



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

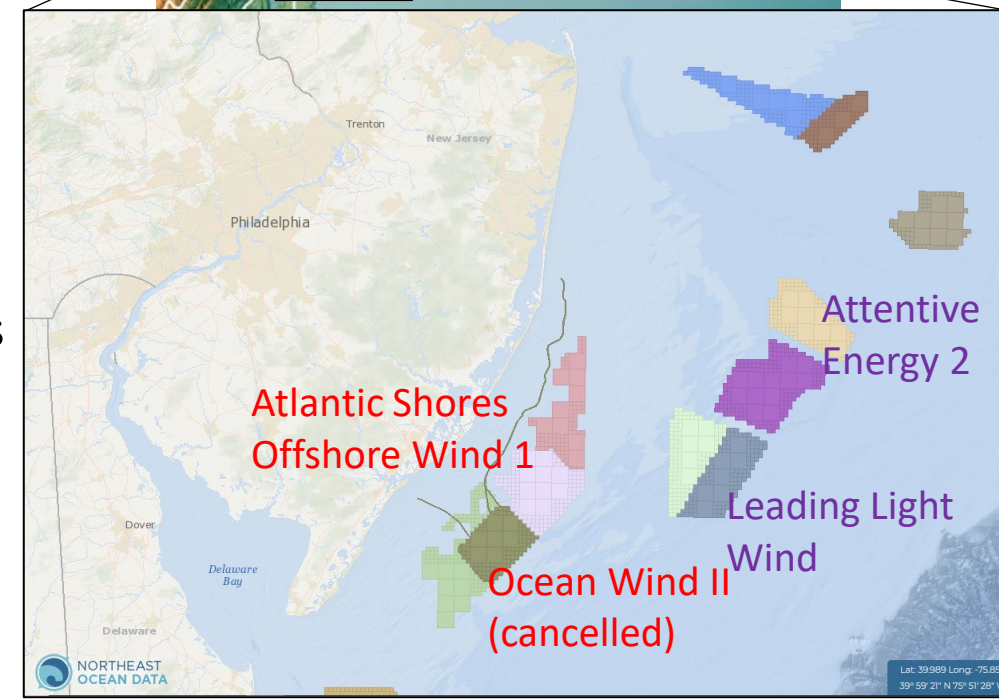
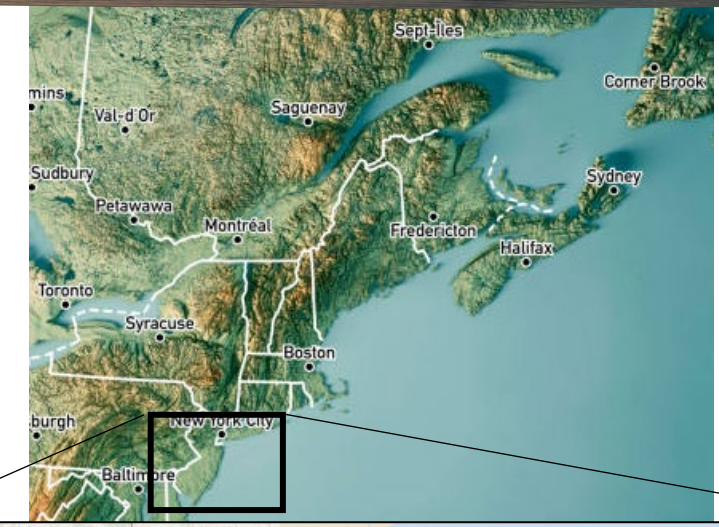


Mission Statement

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)
\$23.7 M \$39 M TBA

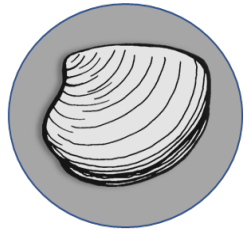




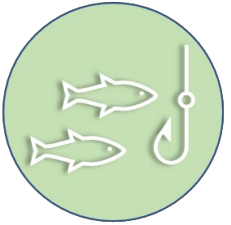
New Jersey's Offshore Wind Research and Monitoring Initiative

