



Seafloor Mapping and Biological Assessments in Potential Wind Energy Area of Offshore North Carolina



<http://coastalscience.noaa.gov/projects/detail?key=165>

Partnering with the University of North Carolina Institute of Marine Sciences, Bureau of Ocean Energy Management, NOAA's Fisheries Service, and Geodynamics, LLC.

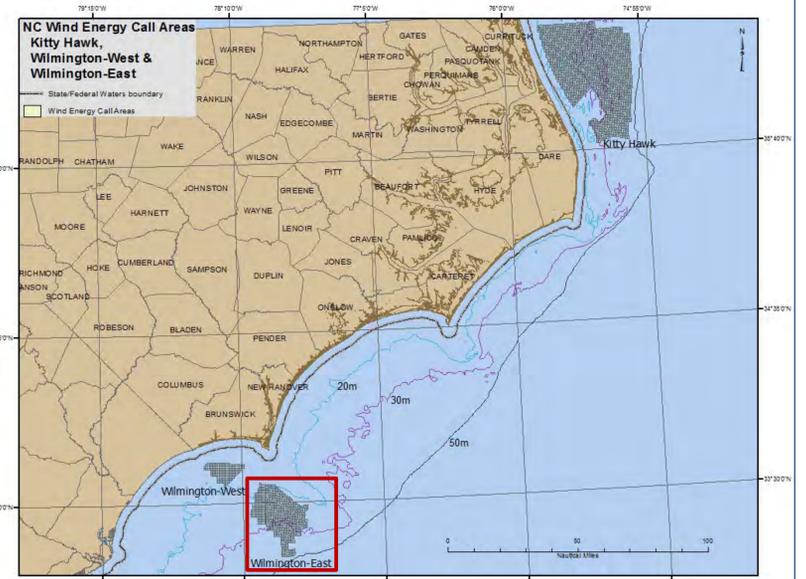
Interagency Agreement

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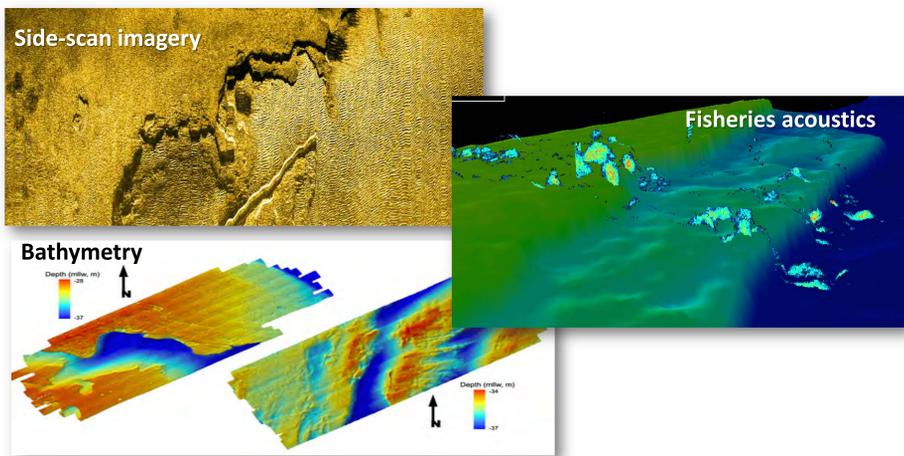
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Overview

North Carolina has some of the best conditions to support offshore wind energy in the Southeast U.S. Three areas identified by BOEM are being evaluated for potential commercial wind energy development. In 2013-2014, NOAA's National Centers for Coastal Ocean Science (NCCOS) and partners are conducting baseline biological assessments and extensive seafloor mapping in the Wilmington-East area. Results of these surveys will help refine potential lease areas to reduce conflict among ocean uses and minimize environmental impacts off the North Carolina coast.



