



Building a diverse, large-scale marine research program to inform responsible offshore wind development in New Jersey

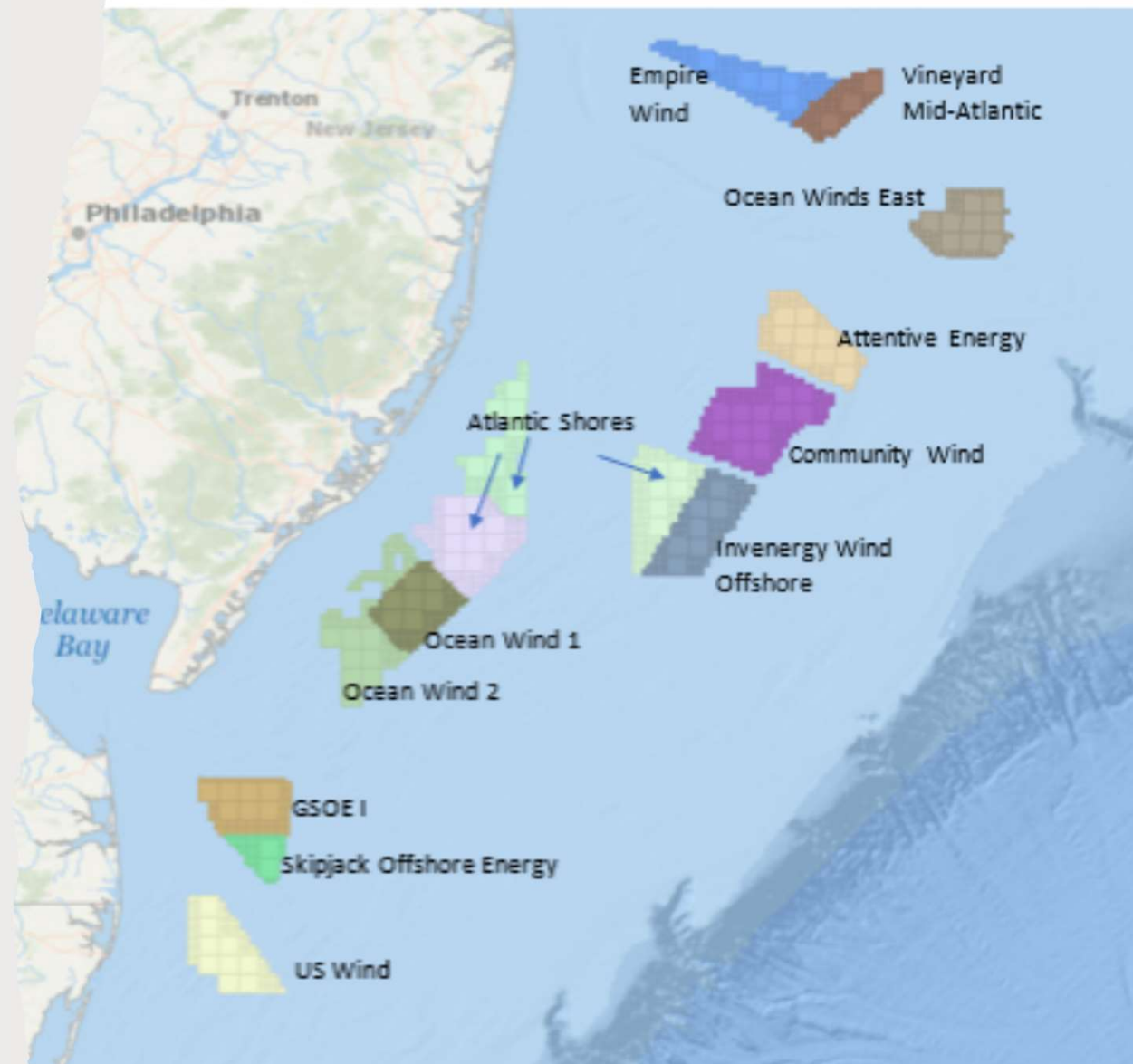
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Marine Resources Administration



New Jersey's Offshore Wind Goals

- The state's offshore wind target is 11 GW by 2040.
- Three projects in development with a third solicitation in review.
- Siting was well planned with research beginning pre-2007.
- Goal is effective mitigation (avoidance, minimization, address/offset) of impacts to marine resources.





