NJDEP Research and Monitoring Initiative: Project Fact Sheet

Determining baseline information for sea turtles overlapping the proposed wind energy areas in waters off the New Jersey coastline

Research Motivation

- The primary objective of this project is to create an ecological baseline to identify potential impacts of offshore wind development on surrounding sea turtle populations, with an emphasis on the loggerhead sea turtle.
- A main goal of this research is to expand on the current data regarding sea turtle density and behavior off the NJ coast.

Principal Investigators and Institutions

Lead Principal Investigator: Dr. Samir Patel, Senior Research Biologist with the Coonamassett Farm Foundation
Collaborators: Ronald Smolowitz, Coonamassett Farm, Inc. East Falmouth, MA
Heather Haas, PhD., Northeast Fisheries Science Center, Woods Hole, MA
Galit Sharon, PhD., Roger Williams University, Bristol, RI
Jim Gutowski, Viking Village Fisheries, Barnegat Light, NJ
Charlie Locke, F/V Salvation, Wanchese, NC

RMI Research Priorities Addresses

- (2) Understand how sea turtles respond to changes in diversity and abundance of marine species throughout the water column and in the benthos due to oceanographic conditions
- (9) Examine the effects of OSW on the distribution/connectivity of sea turtle species and communities
- (14) Determine the effects on fisheries through camera-tag footage and satellite telemetry

Geographic Scope

Primarily focused on the Mid-Atlantic Bight region specifically coastal New Jersey from 0 – 40 miles offshore. Tagging occurs in North Carolina and Virginia to observe turtles as they move through the MAB and NJ Wind Energy Areas (WEAs).

Methods or Approaches Used

- Collect demographic and biological samples from ~20 sea turtles per year in NC and VA through tagging individuals with satellite and acoustic telemetry tags and sampling their blood, skin, and digestive opening. These samples will be used to evaluate contaminants, parasite loads, stress hormones, and diet.
- Observe behavior in NJ through two videography techniques: following turtles with a remotely operated vehicle (ROV) and deploying mounted camera-tags on the hard-shell of the turtles. This video is important for foraging behavior observation and prey species identification.

Expected Outcomes or Deliverables

- A dataset including the biological and ecological baseline of the sea turtle community to address potential changes in sea turtle community composition, movement patterns, dive behavior, and health as a result of offshore wind development.
- Generation of oceanographic conditions through temperature-depth profiles gathered from tagged sea turtles.

Regional Coordination / Collaboration / Data Sharing

- This project involves collaboration between academic, state and community partners. Updates will be given to NJDEP, RWSC, ROSA, and Project WOW.
- The data will be made available through the Northeast Fisheries Science Center (NEFSC), Northeast Ocean Data Portal, and the Mid-Atlantic Acoustic Telemetry Observations System (MATOS).

Project Completion Date: December 2025
Total Project Budget: $1,030,863