



New Jersey's Offshore Wind Research and Monitoring Initiative (RMI): Leveraging Projects for Regional Monitoring

Caitlin McGarigal, Colleen Brust, Heather Genievich ... *and many more*
New Jersey Department of Environmental Protection





New Jersey Offshore Wind Research and Monitoring Initiative



Joint
Venture

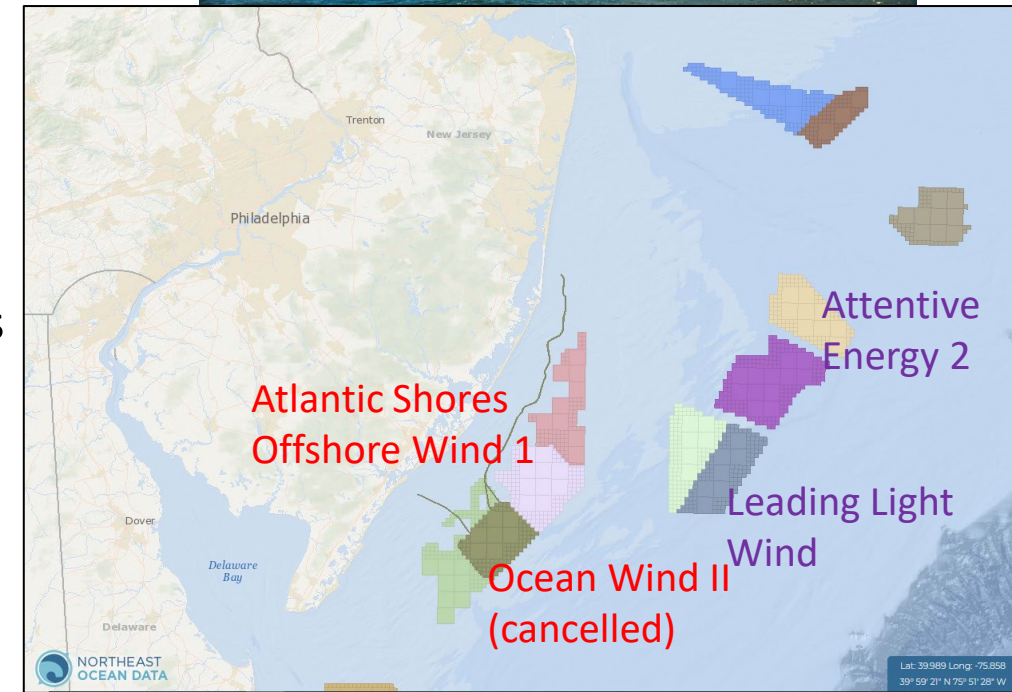


Mission Statement

The RMI addresses the need for regional research and monitoring of marine and coastal resources during offshore wind development, construction, operation, and decommissioning.

Rigorous, hypothesis-driven approach to protect & manage resources

NJ OSW Solicitation Guidance includes “RMI Fee” \$10,000 / MW
Solicitation 2 (2022), **Solicitation 3 (2024)**, **Solicitation 4 (2024) TBD**

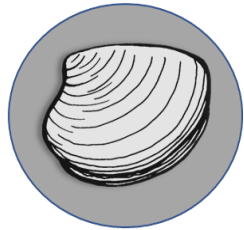




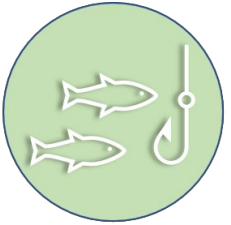
New Jersey's Offshore Wind Research and Monitoring Initiative

>\$18 Million Awarded to Current Projects

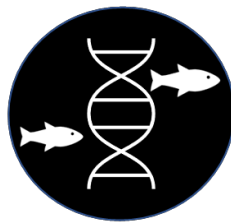
Institutional Support



Novel Surfclam Dredge & Carbonate Chemistry



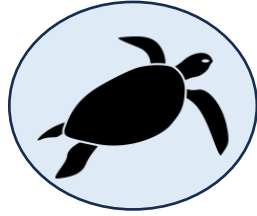
Socioeconomics of Rec. Fisheries



Fish Community Assessment Using eDNA



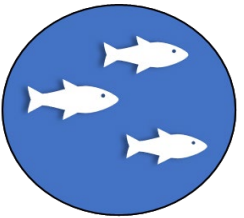
Motus Network Expansion



Turtle tagging & Biological Assessment



EcoGlider Environmental Monitoring (extended)