>\$18 Million Awarded to Current Projects

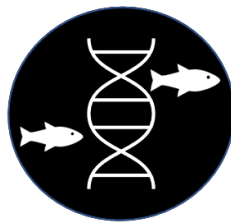
Institutional Support



Novel Surfclam Dredge & Carbonate Chemistry



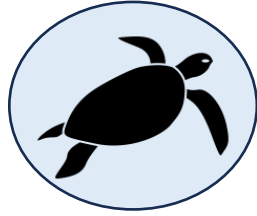
Socioeconomics of Rec. Fisheries



Fish Community Assessment Using eDNA



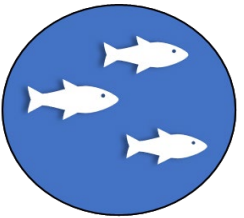
Motus Network Expansion



Turtle tagging & Biological Assessment



EcoGlider Environmental Monitoring



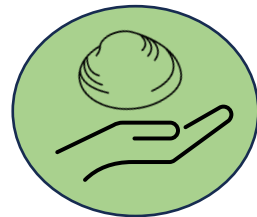
Acoustic Fish Telemetry



Harbor Seal Tracking & Health Assessment



Whale Satellite Tagging



Surfclam Fishery Enhancement



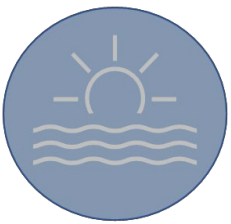
Multi-focus RFP
\$4.75 M
(proposals in review)



