2012 Presidential Migratory Bird Federal Stewardship Award Nominations

NOMINATION #1

1. Applicant (must be a Federal Agency. If more than one, list the lead agency):

Environmental Studies Program (ESP), Bureau of Ocean Energy Management (BOEM), U.S. Department of the Interior.

2. Co-applicant(s) if any; can be Federal or non-Federal entity. A co-applicant is a major contributor to the outcome of the project (e.g., without their contribution, the action would not have occurred):

U.S. Fish and Wildlife Service(USFWS), U.S. Geological Survey (USGS), Massachusetts Audubon Society, Normandeau Associates, Pandion Systems Inc., Rutgers University, Cornell Lab of Ornithology, National Oceanic and Atmospheric Administration (NOAA) including the National Marine Fisheries Service and the National Ocean Service, Sea Duck Joint Venture, Atlantic Coast Joint Venture, Northwest Atlantic Marine Bird Cooperative, British Trust for Ornithology, Memorial University of Newfoundland, the College of Staten Island/City University of New York, Manomet Center for Conservation Sciences, and other "data providers" which are too numerous to list.

3. Action (In two pages or less, describe how the action contributes to overall migratory bird conservation. Be sure to highlight areas in which the action exceeds daily activities and/or agency mandates, and represents a leadership role in migratory bird conservation):

The action described in this nomination is the development of a national research initiative to understand the distribution, abundance, and behavior of migratory birds in the Atlantic marine offshore environments to reduce or eliminate possible impacts from renewable energy. The ESP has conceived, developed, and is overseeing an innovative research initiative that may be the foremost research program in the world examining how to reduce or eliminate potential impacts to migratory birds from marine offshore renewable energy.

The ESP began an ambitious research program by first working with federal partners, initially USGS and USFWS, to synthesize existing information and knowledge of migratory birds in the Atlantic Ocean from Maine to Florida. The "Compendium of Avian Information and Comprehensive GIS Geodatabase" (Compendium) pulled together for the first time information contained in Atlases, Census compilations and databases that are held by the USFWS, USGS, state environmental agencies, academic institutions or avian advocate groups such as state Audubon Societies or the Sea Duck Joint Venture. The data from these diverse datasets dates back more than 30 years and is being compiled, synthesized and incorporated into a comprehensive GIS database to assist agency scientists and decision makers regarding potential impacts from wind energy development on the Atlantic Outer Continental Shelf (OCS). The need for this information was identified during the ESP Alternative Energy workshop, in a previous study of the Worldwide Synthesis and Analysis

of the Existing Information Regarding Environmental Effects of Alternative Energy Uses on the OCS, and at the Workshop on Birds and Offshore Wind Development in the Northeast/Mid-Atlantic held in Shepherdstown, West Virginia in February 2008.

This Compendium is serving as a basis for future studies by identifying key species of concern and data gaps. Information about seabirds and shorebirds, two groups potentially at risk in the offshore environment, were the focus of data compilation and standardization. This study compiles data on seabirds and shorebirds off the Atlantic Coast, the area where offshore wind development is most likely to occur in the immediate future. The study also developed predictive models of shorebird distribution (see, for example, Zipkin et al. 2010. Distribution patterns of wintering sea ducks in relation to the North Atlantic Oscillation and local environmental characteristics. *Oecologia.* 163: 893-902). The resulting Seabird Catalog has been made available through the U.S. Fish and Wildlife Service as a web mapping service (http://www.data.gov/communities/node/237/data_tools/5913). The first stage of the Compendium is complete but BOEM has renewed funding to include new sources of information, to bring in new partners and to expand modeling efforts to help predict where species may occur.

Certain species, have been, or will be, studied in greater detail because of recognized conservation concerns. These have included the piping plover, roseate tern red knot, and long-tailed duck. These species were monitored using various approaches including acoustic techniques, tracking red knots through the use of light sensing tags and evaluating avoidance behavior of roseate terns. These studies concluded that the overall risk of adverse impacts from collisions with wind turbines on the Atlantic Outer Continental Shelf for these species was low, although some degree of exposure is likely.

