

## **ENVIRONMENTAL STUDIES PROGRAM: Ongoing Studies**

**Region:** Atlantic

**Planning Area(s):** North Atlantic

**Title:** Comprehensive Seafloor Substrate Mapping and Model Validation in the Atlantic

**BOEM Cost:** \$650,000

**Period of Performance:** FY 2016-2018

**Conducting Organization(s):** National Oceanic and Atmospheric Administration  
National Ocean Service

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### **Description:**

Background: There have been several recent efforts to better describe the ocean floor. For example, as part of the New York Department of State's renewable energy planning efforts and its Offshore Atlantic Ocean Study, released in July 2013, NOAA's National Centers for Coastal Ocean Science (NCCOS) developed a biogeographic assessment with maps and spatial information on bathymetry, surficial sediments, deep sea corals, oceanographic habitat variables, and seabirds offshore New York. BOEM has also partnered with NOAA's Northeast Fisheries Science Center to conduct a benthic habitat assessment in several offshore wind energy areas. Additionally, The Nature Conservancy has also partnered with the University of Massachusetts at Dartmouth to further analyze their seafloor imagery database. Each of these efforts uses relatively sparsely distributed data and statistical interpolation to create maps of habitats. Given the high cost of vessel time to conduct full multi-beam echosounder surveys, there will continue to be only broadscale sampling within potential lease areas and the need for predictive models.

The predictive models of seafloor substrate and sediment composition that have recently been developed for New York, and are under development for the other Mid-Atlantic states, need groundtruthing and model validation to assess the model predictions and ensure reliability. Obtaining this baseline information is a necessary precursor for evaluation of the potential impacts of offshore wind development upon the substrate and to inform siting decisions.

Objectives: The study will validate the existing substrate and sediment models, and provide finer-resolution substrate and habitat data in areas selected for groundtruthing.

### **Importance to BOEM:**

The Atlantic region is in need of high quality information on the composition of seafloor substrate and sediments for BOEM to accurately assess the effects of renewable energy development. This is particularly important for offshore wind development with respect to turbines that are anchored into the seafloor and the potentially high levels of benthic

disturbance that will occur during construction and operation. Direct on-the-ground documentation of the makeup of the seafloor could prevent the inadvertent destruction of marine habitats and shipwrecks. The results would also enhance NEPA documentation which requires an evaluation of the effects of proposed actions with consideration of numerous categories including: ecological, cultural, historic, aesthetic, economic, social, and health. One of the primary impacts of offshore wind development will be ecological effects on the substrate. The results of this study will allow for more successful and appropriate planning for the development of renewable energy on the Atlantic OCS and inform project siting.

**Current Status:** Agreement signed June 21, 2016. Kickoff meeting to discuss schedule and activities is planned for August 2016.

**Final Report Due:** June 2018

**Publications:** None.

**Affiliated Web Sites:** None.

**Revised Date:** July 18, 2016