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

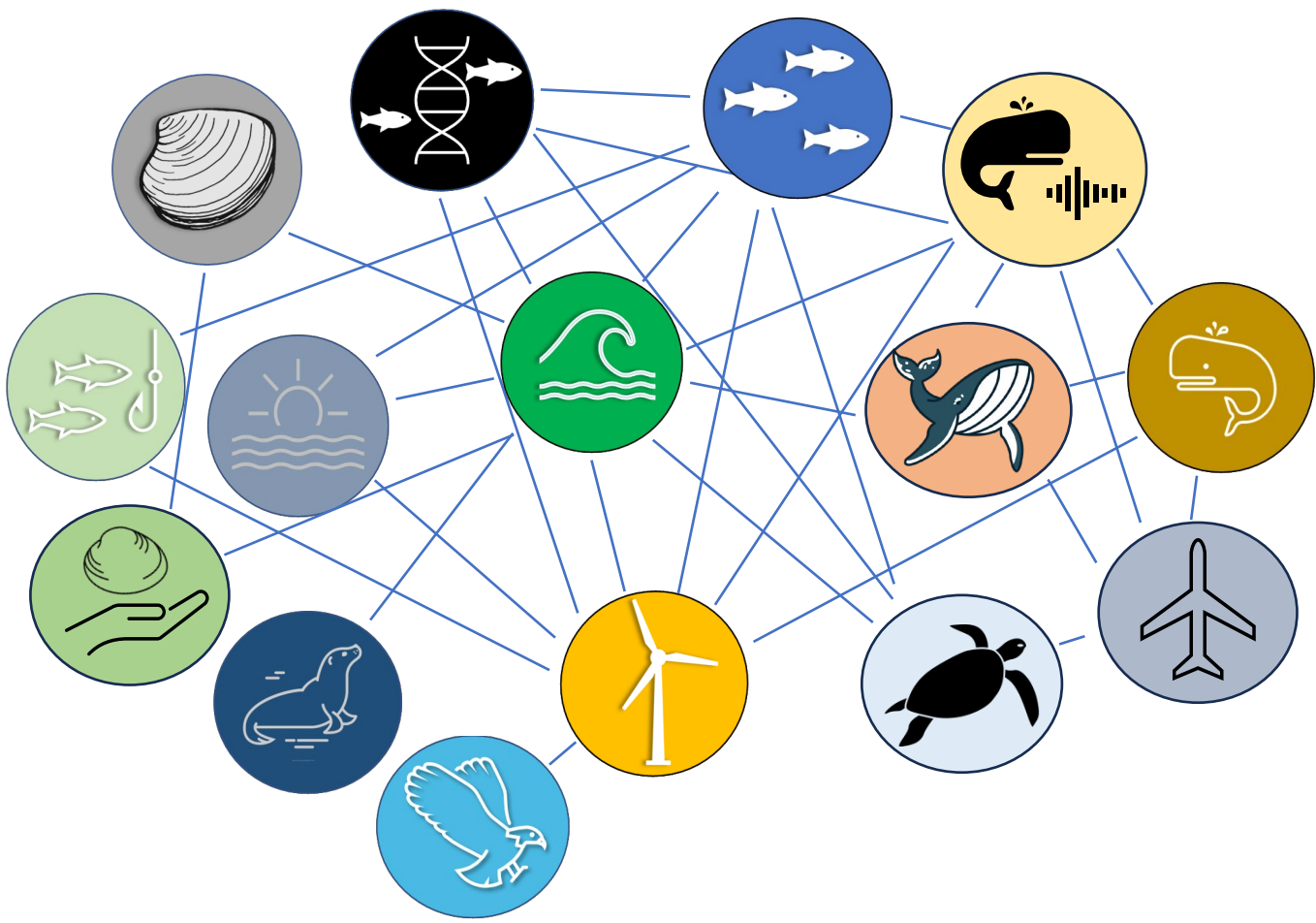


Responsible Offshore Science Alliance



New Jersey Offshore Wind Research and Monitoring Initiative

RMI 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



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



NOAA FISHERIES
Northeast Fisheries Science Center



Robots4Whales



NARWC
THE NORTH ATLANTIC
RIGHT WHALE CONSORTIUM



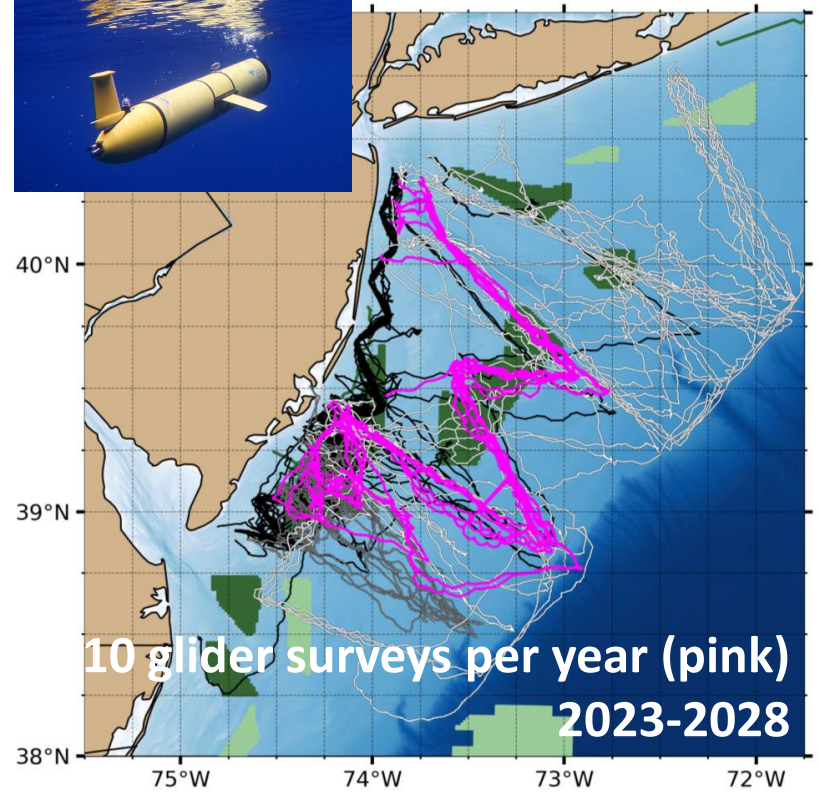
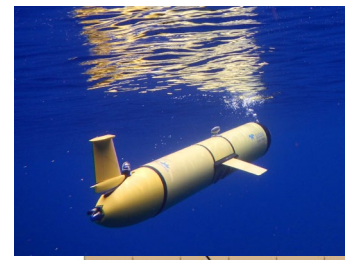
Passive Acoustic Cetacean Map