The ESP program is also engaged in surveying efforts related to its migratory bird initiative. For example, BOEM has been working in partnership with USFWS, NOAA, USGS, the College of Staten Island/City University of New York, and the Manomet Center for Conservation Sciences to collect data on marine bird distribution and abundance on the Atlantic Outer Continental Shelf. NOAA's National Marine Fisheries Service provides space on its research vessel cruises for seabird scientists. In a much broader effort, through Atlantic Marine Assessment Program for Protected Species (AMAPPS) BOEM, NOAA and the USFWS are working on a joint, multi-year, comprehensive study along the East Coast to survey marine protected species, including seabirds. BOEM will provide $7.6 million for this study, which runs from 2010 until 2014. Aboard NOAA ships, ESP-supported bird researchers are surveying the northeast and southeast beyond the edge of the continental shelf. Observers on NOAA aircraft survey shallower waters and USFWS aircraft survey seabirds during August from Maine to Florida. The project will also test new technologies and develop models designed to interpret the survey data relative to time, space and habitat.

More recently the BOEM marine migratory bird research initiative has focused on developing innovative ways to meet the enormous challenge of surveying birds in the offshore environment. This is being accomplished through the support of new technology development that is utilizing acoustic and remote sensing technologies.

Acoustic microphones can monitor vocalizations of birds both day and night, at all seasons of the year, and during periods of low visibility. The ESP is leading efforts to deploy and field test acoustic and thermographic detectors and the deployment and data gathering in the

Atlantic OCS. To be able to automate analyses would make this method more efficient and economical. The ESP is supporting the Cornell Lab of Ornithology's development of software to automate analyses by matching spectrograms of recorded vocalizations to an extensive library of audio recordings. In addition, the plan is to try to develop an algorithm to relate call counts to abundance and/or passage rates. The combination of deployed acoustic sensors and automated call detection software may allow the automated detection of bird species using remotely deployed acoustic sensors many miles offshore.

The ESP is also developing new technology to utilize high definition aerial cameras to survey birds. High definition cameras mounted on aircraft show promise as a means to conduct aerial surveys with minimal error and without disturbance to birds that are being surveyed. Combinations of aircraft type, camera type, mounting systems and onboard recording systems are being evaluated to determine the most effective, efficient and economical means of monitoring seabirds, marine mammals and sea turtles on the Atlantic OCS. This research is engaging the British Trust for Ornithology to ensure that efforts build upon the pioneering efforts of European scientists.

Through this research initiative the ESP has taken a leadership role in the conservation of marine birds. The ESP has committed more than 5 million dollars over the past 4 years on migratory bird research in support of its partners. The results of this effort benefit the conservation of migratory birds both in the marine environment and on land.

4. When was the action initiated? (Initiation date must be 2002 or later)

The Energy Policy Act of 2005 added responsibilities for offshore renewable energy projects and alternate use of existing structures to the BOEM's mandates. This nomination is for the ESP Migratory Bird research initiative that was started, and is ongoing, since that time.

5. Does the action take place locally, regionally, nationally or internationally? Please explain.

The ESP develops, designs, and oversees research on migratory birds nationally. The focus of recent research has been in the Atlantic Ocean, where the development of renewable energy offshore, particularly wind turbines, is most imminent. Due to the nature of migratory birds the research information being collected is relevant internationally. For example, ESP-led research has found new wintering and migratory stopover sites in South America for the red knot. In addition, international scientists from Canada, Denmark, and the United Kingdom are engaged in this research initiative.

6. How does the action meet or exceed agency mandates or daily activities?

The BOEM is responsible under the Energy Policy Act of 2005 for managing alternative energy resources on the Outer Continental Shelf. This includes preparation of environmental assessments and environmental impact statements using the best available knowledge and information. BOEM has gone beyond the mandate to use the "best available information" by becoming world leaders in research on the potential impacts from renewable energy development offshore. This research initiative is responsible for significant preconstruction surveying and monitoring on a regional scale. This effort improves BOEM's ability to make

environmentally sound decisions regarding the siting and permitting of offshore energy developments on the Atlantic Outer Continental Shelf.

