Environmental Studies Program: Ongoing Study

Title	Endangered Atlantic Sturgeon Habitat Use in Mid-Atlantic Wind Energy Area (NSL #AT 15-01)
Administered by	Office of Renewable energy Programs
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Conducting Organizations(s)	U.S. Department of the Navy, Naval Facilities Engineering Command, Atlantic
Total BOEM Cost	$870,000
Performance Period	FY 2015–2020
Final Report Due	September 2, 2020
Date Revised	May 14, 2019
PICOC Summary	Write one or two sentences for each of the following elements, as appropriate. If not appropriate, write N/A.
Problem	This is a baseline study of sturgeon occurrence offshore Virginia.
Intervention	This study will monitor sturgeon occurrence offshore Virginia via acoustic telemetry.
Comparison	This baseline data will be compared with future disturbance from offshore wind energy development and sand extraction.
Outcome	A better understanding of Atlantic sturgeon habitat offshore Virginia
Context	Atlantic offshore renewable energy and marine minerals.

BOEM Information Need(s): Atlantic sturgeon were listed under the auspices of the Endangered Species Act in 2012. Limited information shows that Atlantic sturgeon occupy offshore waters (marine zone) up to at least 40m in depth during the winter. However, there is little data regarding their seasonal patterns of distribution and abundance in and around the proposed offshore wind energy areas (WEAs) and sand borrow sites. This information is necessary for BOEM's Office of Renewable Energy Programs and Marine Minerals Program to meet its obligations under the National Environmental Policy Act, the Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act. Baseline data on Atlantic sturgeon, and other important protected and commercially important finfish that have been implanted with acoustic transmitters, will allow their seasonal presence/absence, habitat use, and any migration corridors to be identified and used to inform environmental impact assessments for offshore renewable energy as well as for marine minerals. Atlantic sturgeon could potentially be negatively impacted by offshore wind energy development through noise disturbance and displacement from feeding grounds, masking of their communication calls, and disruption of their migration pathways, as well as through changes to their benthic prey species.

Background: Atlantic sturgeon experienced severe declines due to habitat destruction and overfishing beginning in the late 19th century. Lack of recovery coupled with concerns over continued loss/degradation of habitat, ship strikes, and bycatch in commercial fisheries resulted in NOAA-NMFS listing five Distinct Population Segments under provisions of the Endangered Species Act in 2012 (NOAA-NMFS 2012). The Mid-Atlantic, which includes the James River, Delaware River, and the Hudson River, historically supported the largest populations of Atlantic sturgeon (Secor and Waldman 1999). However, presence in the offshore environment is not well understood. While there is a growing body of information on the riverine habitat requirements for this species, information on their marine habitats is severely lacking (Dunton et al. 2010, Erickson et al. 2011). This lack of information on marine habitat use is of particular concern given the fact that Atlantic sturgeon spend the vast majority (>90%) of their adult lives in the coastal and offshore waters and are completely dependent on this region for food resources. Atlantic sturgeon are a large (max weight > 400kg) and highly mobile species, as a result they are not commonly encountered in traditional gillnet or trawl surveys due to issues surrounding gear selectivity (Dunton et al 2010). Telemetry is therefore a much more effective technique for understanding the seasonal presence, habitat use and movement pathways of sturgeon.

Objectives: The objective of this study is to provide information on the seasonal patterns of occurrence and habitat use as well as explore the underlying causal mechanisms for Atlantic sturgeon habitat selection in and around the Virginia WEA and the Sandbridge Shoal sand borrow site in BOEM's Mid-Atlantic Planning Area.

Methods: The approach would be to leverage large numbers (>900 at present) of telemetered Atlantic sturgeon in the Mid-Atlantic, which have been tagged through a number of research programs and form part of the Atlantic Cooperative Telemetry Network and supplement these tags with animals caught in the offshore habitat. Existing studies with acoustic receivers have primarily been in freshwater, estuarine, and nearshore (<8km) marine habitats. Consequently, very little is known about their offshore marine habitats and feeding grounds, and how these may overlap with the proposed WEAs, sand borrow areas, and adjacent nearshore areas. The approach will provide a robust estimate of Atlantic sturgeon distribution and habitat use in the WEAs and sand borrow areas in the mid-Atlantic.