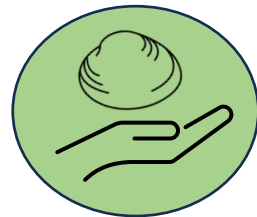
Acoustic Fish Telemetry



Harbor Seal Tracking & Health Assessment



Whale Satellite Tagging



Surfclam Fishery Enhancement



Multi-focus RFP \$4.75 M (open now)



OSW Structures as Monitoring Platforms



Near Real-Time Passive Acoustic Monitoring



Turbine Foundations & Cold Pool



Cetacean Aerial Survey



Archival Passive Acoustic Monitoring

RWSC

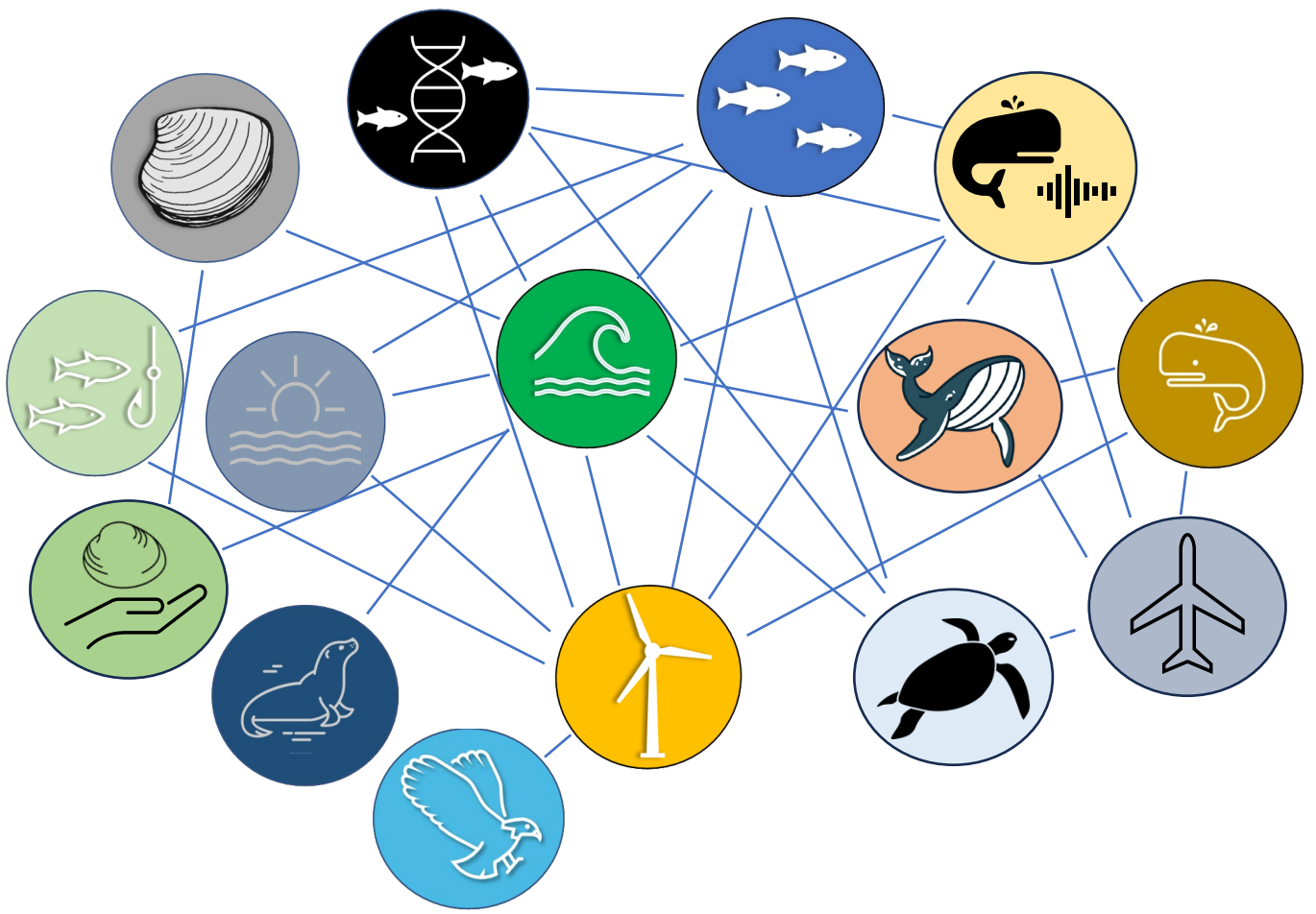
Regional Wildlife Science Collaborative for Offshore Wind



