



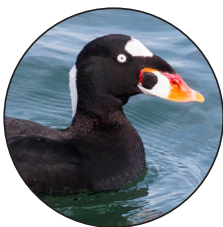
# SEA DUCK JOINT VENTURE

## NEWS - SPRING 2016

Welcome to the first ever newsletter from the Sea Duck Joint Venture! We're excited to share news about our program with folks already familiar with the SDJV, and also with folks just learning about it. We've included several stories written by our partners to give you a taste of the work we're supporting, from surveys to research to citizen science. We also encourage you to check out our newly designed website at <http://seaduckjv.org>.

For those of you not familiar with the SDJV, here's a nutshell version of what we're about. The SDJV was started back in 1999 because there was growing evidence that many sea duck populations were not doing very well. Sea ducks include 15 species including eiders, scoters, goldeneyes, mergansers, Harlequin Duck, Long-tailed Duck, and Bufflehead (meet them at <http://seaduckjv.org/meet-the-sea-ducks/>). They are a group of waterfowl for which relatively little is known, in large part because they nest at low densities in arctic and subarctic environments, or winter offshore where they're difficult to study. The SDJV was designed to promote research and monitoring to help find causes of population declines and learn more about this fascinating group of birds. It's a partnership encompassing the U.S. and Canada.

Our science program started off broad, studying all 15 species of sea ducks, but as we've learned more about them, we've focused on a few species of highest concern, particularly Surf Scoter, Black Scoter, White-winged Scoter, Long-tailed Duck, and Common Eider. Numbers of these species are well below historic levels. Because they live in marine areas most of the year, they reflect the health of coastal areas. The SDJV provides seed funding to partners for studies that provide information needed by conservation managers to make good decisions about sea ducks and their habitats.



SCIENCE  
2



FROM THE FIELD  
3-5



CITIZEN SCIENCE  
6



NEWS  
7



# SEA DUCK SCIENCE

## ATLANTIC AND GREAT LAKES SEA DUCK MIGRATION STUDY

*Tim Bowman, SDJV Coordinator, U.S.*

In 2009, the SDJV launched an ambitious, large-scale satellite telemetry study of sea ducks in the Atlantic Flyway, with more than 400 transmitters deployed so far by study partners. Target species include all three scoters (Black, Surf, and White-winged) and Long-tailed Ducks. Capture and marking efforts have been highly successful for Black Scoter and Surf Scoter, and many objectives have largely been met for these species. The focus has now shifted to filling in gaps for Long-tailed Duck and White-winged Scoter, with crews trapping and marking birds around Cape Cod and Long Island Sound.

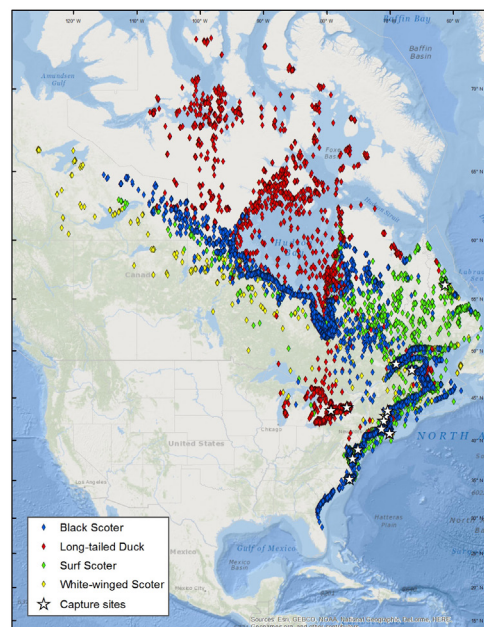
The overall goal of the study is to improve our understanding of the links among breeding, wintering, staging, and molting areas (i.e., population delineation) for these species, which is essential to understanding sea duck declines and limiting factors. In addition, the study is identifying habitats most important to sea ducks, and when they use them, thus helping to evaluate potential impacts from development, harvest, and climate change. This project is complementary to other ongoing studies of marine birds in the Atlantic, including a Bureau of Offshore Energy Management study assessing diving bird use of offshore areas along the mid-Atlantic coast.

