

Environmental Studies Program: Ongoing Study

Title	Using Nanotags to Measure Shorebird and Bat Responses to Offshore Wind Turbines (AT 17-01)
Administered by	Office of Renewable Energy Programs
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Conducting Organizations(s)	University of Rhode Island
Total BOEM Cost	\$299,842
Performance Period	2017-2020
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Date Revised	May 28, 2019
PICOC Summary	
<i>Problem</i>	Previous studies tells us when and where individuals are likely to travel in a wind energy area or leased area, but they do not tell us how individuals may respond to the actual presence of operating wind energy turbines.
<i>Intervention</i>	Use radio-telemetry to describe the movement behavior of birds fitted with nano-tags as they fly near operating offshore turbines.
<i>Comparison</i>	Most impact assessments rely on information collected before construction. This study will describe bird responses to actual turbines.
<i>Outcome</i>	A 3D description of how birds move and respond to offshore turbines. This information will better inform future risk assessments.
<i>Context</i>	Block Island Wind Farm.

BOEM Information Need(s): The recent installation of the nation’s first offshore wind facility near Block Island, Rhode Island, creates a unique opportunity to better understand the environmental impacts of offshore wind energy development on shorebird and bat resources. Tracking the movements of birds and bats at an existing wind energy facility is essential for understanding the potential risks associated with renewable energy development along the Atlantic Coast, for NEPA assessments, and for Section 7 Consultations with the U.S. Fish and Wildlife Service (USFWS).

Background: In anticipation of offshore wind energy development on the Atlantic Outer Continental Shelf (OCS), the BOEM and USFWS collaborated on three studies that use digital VHF telemetry ("Nanotags"): 1) "[Tracking Movements of Endangered Roseate Terns and Threatened Piping Plovers in the NW Atlantic](#)"; 2) "[Tracking Northern Long-Eared Bat Offshore Foraging and Migration Activities](#)"; and 3) "[Tracking Movements of Threatened Migratory *rufa* Red Knots in U.S. Atlantic Outer Continental Shelf Waters](#)." Although these studies are telling us when and where individuals are likely to travel in a wind energy area or leased area, they do not tell us how individuals may respond to the actual presence of operating wind energy turbines.

Objectives: The primary objective of this study is to track the movement of nano-tagged migratory birds and bats and to assess their responses to operating offshore wind turbines located off Block Island, RI.

Methods: The University of Rhode Island team is responsible for the field activities that span two field seasons. The team will construct a land based tower array on Block Island. In a partnership with Deepwater Wind, tracking arrays will also be installed on up to two offshore wind turbine foundations. These tracking arrays will be in position to track several other species of migratory birds and bats fitted with nanotags from the dozens of other ongoing projects (<http://motus-wts.org/>). The team will also conduct up to six boat surveys near the offshore wind turbines off Block Island to calibrate detections and then develop mathematical models that will describe NanoTagged bird responses to the presence of offshore wind turbines. The team will repeat the effort in to increase sample size and to further refine modeling efforts. Also in 2019, the team will capture additional shore birds that will be fitted nano-tag transmitters.

Specific Research Question(s): How do individual birds respond to offshore wind turbines?

Current Status: A tower array was installed on Block Island, and Deepwater Wind installed a tracking array on the easternmost foundation platform at its 30MW Block Island offshore wind farm. Kickoff meeting was held October 20, 2017. The 2018 field season is complete. Work on the 2019 field season is underway.

Publications Completed: (Press releases)

<http://dwwind.com/press/cutting-edge-technology-block-island-wind-farm-helping-scientists-track-bird-bat-activity-offshore/>

<http://ripr.org/post/block-island-wind-farm-helps-researchers-monitor-offshore-bird-and-bat-migrations#stream/0>

Affiliated WWW Sites: None

References: None