Responsible Offshore Science Alliance

New Jersey Offshore Wind Research and Monitoring Initiative

Project Data Sharing & Connectivity



*Annual RMI meeting facilitates communication

Research Community Platforms

- MARCO** MID-ATLANTIC REGIONAL COUNCIL ON THE OCEAN
- ATN** ANIMAL TELEMETRY NETWORK
- IOOS** Integrated Ocean Observing System
- MARACOOS** Ocean Information for a Changing World
- NOAA FISHERIES** Northeast Fisheries Science Center
- Robots4Whales**
- Motus** Wildlife Tracking System
- The Atlantic Cooperative Telemetry Network**
- NORR** National Centers for Environmental Information
- ROSA**
- WHALEMAP**
- RWSC** Regional Wildlife Science Collaborative for Offshore Wind
- NARWC** THE NORTH ATLANTIC RIGHT WHALE CONSORTIUM
- Passive Acoustic Cetacean Map**
- MATOS**

New Jersey Offshore Wind Research and Monitoring Initiative

Leveraging RMI Project Data for Multiple Research Efforts

Ocean Glider Environmental & Ecological Monitoring

Josh Kohut & Grace Saba

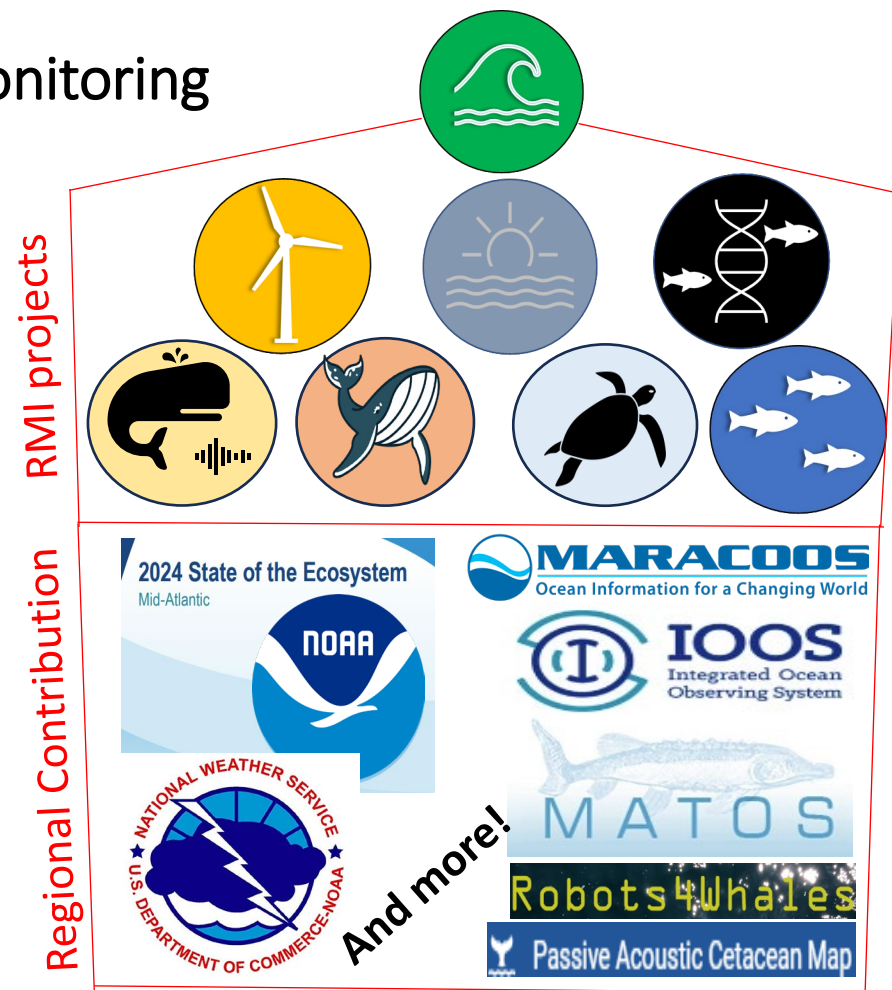
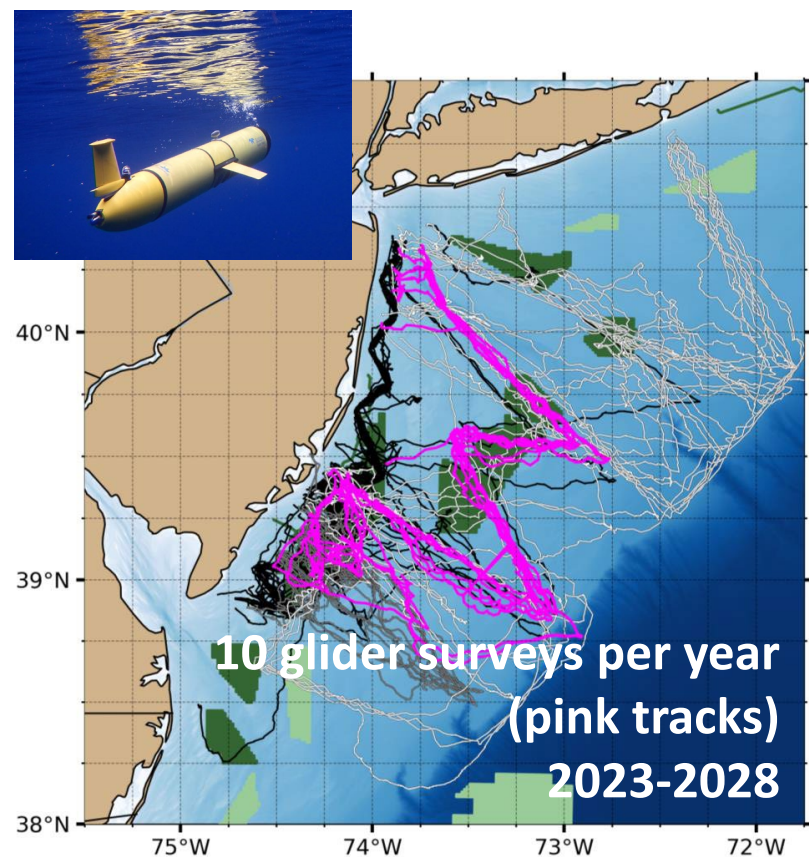
Rutgers University Center for Ocean Observing Leadership