Ducks were captured using a variety of techniques, including mist-netting, net-gunning, and night-lighting. Transmitters were surgically implanted in sea ducks and provide location data every few days for up to two years. The ongoing study is generating a wealth of detailed information on coastal and marine areas used by sea ducks throughout the year and is greatly improving our understanding of migration patterns and range affiliations for sea ducks in eastern North America.

Some of the more notable results include:

1. Documentation of a previously unknown major breeding area for Black Scoter west of Hudson Bay and in Hudson Bay lowlands (see Barrenlands story on page X);
2. Documentation of the importance of Chaleur Bay in New Brunswick and Quebec, the St. Lawrence Estuary, and James Bay as staging areas for high proportions of all species marked (see Cape Cod Bay story on page X).

More information about the study can be found at <http://seaduckjv.org/science-resources/atlantic-and-great-lakes-sea-duck-migration-study/>.



*Locations from scoters and Long-tailed Duck tagged with satellite transmitters in the Atlantic flyway.*



*Researchers are currently focusing on marking White-winged Scoter and Long-tailed Duck. Tim Bowman*





# FROM THE FIELD

## LIFE ON THE EDGE

*Rebecca Bentzen, Wildlife Conservation Society, Alaska*

I spent last spring atop a mountain of ice sitting on a caribou skin, binoculars glued to my face. Wave after wave of eider ducks winged past my perch overlooking the ice edge of the Beaufort Sea, about three miles from solid ground. During breaks in the migration I scanned for polar bears or climbed into the warming tent for a cup of tea. In teams of two, we kept our eyes on the water for twelve hours a day from late April through early June counting eiders as they migrated past.

Eiders are sea ducks that nest on the northern coastal plain and associated nearshore islands of Alaska and Canada and are an important subsistence food species to people in the north. In spring and fall, hundreds of thousands of King and Common Eider migrate past Point Barrow and periodic migration counts have been done since the early 1950s. It's been a collaborative effort between the Wildlife Conservation Society, North Slope Borough, USFWS, University of Alaska, Fairbanks, and the Sea Duck Joint Venture. Current population estimates for the Western Arctic population are 100,000-200,000 Common Eider and 300,000-600,000 King Eider. Our goal was to estimate the current population size of King and Common Eider and determine population trajectories.



*Rebecca Bentzen (WCS staff) working on the eider migration count at Point Barrow, Alaska, 2015. Wildlife Conservation Society*



*King Eider pair on nesting grounds. Tim Bowman*

The eider count crew arrived in Barrow in late April, to a world that was snow covered and wintery. The first order of business was to find a suitable vantage point at the water's edge to count the eiders on their spring migration towards their breeding grounds. The eiders generally fly along leads in the sea ice near the coast. We located a large pressure ridge near the edge of the shore fast ice that we were confident was set in stable ice and not likely to either drift to sea, nor crumble, should heavy pack-ice move in.

The pace of eider migration is quite variable. On some days very few birds are seen, on others, eiders pass by in the tens of thousands. Generally, more birds pass by when the wind is from the south and the lead is open.

The ice edge is not the silent, frozen Arctic that some may imagine; it is a highway through a white and frozen land that can be teeming with wildlife and quite noisy. As the eiders fly by you can hear their wings knocking together as they fly in tight formation, and you can hear their calls. As the bowhead and beluga migrate up the lead you can hear their breathing, and sometimes you can hear the pack ice grinding against the shore fast ice or large chunks cleaving off into the water. We also saw, and sometimes heard polar bears; on one early morning we saw eleven polar bears!

Preliminary analyses indicate that the numbers of King Eider are up since the early 2000s and the numbers of Common Eider are down. Another count is scheduled again for spring 2016.



