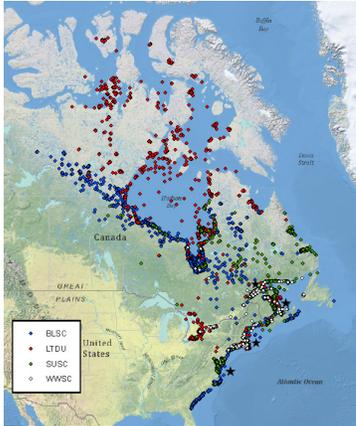


## Patuxent Wildlife Research Center

### Migration and Habitat Use by Seabirds in the Atlantic Flyway: Evaluation of Potential Impacts of Proposed Wind Farms



**The Challenge:** Demands for alternative energy are increasing and offshore wind projects are slated for several areas used by seabirds in coastal areas of the Atlantic flyway and in the Great Lakes. There is a need to identify the most important habitats for seabirds related to the construction of turbines to evaluate and minimize potential adverse effects on seabirds and their habitats. This will be a large scale, multi-year, collaborative project that will use satellite telemetry to document annual migration patterns and to assess risk to seabirds in specific areas in eastern North America where offshore wind projects are planned. Target species include black scoter, surf scoter, white-winged scoter, long-tailed duck, red throated loons and northern gannets.

**The Science:** Using surgically implanted satellite transmitters we will fulfill the following objectives: 1) Estimate average length-of-stay during winter in areas of highest concern relative to wind farm developments; 2) Map local movements of individual radio-marked birds in areas slated for placement of wind turbines; 3) Fully describe the annual migration patterns for four species of seaducks: surf scoter, black scoter, white-winged scoter, long-tailed duck and two seabird species: red-throated loon and northern gannet in the Atlantic flyway; 4) Quantify the proportion of the flyway population of each of the species that winters within the Great Lakes, north Atlantic, mid-Atlantic, and south Atlantic regions; 5) Estimate rates of annual site fidelity to wintering areas, breeding areas, and molting areas for all species in the Atlantic flyway.

**The Future:** Offshore windfarms constructed in Denmark have documented seabirds avoidance of the area. Once all the pre-construction information is collected, and with additional funding during post construction, local movement data are needed to evaluate impacts of implementation on seabird habitat utilization, i.e. Cape Wind Project. In addition, this research is linked to research being completed on underwater hearing thresholds of these species to evaluate if avoidance of an area is due to physical presence of turbines or underwater noise generated by turbine construction and use. Upon completion of the project all data will be incorporated into the marine database to monitor potential impacts of climate change on seabird migration.

