind farms
-

Fishing
Innovation

Advancing Mechanical Jigging to Strengthen Squid Fishery Resilience Amid Offshore Wind Development

Project Lead: Commercial Fisheries Research Foundation/David Bethoney/Saunderstown, RI

Project Partners: FVs Princess Scarlett & Lightning Bay, The Town Dock, Atlantic Shellfish, Inc.,

Coonamessett Farm Foundation (Falmouth MA), Fishing Machine LLC – Japan

- Leverage existing knowledge to streamline deployment and operations of jig machines to maximize catches
- Develop SOP for deploying jig gear - inshore, within/near offshore wind farms and offshore
- Create outreach materials and share results with relevant communities and regulatory bodies



Fisheries Innovation Fund Awarded Project Details

(2/3)

Novel fish potting with lights for black seabass and scup: Developing innovative fishing gear for safe and efficient operation in offshore wind farm areas

Project Lead: UMassD-SMAST/Pingguo He/New Bedford, MA

Project Partners: Reidars Manufacturing (New Bedford), local commercial fisherman

Fishing
Innovation

- Develop and evaluate fish pots with different LED light colors
 - Commercial fisherman will deploy best-performing pot/light configuration in OSW array
 - Measure catch performance and describe economic feasibility of broader industry adoption
-

Reelsilience: Strengthening Markets for Massachusetts Seafood through Video and Public Engagement

Project Lead: Eating with the Ecosystem/Kate Masury/South Coast, MA

Project Partners: Tackle 2 The People, collaborating chefs and commercial fishermen

Community

- Promote MA-harvested seafood (Scup, sea bass, pollock, monkfish, Jonah crab, skate, whiting) through public engagement, produced video episodes (with fishermen and chefs) and social media
- Host four public events in MA, pairing episode screenings with tastings and panel discussions
- Reduce consumer intimidation, grow seafood demand and build public support for fishing industry



Fisheries Innovation Fund Awarded Project Details

(3/3)

Community

New Bedford Seafood Study, Marketing and Promotional Campaign

Project Lead: New Bedford Port Authority/John Regan/New Bedford, MA

Project Partners: New Bedford Ocean Cluster/Jen Downing, seafood marketing entity

- Marketing and promotional campaign for New Bedford fisheries and seafood products
- Strengthen market visibility, consumer awareness and New Bedford brand identity
- Support local fishermen, enhance New Bedford's competitiveness and generate measurable economic benefits throughout the region

Safety

Evaluating the Hazard of Trawling Over Cable Protection Mattresses

Project Lead: Commercial Fisheries Research Foundation/David Bethoney/Saunderstown, RI

Project Partners: Commercial fisherman, Superior Trawl

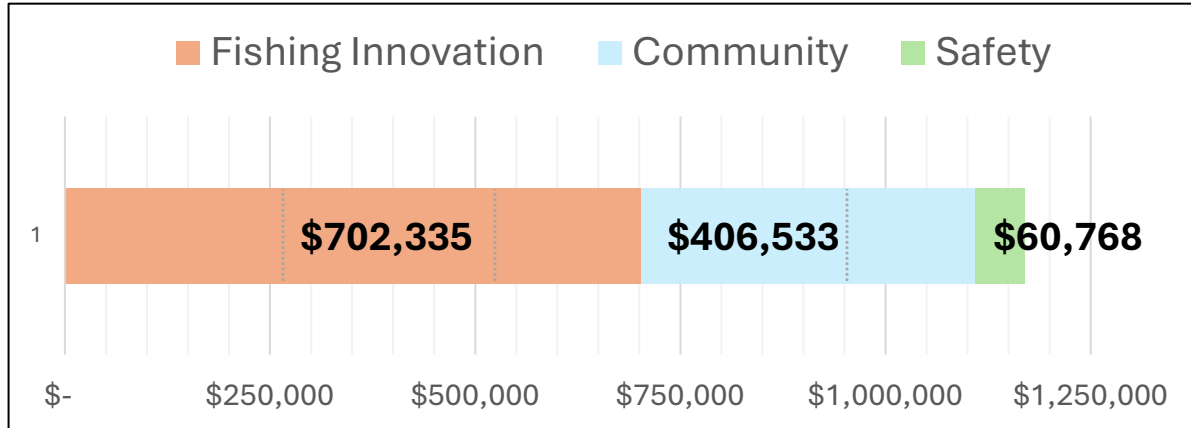
- Assess how different trawl gears and configurations, when towed at different speeds and directions, interact with cable protection mattresses
- Document and describe any gear damage, snagging incidents and movement of cable mattresses
- Collect feedback from fishermen on handling, safety and performance



Massachusetts Fisheries Innovation Fund



Funding Summary



Next Steps

- Scope of Work and Contracting with awardees
- Meet with FIF Advisory Panel
 - Discuss awards
 - Refine application and review process
 - Update scope of RFP for Solicitation 2 (2027)
 - Consolidate OSW mitigation funds and consider future spending plan
- Progress updates from awardees in Mid-2026
- Final results (for 1-year projects) in Mid-2027

Funding Statistics

- **New Bedford/Cape & Islands** applicants and collaborators to receive \$742,000
- **Commercial fishing industry** to receive \$375,000 (32%)
- **Commercial fishing vessel contracts** account for \$160,000 (14%)
- **Massachusetts commercial fishing industry** to receive \$236,000 (20%)

Thank You

- All applicants and industry partners
- FIF Advisory Panel
- EEA Grants Management Staff
- FIF grant reviewers
- DMF staff



Questions? Thank you!



Pilot Project:
**Uniting knowledge from fishing communities
and offshore wind developers to improve
boulder relocation practices**

Hannah Verkamp, N.David Bethoney, Fred Mattera, and Shaye Rooney

Massachusetts Fisheries Working Group on Offshore Wind

December 12, 2025



Background

- Rhode Island Sea Grant Offshore Energy Knowledge Exchange Working Group
 - Underserved topics
 - Boulder Relocation and Fishing Safety
 - Meeting: April 2025



Boulder Relocation/Seabed Alteration Working Group



Action Items

In Concept/Development

Impact of Boulder Size and Weight on Commercial Fishing

Monitor the changes along Subsea Cable Routes due to Boulder Relocation

Developed Proposals

Regional Fishermen Working Groups for Offshore Wind Planning

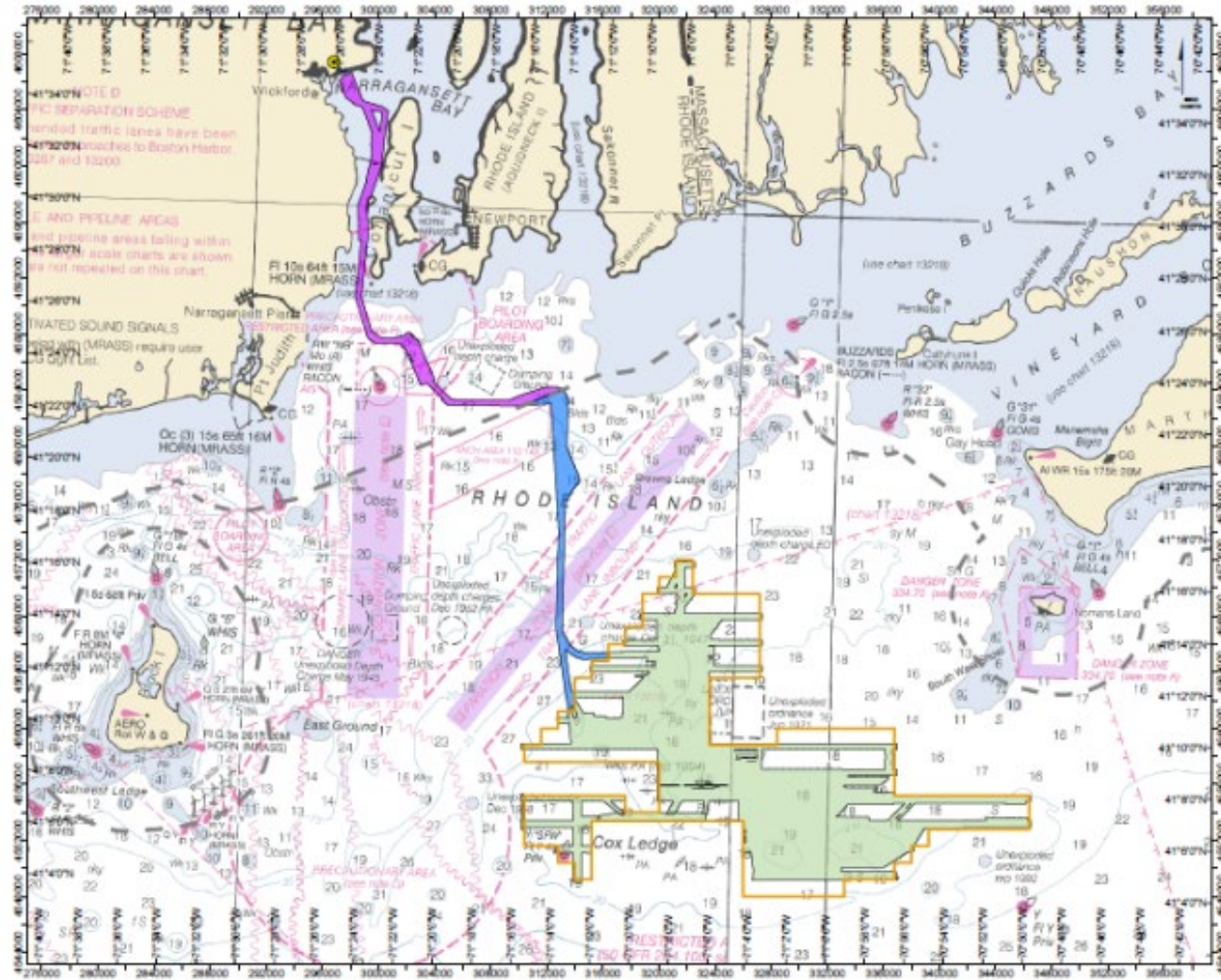
Evaluating the Impact of Trawling Over Cable Protection Mattresses

Recently Completed

Document Methodology for Assessing Fishing Impacts from Boulder Relocation

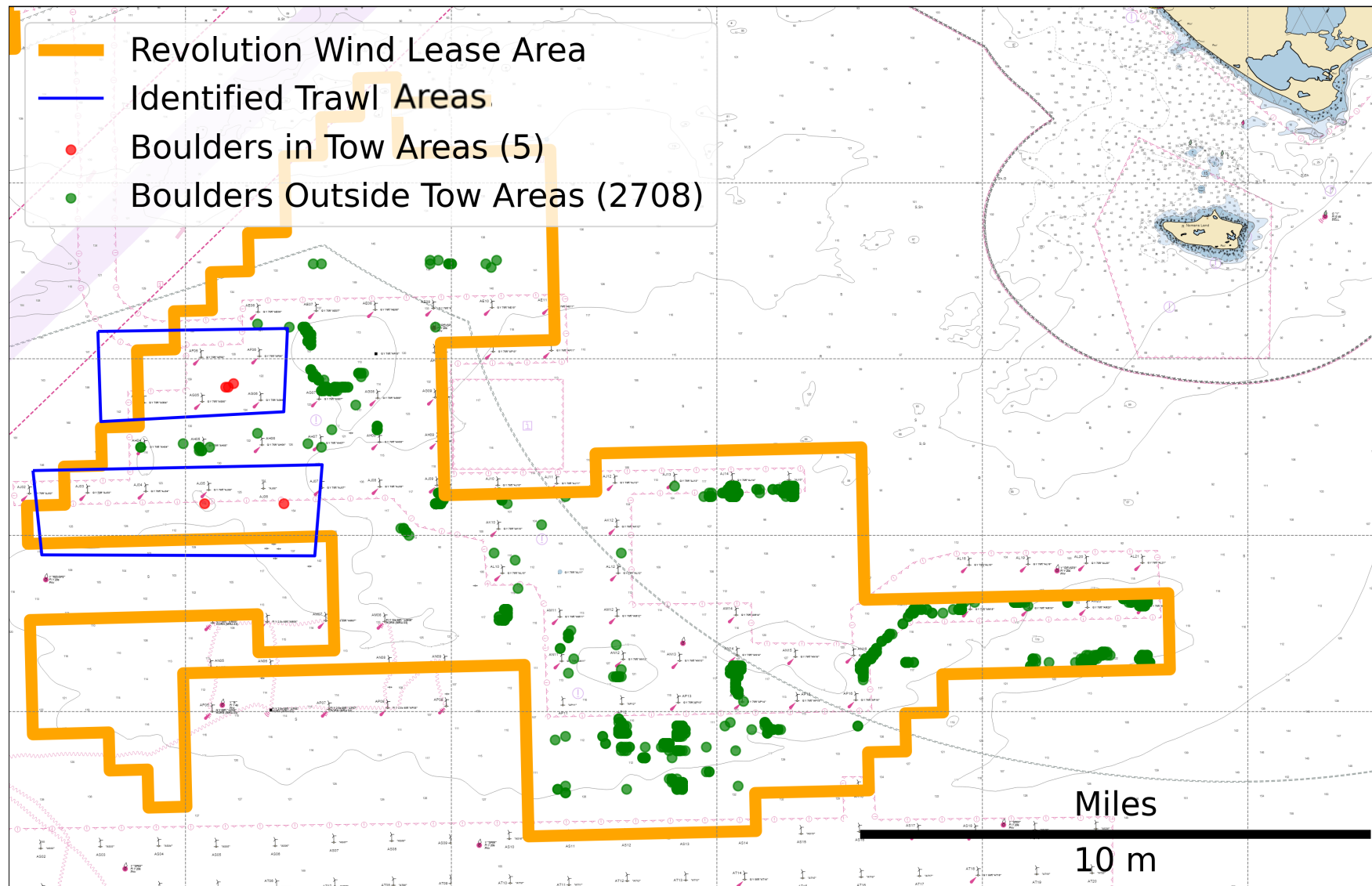
Background

- Action Item
 - Demonstrate a plan for future developments to reduce the negative impacts of boulder relocation on fishing
- Study Area: Revolution Wind Farm
 - ~2,800 boulders relocated
 - Few mobile gear vessels operate