Potential wind energy areas off the NC coast. NCCOS and partners are assessing sensitive seafloor fish and benthic communities in the Wilmington-East area near Cape Fear.

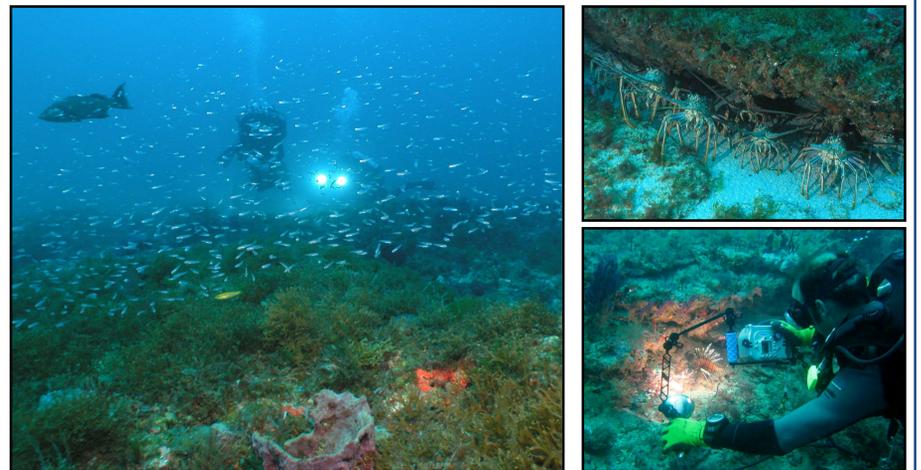


Acoustic Mapping

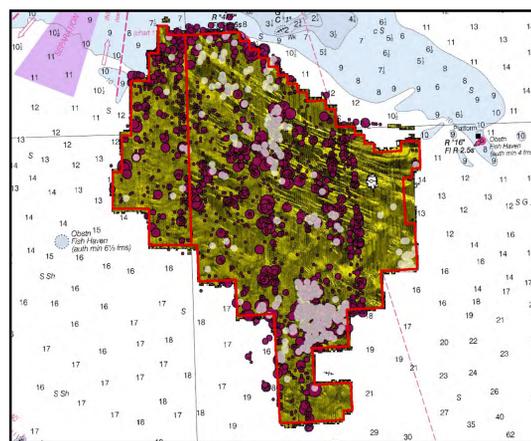
NCCOS scientists will collect data using multiple acoustic imaging techniques to visualize the seafloor and its associated fish communities. Multibeam echosounders and side scan sonars will provide information about the depth (bathymetry) and physical properties (backscatter) of the seafloor. A fishery sonar will allow scientists to remotely estimate fish sizes and densities in relation to seafloor types.

Biological Community Assessments

Hardbottom locations and other target sites selected from the acoustic imagery analysis will be surveyed using SCUBA to quantify the abundance, composition, and diversity of fish, algae, and invertebrates. Diver observations provide the highest level of detail on fish species abundance and sizes as well as the sponges, corals and algae that make up the benthic biological communities. The benthic and fish surveys will also help us ground-truth and interpret the acoustic habitat and fish density maps.



Products & Management Impact



Wilmington-East: Sidescan imagery of seafloor and location of high densities of fish (red and white dots) mapped using fishery sonar.

Offshore hardbottom habitats provide critical habitat for commercially important fishes, such as groupers and snappers. Acoustic seafloor and fish density data will be combined with biological community data to identify hotspots of biological diversity that may be sensitive to impacts of offshore energy development as well as areas that are less likely to be impacted. Our maps will help BOEM and stakeholders minimize direct and indirect impacts to these areas from offshore energy development, such as pile driving or sediment transport.

Outreach

BOEM, NOAA and UNC are engaging stakeholders and the general public to inform them of the science being conducted and identify environmental concerns related to offshore energy development in North Carolina. We are also using this opportunity to showcase regional research as an educational tool for students by inviting them onboard the Nancy Foster.

