

## **OFFICE OF RENEWABLE ENERGY PROGRAMS: Ongoing Studies**

**Region:** Atlantic Region

**Planning Area(s):** North Atlantic, Mid-Atlantic, South Atlantic

**Title:** Statistical Guidelines for Seabird Sampling

**BOEM Cost:** \$138,500

**Period of Performance:** FY2012-2013

**Conducting Organization(s):** National Oceanic Atmospheric Administration National Ocean Service National Centers for Coastal Ocean Science. (M12PG00068)

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### **Description:**

Background: The launching of the Secretary's "Smart from the Start" wind energy initiative for the Atlantic OCS is aimed at facilitating the prioritization, rapid siting and leasing of new projects. Experience from onshore wind development and wind development offshore in Europe suggests that siting of facilities is an important consideration for minimizing impacts to bird species. Discussions during the FWS Marine Bird Science and Offshore Wind Workshop and the BOEM Atlantic Wind Energy Workshop in 2011 emphasized the importance of identifying areas of persistent aggregations of birds (a.k.a. "hot spots") which may conflict with offshore wind energy development. Conversely, the identification of "cold spots" or areas where birds do not aggregate and thus may not conflict with wind energy development is equally important. Yet seabirds are highly mobile organisms, and detecting "hotspots" and "coldspots" of seabird aggregation in the marine environment poses a statistical challenge.

The proposed research will develop a general framework for determining the number, frequency, and temporal distribution of samples needed to adequately characterize the occurrence and abundance of marine avifauna in BOEM outer continental shelf (OCS) lease blocks. A statistical power analysis will be used to estimate the number of surveys needed to determine the likelihood of a site being a seabird "hotspot" or "coldspot". The analysis will rely on existing seabird data from the 'Compendium of Avian Occurrence Information for the Continental Shelf waters along the Atlantic Coast of the U.S.' (M08PG20033).

Objectives: The objective of this study is to develop guidelines for statistically robust sampling of seabird abundance to support environmentally responsible marine renewable energy siting.

**Importance to BOEM:** BOEM is developing guidelines for avian surveys on the OCS that will provide guidance to potential applicants, states, and federal agencies on avian surveys. The guidelines for avian surveys will include explicit recommendations on the number of surveys needed to detect aggregations of birds in OCS lease blocks.

Satisfying this immediate BOEM need will also support future needs including: the interpretation of existing avian survey data for NEPA, the design of future monitoring efforts, and the assessment of impacts due to other activities in on the OCS.

**Current Status:** Awarded on November 14, 2011. Interim Report (Phase I) received March 21, 2012.

**Draft Final Report Due:** October 5, 2012

**Publications:** Zipkin, E.F., J.B. Leirness, B.P. Kinlan, A.F. O'Connell, and E.D. Silverman. Fitting statistical distributions to sea duck count data: implications for survey design and abundance estimation. *Journal of Statistical Methodology*. In review.

**Affiliated Web Sites:** None

**Revised Date:** September 26, 2012