Methods & Results

- Fishermen Interviews
 - Nautical chart with boulders
 - At the vessel
 - Proprietary tow lines protected
 - Boulder size of concern
- 2 historically towable areas
- 5 relocated boulders of potential concern





Take Aways

- Less than 0.2% of the relocated boulders were within towable grounds
 - Several boulders were between the turbines
 - Lower if size and specifics were considered
- Future considerations:
 - Communication **before** relocation
 - Consider **safety** with habitat impacts during permitting
 - Strategically place boulders **outside** of areas of conflict
 - Minimal effort to overcome concerns
 - Boulder size and location matter
 - Support the notion that mobile gear fishing can occur between turbines

THANK YOU

This project was funded by the Commercial Fisheries Center of Rhode Island with support from Orsted

Captains Mike Monteforte (Second Wind) and Paddy McGlade (Enterprise and Cody)

CFRF Research Associate Tori Thomas for conducting interviews

Modeling Fishing and Fishing Vessel Behavior and Assessing Access in and Around Wind Energy Areas

Blair Bailey

New Bedford Port Authority

Steve Cadrin, Meghna Marjadi, Chris Rillahan, Pingguo He & Chengsheng Chen

UMass School for Marine Science & Technology



December 12, 2025

MA Fisheries Working Group on Offshore Wind Energy

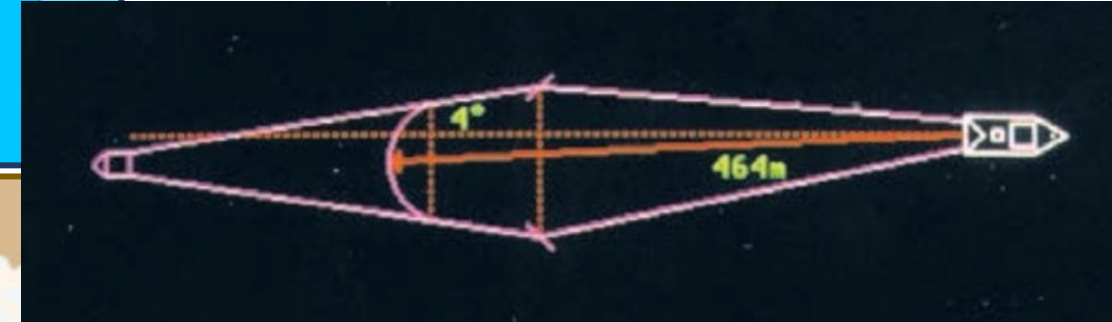
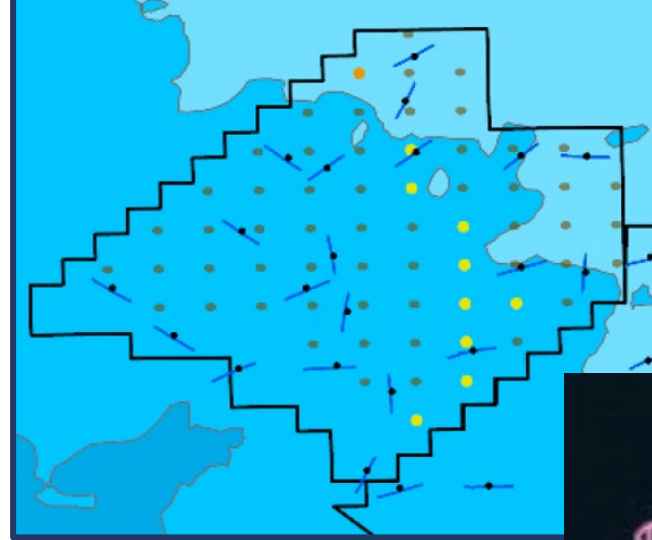
Fishing in and Around Wind Farms

- To what degree do the turbines impact commercial fishing operations?
- How can the design of a wind farm be changed to minimize commercial fishing impacts?
- Are there any innovations or practices that can assist in fishing within a wind farm?
- What are impressions of the commercial fishermen to fishing within a wind farm?



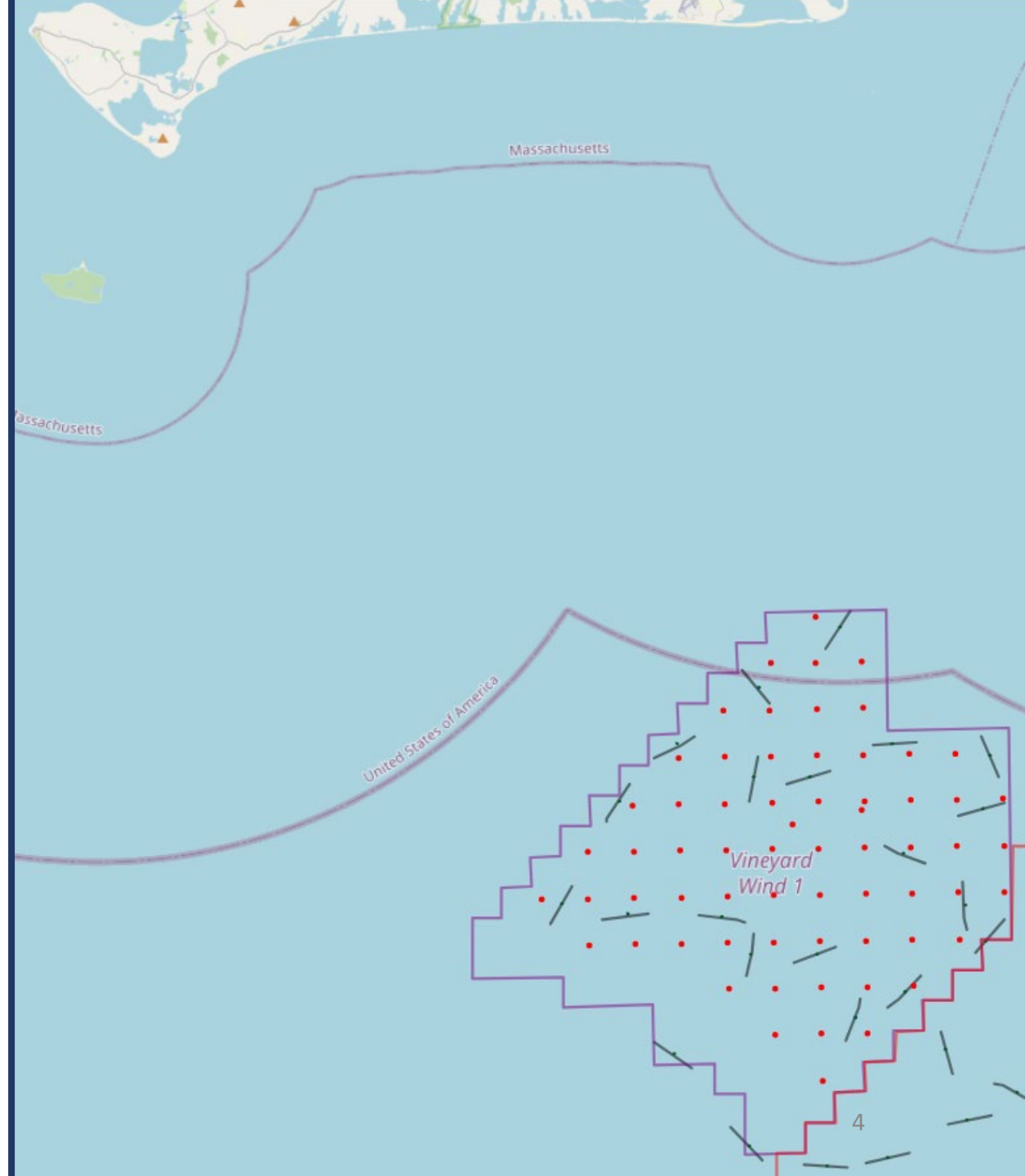
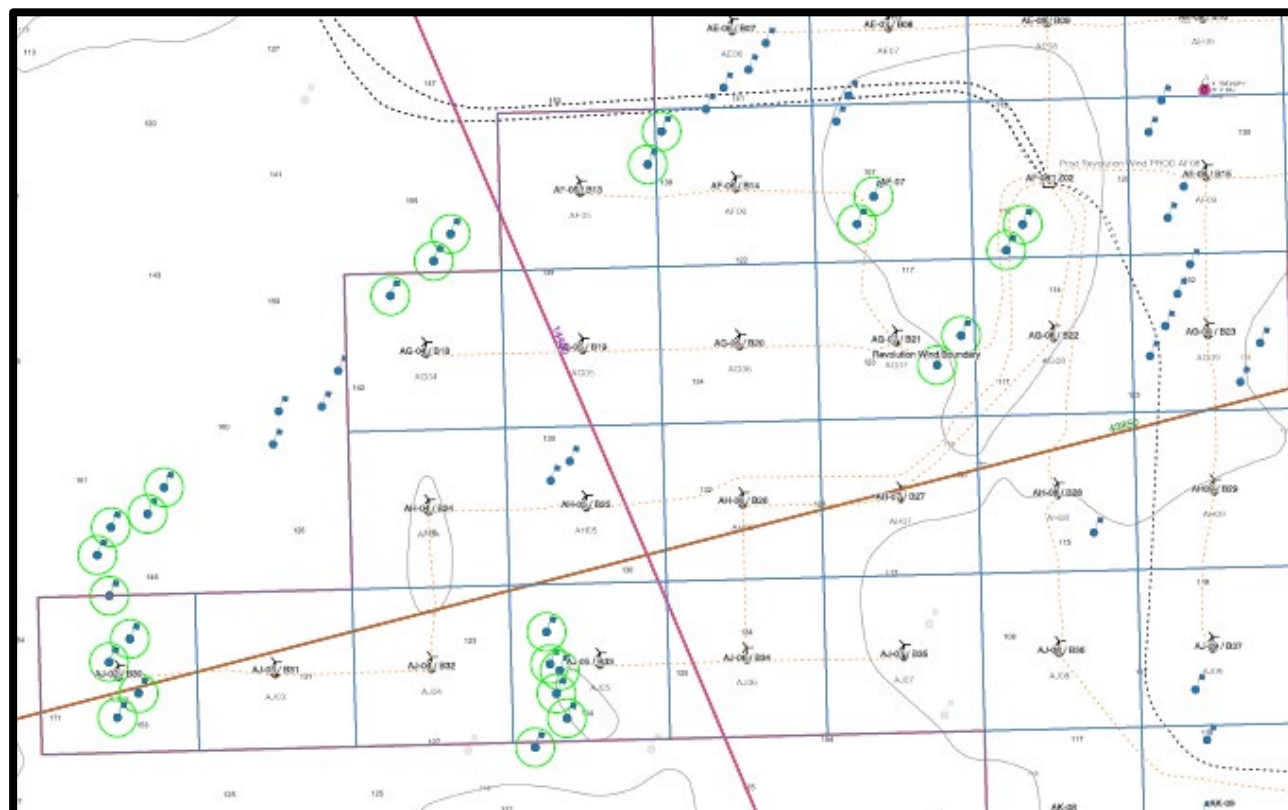
SMAST Work Plan

1. Quantify active fishing locations
2. Mensuration of towed fishing gear
3. Oceanographic modeling
4. Integrate information from vessel positioning, gear mensuration, and ocean modeling to measure how close fishing vessels can safely fish in turbine areas under varying conditions.



