Environmental Studies Program: Studies Development Plan | FY 2022–2023

Title	Evaluating Effectiveness of Nature Inclusive Design Materials (AT-22-09)
Administered by	Office of Renewable Energy Programs
BOEM Contact(s)	Brian Hooker (brian.hooker@boem.gov)
Procurement Type(s)	Contract
Conducting Organization(s)	TBD
Total BOEM Cost	$500,000
Performance Period	FY 2022–2027
Final Report Due	TBD
Date Revised	April 4, 2022
PICOC Summary	
Problem	Some cable protection and scour protection materials may inhibit or not promote epifaunal growth and utilization as fish habitat.
Intervention	Test the effectiveness of different materials in promoting marine growth and enhancing habitat. Materials will be monitored for epifaunal growth and habitat utilization.
Comparison	The results can be compared to materials currently used at two offshore wind energy installations in operation.
Outcome	The outcome is recommendations for materials that enhance fisheries habitat.
Context	Offshore wind energy facilities on the Atlantic OCS

BOEM Information Need(s): BOEM has an obligation to ensure that the wind energy facilities it authorizes uses the best available information and technologically feasible methods of reducing negative environmental effects from offshore wind energy. This information is especially needed as part of assessments to essential fish habitat pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. Current studies (e.g., RODEO, https://www.boem.gov/rodeo) have shown that cable protection materials may inhibit marine growth and may not provide habitat benefits generally associated with the introduction of hard substate (e.g., artificial reef programs). This study would evaluate the effectiveness of different materials used for cable protection and scour protection in enhancing hard bottom fisheries habitat.

Background: BOEM monitoring studies at the Block Island Wind Farm indicate that standard cable protection concrete mattresses inhibit marine growth. Materials used in offshore infrastructure should provide conservation benefits to the maximum extent practicable. This concept has significant development in the North Sea where the Dutch have developed a Nature Inclusive Design (NID) catalog for use by regulators and the offshore wind industry. A similar catalog is being developed by The Nature Conservancy in the U.S. This study would evaluate the effectiveness of materials included in NID catalog under development in the U.S. Furthermore, this study would be able to evaluate the use of various materials by non-native species (e.g., *Didemnum vexillum*), which is commonly found on the northeast shelf to better understand trade-offs of promoting habitat utilization.

Objectives: The objective is to evaluate the effectiveness of cable protection and scour protection materials in providing beneficial habitat to living marine resources while recognizing that not all marine organisms (e.g., non-natives) are not necessarily beneficial to the environment. Thus, both the positive and negative outcomes of habitat promotion can be evaluated.

Methods: This study would procure and deploy various cable protection and scour protection materials on the seafloor, where they would be monitored for marine growth and habitat utilization by not only commercially or ecologically important species, but by non-native species as well. This study may be carried out directly with a lessee implementing such measures, or independently. Results would be compared with completed and ongoing monitoring programs at the Block Island Wind Farm and the Coastal Virginia Offshore Wind facility.

Specific Research Question(s): Are the materials effective in providing/enhancing habitat for structure/hard bottom species? Are the attracted species a positive or negative for the system in which they were deployed?

Current Status: N/A

Publications Completed: N/A

Affiliated WWW Sites: N/A

References: N/A