Environmental Studies Program: Ongoing Study

Title	Pilot Studies for Regional Fisheries Monitoring in Relation to Massachusetts and Rhode Island Offshore Wind Areas (AT-21-x06)
Administered by	Office of Renewable Energy Programs
BOEM Contact(s)	Brian Hooker (brian.hooker@boem.gov)
Procurement Type(s)	Cooperative Agreement
Conducting Organization(s)	INSPIRE Environmental; University of Massachusetts; University of Rhode Island
Total BOEM Cost	$400,000
Performance Period	FY 2020–2023
Final Report Due	April 2023
PICOC Summary	
Problem	Need to further characterize commercially important fish and fish habitat given future wind energy area development in southern New England.
Intervention	This study documents existing fish and fish habitat conditions BOEM lease areas prior to construction. The study could potentially coincide with offshore wind construction activity as well.
Comparison	This initial phase of the study is proposed as a baseline study against which future studies can be compared post construction of offshore wind energy facilities. Depending on timing of construction this study could include comparisons to when construction occurs and post construction.
Outcome	The outcome will be a better understanding of fish and fish habitat in southern New England lease areas.
Context	The principal target for the investigation is commercially and recreationally important fish in the North Atlantic Planning Area.

BOEM Information Need(s): BOEM-permitted renewable energy activities may result in the temporary behavior modification (e.g., displacement, feeding, spawning, communication) of fish due to noise and construction activities as well as the modification of fish habitat from the construction of offshore wind facility foundations and installation of power cables. Studies of fish occurrence in lease areas can help BOEM identify important habitat over multiple seasons in order for BOEM to understand habitat usage and potential impacts to fish habitat from authorized activities. These assessments are necessary pursuant to obligations under the Outer Continental Shelf Lands Act, the Endangered Species Act, the National Environmental Policy Act, and the Magnuson-Stevens Fishery Conservation and Management Act.

Background: BOEM received a letter dated May 16, 2019, from Mr. Matthew Beaton, Secretary, Executive Office of Energy and Environmental Affairs, Commonwealth of Massachusetts requesting BOEM's support for the regional fisheries monitoring. Following further discussions and cost-sharing opportunities with the Commonwealth and the State of Rhode Island, this state-Federal initiative was

implemented at a total level of $1.1 million. The priority area for this study is southern New England. Construction and Operations Plans for projects in Southern New England have been submitted and undergoing environmental review. Southern New England is a very important area for fishing and fish. This study would help fill information gaps through the several awards it is funding. This information will aid in baseline evaluation and monitoring of construction impacts. Specifically, 5 projects are being awarded under this initiative:

INSPIRE Environmental (2 projects) – Acoustic Telemetry for Highly Migratory Species, with the New England Aquarium and Standard Approaches for Acoustic and Imagery Data ($443,450)

University of Massachusetts Dartmouth (UMD) – Net Survey for Larval Lobster and Fish Neuston, with Massachusetts Lobstermen's Association ($278,592)

University of Rhode Island (URI) – Fishing Status Using Vessel AIS Data and Machine Learning, with Rhode Island DEM ($249,646)

New Bedford Port Authority – Comparative Analysis of Regulation in Europe and Japan ($125,000)

Objectives: The principal objective of this cooperative agreement is to execute a collaborative, pilot regional fisheries monitoring program for southern New England in relation to the Massachusetts and Rhode Island wind energy areas. BOEM along with the Recipient have selected 5 pilot projects for funding. Of these 5 pilot projects two sub-awards will be partially funded by BOEM.

The objectives of these two projects include:

UMD Sub-award: Develop baseline larval lobster data in the offshore renewable wind energy lease areas offshore Rhode Island and Massachusetts.

Inspire Environmental Sub-award: Develop baseline data on highly migratory species (e.g., tuna, sharks, and billfish) in the offshore renewable wind energy lease areas offshore Rhode Island and Massachusetts.

Methods: The methods for all 5 awards are:

INSPIRE Environmental (2 awards) – Acoustic Telemetry for Highly Migratory Species, with the New England Aquarium and Standard Approaches for Acoustic and Imagery Data: INSPIRE will conduct a two-year acoustic tagging and tracking study of highly migratory species such as tuna and sharks at popular recreational fishing spots in the wind energy areas, in order to provide new baseline data on highly migratory species. This will enable ongoing assessment of the impact of offshore wind on highly migratory species and associated recreational fishing. INSPIRE will also develop standard approaches to synthesizing, visualizing and disseminating high-resolution acoustic and imagery data for mapping of seabed habitat in the wind energy areas. This will advance baseline characterization of the seabed environment and make high-resolution mapped data available to stakeholders in a web-based, vetted and neutral forum.

University of Massachusetts Dartmouth (UMD) – Net Survey for Larval Lobster and Fish Neuston, with Massachusetts Lobstermen's Association: UMD will conduct towed net surveys for larval lobster and fish neuston (small fish organisms) throughout the wind energy areas. This 18-month study will provide

baseline information on the spatial and temporal distribution of species at their earliest life stage, during which they are transported by tides and currents.

University of Rhode Island (URI) – Fishing Status Using Vessel AIS Data and Machine Learning, with Rhode Island DEM: URI will merge electronic and other data on fishing vessel activity into a single data set and apply a "machine learning" approach to enable lower cost broad-scale modeling of the probability of fishing activity in a given area. This will allow researchers to identify where and when vessels are actually fishing, as opposed to being in transit.

Specific Research Question(s): This study answers important questions regarding the fishery resources and habitats in BOEM lease areas in order to understand the spatial and temporal resolution of impacts from offshore wind energy construction and operation.

Current Status: This project was awarded in April 2020. Although there were initial delays due to the COVID-19 pandemic response, the projects are proceeding. Final reports for the Acoustic Telemetry for Highly Migratory Species and Net Survey for Larval Lobster and Fish Neuston have been received and expected to be published in the winter of 2022.

Publications Completed: None

Affiliated WWW Sites: https://www.masscec.com/about-masscec/news/massachusetts-rhode-island-boem-award-11-million-regional-fisheries-studies-guide