Oceanographic Data

Temperature Chlorophyll-a
 Depth CDOM
 Salinity Dissolved Oxygen
 Density
 pH

Biological Data

DMON (whale acoustic sensor)
 Vemco acoustic receiver
 AZFP (zooplankton, pelagic fish)

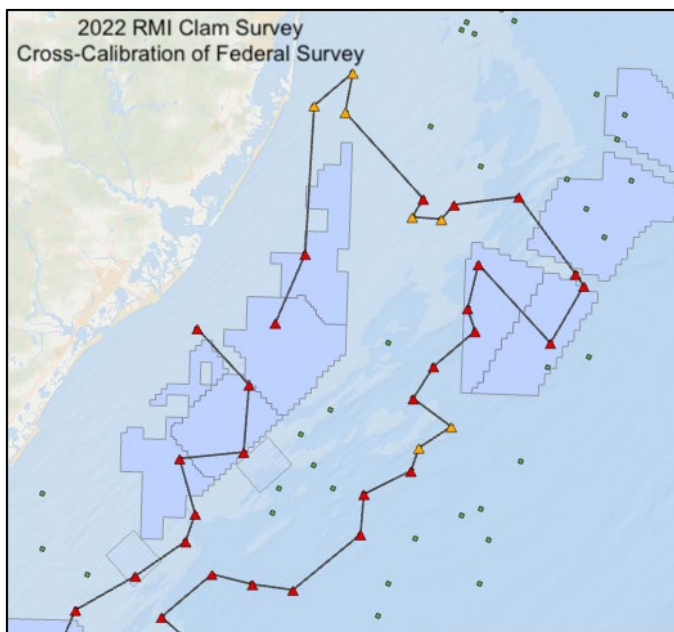


Coordinate spatiotemporal coverage with NJDEP, NYSERDA, NOAA, Developer surveys

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Leveraging Projects for Fisheries Management