*The lead edge: The pressure ridge at the edge of the shore fast ice, and our observation point, can be seen at the right of the photo. Zak Melms; Inset photo: King and Common Eiders migrating up the lead at Point Barrow, Alaska, 2016. Tim Bowman*



## FROM THE FIELD

### SEA DUCK TRAPPING IN CAPE COD BAY

*Dustin Meattey, Biodiversity Research Institute*

A patchwork group of biologists, undergraduate interns, professors, hunting buddies, and friends of friends came together in Cape Cod in late October 2015 with the collective purpose of capturing as many sea ducks as we could in a short two-week window. Waiting in the wings was a team of three experienced wildlife veterinarians ready to surgically implant satellite transmitters in any healthy adult female White-winged Scoter we could get back to them. All we needed were the birds.

It was a very mild fall and winter by New England standards. No snow had fallen, temperatures barely dipped into the 30s at night, and daylight savings time had yet to add an extra hour of (what was soon to be) much needed sleep to our bizarre schedule. Our trip had already been delayed after an earlier scouting trip revealed that the birds simply hadn't arrived yet. This year's warm temperatures and ice-free north were keeping the birds happy and comfortable in their far northern breeding and staging areas.

A helicopter scouting flight from the Rhode Island state biologists finally sounded the starting gun. Scoters had arrived in lower Cape Cod Bay by the thousands and it was time to go.

Scoters are notoriously difficult to capture in the harsh and unpredictable environment of the Atlantic coast. One method that has proven successful is the use of floating mist nets. In contrast to the fine volleyball-net lookalikes used to catch songbirds on land, our nets are thicker and are strung between two floating hubs, usually in prime feeding areas. An array of decoys by the net is often all it takes to catch the eye of a curious flyer-by.

In total, after two solid weeks of 2 a.m. alarm clocks and releasing birds well into the evening hours, we had banded over 330 sea ducks and deployed 22 satellite transmitters in adult female White-winged Scoters.



*Female Long-tailed Duck with implanted satellite transmitter. Lucas Savoy*



*Lizzi Bonczek, Bill Hanson, and Tim Welch pulling decoys after a morning of trapping. Peter Paton*

Less than a month later we were back at it, this time strapped to the bow of a 35-ft. lobster boat, with high-powered spotlight and strong fiberglass dip nets in hand. Our quarry on this trip was Long-tailed Duck. These small sea ducks are best captured by night-lighting--the only caveat being that rough seas and foul weather are often required to efficiently mask boat noise and allow for successful approaches. Choosing the most unpleasant conditions in which we could safely operate, we were able to successfully capture and implant 15 adult females. It was a duck biologist's dream: we had run out of transmitters!

#### ACKNOWLEDGMENTS

This project was a collaborative effort between Biodiversity Research Institute, the University of Rhode Island, and Rhode Island Department of Environmental Management as part of the Sea Duck Joint Venture's Atlantic and Great Lakes Sea Duck Migration Study. Thank you to the many folks involved in the capture and surgical teams: Bill Hanson, Tim Welch, Robby Lambert, Lucas Savoy, Alex Dalton, Vince Spagnuolo, Susannah Corona, Glenn Olsen, Michelle Kneeland, Ginger Stout, John Veale, Joshua Seibel, Josh Beuth, Jim Tappero, Jay Williams, Jay Osenkowski, Lizzi Bonczek, Jenny Kilburn, Dylan Ferreira, Scott McWilliams, and Peter Paton. Thank you to our night-lighting boat captain, Len Greiner. Lastly, thank you to the Cape Wildlife Center for use of their facility to prepare surgical equipment.