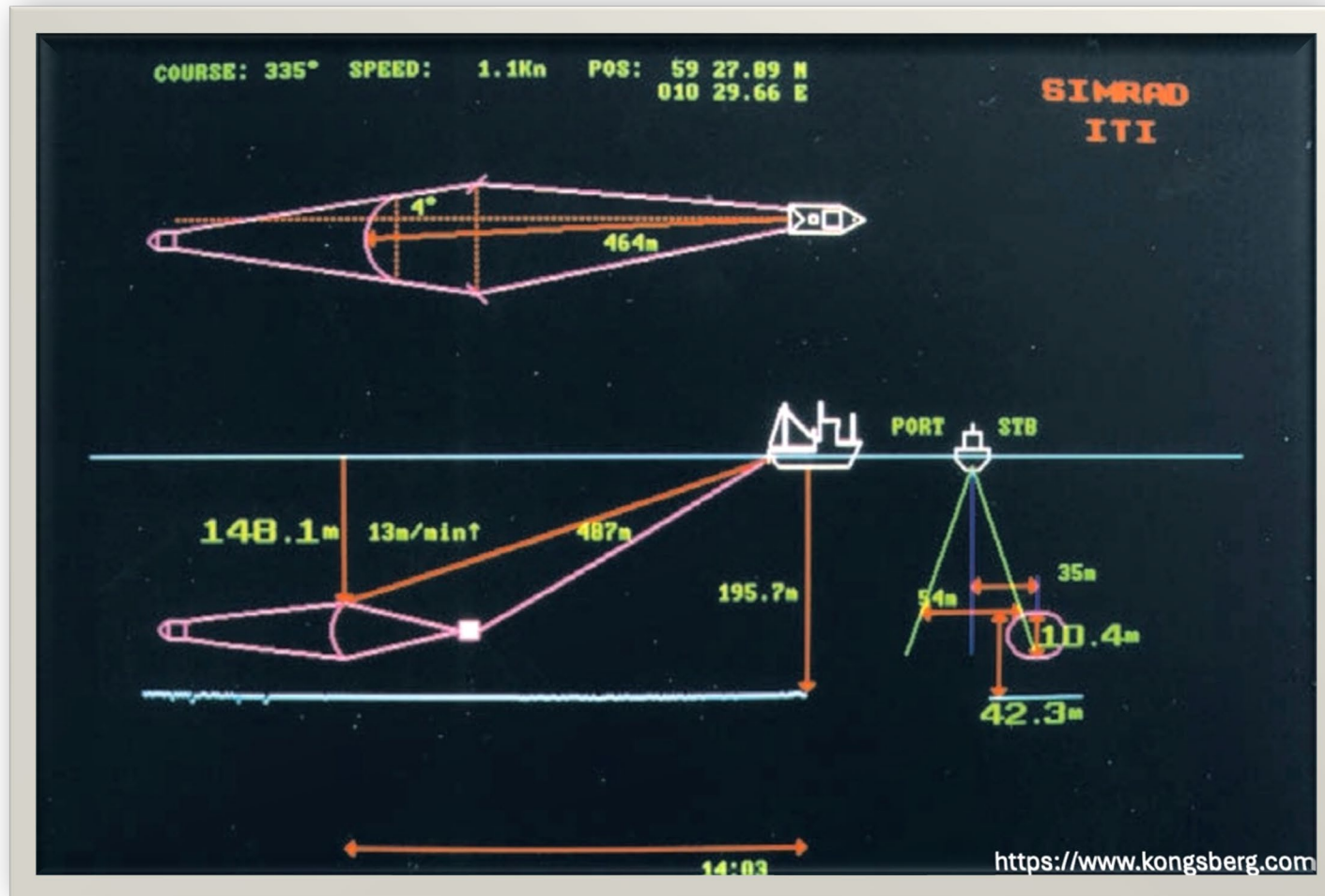
Active Fishing Locations

- Location, speed and direction of fishing vessels will be tracked with a Vessel Monitoring System, and tow-by-tow catches will be recorded using an electronic logbook.



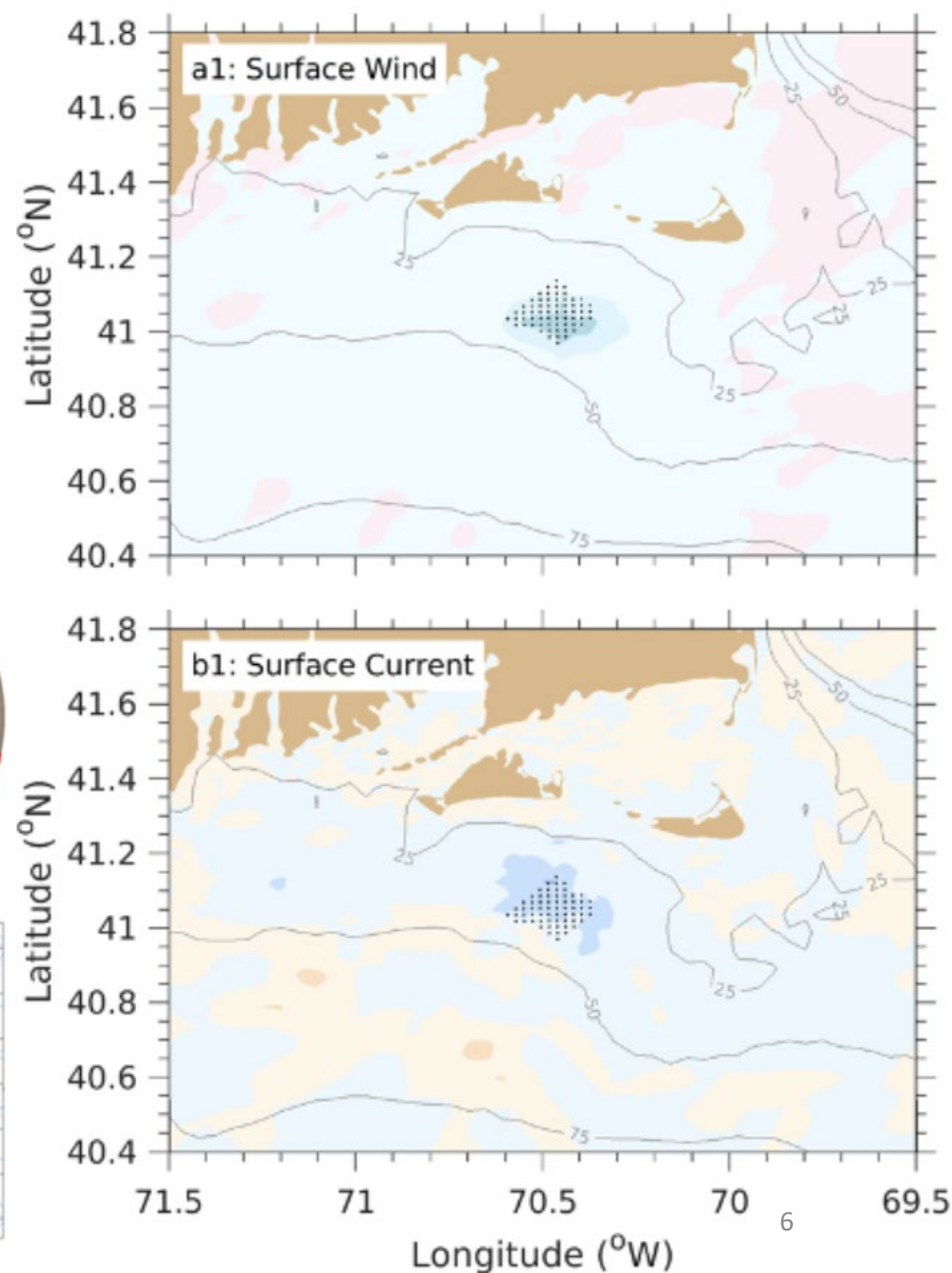
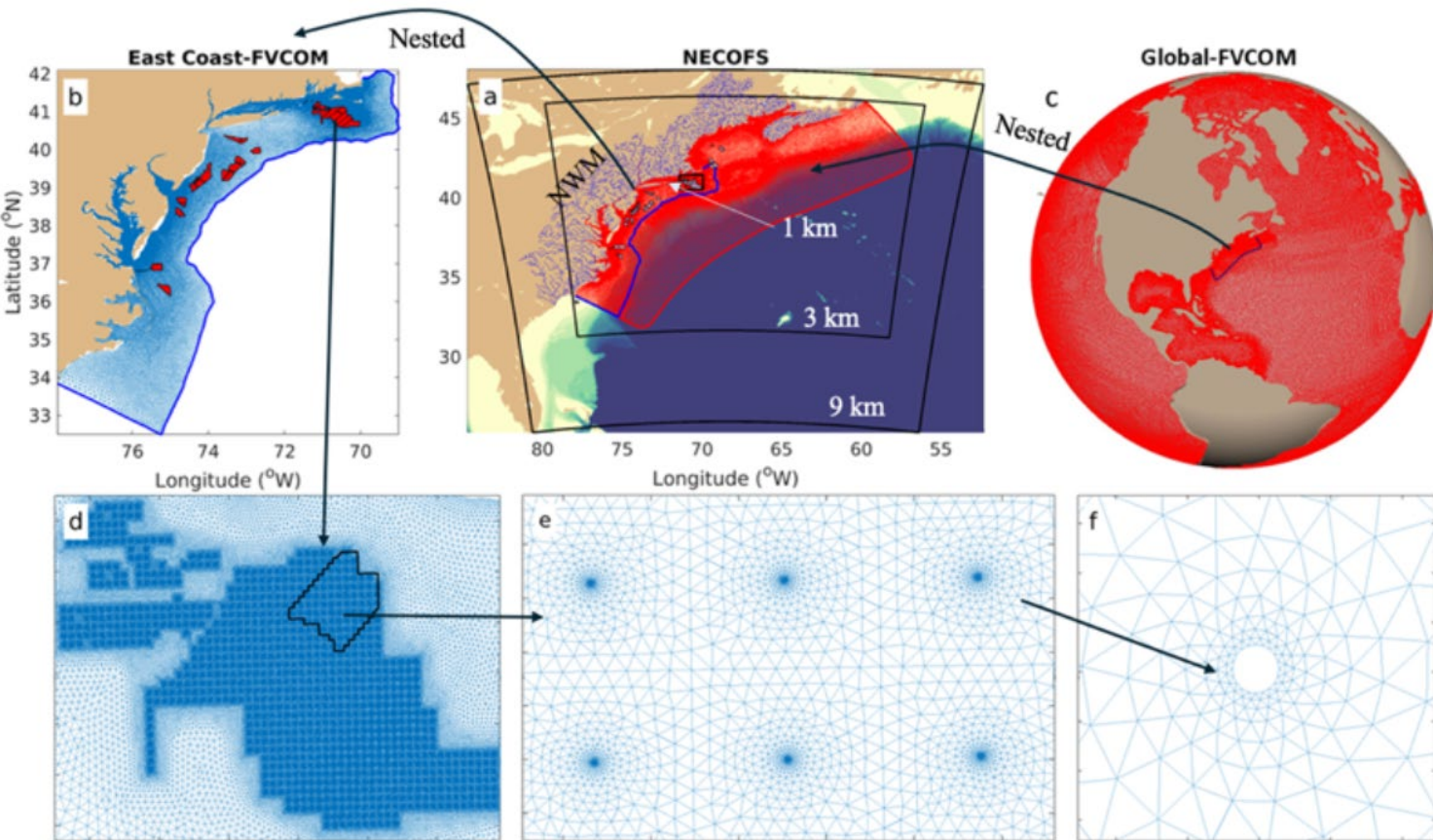
Fishing Gear Mensuration

- Trawl monitoring technologies will be used to record the position of trawls during commercial fishing operations and evaluate how much the gear deviates from the expected tow path under different environmental conditions and operational scenarios.



Modeling Ocean Conditions

- Vessel navigation and gear position will be quantified in the context of wind, seas, and current conditions.



Next Steps

- Meet with fishermen to design field trials for fishing in and near wind farms.
- Conduct field trials.
- Analyze field data to measure safe distance from wind turbines under various conditions.
- Questions? Suggestions?



