

# Atlantic and Great Lakes Sea Duck Migration Study

*Sea Duck Joint Venture Launches Ambitious  
Satellite Telemetry Study*



Surf Scoter. Photo courtesy of E.J Peiker, <http://www.ejphoto.com>

## Why Study Sea Ducks?

Most sea ducks breed at northern latitudes during summer, and spend the remainder of the year in marine and near-shore environments and major inland waters including the Great Lakes. Compared to other waterfowl species, we know very little about sea ducks, including their population size and trends in eastern North America. It is believed that many North American sea duck populations are declining although reasons for declines are unknown. Sea ducks are one of the primary wildlife species utilizing coastal habitats in the Atlantic coast during winter, and may serve as good barometers of environmental health.



Long-tailed Ducks. ©Donna Dewhurst

## The Sea Duck Joint Venture

The Sea Duck Joint Venture (SDJV) was formed in 1999 to address concerns about sea duck declines and the lack of information about their basic life history and limiting factors. It is a partnership-based conservation program and provides seed money and coordination to stimulate research and monitoring of North American sea ducks. Partners include federal, state and provincial wildlife agencies, private conservation groups, academia, and industries with a stake in sea duck resources. For more information about the SDJV, go to <http://seaduckjv.org>.

Driven by a lack of knowledge on sea duck distribution, migration patterns, and seasonal habitats used, the Sea Duck Joint Venture (SDJV) partnership has launched a large-scale satellite telemetry study of sea ducks in the Atlantic Flyway. From 2009 to 2013, about 300 transmitters will be deployed in four species: Black Scoter, Surf Scoter, White-winged Scoter, and Long-tailed Duck - all species of high conservation concern.

## Purpose of Study

The study will address three primary topics:

- Migration patterns of sea ducks in the Atlantic Flyway;
- Identify key habitats used by sea ducks throughout the year; and
- Evaluate sea duck use of offshore areas to help minimize conflict with wind energy development.

Relatively little is known about population delineation (the links among breeding, wintering, staging, and molting areas) for sea ducks in eastern North America. Documentation of these migration patterns are needed to understand population ecology, and to help identify limiting factors and evaluate potential impacts from harvest and development. This study is a large scale, multi-year, collaborative project that will use satellite telemetry to document annual migration patterns and habitat use. Documenting key habitats used throughout the year will also help better inform habitat conservation efforts, and aid in the design of monitoring programs for sea ducks.

As climate change becomes more evident, demands for alternative energy, including offshore wind power, are increasing. Offshore wind farms are currently proposed for Nantucket Sound; coastal areas of Maine, Delaware and Rhode Island; the north shore of Lake Ontario, and other areas, many of which harbor significant sea duck populations during winter. Information from this study will help managers and developers make more informed decisions about site placement of wind farms that would minimize impacts to sea ducks.

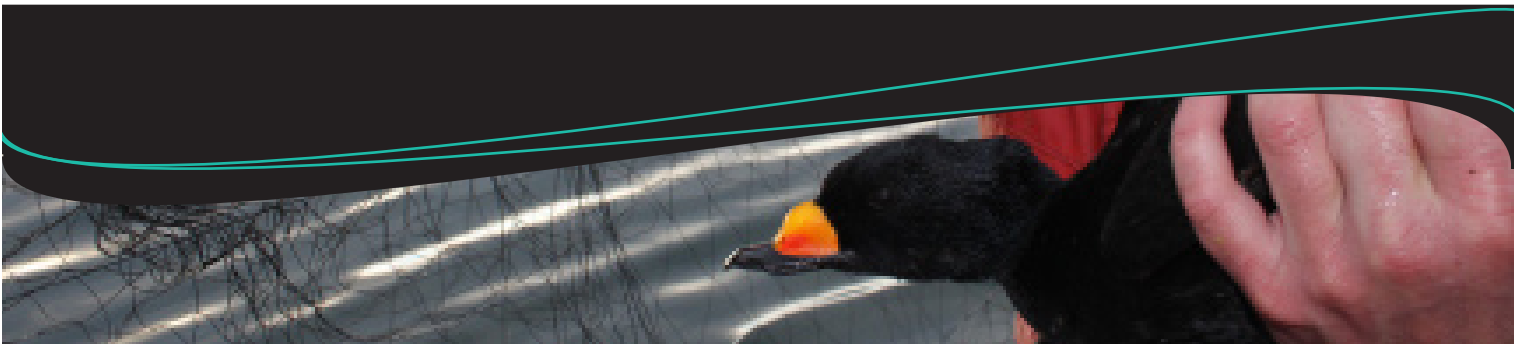
## How Are Sea Ducks Captured and Tracked?