Meeting New Jersey's Offshore Wind Goals

The Board of Public Utilities

- Lead agency for offshore wind
- Coordinates the ORECs (power purchase agreements)
- Coordinates the Energy Master Plan and the Offshore Wind Strategic Plan

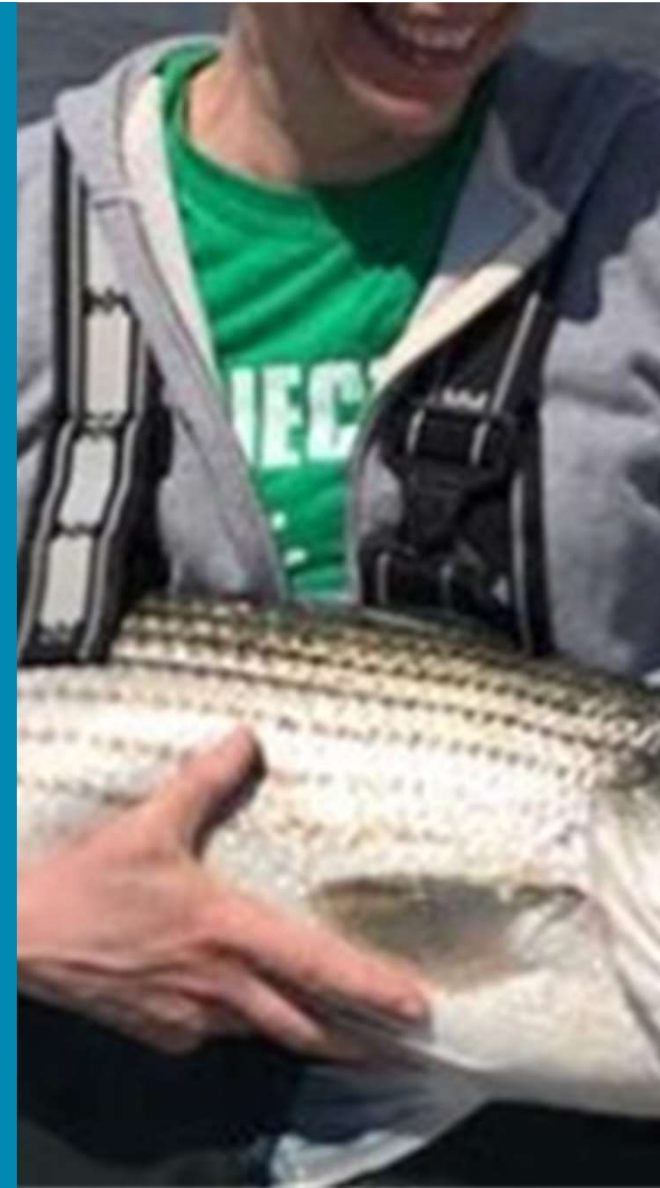
The Department of Environmental Protection

- Permits all work in the state, including state waters
- Cooperates with BOEM for NEPA (Federal) permitting
- Review for Federal Consistency
- Advises the BPU on above



The science we need: goals of research and monitoring (whether project specific or regional studies...)

- Hypothesis driven.
- Dependent variable is potential response related to offshore wind (may be environmental, individual, population, community, etc.).
- Identify changes if they occur and potential causes.
- Inform mitigation.
- Replace data loss for potentially-impacted surveys.





