

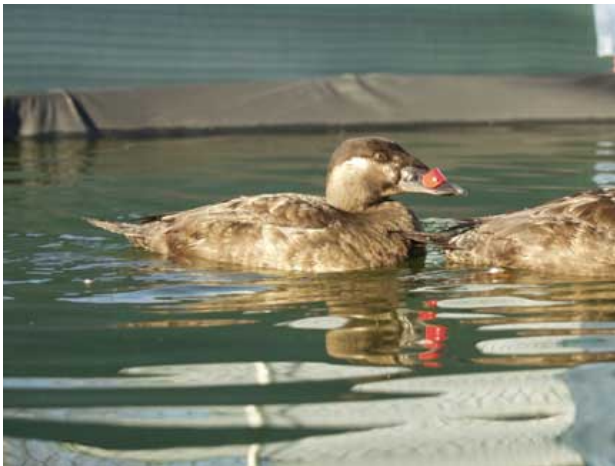
ATLANTIC SEADUCK PROJECT

Scientists at the USGS Patuxent Wildlife Research Center in Laurel Maryland are attempting to learn more about seaducks, a group of ducks that has received little attention in the past. Seaducks (eiders, goldeneyes, mergansers, scoters, bufflehead, harlequin duck, and long-tailed duck) are the most poorly understood group of North American waterfowl. Past summary reports of the status of seaducks have revealed that populations have declined for some species and there has been increased concern for the status of seaducks in general.



Populations of two Pacific species, the spectacled eider and Steller's eider, are declared threatened under the authority of the U.S. Endangered Species Act. Four additional species, common eider, king eider, long-tailed duck, and black scoter are in low numbers and deserve immediate attention. In addition, surveys of seaducks wintering along the Atlantic coast have shown major declines for the long-tailed duck, black scoter, and surf scoter.

To learn more about seaducks, the scientists have created the [Atlantic Seaduck Project](#), which is supported by a team of permanent scientists, several graduate students, and numerous interns and volunteers. The Project includes two major studies to first learn more about the breeding and molting areas of seaducks in northern Canada and secondly to learn more about their feeding ecology on wintering areas, especially Chesapeake Bay.



Female surf scoter fitted with a nasal saddle, a device that allows researchers to distinguish between different seaducks.

Photo by Edward J.R. Lohnes, USGS

Satellite telemetry is being used to track surf scoters wintering in Chesapeake Bay, Maryland and black scoters on migrational staging areas in New Brunswick, Canada to breeding and molting areas in northern Canada. Various techniques used to capture the scoters included mist netting, night-lighting, and net capture guns. All captured ducks were transported to a veterinary hospital where surgery was conducted following general anesthesia procedures. A PTT100 transmitter (39 grams) manufactured by Microwave, Inc., Columbia, Maryland was implanted into the duck's abdominal cavity with an external antenna. Twelve of the surf scoters from Chesapeake Bay successfully migrated to breeding areas in Canada and 13 of the black scoters migrated to breeding areas. Most of the black scoter males migrated to James Bay for molting after the females began incubating eggs.

Updated information from the tracking system aboard NOAA satellites on scoter movements was made accessible on the Patuxent Website. Habitat cover types of locations using GIS (Geographical Information Systems) and aerial photographs (in conjunction with remote sensing software) are currently being analyzed to build thematic maps with varying cosmetic layer applications.

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Many factors related to human population increases have been implicated in causing changes in the distribution and abundance of wintering seaducks. Analyses of the gullet (esophagus and proventriculus) and the gizzard of seaducks are currently being conducted to determine if changes from historical data have occurred. Scoters in the Bay feed predominantly on the hooked mussel and several species of clams.

The long-tailed duck appears to select the gem clam in greater amounts than other seaducks, but exhibits a diverse diet of other mollusks and crustaceans. Seaduck food habits in the Maritimes are decidedly different, where all three species of scoters feed extensively on the blue mussel. Understanding the feeding ecology of seaducks in wintering areas such as the Chesapeake Bay and the Maritimes will provide managers with a better understanding of the changes in the distribution and abundance of these ducks.