Monitoring the effects of offshore wind on HMS in southern New England

Jeff Kneebone

jkneebone@neaq.org

Edward Kim

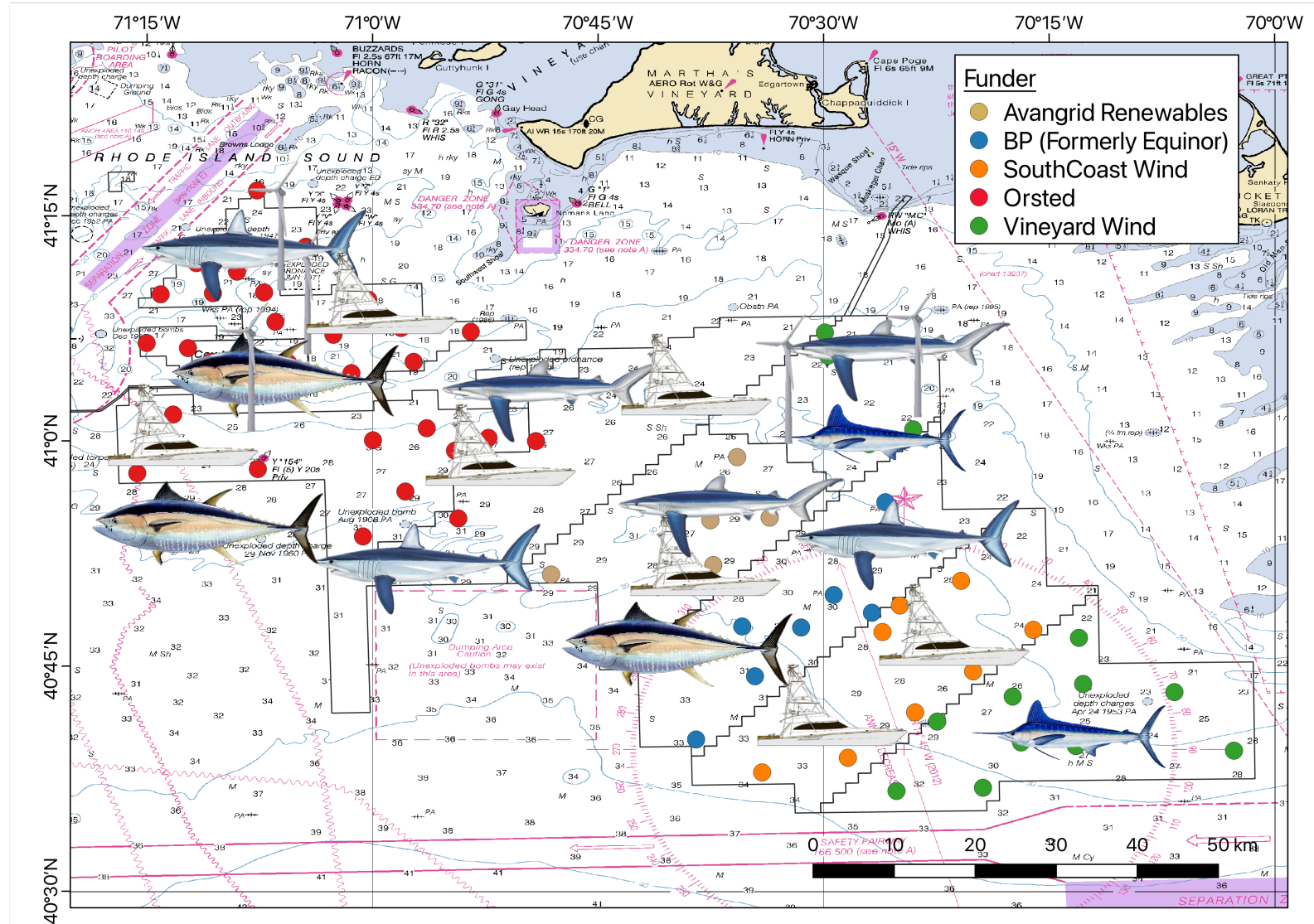
Ryan Lowndes



Anderson Cabot
Center for Ocean Life
at the New England Aquarium

Brian Gervelis

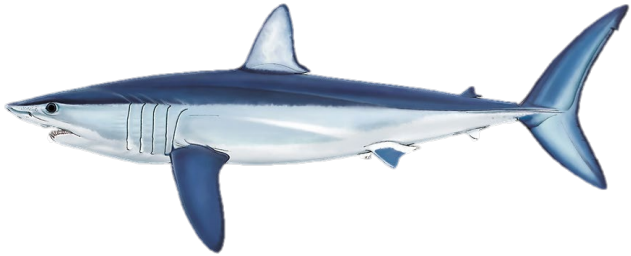
brian.gervelis@venterra-group.com



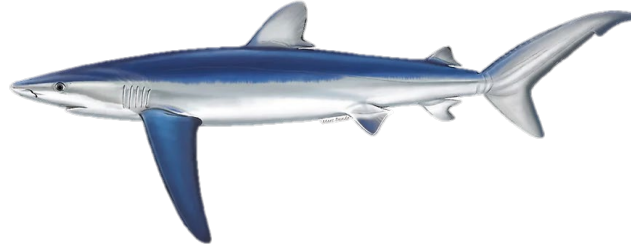
What are Highly Migratory Species (HMS)?

Sharks

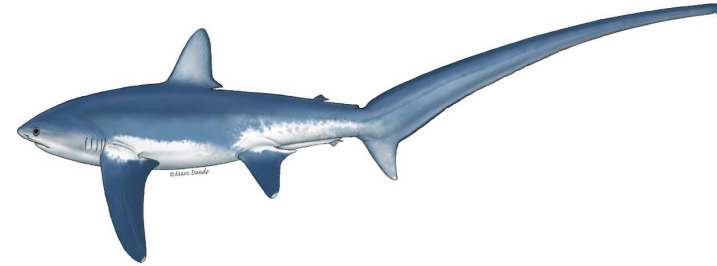
Shortfin mako



Blue shark



Common thresher shark



Dusky shark



Tunas



Bluefin tuna



Yellowfin tuna

Billfishes



White marlin

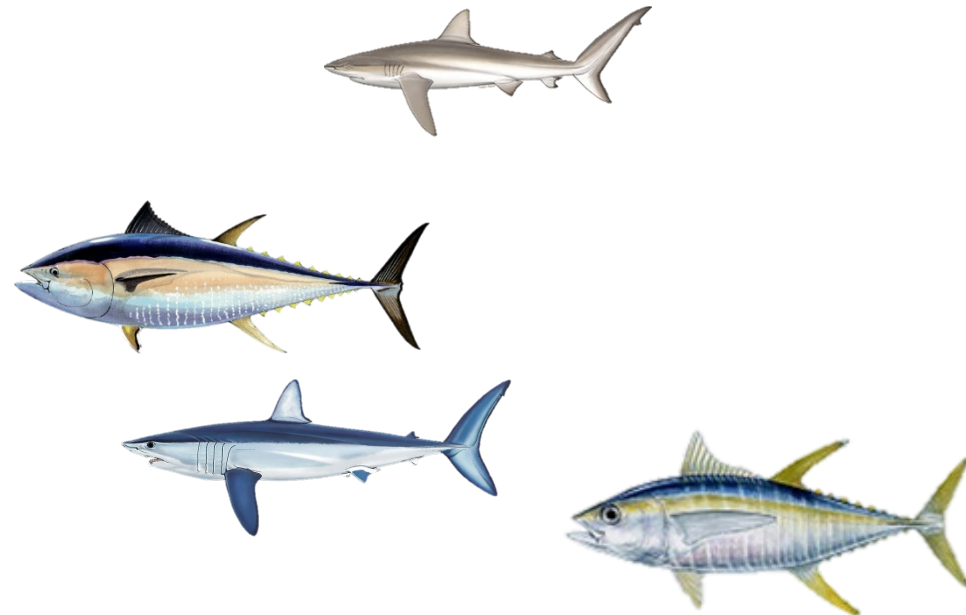
HMS in southern New England (SNE) and the WEA

SNE contains...

- EFH for 14 species
 - Migratory corridors
 - Foraging areas
 - Mating/pupping areas?

SNE supports...

- Large recreational fishery for HMS
- >7,000 permitted vessels in 2022*

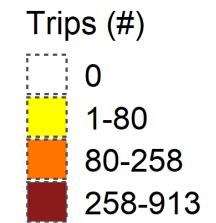
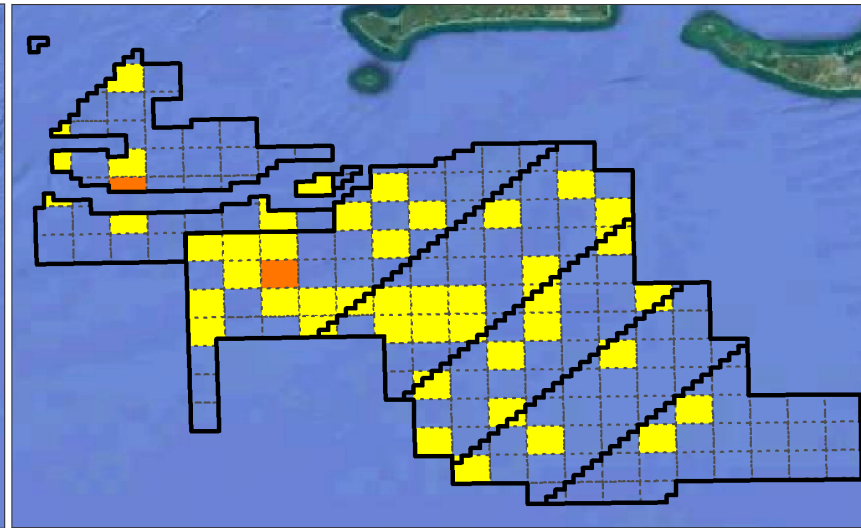
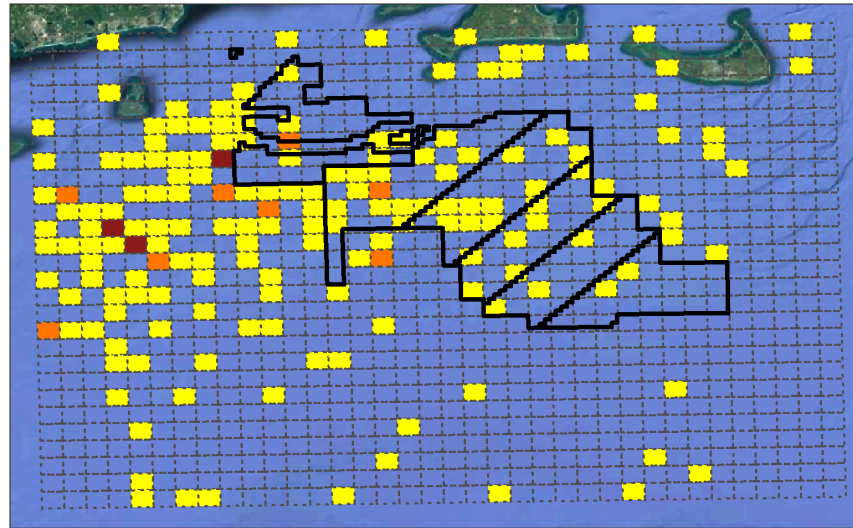