New Jersey's Offshore Wind Research & Monitoring Initiative (RMI)

- Research and monitoring of marine and coastal resources during development, construction, operation and decommissioning of offshore wind.
- \$10K/MW for research and monitoring on wildlife and fisheries.
- Research priorities developed in house and stakeholdered.
- Projects developed in collaboration with subject matter experts.
- Project funding awarded through contracts with state universities, NJ Sea Grant Consortium members, and RFPs.

Initial Research Priorities

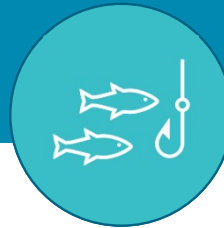
- Information Sharing
- Environmental Change
- Commercial and Recreational Fisheries
- Birds and Bats
- Marine Mammals and Turtles
- Benthos
- Fishes and Invertebrates



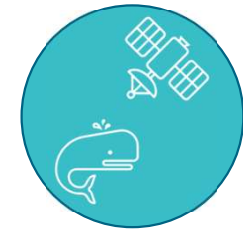
Data standardization, processing, analysis, housing, and QA/QC



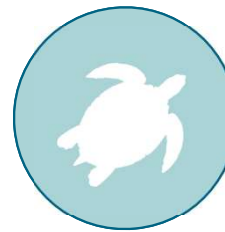
Impacts on seafloor, light conditions, and ocean stratification



Potential effects on recreational fisheries



Evaluate relative threat of mortality/injury to whales from vessel strike



Sea turtle movement, distributions, and habitat use



Baseline estimates of marine mammals



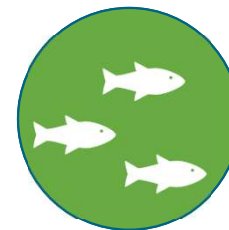
Identify & evaluate valuable bottom habitats and species



Potential effects on mobile bottom gear fisheries



Baseline population-level distribution information for birds and bats



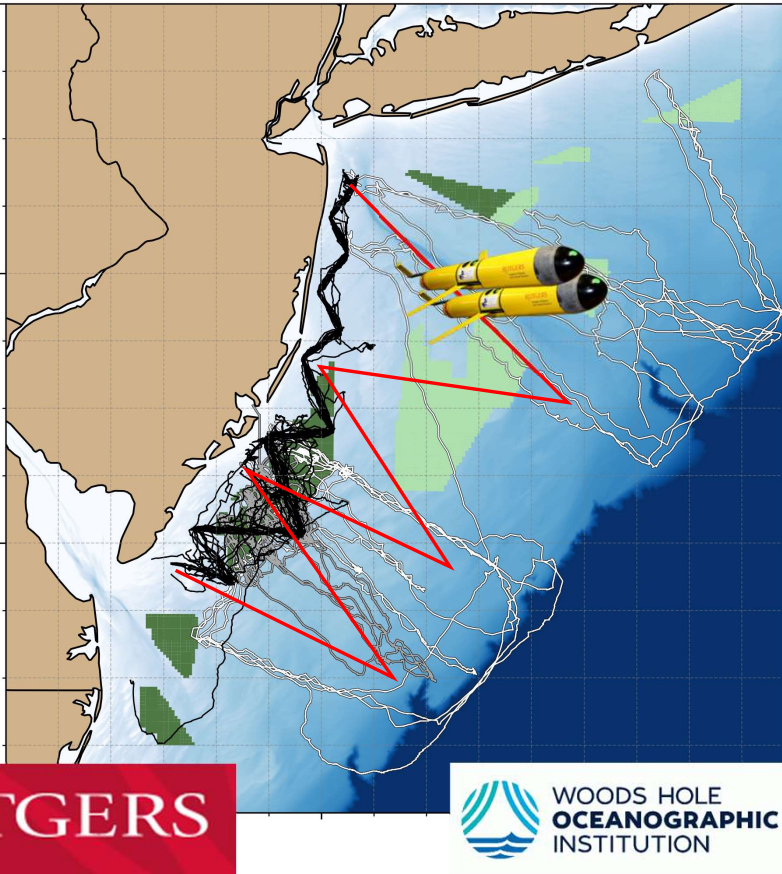
Effects of OSW on various life stages of fish & invertebrates