Future studies will attempt to determine the effects of experimental diets varying in protein and energy levels on the physiology and behavior of captive seaducks. An attempt will be made to determine if seaducks exhibit an endogenous rhythm in regard to body weight and condition during the winter. Foraging energetics in relation to different food sources found in the Chesapeake Bay will be measured in the two large aquariums (dive tanks) with scoters and long-tailed ducks. The combined studies being conducted in the Atlantic Seaduck Project will greatly aid the conservation effort for seaducks presently being conducted throughout the world.



USGS Scientists measure the feather growth of a white-winged scoter. This seaduck was hatched at the Patuxent Wildlife Research center; the eggs were collected from Canada.

Photo by Edward J.R. Lohnes, USGS.

For information about other USGS projects addressing the Chesapeake Bay and its watershed, go to <http://chesapeake.usgs.gov/studiesproject.html>

2005 International Seaduck Conference

The team of scientists has taken on the ambitious task of hosting an International Conference in Annapolis, Maryland, USA during November 7-11, 2005 at the Loews Annapolis Hotel. This is the Second North American Sea Duck Conference and is financially sponsored by the Sea Duck Joint Venture and by various other federal and private organizations, including the U. S. Fish and Wildlife Service and the Canadian Wildlife Service.

This meeting of sea duck scientists from around the world provides a forum to exchange information about sea duck biology and management. Workshops will be conducted during the conference and will include subjects such as off-shore wind farms, sea duck harvest (sport and subsistence), contaminants/diseases, and satellite telemetry.

The conference provides a stimulating environment, in which scientists may expand their scientific vision and ultimately result in a better understanding and conservation of seaducks. The Team is working hard to provide their own data about seaducks, while also offering the forum for other scientists to discuss their studies with a large group of scientists and managers concerned about this interesting group of ducks.

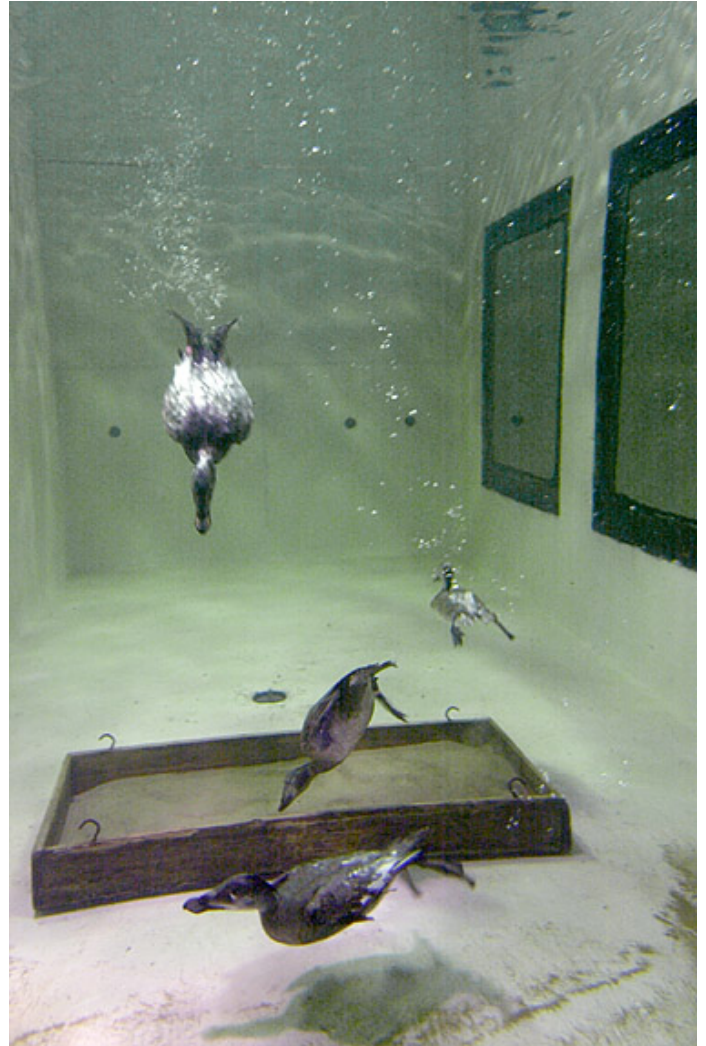
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Patuxent Wildlife Refuge Center:
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Seaducks:
<http://www.pwrc.usgs.gov/resshow/perry/scoters/>



Dive tanks have been constructed by USGS to learn more about food selection and diving energetics of captive ducks.

Photo by Fred Greenslade.