*Source: NOAA Fisheries 2022 HMS SAFE report

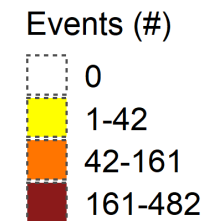
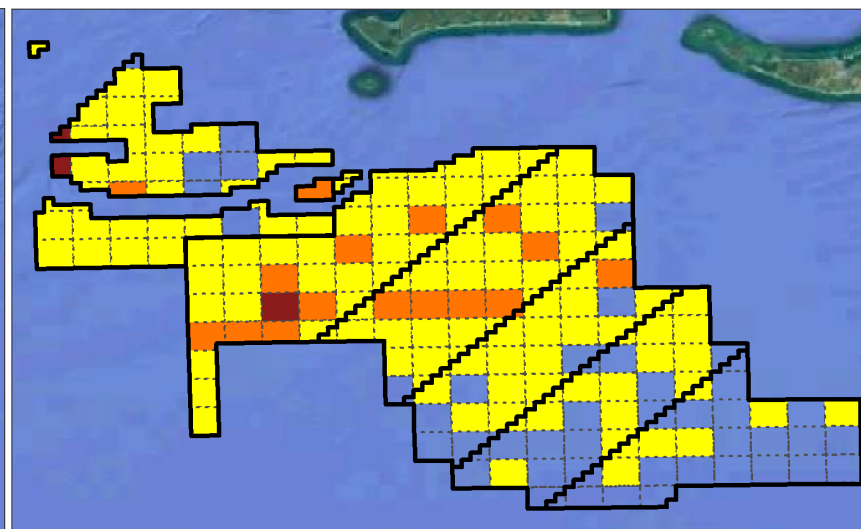
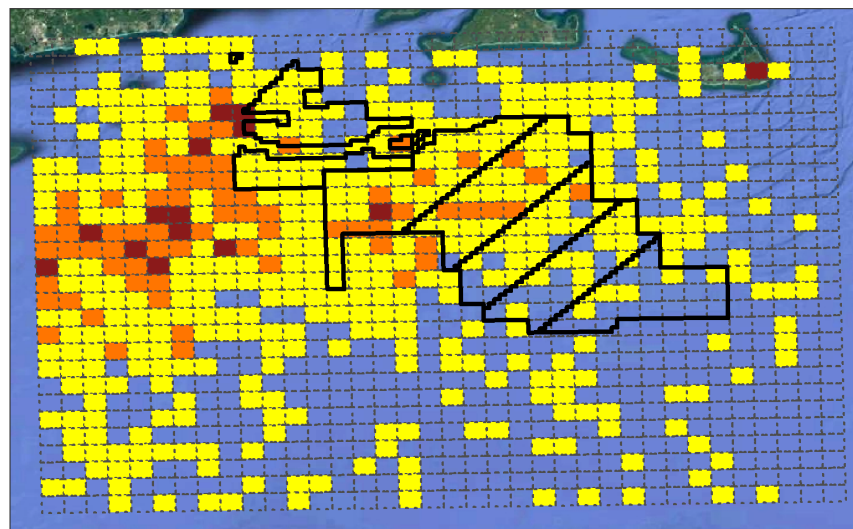
Recreational HMS effort in southern New England and the WEA

All highly migratory species

Large Pelagics Survey: Trip counts (2002 - 2019)

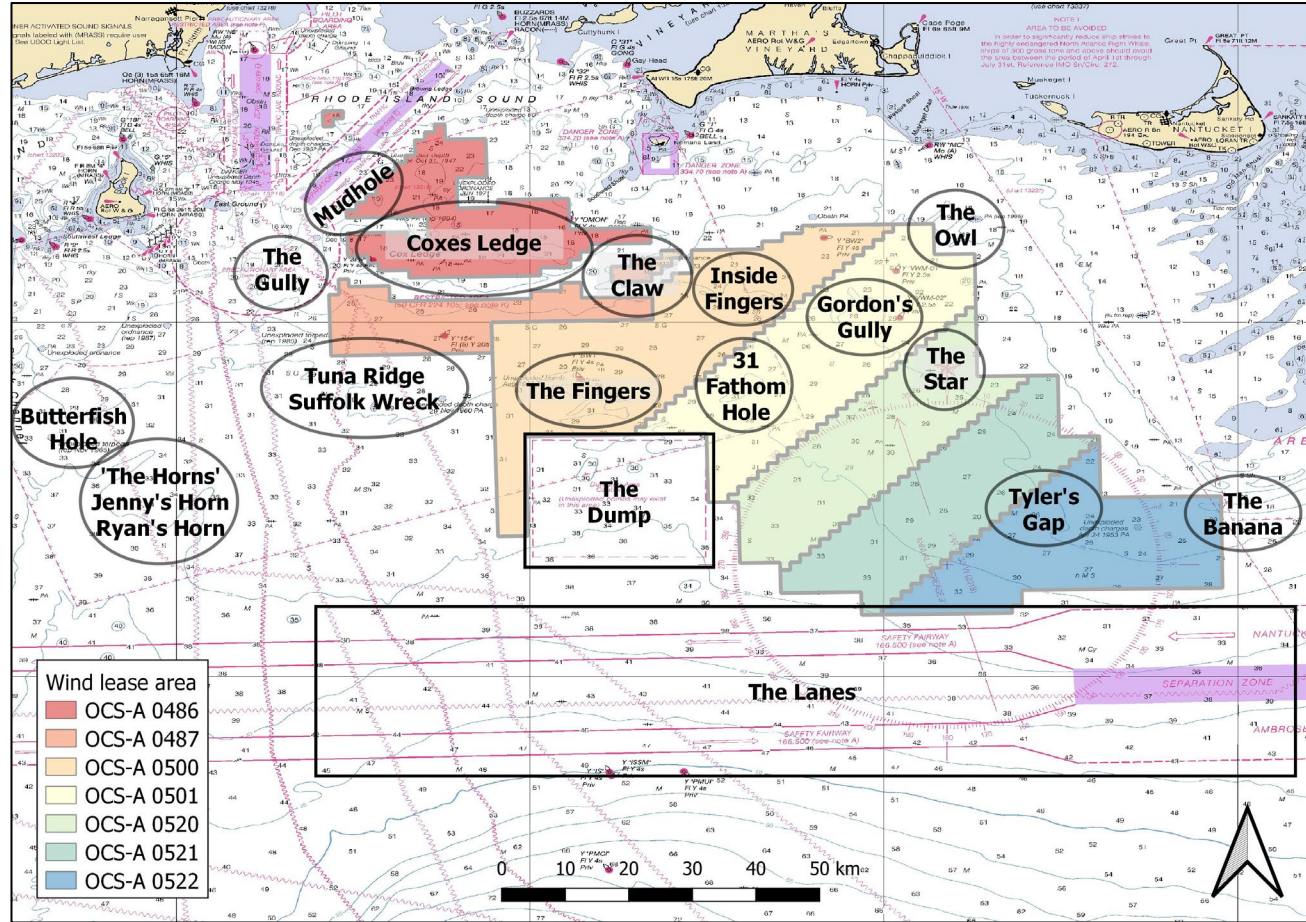
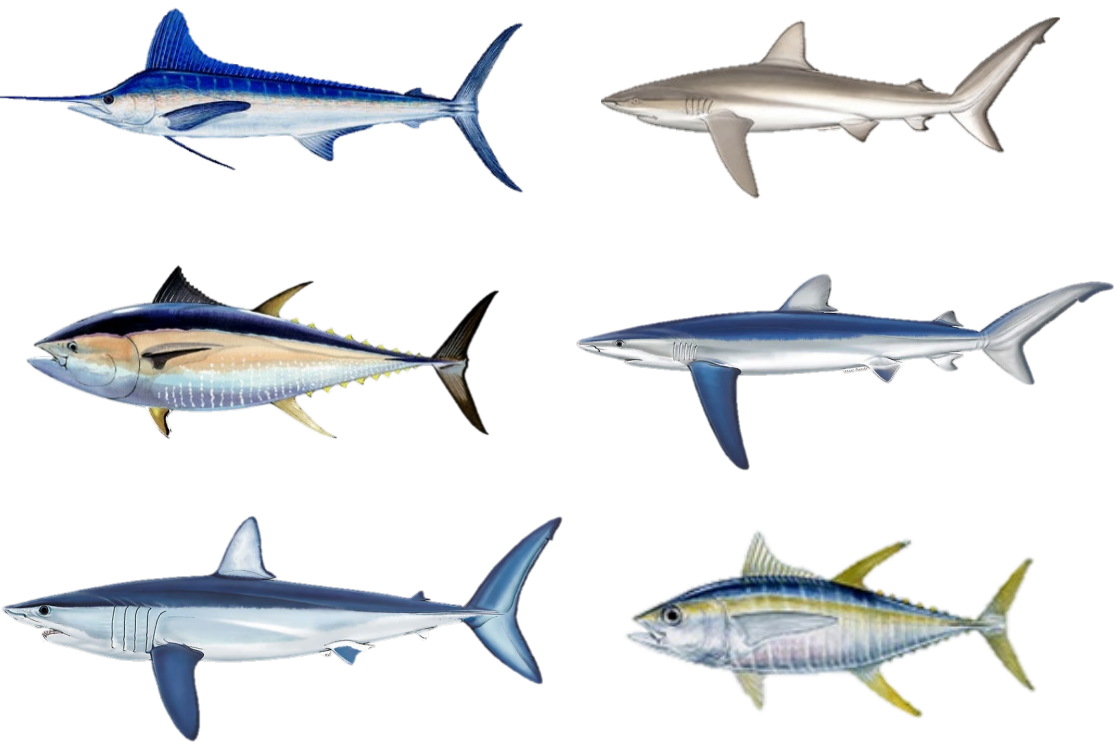


Conventional tagging data: Tagging events (2002 - 2019)



Study design, approach, and objectives

- Monitor species of greatest importance to the recreational HMS fishery: bluefin tuna, yellowfin tuna, white marlin, blue shark, shortfin mako, common thresher And a few others (dusky shark)
- Deploy tags both within and outside the WEA
- Monitor fish presence, persistence (residency), and movement inside WEA before, during, and after construction
- Monitor inter-annual use of WEA



Data sharing: Turning multiple projects into one

Goals

- 1) Aggregate data to permit regional analysis
- 2) Increase sample size
- 3) Allow more coordinated field work activities

- Process initiated September 2021
- Formal agreement signed September 2023
- Involves 6 developers, 6 contracts, 8 lease areas
- Minimum receiver monitoring requirement
- Participants must maintain active transmitters