Adapt DEP trawl survey

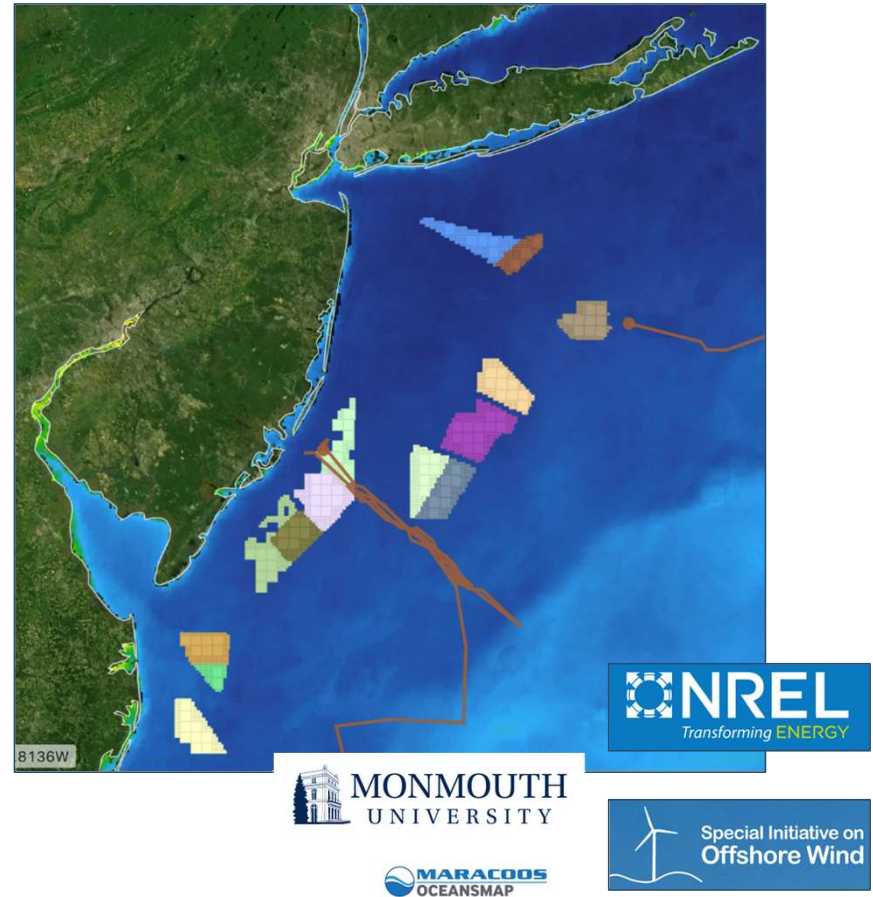
Initial RMI Projects

Gliders for oceanographic and ecological surveys of the continental shelf off the coast of New Jersey
Grace Saba, Josh Kohut and Mark Baumgartner



Options for a regional environmental and ecological monitoring system

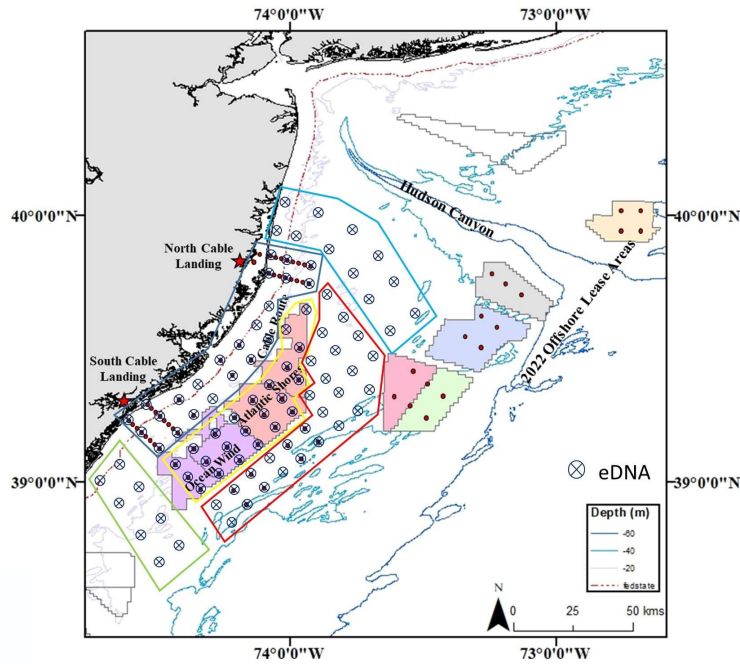
Josh Kohut, Mike Crowley, Doug Zemeckis, Tony MacDonald, Tom Herrington, Rebecca Green, Chris Hein, and Kris Ohleth



