

Environmental Studies Program: Ongoing Studies

Title	A Comprehensive Assessment of Existing Gulf of Maine Ecosystem Data and Identification of Data Gaps to Inform Future Research (AT-22-11)
Administered by	Office of Renewable Energy Programs
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Conducting Organization(s)	NOAA, Northeast Fisheries Science Center
Total BOEM Cost	\$250,000
Performance Period	FY 2023–2025
Final Report Due	August 24, 2024
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PICOC Summary	
<i><u>Problem</u></i>	The Gulf of Maine (GOM) is an area of interest for offshore wind development by BOEM and GOM states. In order to evaluate potential impacts of offshore wind development on the GOM marine ecosystem, existing GOM baseline biological and oceanographic data should be compiled and synthesized to develop an understanding of the GOM marine ecosystem before development occurs and to identify areas of focus for future environmental studies.
<i><u>Intervention</u></i>	This study proposes to address the need for baseline marine ecosystem information in the GOM to enable the evaluation of potential impacts of offshore wind development by coordinating with regional partners to leverage existing GOM ecosystem data to develop and synthesize a baseline compilation and to identify data gaps.
<i><u>Comparison</u></i>	The data compiled through this study will enable comparisons with future studies in the GOM.
<i><u>Outcome</u></i>	A compilation and synthesis of biological and oceanographic data that will serve as a baseline for future studies and will identify data gaps to inform future renewable energy use in the GOM
<i><u>Context</u></i>	Gulf of Maine, including nearshore and OCS

BOEM Information Need(s): BOEM conducts environmental analyses as part of the identification process of potential sites for offshore wind development. There is a need for baseline biological and oceanographic data in order to fully assess potential impacts of offshore wind on biological resources in areas of potential development. It is also important to identify data gaps in order to inform future environmental studies.

Background: The GOM has a robust and highly productive ecosystem that harbors many protected species and is an important driver of the economy of the region through sustainable regional fisheries (Thompson 2010, NMFS 2020). Considerable effort by Federal and state agencies, NGOs, and academia has gone in to developing long-term biological and oceanographic regional data sets. BOEM (as the Bureau of Land Management) had previously supported studies in the region as part of the New England

Outer Continental Shelf Physical Oceanography Program (1975 – 1979) (e.g., Flagg et al. 1982, Cura and Ryther 1982, and others). Coordination with regional partners is necessary to compile the existing data sets in order to develop a comprehensive assessment of the GOM ecosystem and to identify data gaps that will support justification for future environmental studies.

GOM monitoring efforts and studies that would be leveraged for this project include a range of oceanographic, fishery, and marine mammal regional surveys from both ships and aerial platforms that provide expansive multispecies coverage. Examples include the decades-long NMFS/Northeast Fisheries Science Center (NEFSC) ecosystem monitoring and fisheries stock assessment surveys, NEFSC PlatOpus program, and recently installed passive acoustic receivers that monitor for the presence of North Atlantic right whales. The NEFSC PlatOpus program, started in 2005, uses acoustic receivers on the Northeastern Regional Association of Coastal Ocean Observing Systems and other platforms and has detected over 1,100 acoustic transmitters released by 50 organizations representing 17 species including endangered Atlantic salmon, Atlantic sturgeon, and shortnose sturgeon.

Objectives: The objective of this study is to develop a comprehensive assessment of current and historical environmental conditions in the Gulf of Maine. This will be accomplished by the following:

- Compiling existing data and assessments
- Developing a structured data model to facilitate future use of the data
- Identifying data gaps important for assessing offshore wind impacts to inform future environmental studies of the region

Methods: Coordination will occur with Federal and state agencies, NGOs, and academia to identify biological and oceanographic data sets for the GOM ecosystem, such as the NMFS/NEFSC ecosystem monitoring and fisheries stock assessment surveys and passive acoustic monitoring program. Data requirements will be defined, and an organizational system for compiling the data will be developed. Data will be synthesized into a report to develop a comprehensive assessment of the current and historical environmental conditions in the GOM, and to identify data gaps that will inform future studies of the GOM ecosystem. Additional products would include a spatial analysis or the creation of a geodatabase.

Specific Research Questions:

1. What are the baseline biological and oceanographic conditions in the GOM ecosystem, and how can that information be leveraged for analysis of potential impacts of future renewable energy use?
2. How should BOEM focus future environmental studies to inform future renewable energy use in the Gulf of Maine?

Current Status: A kick-off meeting was held on October 26, 2022. Several webinars were conducted in 2023. Additional outreach is planned.

Publications Completed: N/A

Affiliated WWW Sites:

Gulf of Maine Information sources:

<http://www.gulfofmaine.org/2/resources/state-of-the-gulf-of-maine-report/>

<https://www.integratedecosystemassessment.noaa.gov/regions/northeast/gulf-of-maine>

NOAA Surveys:

<https://apps-nefsc.fisheries.noaa.gov/rcb/publications/tm265.pdf>

<https://www.fisheries.noaa.gov/feature-story/monitoring-northeast-shelf-ecosystem>

<https://www.fisheries.noaa.gov/new-england-mid-atlantic/population-assessments/fishery-stock-assessments-new-england-and-mid-atlantic>

BOEM Studies:

<https://www.boem.gov/sites/default/files/non-energy-minerals/States-documents/ME-M14AC00008-Summary-Report-Revised-opt.pdf>

https://www.boem.gov/sites/default/files/non-energy-minerals/ME_1987_Kelley.pdf

https://www.boem.gov/sites/default/files/non-energy-minerals/ME_2004_Kelley.pdf

https://www.boem.gov/sites/default/files/non-energy-minerals/ME_2007_Kelley.pdf

https://www.boem.gov/sites/default/files/non-energy-minerals/ME_2007_Nathan.pdf

References:

Cura Jr JJ, Ryther Jr JH. 1982. Relationships between phytoplankton distribution and production and the physical oceanography in the Georges Bank region. 92 p. OCS Study 1982-34. Obligation No.: 14-12-0001-29188 CT1-39.

Flagg CN, Magnell BA, Frye D, Cura Jr JJ, McDowell SE, Scarlet RI. 1982. Interpretation of the physical oceanography of Georges Bank, final report, Volume 1. 648 p. OCS Study 1982-21. Obligation No.: 14-12-0001-29188 CT1-39.

NMFS. 2020. State of the Ecosystem Report: New England. Northeast Fisheries Science Center.

Thompson C. 2010. The Gulf of Maine in Context: State of the Gulf of Maine Report.