Orsted



equinor



VINEYARD
WIND



VINEYARD
OFFSHORE

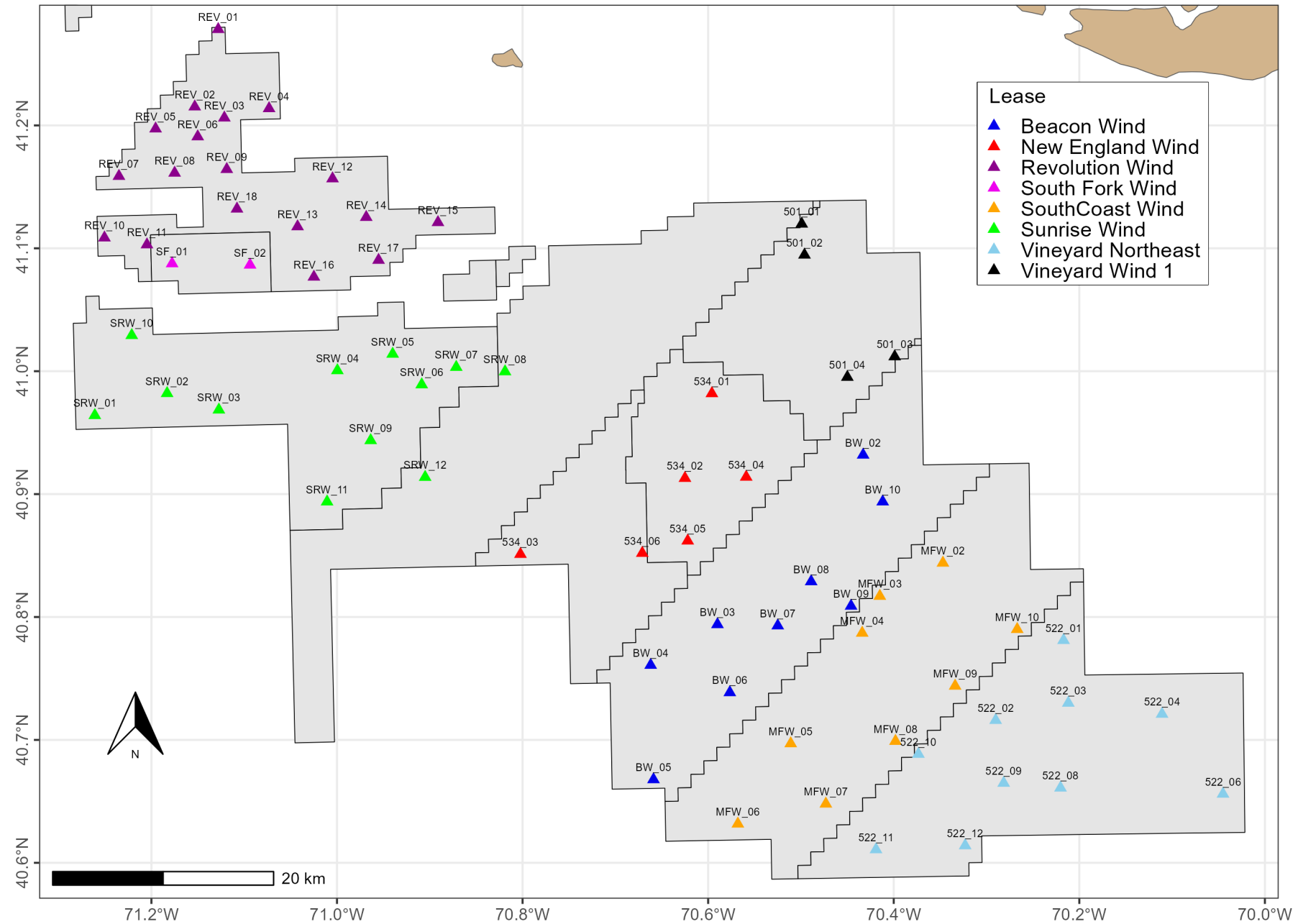


SOUTHCOAST
WIND

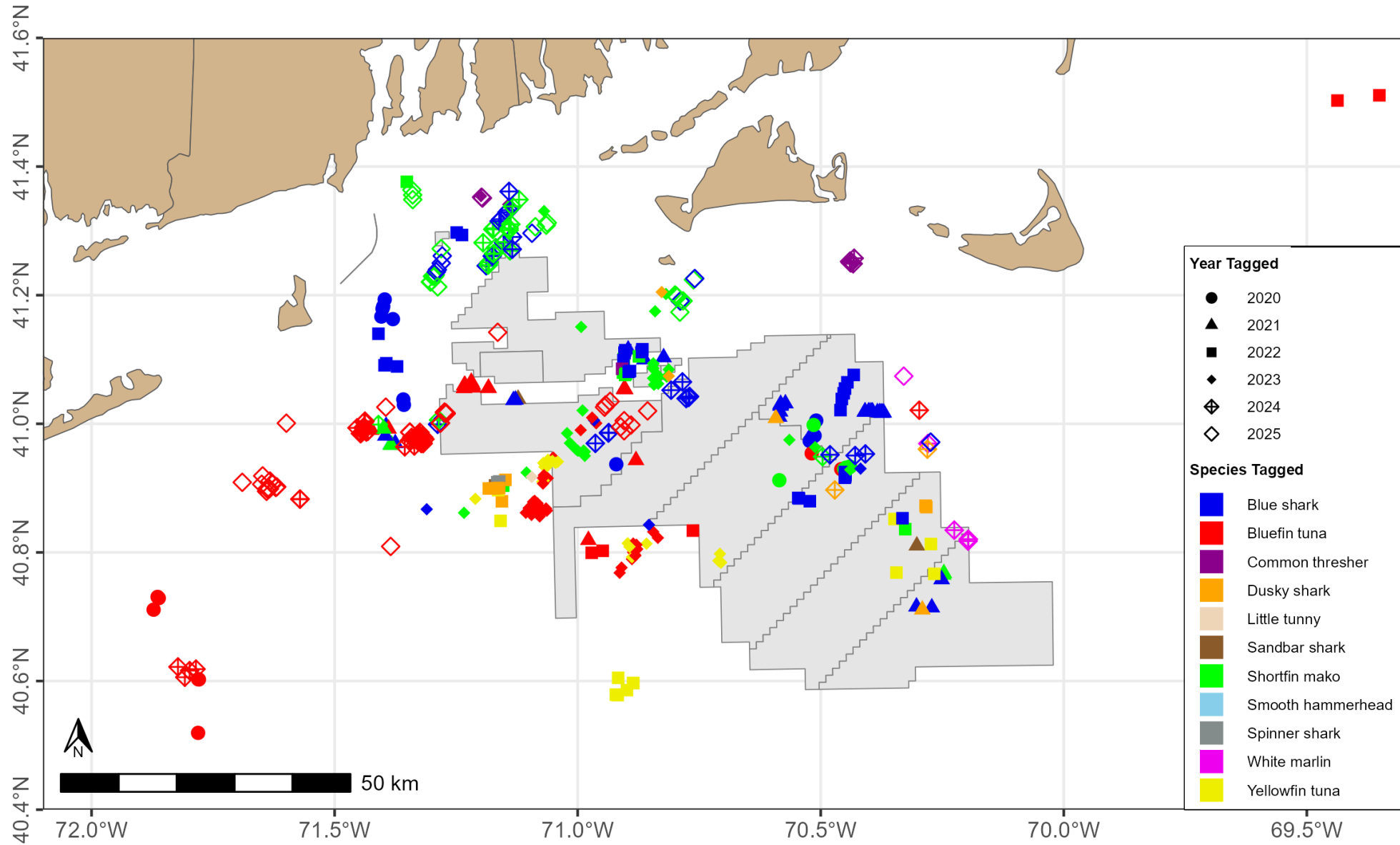
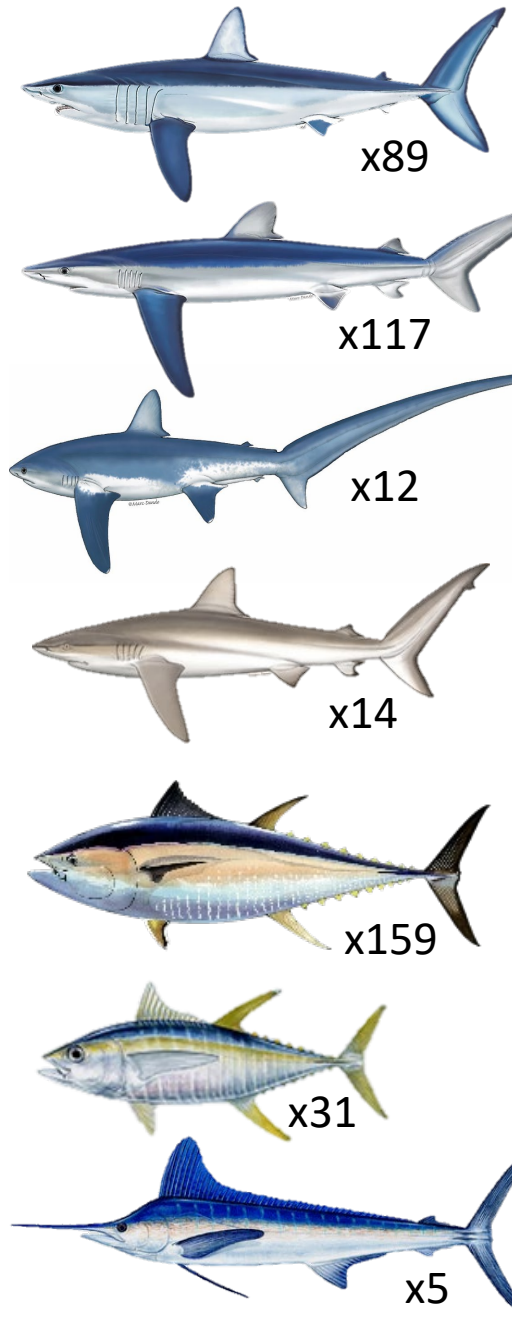


AVANGRID
RENEWABLES

Acoustic telemetry: Regional monitoring



Tag deployments: 2020 – 2025 (n=435)

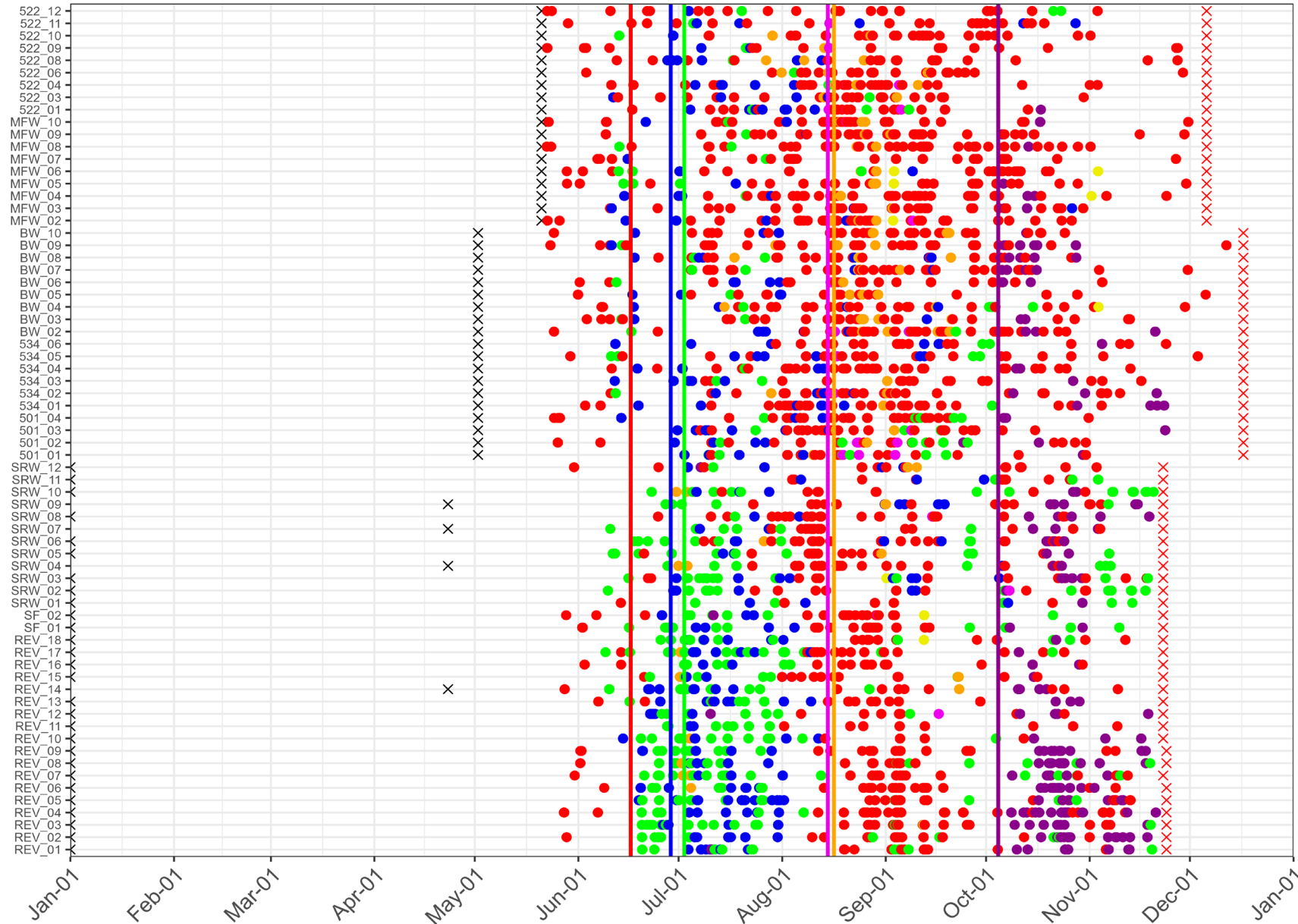


Data summary through December 2024

	Tagged	Detected	% detected
Blue shark	108	94	87%
Bluefin tuna	122	84	68%
Common thresher shark	11	10	91%
Dusky shark	14	13	93%
Shortfin mako	67	57	85%
White marlin	4	3	75%
Yellowfin tuna	31	18	58%
All species	357	279	78%

Species

- Blue shark
- Common thresher shark
- Shortfin mako
- Yellowfin tuna
- Bluefin tuna
- Dusky shark
- White marlin



Residence times

1 to 2,283 minutes (~38 hrs)

