NJDEP Research and Monitoring Initiative: Project Fact Sheet

Assessing the Impacts of Offshore Wind Development with Marine eDNA: An Innovative, Non-extractive Approach for Monitoring Protected, Prohibited, and Commercially/Recreationally Important Species

Research Motivation

- The primary objective of this project is to create an ecological and methodological baseline to identify potential impacts of offshore wind development on surrounding marine fish communities and the fisheries that rely on them
- Further refine the use of environmental DNA for use in fisheries monitoring programs for offshore wind development

Principal Investigators and Institutions

Lead Principal Investigator: Dr. Jason E. Adolf , Endowed Professor of Marine Science Monmouth University
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Co-PI: Dr. Shannon O'Leary, Assistant Professor St. Anselm College
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RMI Research Priorities Addresses

- (7) Examine the effects of OSW on the distribution/connectivity of fish and invertebrate species and communities
- (12) Adapt DEP trawl survey design to allow for comparison of biases/limitations in and outside of OSW development areas and calibrate new time series
- (14) Develop and implement methods to assess impact of OSW on recreational fisheries

Geographic Scope

Primarily focused on the Mid-Atlantic Bight region specifically coastal New Jersey from 0 – 40 miles offshore

Methods or Approaches Used

- Quarterly sampling of eDNA from Ocean Wind 1 and Atlantic Shores offshore wind development (and adjacent) areas
- Paired eDNA sampling with ongoing NJDEP MRA capture surveys (Ocean Trawl, Artificial Reefs, Raritan Inventory Project)
- Paired lab / community scientist sampling of eDNA from shoreline sites adjacent to offshore wind development areas

Expected Outcomes or Deliverables

- A dataset that characterizes ecological baseline conditions (fish community composition and environmental conditions) of offshore wind development areas to be used to address potential changes to the fish community composition as a result of offshore wind development
- Establishment of a methodological baseline that further validates eDNA as an additional tool for monitoring potential effects of offshore wind on marine fish communities

Regional Coordination / Collaboration / Data Sharing

- This project involves strong collaboration between academic, state and community partners. The code for analyses will be made available along with the primary data sources to ensure transparency and repeatability of all steps of the process.

Project Completion Date: June 2025
Total Project Budget: $1,145,583