7. Explain how the action promotes or results in effective migratory bird conservation.

By developing a greater understanding of where and when birds are concentrated on the Atlantic OCS, this research effort will enable BOEM to minimize or avoid adverse impacts on bird populations by avoiding heavily used migratory pathways and/or areas of high bird concentrations when permitting offshore energy activities. However, this information on migratory birds is broadly applicable to many other federal agencies and the overall promotion of effective migratory bird conservation. In addition, it is significant that the ESP is promoting the use of new technologies, such as high definition aerial imagery that may revolutionize surveying of marine birds. This will allow for greater information collection and more informed decision-making regarding effective migratory bird conservation.

8. Provide details that demonstrate how the action is innovative.

This action is innovative in several ways:

- The compilation and synthesis of the most comprehensive dataset on Atlantic Seabirds for U.S. Atlantic Coast, spanning a period of more than 30 years. Previously the access to this data was limited or unavailable.
- The development of unique spatially explicit models of seabird occurrence for species of special concern.
- The development, testing, and advancement of new technologies and instruments that are revolutionizing the way that data collection is being viewed for birds in the offshore environment. These technologies include high definition and thermal imagery, marine hardy acoustics, geo-locator tags, and software that can automatically identify birds based on their flight calls.

9. Describe the roles and responsibilities of partners (if any). Partners are associated with the action through monetary or in-kind support.

The ESP has a rigorous, competitive process for developing research projects for migratory bird research. We select the best scientists in the world to complete the research and engage other federal scientists, such as the USFWS scientists, to make sure the right research questions are being addressed. The ESP program scientists conceptualize, develop, and oversee the research projects that are part of this action. Examples of the roles of our partners include:

- Development of research needs and data gaps.
- Participation in proposal evaluation for studies (Federal partners only).
- Conducting research projects overseen by the ESP.

10. How might the action be transferrable to other sites managed by this or other federal agencies? Does the action contribute to a tangible need locally, regionally, nationally, or internationally? How is this being encouraged? Please explain.

Although BOEM's jurisdiction is limited to the offshore environment results of this research initiative for migratory birds are easily transferrable to other federal agencies. The increased understanding of migratory birds in the marine environment that has occurred due to this research is broadly beneficial. Among the many agencies that may use this data for their missions include the USFWS, NOAA, Department of Energy, National Park Service, the Navy and Coast Guard, and the Federal Energy Regulatory Commission. The ESP encourages this by partnering with these agencies throughout the entire process and making all study results readily accessible to the public.

11. How does/did the action impact your agency's current migratory bird conservation practices?

The results of research are critical to site evaluations where future energy development is being considered or has been proposed, thus enabling BOEM to minimize or avoid significant impacts to birds by avoiding heavily used migratory pathways or areas of high bird concentrations. As part of this process the information is included in National Environmental Policy Act analysis documents and in the development of mitigation approaches.

12. How does the action benefit migratory bird species of concern?

We work closely with the USFWS to focus on species of highest priority. Some specific examples include:

- We currently are planning a study examining three species of diving birds identified as species of concern by the USFWS (surf scoter, northern gannet and red-throated loon.) This new $1.3 million study (which involves five partner agencies/organizations) will track migratory corridors and winter concentration areas through the mid-Atlantic region via surgically-implanted satellite transmitters.
- A recently completed study focused on Endangered Species Act-listed and/or candidate species found along the Atlantic (piping plover, roseate tern and red knot).
- Compiling and standardizing various seabird and shorebird data sets will be useful to researchers and natural resource managers.
- Development of research and survey tools could help foster offshore bird research, an often neglected field.
- New survey efforts could help in population assessments and understanding of current distributions. Current distributions may be affected by changes in the environment, particularly changes due to climate change.