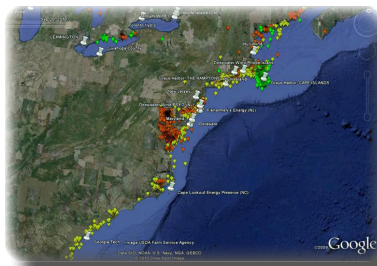
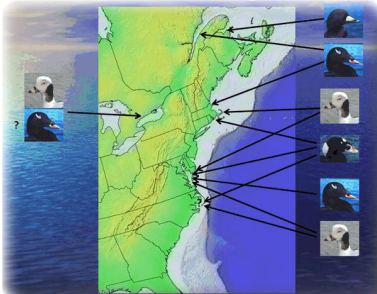


## Migration and Habitat Use by Seaducks in the Atlantic Flyway: Evaluation of Potential Impacts of Proposed Wind Farms



- **The Challenge:** Demands for alternative energy are increasing and offshore wind projects are slated for several areas used by seaducks in coastal areas of the Atlantic flyway and in the Great Lakes. There is a need to identify the most important habitats for seaducks related to the construction of turbines to evaluate and minimize potential adverse effects on seaducks 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 seaducks in specific areas in eastern North America where offshore wind projects are planned. Target species include black scoter, surf scoter, white-winged scoter, and long-tailed duck.
- **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 ducks 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 in the Atlantic flyway; 4) Quantify the proportion of the flyway population of each of the four focal 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 four focal species in the Atlantic flyway.



**The Future:** Offshore windfarms constructed in Denmark have documented seaduck 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 seaduck 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 seaduck migration. To enhance the outreach of this project partners will implement an adopt-an-animal program for individuals to follow adopted seaducks along their migration, "The Great Seaduck Race" (modeled on the successful, Great Turtle Race) will be created, and we will incorporate telemetry data into the Signals of Spring program.