Initial RMI Projects

Marine eDNA for monitoring protected, prohibited, and commercially/recreationally important species

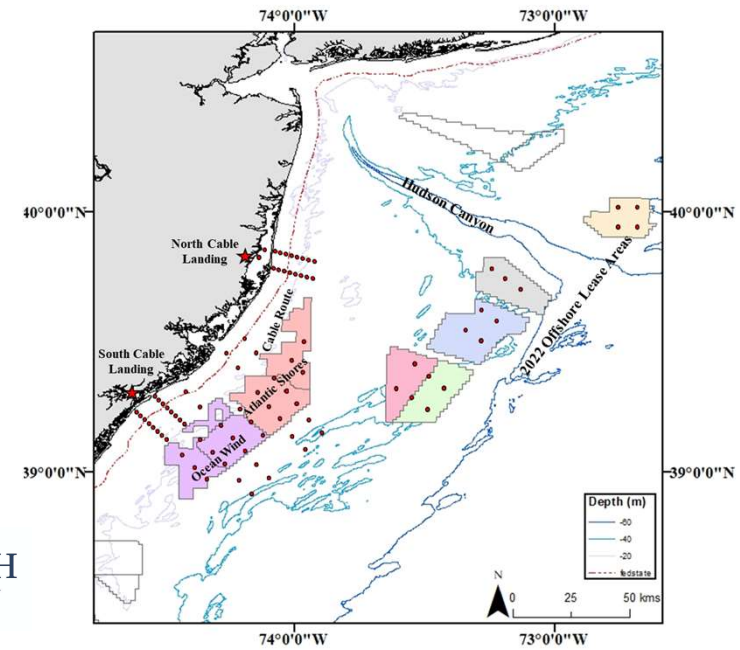
Jason Adolf, Keith Dunton, and Shannon O'Leary



MONMOUTH UNIVERSITY

Acoustic telemetry for monitoring protected, prohibited, and commercially/recreationally important species