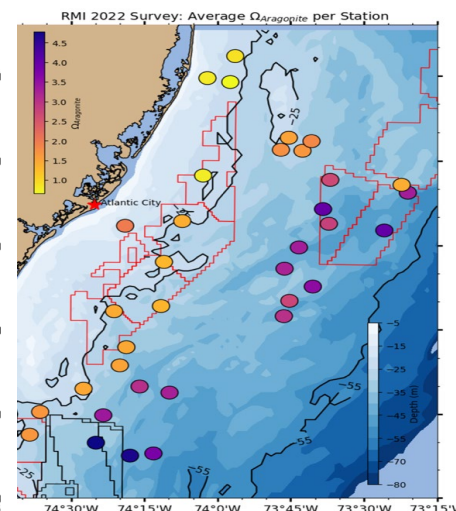
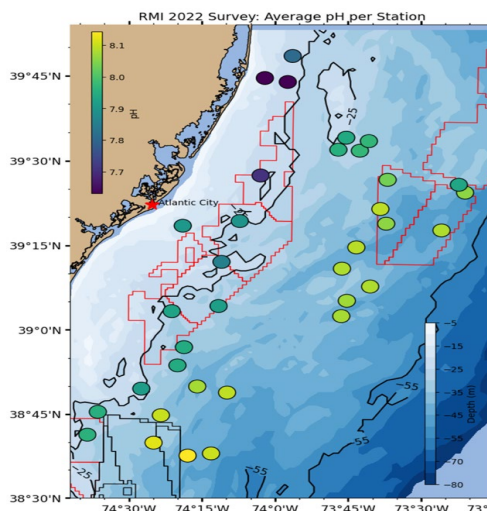
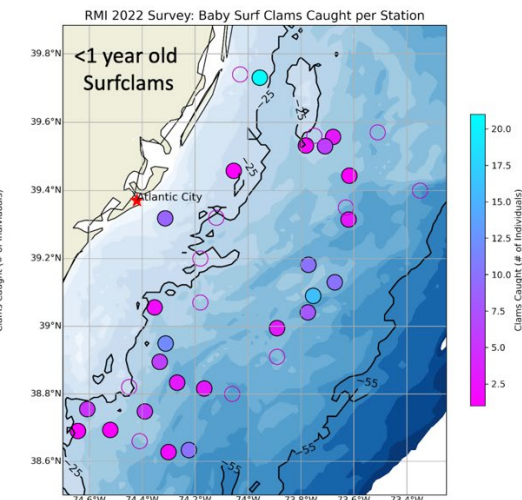
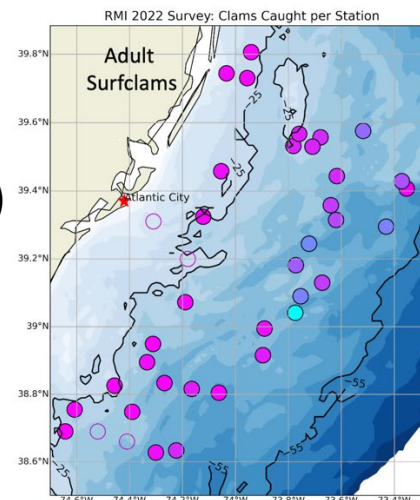
*Preliminary Data



Novel Surfclam Dredge & Carbonate Chemistry

Daphne Munroe & Grace Saba (Rutgers)
Tom Dameron (Surfside Seafood)

- Calibrate RMI dredge with Federal Survey dredge
- Assess gear performance & bias
- Conduct preconstruction population assessment
- Assess biological response to OA & environmental conditions