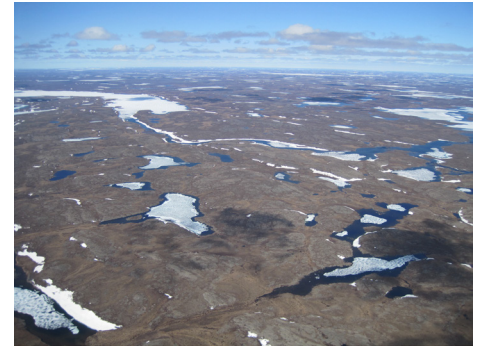
## FROM THE FIELD

### PURSUING BREEDING SEA DUCKS ACROSS THE BARRENLANDS

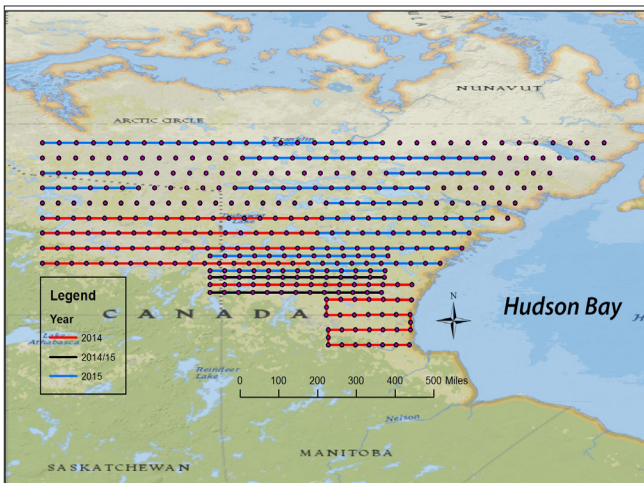
Walt Rhodes, USFWS pilot-biologist

Zinging along in a floatplane at 100 knots and 150 feet above the ground, the ponds go by in quick succession. A sneak glance to the horizon ahead reveals an infinite number of wetlands still to come. Add stubby vegetation and gravel substrates, and the habitat looks like the Missouri Coteau but a piece of evidence just said otherwise.

“Longtails, pair,” I call into the microphone as the ducks skitter from under the plane. Ten seconds farther down the transect two pairs of Black Scoter are bobbing on a pond. These are species not of the Prairies but rather the sub-Arctic, and the location of these birds add to an emerging database on breeding waterfowl distribution across the Canadian Barrenlands.



*The Barrenlands is characterized by tundra packed with ponds and bisected by a few major rivers. Walt Rhodes*



*Proposed and completed transects across the Barrenlands.*

The Barrenlands is an area twice the size of Texas, situated west of Hudson Bay and north of the tree line mainly in Nunavut and the Northwest Territories. It is tundra historically inhabited by mostly nomadic Inuit. Due to its remoteness, no large-scale, systematic waterfowl surveys have ever been conducted until now.

Results from the Atlantic & Great Lakes Sea Duck Migration Study pointed my plane in this direction – it suggested that satellite radio-tagged scoters and Long-tailed Ducks were breeding in this area. U.S. Fish & Wildlife Service (USFWS) and Canadian Wildlife Service (CWS) partners began discussing a reconnaissance survey. The objectives of the experimental survey were to determine the feasibility and logistics to operate in the region, determine relative density and distribution of waterfowl, particularly sea ducks, and verify the satellite telemetry results.

Starting in Churchill, Manitoba, in mid-June 2014, USFWS pilot-biologist Fred Roetker and I flew 2,592 miles of transects that extended west and north, first skirting in and out of the tree line before finally settling over treeless tundra and covering an area of approximately 203,000 sq. miles. The top five breeding waterfowl species or groups observed were Scoter spp., Long-tailed Duck, Scaup spp., Northern Pintail, and Common Merganser. Many Canada Goose breeding pairs and molting flocks were observed as well.

In June 2015, some of the 2014 transects were again flown and additional transects were laid out further north and west to further determine breeding-waterfowl ranges. We began at Kasba Lake, NT, and after 2,763 miles of transects, ended at Bathurst Inlet, NU. Results from 2015 were strikingly similar to 2014, and we documented the northern extent of distribution for scoter species.

The effort has begun to fill a data gap that demonstrates the Barrenlands' significance to arctic-nesting waterfowl species much like the Missouri Coteau is for prairie nesters. And, we proved that it is feasible to conduct waterfowl surveys here.



*Scoters (White-winged and Black Scoters shown here) and Long-tailed Duck were the most common nesting sea duck species across the Barrenlands. Tim Bowman*



# CITIZEN SCIENCE

## ProjectFlockTogether

### A Crowdsourcing Approach To Aerial Photo Survey Analysis Of North America's Waterbirds

*Emily Silverman & Shanie Gal-Edd, U.S. Fish & Wildlife Service Division of Migratory Bird Management*

The U.S. Fish & Wildlife Service's (FWS) Migratory Bird Program is currently developing ProjectFlockTogether: an online crowdsourcing platform that will invite bird enthusiasts and citizen scientists to participate in important, cutting-edge conservation research.