Keith Dunton, Jason Adolf, Jeff Kneebone, Michael Frisk



Stony Brook University

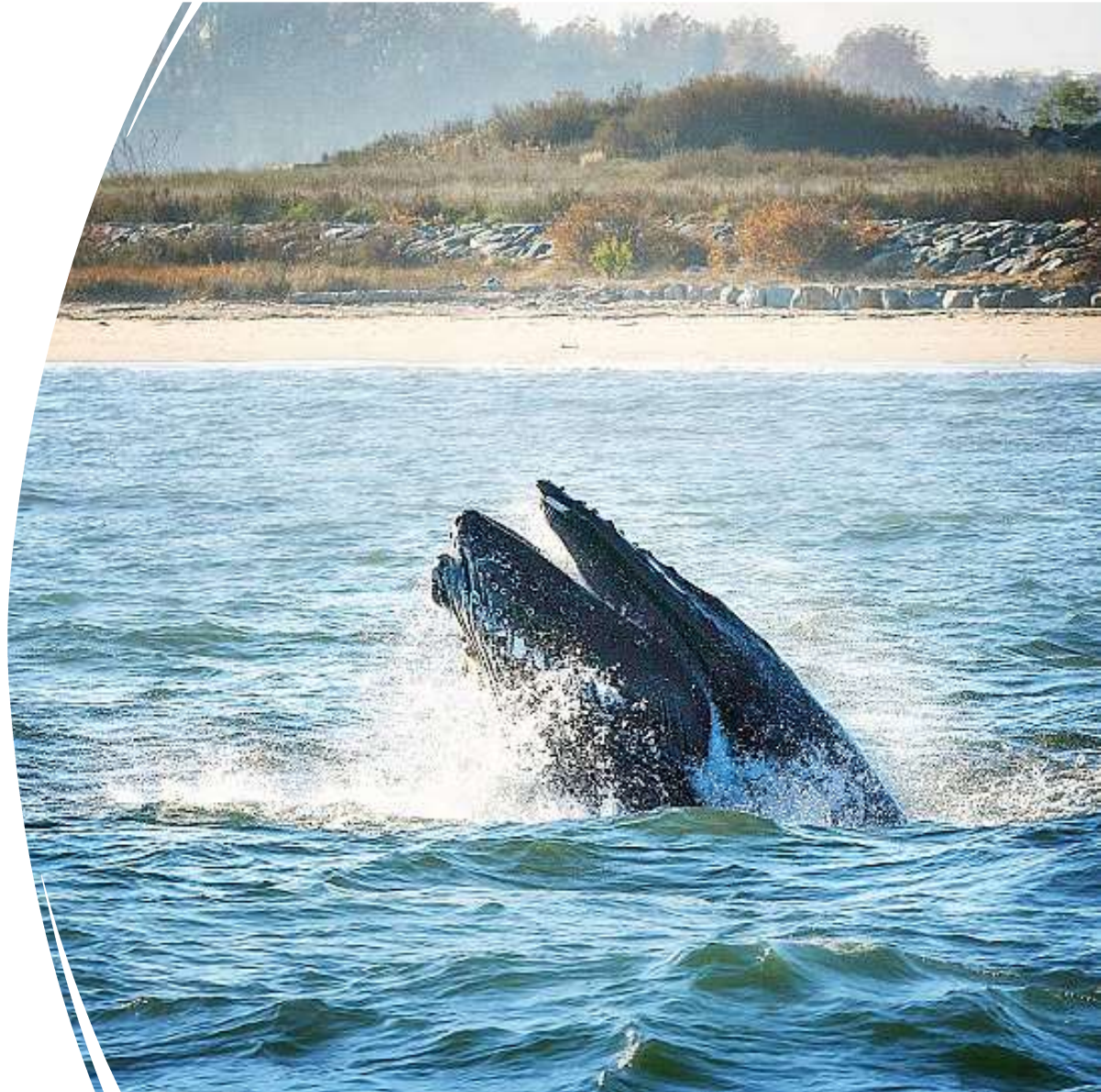
Our successes come from collaboration.

- Our fisheries and environmental stakeholders
- NJ Board of Public Utilities
- ROSA, Reneé Reilly
- NYSERDA
- RWSC
- NOAA GARFO and NEFSC
- BOEM
- Our amazing PIs
- Developers who work with us
- Interstate partners (Thx to Julia Livermore in RI, MD, NY, DE, ME, MA, CT, VA,...)