Means by species: 9 – 98 minutes

Blue shark, Bluefin tuna,
& Shortfin mako longest

Interesting tidbits

2 Blue sharks, 2 bluefin, & a mako
detected 4 yrs straight

4 bluefin, 3 dusky sharks, 2 makos, & 2
yellowfin detected 3 yrs straight

Data summary through December 2024 continued

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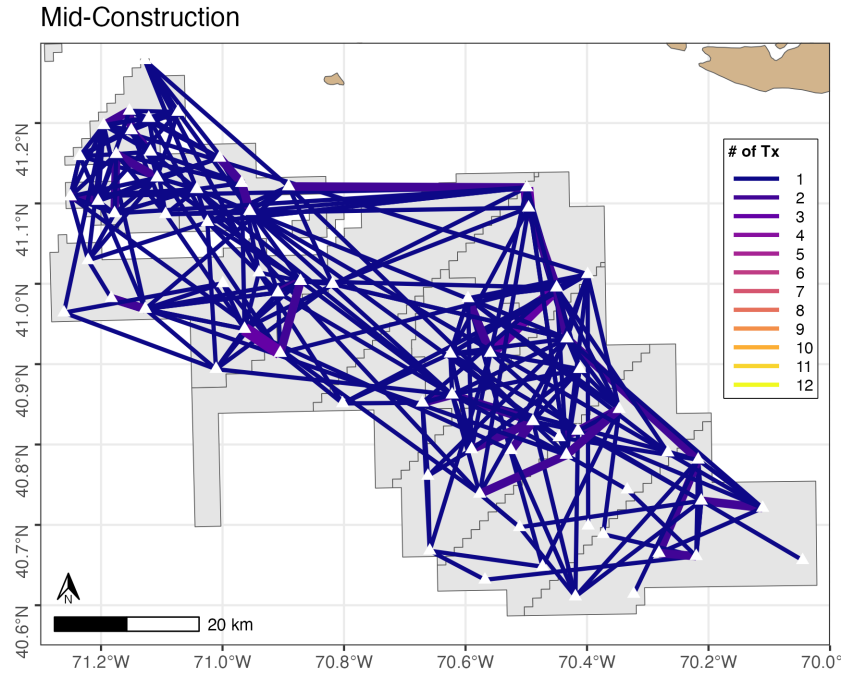
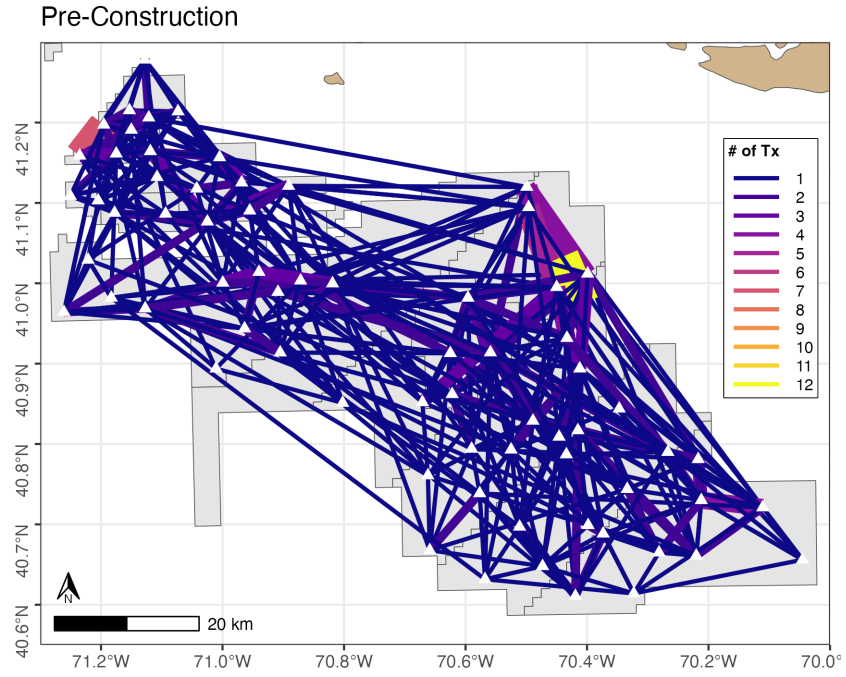
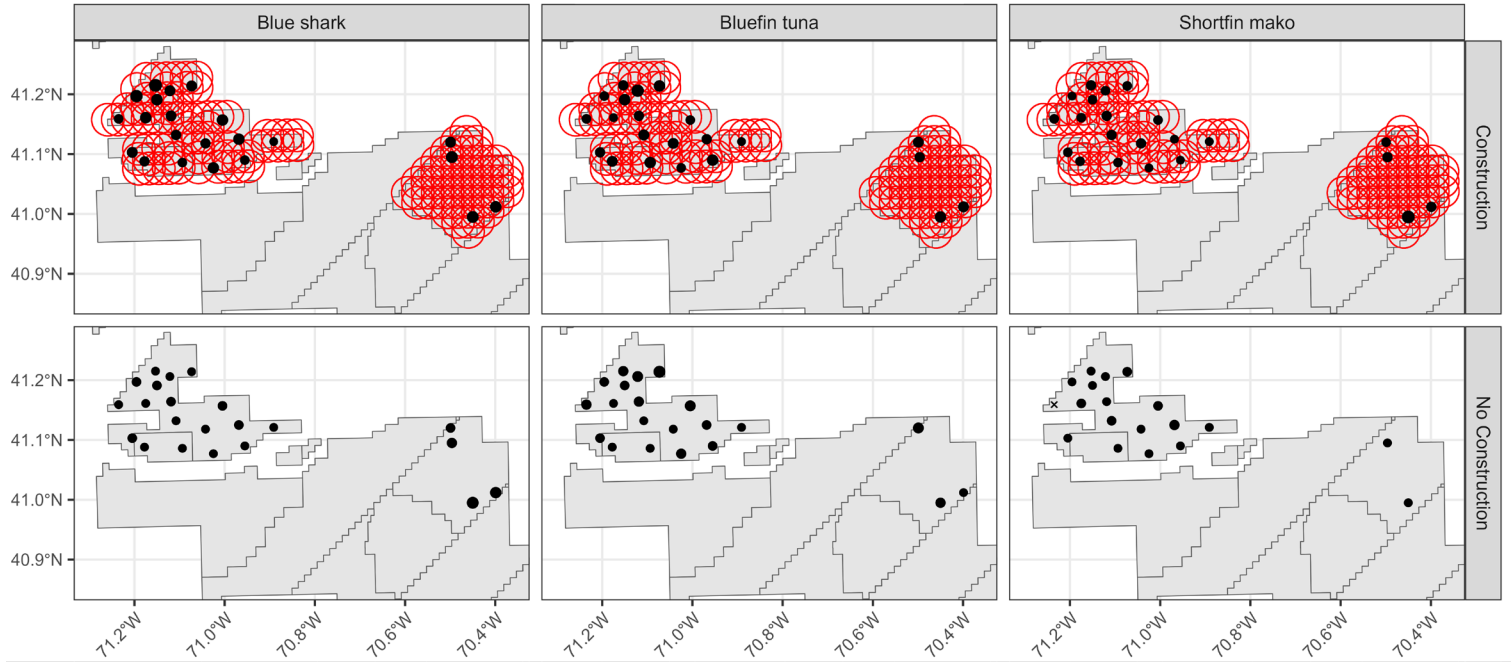
4 bluefin, 3 dusky sharks, 2 makos, & 2
yellowfin detected 3 yrs straight

Impact analysis: Approach

Compare residence index and movement networks between baseline (pre-construction) and post-construction

Residence Index (RI) × 0 ● 1 ● 2 ● 3 ● 4

— Construction Impact Radius (3km)