Leveraging RMI Project Data for Multiple Research Efforts

Ocean Glider Environmental & Ecological Monitoring

Dr. Josh Kohut & Dr. Grace Saba

(Rutgers University Center for Ocean Observing Leadership)

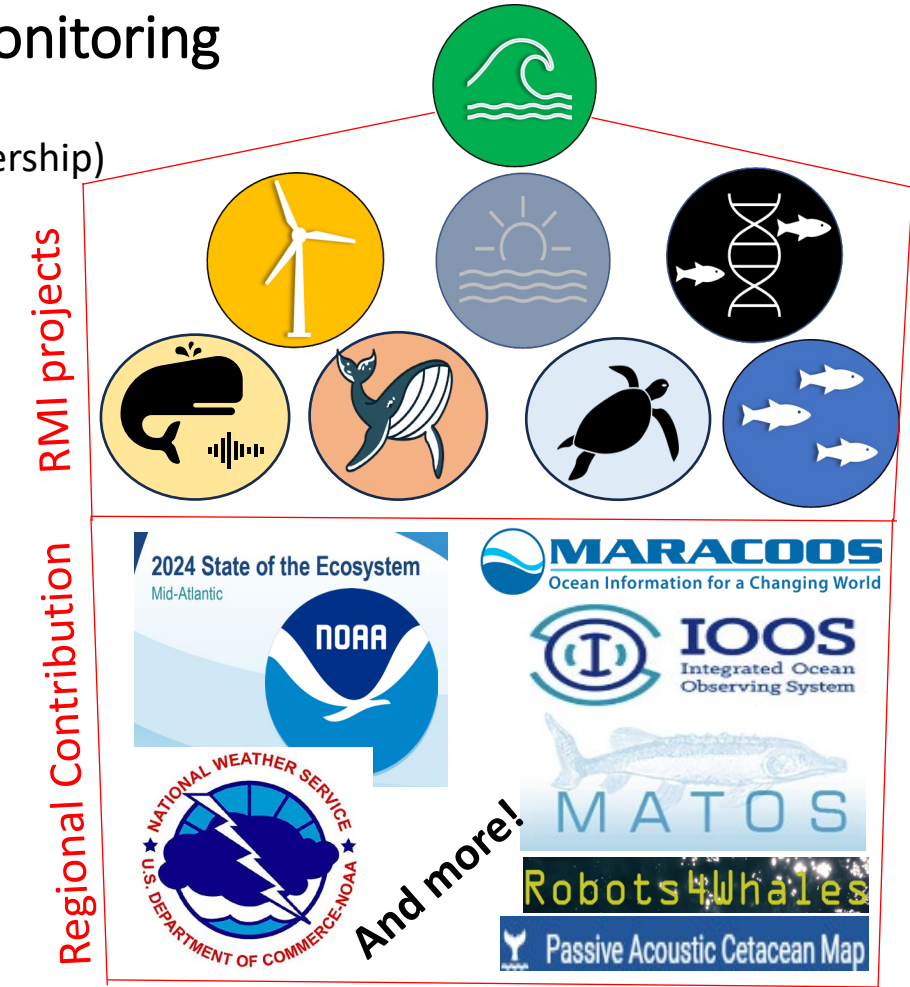


Oceanographic Data

- | | |
|-------------|------------------|
| 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 other glider programs/funders (states, fed agencies, wind industry, etc.)