Offshore Wind Brings Opportunities

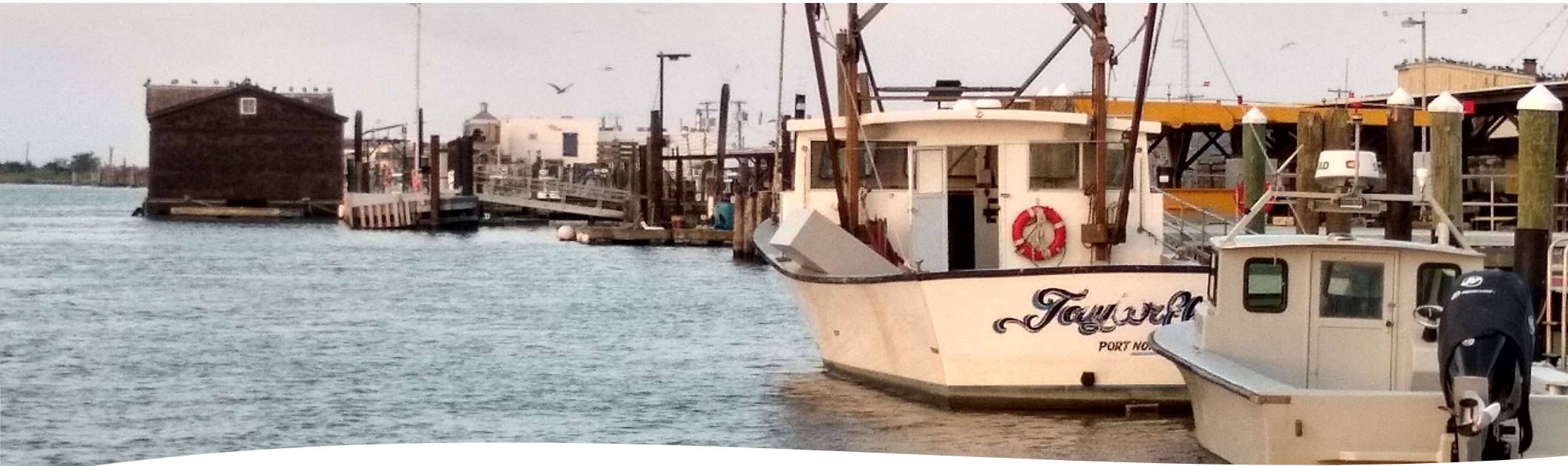
- Broad scale collaboration and making new connections.
- Regional research on wildlife and fisheries projects.
- Research funding.
- Learning every day.



Research Funding Opportunities

A row of white offshore wind turbines in a blue ocean under a clear blue sky. The turbines are arranged in a line, receding into the distance. The sky is a deep, clear blue, and the water is a darker blue. The overall scene is clean and modern, representing renewable energy.

- NOWRDC has awarded **\$41M** to 52 projects.
- NJRMI **\$26M** for Solicitation 2, as much as **\$40M** for Solicitation 3.
- By 2022, BOEM had awarded **\$13M** on fisheries research; environmental program requested **\$86.4M**.
- NYSERDA's solicitations 2 and 3 **\$70M** plus **\$2-2.5M** every other year.
- DOE awarded **\$13.5M** in 2021 for environmental monitoring.



Challenges

- Complex and new for US
- Scope
- Effective collaboration is hard
- Engaging problem solvers
- Accessibility of science
- Misinformation and communicating science
- Research capacity
- Urgency

Next Steps



Be adaptive throughout the Initiative to reflect that different or expanded research and monitoring needs may arise to accommodate both unforeseen circumstances and new scientific information as future offshore wind projects are developed.



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Continue to facilitate coordination (RWSC, ROSA, Developers)

Continued Review of Priorities

- *As priorities are addressed*
- *As science matures*

3rd party process review

Beyond pre-construction

Innovations in mitigation

We couldn't do it without...

Some of NJDEP's
Offshore Wind Team

Katrina Angarone
Linda Barry
Megan Brunatti
Jeff Brust
Joe Cimino
Nina Colagiovanni
Lindsey Davis
Heather Genievich
Kevin Hassell
Matt Heyl
Elizabeth Lange
Caitlin McGarigal
Katie Nolan
Nick Procopio
Janet Stewart
Scott Stueber
Molly VanWieren
Alissa Wilson



Special Thanks to

Our fisheries and environmental
stakeholders
The NJ Board of Public Utilities
ROSA
Reneé Reilly
NYSERDA
RWSC
NOAA GARFO and NEFSC
BOEM
Our amazing PIs
Developers who work with us