NJDEP Research and Monitoring Initiative: Project Fact Sheet

Harbor Seal Satellite Tagging and Health Assessment in Southern New Jersey: Implications for Local and Regional Population Patterns

Research Motivation

- The purpose of this study is to better understand movement patterns of harbor seals both locally (New Jersey) and regionally (northwest Atlantic), and to identify variability of harbor seal health through the region.
- Current and comprehensive movement behavior, distribution, and health data on harbor seals that spend time each winter in Great Bay will establish a baseline for future impact assessments.

Principal Investigators and Institutions

- Jacalyn Toth Sullivan, Stockton University
- Robert A. DiGiovanni, Jr., Atlantic Marine Conservation Society

RMI Research Priorities Addresses

- #10 Estimate habitat use, distribution, and abundance by season (e.g. overwintering harbor seals); identify environmental variables driving these patterns.

Geographic Scope

- Tagging and health assessments will be conducted in Great Bay, New Jersey.

Methods or Approaches Used

- Seals will be tagged with unique identifying flipper tags and satellite tags mounted between the shoulder blades using epoxy. Tags will signal location daily and will upload data on location, movements, dive patterns, and environmental variables including sea surface temperature, chlorophyll a, wind speed, direction, and air temperature.
- Health assessments will consist of samples of blood, fur, and feces, along with swabs of the nose, eyes, and rectum. Health assessment data will be compared to historical stranding data to assess the overall health of the wild harbor seal populations.

Expected Outcomes or Deliverables

- There is currently little data on the offshore habitat use, movement patterns, and dive behavior of harbor seals that utilize Great Bay near offshore wind lease areas. The data from this project will improve understanding of the potential impact of offshore wind development on harbor seal population dynamics.
- A final report will be provided at the conclusion of this three-year study.

Regional Coordination / Collaboration / Data Sharing

- This project will incorporate data from the environmental gliders deployed by other research teams, such as Rutgers University.
- Data will be submitted to NOAA's Northeast Fisheries Science Center and housed there for use/sharing.
- Data will also be shared with state and regional committees and stakeholders, including NYSERDA, ROSA, AND RWSC. It will also build on existing health assessments in Virginia, New York Bight, eastern Long Island NY, southern New England, Massachusetts and Maine.

Project Completion Date
June 2026

Total Project Budget
$682,889.59