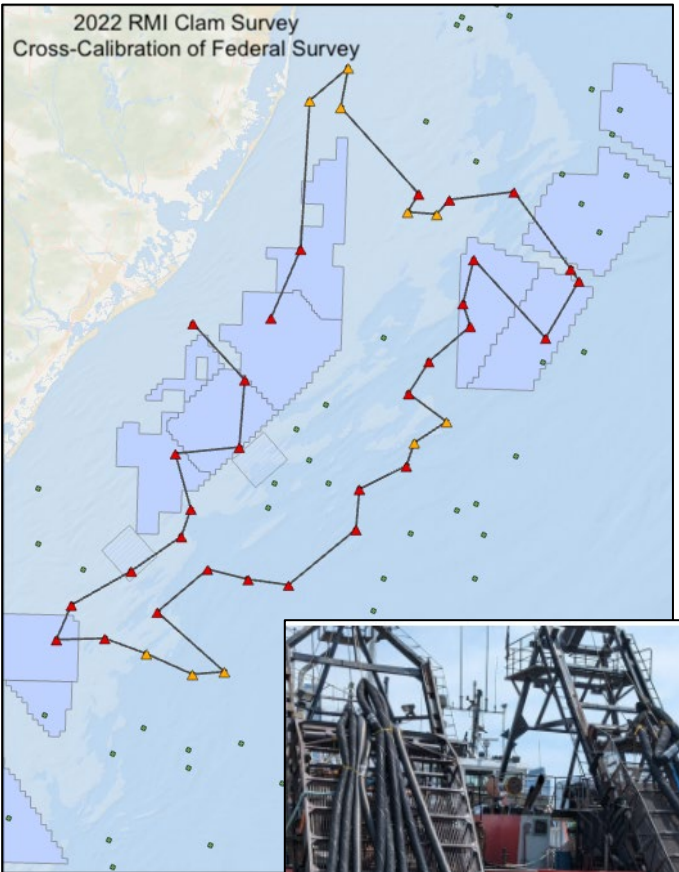


New Jersey Offshore Wind Research and Monitoring Initiative

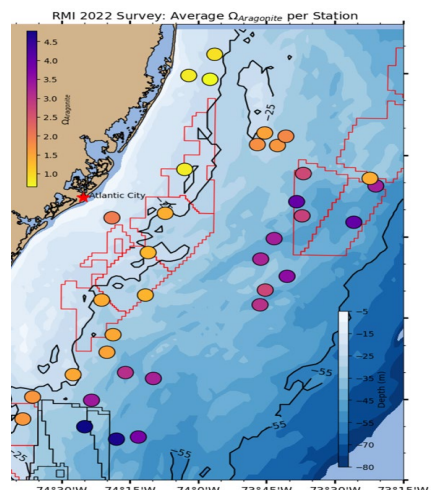
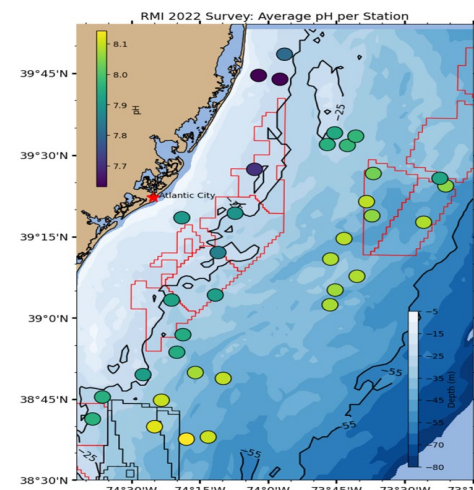
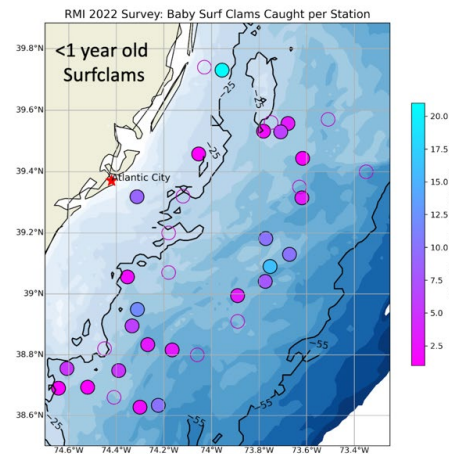
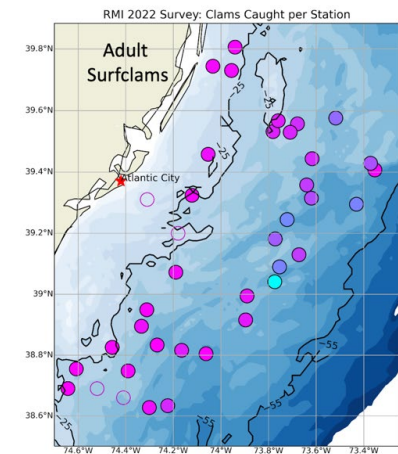
Leveraging Projects for Fisheries Management Novel Surfclam Dredge & Carbonate Chemistry