Each year, the FWS conducts aerial visual surveys by flying small planes over North America's wetlands and coasts, in order to monitor the populations of migratory birds. These monitoring projects directly inform species conservation and management plans. Survey data are collected by onboard observer biologists who identify and count birds in real time.

Due to advances in digital photography, it is now possible to use high resolution digital imagery in conjunction with standard observer data. The 2011-2014 Sea Duck Aerial Survey Detectability Project, a collaboration of FWS, the Atlantic Marine Assessment Program for Protected Species, the Washington Department of Fish & Wildlife, and the Sea Duck



*FWS aerial team members Troy Wilson, Walt Rhodes, and Tim Jones in front of the FWS Kodiak aircraft used to conduct AMAPPS surveys. USFWS*

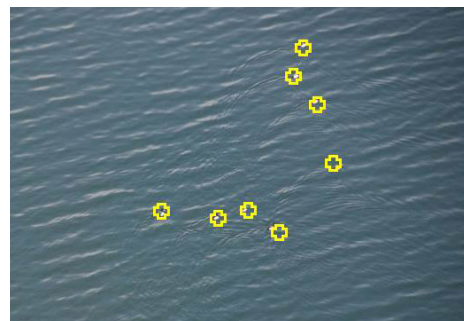
Joint Venture, collected data using two observer biologists who identified and counted birds in real time, simultaneous with two cameras that took continuous photos.

The addition of digital imagery to survey flights will allow FWS to evaluate and improve the accuracy of survey methods and data. The challenge, however, is that even short photo surveys generate hundreds of thousands of digital photos that must be processed quickly, inexpensively, and accurately. That's where you come in: **FWS will need the help of a large community of volunteers to review each photo and find and identify the birds within them.**

ProjectFlockTogether, a crowdsourcing project currently in development, will revolutionize aerial wildlife monitoring by offering citizen scientists of all skill levels the opportunity to help process aerial survey photos from the comfort of home. The crowdsourcing platform will divide image processing into three phases, each of which offers a different task to citizen scientists. In Phase I, participants simply determine whether or not each photo contains birds: the goal of which is to weed out photos with no birds present. In Phase II, participants get a count of total birds per photo by clicking on each bird, whereupon a cropped photo at maximum resolution is saved for Phase III. In Phase III, participants will identify to species the birds in each cropped photo.

Phases I and II require of volunteers only keen eyesight and the desire to help. Phase III, however, (species identification) will be the greatest challenge and requires volunteers with greater expertise. Volunteers can choose to participate as much and often as desired: no contribution is too small! The website will be easy and fun to use, and in a matter of minutes, volunteers can begin contributing to what we hope will become one of the largest collaborative data collection projects to date.

ProjectFlockTogether is estimated to launch in 2017 and will undoubtedly draw on the expertise and enthusiasm of the Sea Duck Joint Venture community at that time.



*Volunteers first identify images that are "positive" for birds (left image) and then count them by "clicking" on individuals (right image). Joe Evenson*