Specific Research Question(s): This study will:

1. Determine the seasonal presence/absence of endangered Atlantic sturgeon in and around the project areas in the mid-Atlantic.

2. Characterize the habitat use (including habitat type including biological and physical characteristics) and feeding grounds of Atlantic sturgeon to the extent practicable with available data.

Current Status: The project kick-off meeting was held on October 7, 2015. Receiver deployment was completed in spring 2016. The study is proceeding well with several species being identified and coordinated through data sharing networks such as the Atlantic Cooperative Telemetry Network.
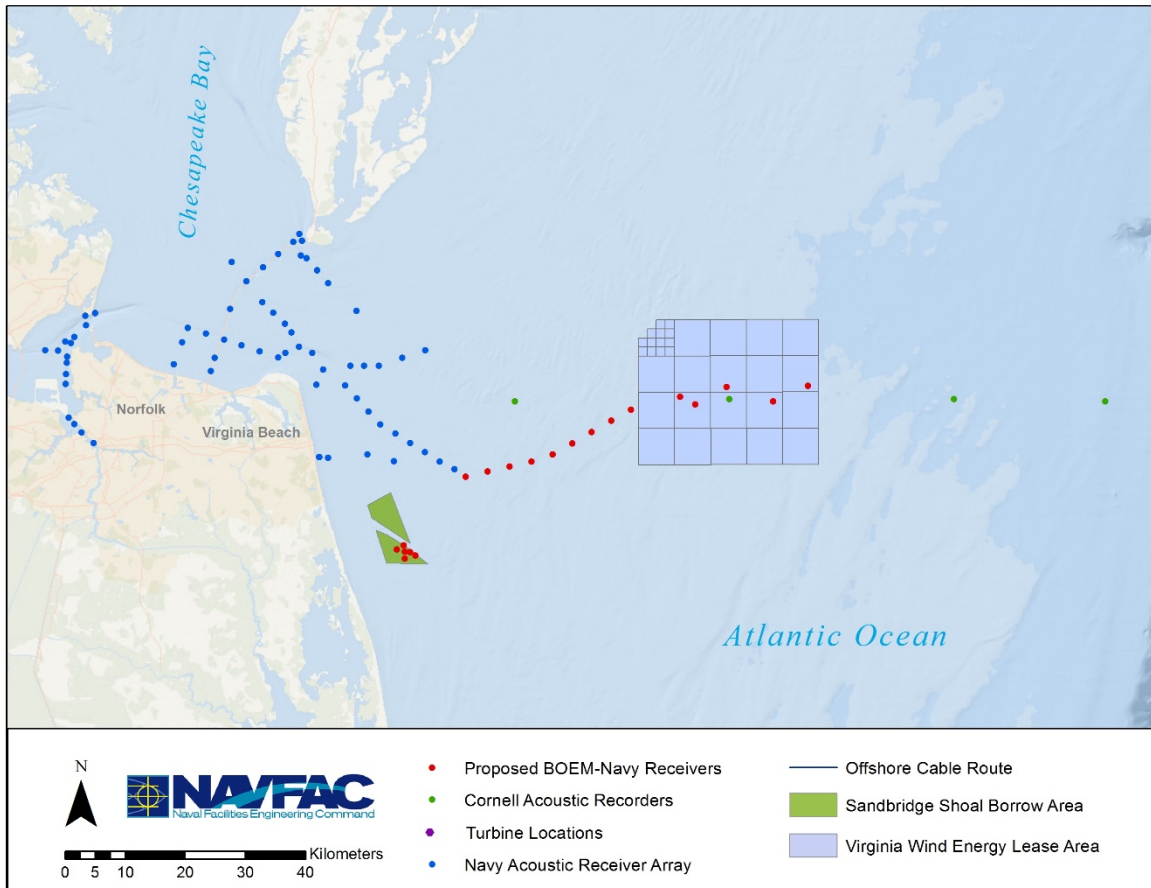
Publications Completed: N/A.

Affiliated WWW Sites: https://www.boem.gov/Renewable-Energy-Ongoing-Studies/.

References:

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