

Environmental Studies Program: Ongoing Studies

Study Area(s): Atlantic

Administered By: Office of Renewable Energy Programs

Title: Determining Offshore Use by Diving Marine Birds Using Satellite Telemetry (AT 12-0)

BOEM Information Need(s) to be Addressed: Large marine birds with a diving strategy for foraging migrate and winter along the U.S. Atlantic coast from Maine to North Carolina and beyond. Three species of marine diving birds – surf scoters, red-throated loons and northern gannets - - were selected for study because they represent diverse foraging strategies and are of special concern to the U.S. Fish and Wildlife Service (USFWS) because they all appear to be declining. Their foraging strategies could possibly put them at special risk for collision with offshore wind farms. BOEM needs to know where they concentrate in winter off the U.S. coast, and also, if possible, to define the width and location of their migration corridors.

Total Cost: \$2,058,379

Period of Performance: FY 2012-2017

Conducting Organization(s): U.S. Fish and Wildlife Service (USFWS)

Principal Investigator(s): Scott Johnston, scott_johnston@fws.gov

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Description:

Background: Specific information is needed on migration corridors and winter concentration areas used by surf scoters, northern gannets, and red-throated loons during spring and fall migratory flights along the U.S. Atlantic coast and Outer Continental Shelf (OCS), especially south of New England to the Carolina Outer Banks, where there is great interest in development of wind energy facilities. These species have been identified as high priority species by the USFWS because of their declining populations, paucity of information on the Atlantic south of New England and/or because of the perceived threat of wind energy development to diving birds. This study will permit delineation of specific fall and spring migration corridors used by these species and will help to identify winter concentration areas for each species.

Objectives: The primary objective is to determine the occurrence and movement patterns south of New England to the Outer Banks of three diving marine bird species with diverse life history strategies: the surf scoter, northern gannet, and red-throated loon.

Methods: The USFWS, through partnerships with the Sea Duck Joint Venture (SDJV), US Geological Survey (USGS), Biodiversity Research Institute (BRI) and Memorial University of Newfoundland, will capture surf scoters, northern gannets, and red-throated loons from December through March and surgically implant satellite transmitters with duty cycles programed to provide locations of these birds in winter

and during spring and fall migrations. Boats and experienced crews of BRI and SDJV will be used to capture birds and experienced veterinarians identified by SDJV and USGS will perform surgical implantations of transmitters. Memorial University of Newfoundland's Montevicchi Laboratory will also attached satellite transmitters externally at the base of the tail feathers of northern gannets. USGS will also conduct tests of externally-attached, solar powered satellite transmitters.

Each year, 15 birds of each species will be captured offshore during fall and winter for three years and fitted with surgically implanted satellite transmitters with a battery life of less than one year. Transmitters will be programmed to send data during winter and migratory periods when birds are most likely to occur in the study areas. To assure that transmitted birds will yield data on movements south of New England, most birds will be captured off the Outer Banks of North Carolina and off the Chesapeake Bay. Satellite data will be collected and analyzed to determine the locations of these birds throughout the life of the transmitters. During a fourth field season, an additional 25 birds of each species will be captured and fitted with transmitters.

Current Status: BOEM received annual reports for field work in 2012, 2013, and 2014. The draft final report was received on June 2, 2017 and the datasets were received on June 9, 2017

Final Report Due: July 31, 2017.

Publications Completed: None

Affiliated WWW Sites: <http://www.briloon.org/surf-scooters-determining-offshore-use-off-mid-atlantic-using-satellite-tracking>

Revised Date: June 30, 2017