New Jersey Offshore Wind Research and Monitoring Initiative

Leveraging OSW Platforms to Address Multi-User Needs

Attachment 8

Offshore Wind Infrastructure Monitoring Plan Requirements

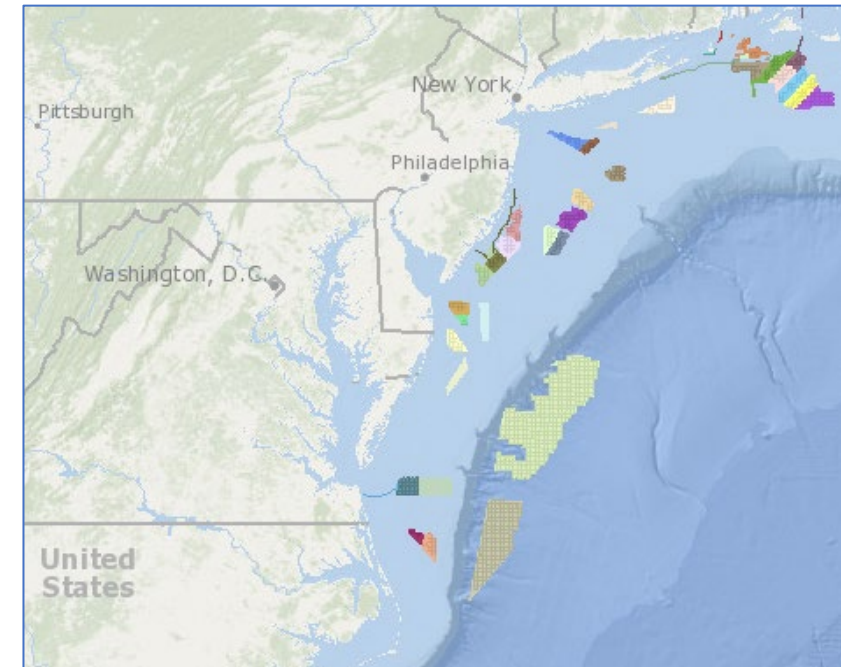
The Applicant shall develop a plan for the use of offshore wind infrastructure including turbine arrays, foundations, and substations as environmental and ecological monitoring platforms that can contribute to relevant regional monitoring, observing, and research efforts.

- This plan for co-located monitoring equipment must identify and describe the incremental investment and implementation plan to incorporate and integrate multiple sensors, platforms, and data systems on offshore wind infrastructure. The plan must articulate how the monitoring will align with the New Jersey RMI and regional research objectives, including contributing to:
 - Environmental and ecological baseline and monitoring frameworks;
 - Understanding changes to marine resources from established baselines during the construction and operation of wind turbines; and
 - Integration of existing and novel scientific approaches and platforms.
- The plan shall consider the entire footprint of the Project including wind farm area, cable routes, landfall locations, and upland routes, and shall address how implementation of the plan will inform outstanding questions related to and reduce impacts associated with wind farm construction and operation.
- The plan shall align with the Data Management and Availability plan as described in Attachment 7.
- The plan shall describe how the applicant will work collaboratively with and leverage relevant work from federal, state, academic institutions, other ocean user groups, developers of other wind farm projects in the region, and regional science entities to develop and implement the plan.
- The Applicant is encouraged to review the following resources posted to the Solicitation documents page of the BPU's Solicitation Website in the development of their plan.¹

Infrastructure Monitoring Plan
Required by NJ solicitation 3 & 4

Observing Guidance for a Mid-Atlantic Regional Monitoring System

Rutgers University, Monmouth University,
National Renewable Energy Laboratory,
Special Initiative on Offshore Wind



Conceptual Plan for Regional Monitoring

- Sensor and Instruments
- Spacing and sampling
- Maintenance schedule and costs
- Data interoperability and sharing



New Jersey's Offshore Wind Research and Monitoring Initiative

Request for Proposals for

Addressing New Jersey's Highest Priority Research and Monitoring Needs for Environment, Wildlife, and Fisheries Associated with Offshore Wind

Focus Areas (\$4.75 M available):

- Non-extractive methods for surveying wildlife and habitat
- Technological innovations in data collection, analysis, and management
- Fishery sustainability and socioeconomic impacts of offshore wind activities
- Identifying and reducing offshore wind noise impacts on marine wildlife
- Characterization of benthic ecosystems and primary productivity
- Assessing bird and bat abundance, migration patterns, and risk exposure associated with offshore wind
- Current RMI Short-term, Highest-Priority Research & Monitoring Needs

Coordinate project awards with other funding entities

 Representatives participate in Selection Panel





New Jersey's Offshore Wind Research and Monitoring Initiative

Project Requirements for Regional Coordination

Regional Wildlife Science Collaborative

Responsible Offshore Science Alliance

Annual progress update to relevant Subcommittee(s)

Annual progress update to Advisory Committee



 **Offshore Wind & Wildlife Research Database**
<https://database.rwsc.org>

 **Offshore Wind & Wildlife Research Data Catalog**

 **Map of deployed offshore wind research assets and activities**

Provide general project info
(when project awarded)

Provide project info/metadata and links to data access
(update at least annually)

Provide planned/ongoing spatial data
(e.g., sensor or sampling location, other effort)
(update at least annually)

Fish & Fisheries Offshore Wind Research Database
(FishFORWRD)



New Jersey Offshore Wind Research and Monitoring Initiative



dep.nj.gov/offshorewind/rmi

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