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

***Preliminary Data**



- 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

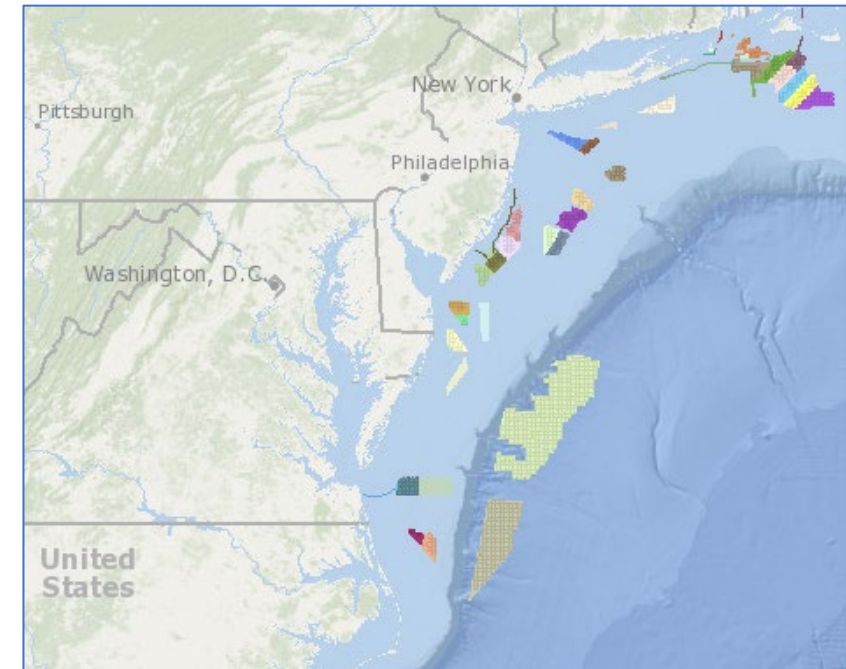
The Applicant shall develop a plan for the use of offshore wind infrastructure including turbine arrays, foundations, and substations as environmental and ecological monitoring platforms that can contribute to relevant regional monitoring, observing, and research efforts.

- 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

Project Requirements for Regional Coordination

Regional Wildlife Science Collaborative

Annual progress update to relevant Subcommittee(s)



 **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)

Responsible Offshore Science Alliance

Annual progress update to Advisory Committee



Fish & Fisheries
Offshore Wind
Research Database
(FishFORWRD)



New Jersey Offshore Wind Research and Monitoring Initiative

Register for updates:



Learn more about RMI:

Contact Us

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Thank You!