

## Environmental Studies Program: Ongoing Study

Field	Study Information
Title	A Biogeographic Assessment of the U.S. Territories (NT-24-x08)
Administered by	Office of Environmental Programs
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Procurement Type(s)	Interagency Agreement
Conducting Organization(s)	NOAA NCOSS (National Centers for Coastal Ocean Science)
Total BOEM Cost	\$1,250,000
Performance Period	FY 2024–2029
Final Report Due	Reports in 2026 (PR and USVI) and 2029 (Pacific)
Date Revised	January 30, 2024
Problem	Under the Inflation Reduction Act, BOEM has expanded jurisdiction that includes potential wind offshore wind development in the U.S. Territories. However, BOEM lacks the marine spatial data to support such activities.
Intervention	NOAA's Biogeographic Assessment Framework will provide a flexible multidisciplinary approach to collect and integrate geospatial data into formats that are readily available for BOEM, NOAA and their stakeholders in the U.S. Territories.
Comparison	Without appropriate access to marine spatial data BOEM will not be able to synthesize the information it needs to make the best available assessments of potential offshore wind in the U.S. Territories.
Outcome	A biogeographic assessment for the U.S. Territories
Context	The five major territories of the U.S. which include Puerto Rico, U.S. Virgin Islands, American Samoa, Guam, and the Northern Mariana Islands.

**BOEM Information Need(s):** BOEM is required to conduct environmental analysis and assessment of renewable energy projects on the outer continental shelf. BOEM's new authorities in the U.S. Territories require access to readily available marine spatial data so that there is access to information that can be used to inform these analyses.

**Background:** The Inflation Reduction of 2022 (IRA) provided DOI with the authority to issue leases, easements, and rights-of way offshore U.S. Territories, expanding the definition of the Outer Continental Shelf (OCS) to include the five major territories of the U.S. which include Puerto Rico, U.S. Virgin Islands, American Samoa, Guam, and the Northern Mariana Islands. With the new jurisdiction under the Inflation Reduction Act, BOEM needs to assemble and curate existing spatial information relevant to offshore wind to inform marine spatial planning for potential offshore wind energy development. Information needs include offshore biological and physical resources as well as human uses of these

resources. Such an assessment will help support responsible, ecosystem-based managed of resources by BOEM as well as other federal and territorial agencies.

This study will be conducted in collaboration with NOAA's National Centers for Coastal Ocean Science (NCCOSS) and will use NOAA's Biogeographic Assessment Framework (BAF). The BAF is a flexible, multi-disciplinary approach to integrate geospatial information into formats and visualization tools readily usable by BOEM, NOAA and their stakeholders. This framework has evolved from nearly three decades of close partnerships with natural resource managers addressing complex problems in both temperate and tropical marine and coastal environments, including the U.S. Caribbean. The BAF incorporates a broad spatial ecology perspective that integrates concepts and techniques from traditional ecology, biogeography, landscape ecology, sociology and economics, remote sensing, and the emerging fields of spatial eco-informatics and computational ecology. The BAF is a rapid and flexible approach for responding to the relatively short timescales that are typical for implementation of management actions, such as the development of marine spatial plans, marine protected area management plans, and in this case, to support offshore wind energy planning (Caldow, et al. 2015). This approach has been successfully applied in the Hawaiian Islands by BOEM and NCCOS (Costa, et al. 2016).

Objective(s): The primary objective of this study is to provide the marine spatial data and preliminary analysis and modelling needed for BOEM to support wind energy planning within the U.S. Territories.

Methods: This study will utilize NOAA's Biogeographic Assessment Framework (BAF) which is a flexible multidisciplinary approach that integrates geospatial information into formats that are readily usable. Work will initially begin in the U.S. Caribbean and later shift to the Pacific territories. The specific components of the study will include:

1. Developing, updating and maintaining a publicly accessible website that will provide background information and key updates to stakeholders. An example can be found here: <https://coastalscience.noaa.gov/project/marine-biogeographic-assessment-hawaiian-islands/>.
2. Acquiring and compiling existing readily available data that describes the physical environment, benthic communities and select species of marine mammals, seabirds, turtles. The assessment will also compile relevant management boundaries and social, economic and space use data to help describe human dimensions.
3. Organizing and formatting data into a common GIS structure (e.g., geodatabase). The catalog and format specifications will be reviewed by BOEM and participating coauthors before being finalized during conference calls of on-site meeting with BOEM and other partners. The result will be a publicly accessible web mapping service. An example of this can be found here: <https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=835a1ded67ab488bb18ce50f7e09424c>.
4. Developing documentation that clearly describes methods used to collect and develop data, products, and models. Data will be appropriately archived in repositories such as the (National Centers for Environmental Information (NCEI) with metadata. A biogeographic assessment report will be developed by NOAA Clear documentation for geodatabases, analyses, data and models will be developed.
5. Integration and synthesis of data sets to support detailed environmental analysis for wind energy projects.

6. Spatial analysis will be used to identify biogeographic patterns and ecologically important regions.
7. A biogeographic assessment report will be developed describing key ecological patterns, linkages and locations highlighted by the project's quantitative and qualitative analyses.

Specific Research Question(s): Some of the specific questions this study will examine include:

1. What is the marine spatial data that is needed for informed wind energy planning in the U.S. Territories?
2. What marine spatial data is readily available?
3. What are the important data gaps that need to be filled?
4. What are the biogeographic patterns and ecologically important areas?
5. Is there overlap among ecologically important areas and areas that have high relative wind energy potential?

Current Status: Initial work has begun with NOAA funding. IA has been drafted and is in review.

Publications Completed: None

Affiliated WWW Sites: None

References:

- Caldow C, Monaco MR, Pittman SJ, Kendall MS, Goedeke TL, Menza C, Kinlan BP, Costa BM. 2015. Biogeographic assessments: a framework for information synthesis in marine spatial planning. *Marine Policy*. 51:423–432. <https://doi.org/10.1016/j.marpol.2014.07.023>.
- Costa BM, Kendall MS, editors. 2016. Marine biogeographic assessment of the Main Hawaiian Islands. Bureau of Ocean Energy Management and National Oceanic and Atmospheric Administration. 359 p. Report No.: OCS Study BOEM 2016-035 and NOAA Technical Memorandum NOS NCCOS 214.