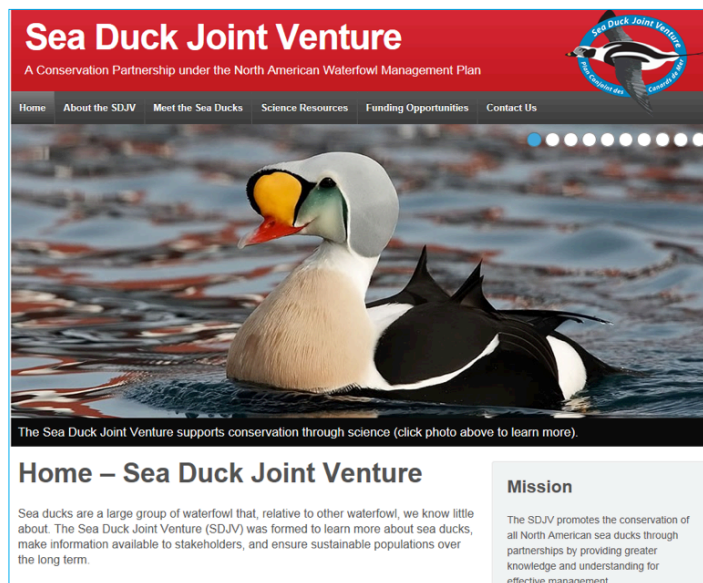




# NEWS

## NEW SEA DUCK JOINT VENTURE WEBSITE

Our web site has a fresh, new look with updated species status summaries, photo galleries, sea duck bibliography, and more. Check it out at <http://seaduckjv.org> and sign up for our e-newsletter.



## FUNDING OPPORTUNITIES

The SDJV expects to post a Request for Proposals in early July 2016. Watch for updates on the Funding Opportunities page at <http://seaduckjv.org/funding-opportunities/>.

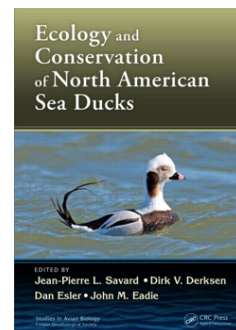
## 6th INTERNATIONAL SEA DUCK CONFERENCE: SAVE THE DATE

The 6th International Sea Duck Conference will be held from February 6-12, 2017 in San Francisco, CA. Theme: "From Bay to Boreal: Challenges of Full Annual Cycle Management of Sea Ducks". More info at [www.seaduckconference.net](http://www.seaduckconference.net)



## NEW BOOK: ECOLOGY AND CONSERVATION OF NORTH AMERICAN SEA DUCKS

This new book provides the first comprehensive assessment of the status, population dynamics, and demography of sea ducks across North America. The fifteen chapter book "Ecology and Conservation of North American Sea Ducks" was a collaborative effort by 27 sea duck specialists from North America and Europe. Available from CRC Press. You can view the table of contents at: <http://www.crcpress.com/product/isbn/9781482248975>.



### Features

- Provides the first comprehensive assessment of the status, population dynamics, and demography of sea ducks across North America.
- Characterizes phylogeography, phylogenetics, and population genetics.
- Examines the diseases, parasites, biological toxins, and contaminants affecting sea ducks.
- Provides an up-to-date assessment of migration and molt strategies.
- Documents reproductive energetics, strategies, and behavior.

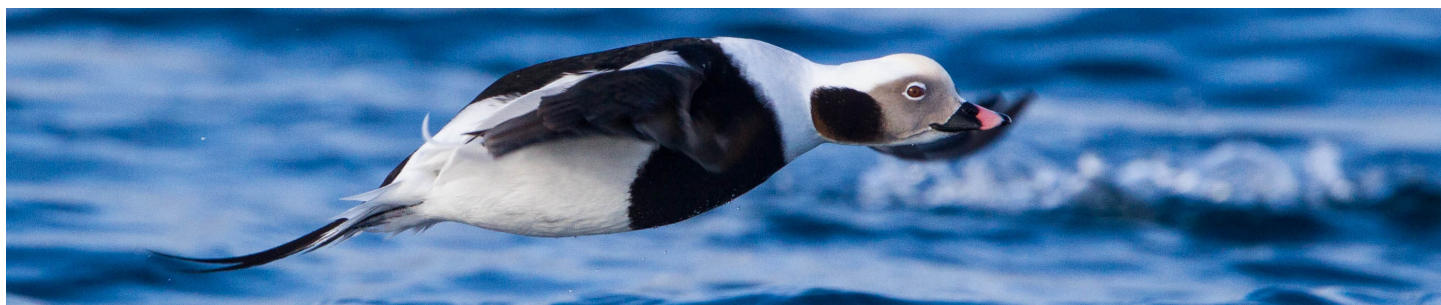
## FOR MORE INFORMATION ABOUT THE SEA DUCK JOINT VENTURE

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Long-tailed Duck. Ron Knight