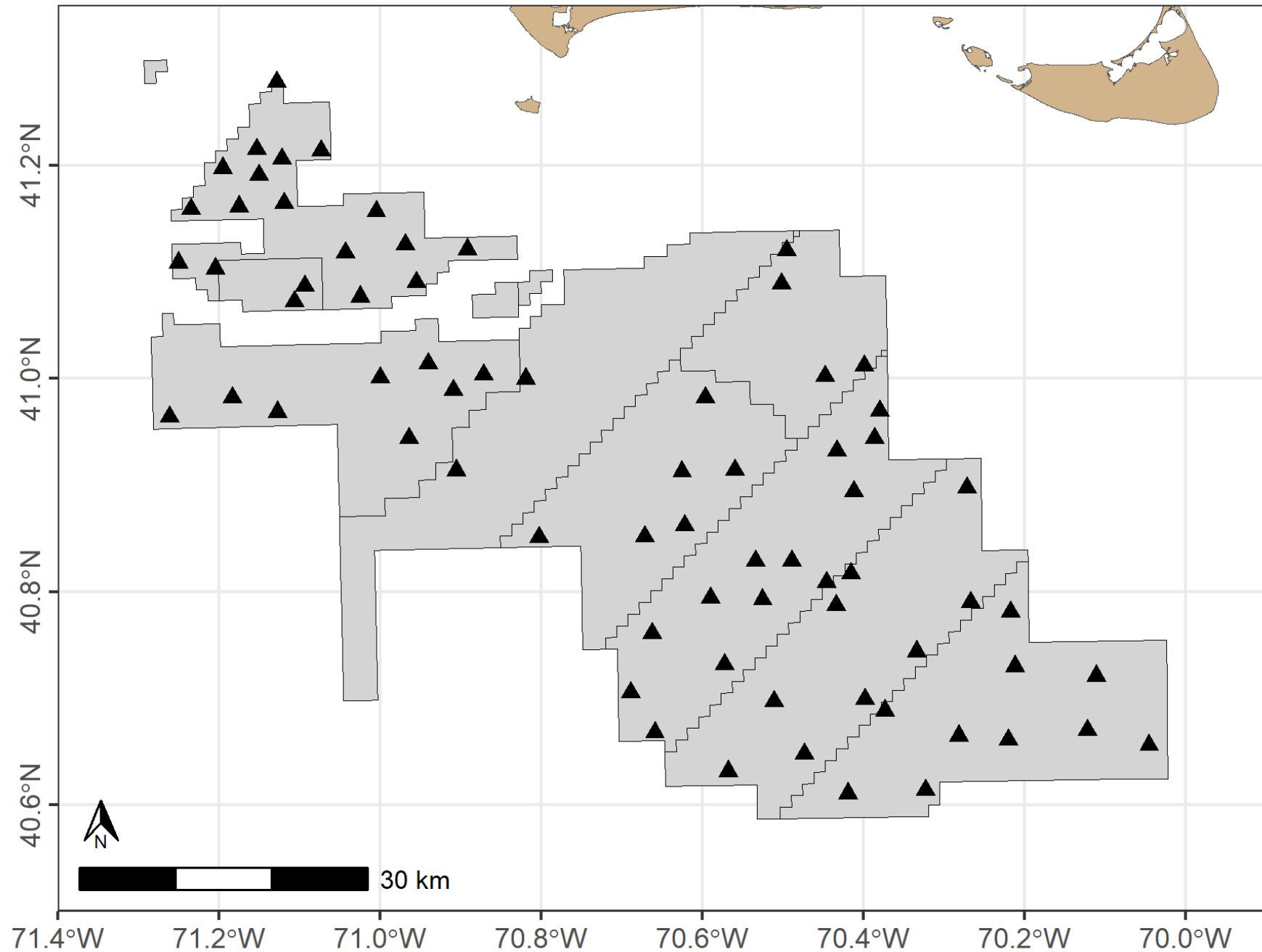


Bluefin Tuna 2022-05-31



12 fish tracked

Construction activity:
None



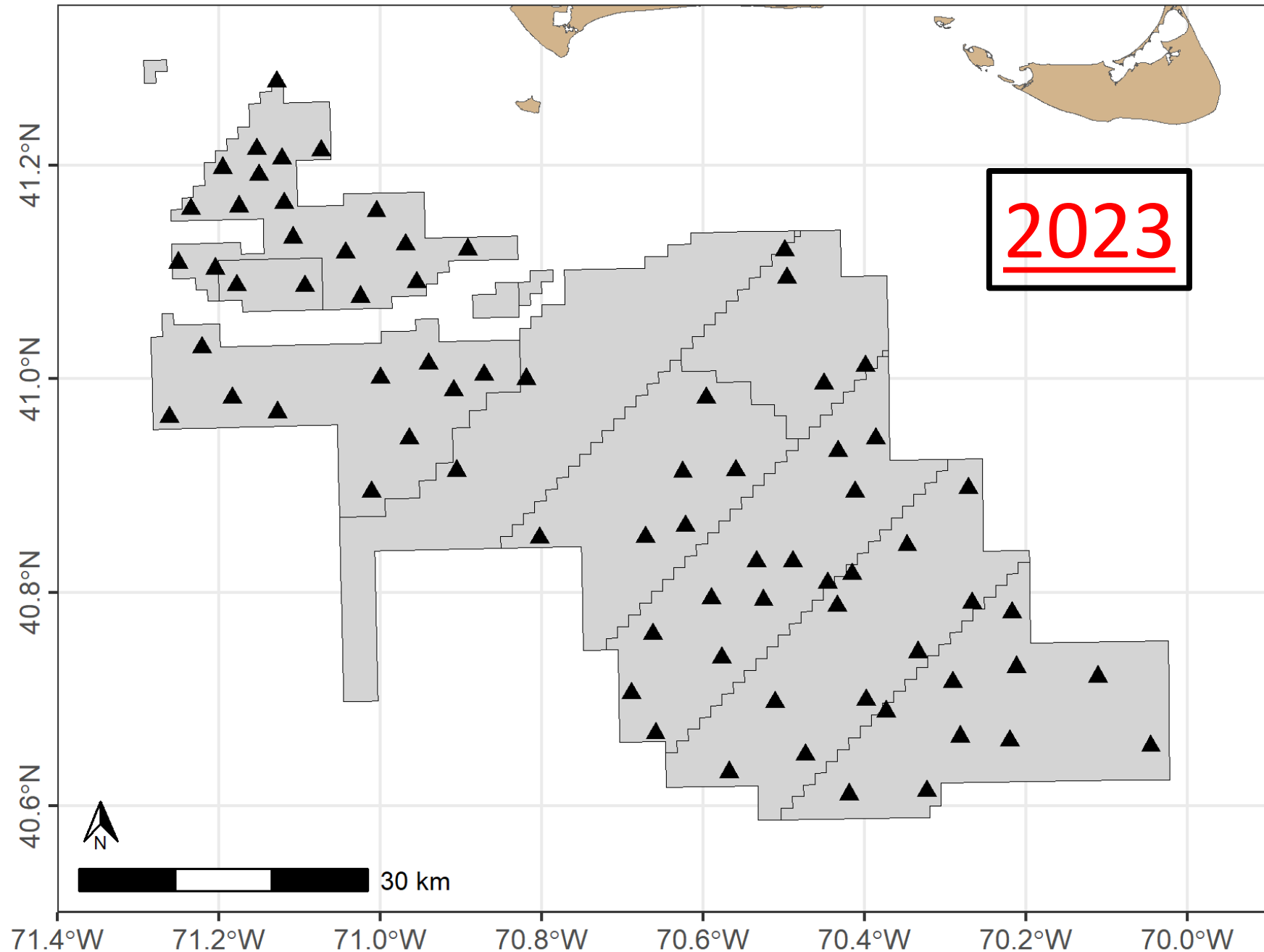


40 fish tracked

Construction activity:
South Fork
June to September

Vineyard Wind 1
May to December

Bluefin Tuna 2023-05-31





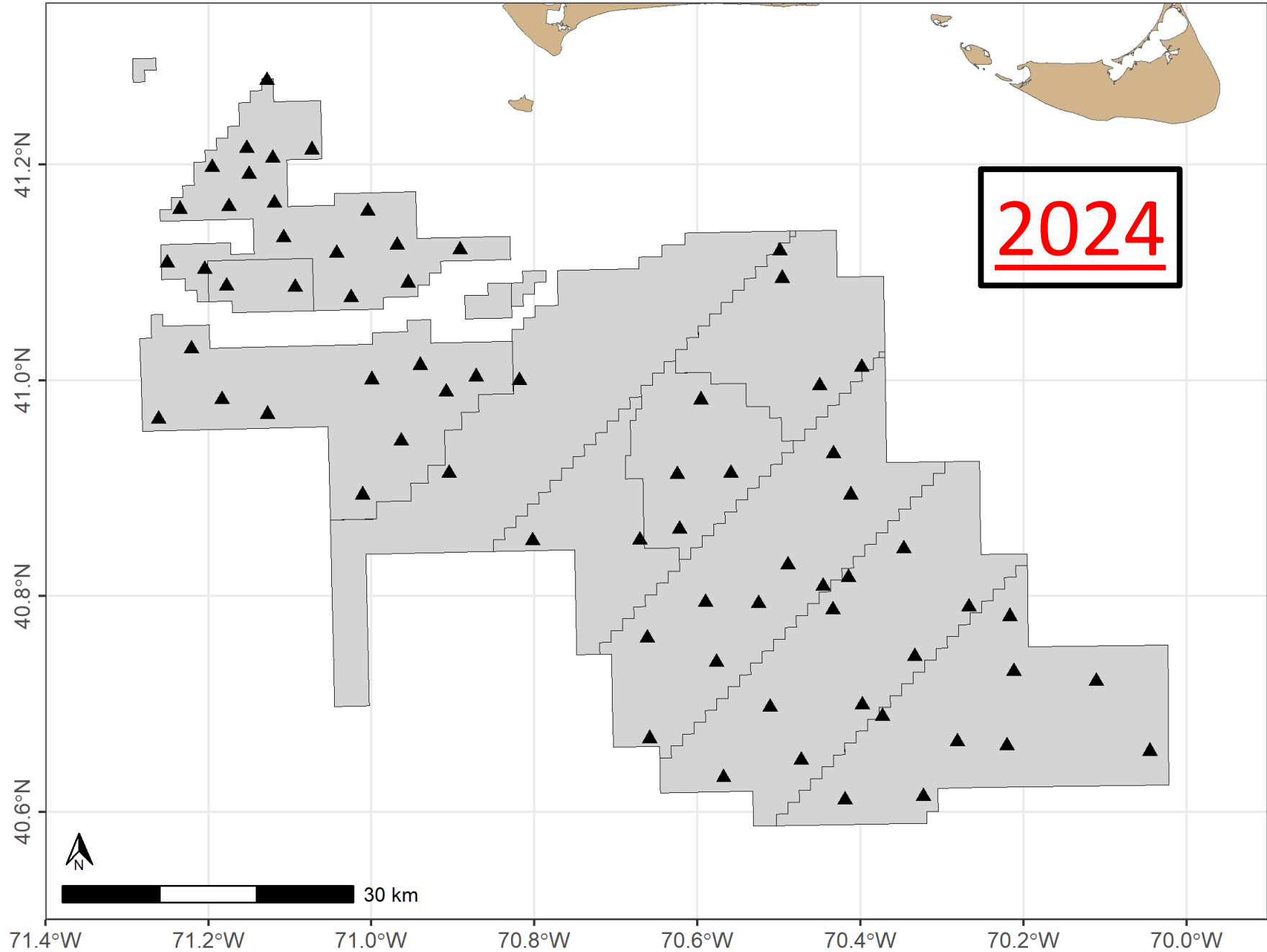
40 fish tracked

Construction activity:
Revolution Wind
June to September

Vineyard Wind 1
October to December

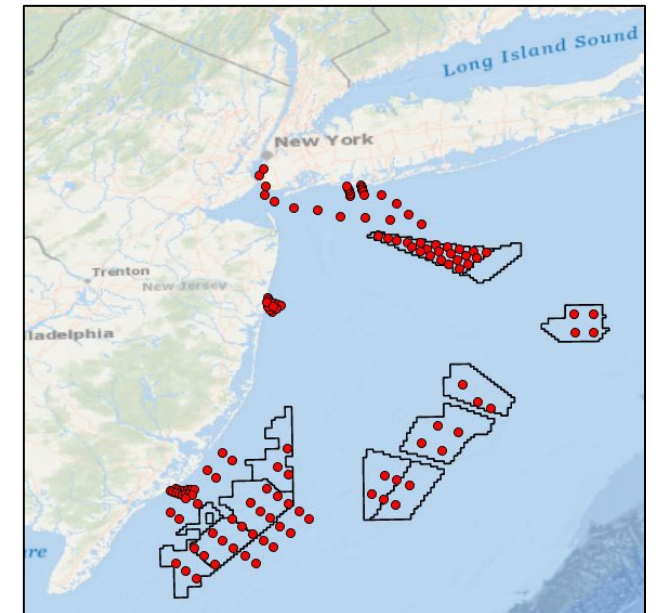
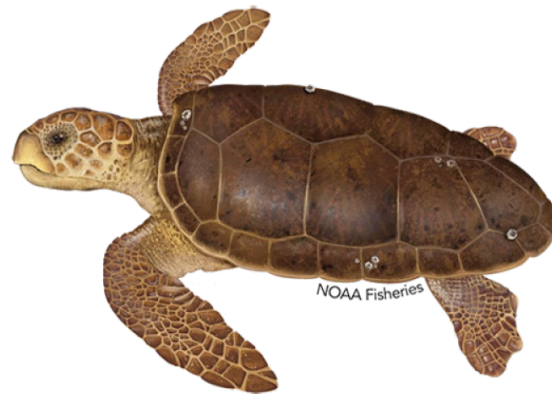
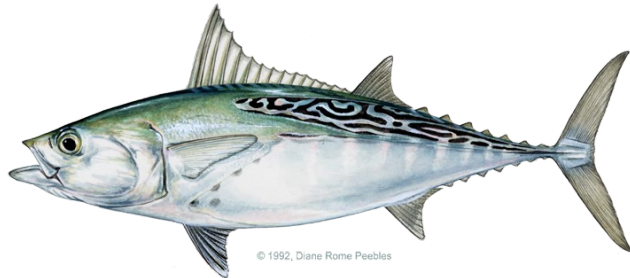
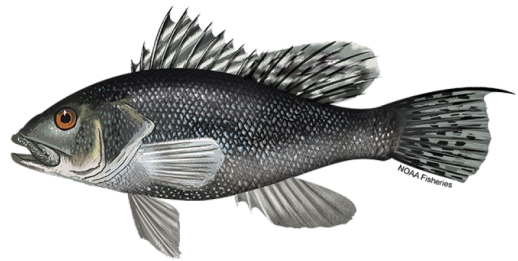
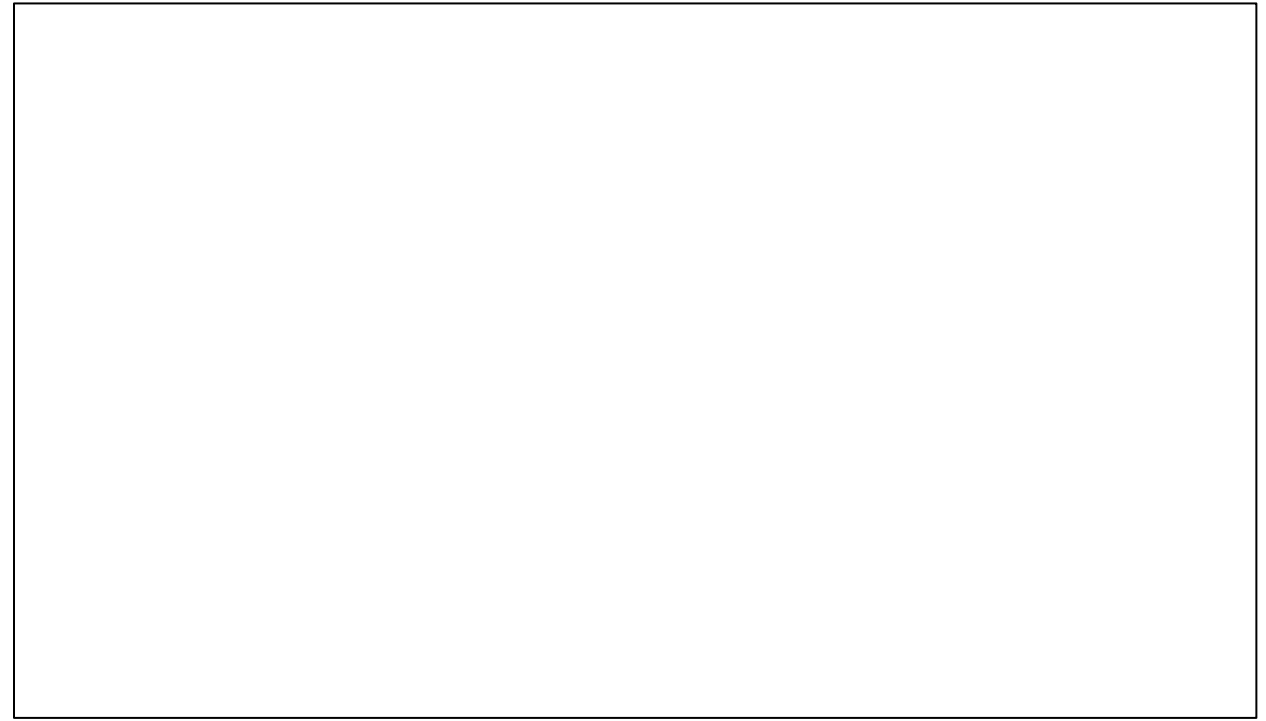
Operations activity:
South Fork
May to December

Bluefin tuna 2024-05-14



Future work

- Continue to deploy receiver array (2026, 2027?)
- Deploy more transmitters (2026, 2027?)
- Expand data analysis to include
 - All data through 2025
 - New analyses (ROSA award: spatial modelling)
- Expand scope of analysis
 - NJRMI award: effectiveness of telemetry
 - Include new species in analysis



Many thanks to many

Captains

- Greg Mataronas (Cailyn & Maren)
- Mark and Sean Leach (Sea Holly III, Jessica Beth)
- Mohawk Bolin (Rock n' Roll)
- Rob Taylor (Reel EZ)
- Mike Littlefield (ArchAngel)
- Tyler Macallister (Bottom Line)
- Willy Hatch (Machaca)
- Diego Bernal (Toro)

Developers

- Crista Bank (Vineyard Wind)
- Travis Lowery (Vineyard Offshore)
- Caela Howard (Avangrid)
- Chris Sarro, Greg DeCelles (Orsted)
- Elizabeth Marchetti (Equinor)
- Joel Southall, Sam Asci (Mayflower/SouthCoast)

