

## **ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES**

**MMS OCS Region:** Atlantic

**Title:** Determining Distributions and Movements of Long-tailed Ducks Using Satellite Telemetry

**Total Cost:** \$76,340

**Period of Performance:** FY 2009-2011

**Conducting Organization:** Massachusetts Audubon Society

**MMS Contact:** Dr. James Woehr

### **Description:**

Background With the passage of the Energy Policy Act of 2005, MMS was delegated responsibilities for alternative energy activities on the Outer Continental Shelf. This new responsibility includes offshore wind energy projects. As the technology is new, MMS is challenged with analyzing existing information and identifying needs for further study to develop the information necessary to adequately assess the potential project impacts under the National Environmental Policy Act (NEPA) and other relevant statutes. Call for interest in alternative energy developments indicated a strong interest in the New England (Rhode Island to Maine) areas for wind development in particular. Based on the information available MMS has identified impacts to birds as a primary biological concern and has been seeking additional data to describe bird use of Nantucket Sound. The proposed study would build upon a previous effort conducted during Winters 2006-2008 by the Massachusetts Audubon Society in collaboration with the U.S. Geological Survey which captured, tagged, and tracked long-tailed ducks in and around the Nantucket Sound to determine movement patterns and areas where ducks congregate. This study would increase the sample size from 16 individuals, thus providing a more robust data set from which to draw inferences.

Objectives The objectives of the study are to:

- 1) Determine locations of roosting sites of individual long-tailed ducks change over time (e.g., nightly, weekly, etc.) Do these ducks return to approximately the same locations?
- 2) Refine the understanding of migration and breeding locations developed from 2007-2008 satellite telemetry work.
- 3) Track night-time movements of long-tailed ducks in Nantucket Sound.
- 4) Provide additional information to help determine whether long-tailed duck roost sites are concentrated or widely scattered across Nantucket Sound.
- 5) Determine whether long-tailed ducks in Nantucket Sound are comprised of genetically differentiated breeding populations.

Methods The research will include the capture, satellite tagging, tracking and mapping of long-tailed ducks in Nantucket Sound, Massachusetts. DNA testing will be conducted on all captured birds through blood and feather samples.

Importance to MMS Long-tailed ducks are of conservation concern because a large portion of the North American population winter in Nantucket Sound, an area where offshore wind power

could be developed. Although previous studies provided limited information on bird use in Nantucket Sound, the sparseness of data on long-tailed duck nocturnal use of Nantucket Sound continues to be a significant information gap. As a wind power facility would run 24 hours a day, it is critical for MMS information needs to have a better understanding of night time bird use of the Sound. The results of this study will also provide a baseline estimate of the relative abundance and movements of wintering sea ducks that will help MMS detect and interpret changes in long-tailed duck abundance and distribution in and around Nantucket Sound should a proposed project move forward. This includes detection of changes in the numbers, movements and distribution of wintering sea ducks in response to the construction of a wind farm, or whether the ducks experience habitat loss or displacement.

Current Status: The project completed the first year of using satellite tags. Three ducks are currently being tracked at their summer nesting areas. Additional ducks will be tagged during the winter of 2009.

Final Report Due: March, 2011

Publications: None.

Affiliated WWW sites:

[http://www.massaudubon.org/Conservation\\_Science/Tracking/LTDUresearch.php](http://www.massaudubon.org/Conservation_Science/Tracking/LTDUresearch.php)

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