Several methods of capture have been used to successfully and safely catch sea ducks, including over-water mist nets, net guns, nightlighting, and drive-trapping molting birds into special gill nets. All of these techniques will be used, depending on the particular species and time of year. You can learn more about these capture techniques at <http://seaduckjv.org>.

Satellite telemetry has been the primary tool used to identify breeding ranges, migration routes, molting and wintering areas, and timing of bird movements for sea ducks. In remote northern locations, satellite telemetry is the only way to generate



Black Scoters with transmitters. Matt Perry



Black Scoter captured in mist net. Jay Osenkowski

detailed data about sea duck migration patterns because there are limited opportunities to band sea ducks during breeding, and because band returns for sea ducks are relatively low. Once birds are captured, a veterinarian surgically implants transmitters into the body cavity of the ducks, with the antenna exiting out the duck's lower back. Technological advances in transmitters and batteries now enable researchers to track birds for more than one annual cycle and to describe annual variability in habitat use patterns and site fidelity. Location data from marked birds are downloaded from the Argos system of satellites about every three days. Data are then uploaded to a web-based program that automatically updates maps and allows users to view the migration paths of marked birds.

### What Information Will be Produced and How Will it be Shared Among Partners?

The study is designed to answer several questions, such as:

- Where do birds from a particular wintering area breed and molt?
- Where are the most important wintering and staging areas for sea ducks?
- How much annual variability is there in migration patterns?
- Do sea ducks return to the same wintering and breeding areas each year?
- How should surveys be designed to most effectively monitor sea ducks?

A project web page has been created on the SDJV website that provides migration maps and other information about this study ([http://seaduckjv.org/atlantic\\_migration\\_study.html](http://seaduckjv.org/atlantic_migration_study.html)). The site also includes a photo gallery and will eventually include video clips from various projects so the public can view the capture techniques and see how birds are processed after capture. Tracking of marked birds is yielding detailed information on seasonal habitat use, and some surprising results. For example, previously unknown breeding areas for Black Scoter have been identified (Figure 1).

### Opportunities for a Growing Partnership

Information from this study will be of interest to many diverse groups, including wildlife managers, conservation groups including Habitat Joint Ventures, ornithologists, educators, sportsmen, and industry and management agencies associated with offshore energy development. The SDJV has made this project its highest priority and is committing substantial resources for 2010-2013. However, additional partners and funding are needed to ensure the project is executed at the appropriate scale and magnitude to meet objectives.

We are hoping that additional partners will step forward to assist with and support this important, ambitious, and exciting effort.



Surf Scoters. ©Donna Dewhurst

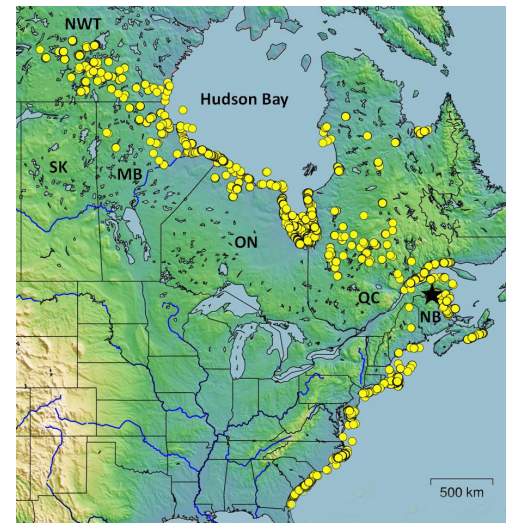


Figure 1. Annual migration pattern for female black scoters marked at Restigouche River, NB and QC, during spring 2009 and 2010. Locations through December 2010.

### Contacts

Tim Bowman  
SDJV Coordinator, United States  
U.S. Fish and Wildlife Service  
907/786 3569  
[tim\\_bowman@fws.gov](mailto:tim_bowman@fws.gov)

Patricia Edwards  
SDJV Coordinator, Canada  
Canadian Wildlife Service  
506/364 5085  
[patricia.edwards@ec.gc.ca](mailto:patricia.edwards@ec.gc.ca)



February 2011