

***Factors influencing population decline of marine birds
on Nova Scotia's Eastern Shore Islands***

Final Report NSHCF – 2016 Season
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Project Goal:

To determine the possible cause(s) of the decline in breeding marine birds in the Eastern Shore Islands Wildlife Management Area (ESI WMA), and to suggest possible means to improve populations and female survival.

Project Objectives:

1. Erect nest shelters for eiders on islands in the ESI WMA where eiders used to nest in abundance but have declined, to determine if this attracts birds back to these sites;
2. Deploy and recover GPS tracking units on Double-crested and Great Cormorants nesting in the ESI WMA to assess habitat overlap and foraging range as is relevant to their sensitivities to ships and disturbance;
3. Collect blood and egg samples of breeding marine birds in the ESI WMA (Leach's Storm-petrel, Common Eider, Double-crested Cormorant, Great Black-backed Gull, Herring Gull, Black Guillemot, Common Tern, Arctic Tern) and examine for stable isotopes, trace elements, and fatty acids, as indices of diet that will provide insights into overlap and competition or predation of species, as well as contamination; and,
4. In collaboration with NS DNR personnel, identify management considerations for these species at these sites.

Planned project outcomes:

For the second year in a row, the 2016 field season was largely disappointing, attributable in part to continued poor weather along the east coast during the planned times to access the site, but also to lack of access to suitable zodiacs for safe operation. We were able to work with NS DNR to deploy nest shelters on one occasion for a couple of days, bringing along several field assistants, but the Acadia zodiac and motor were deemed by me (Mallory) to be insufficiently sized for use by a field team. On the two other occasions that were suitably timed to undertake field collections, zodiacs were not available from NS DNR or Environment and Climate Change Canada, and then later on we did not wish to attempt collections at a time when we would cause major disturbance to nesting birds.

Inherently, the lack of ability to get to the site(s) meant that we could not complete planned objectives 2 and 3.



Figure 1 Deployment of eider nest shelters at ESI WMA in April 2016 (Photo M. Mallory, Acadia)



Figure 2. Eider use of new design of nest shelters deployed at ESI WMA in 2016 (Photo: Glen Parsons, DNR)

Additional Work Completed:

When we could not access the ESI WMA as anticipated, we shifted some of our 2016 focus to other data we had acquired to provide insights on birds in this area, specifically eiders and black ducks. We worked up winter survey data from the site, and those suggest that number of both species found in the ESI region between Dec and Mar has increased since the 1970s, despite clear decreases in eider breeding populations. The reasons for this are being discussed with federal and provincial biologists.

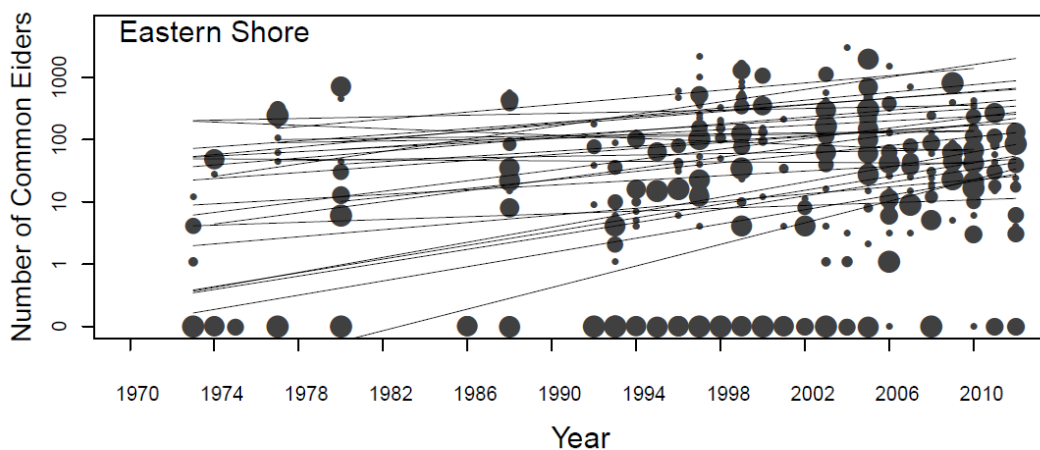


Figure 3 Winter counts of common eiders along the Eastern Shore of Nova Scotia, 1973-2012.

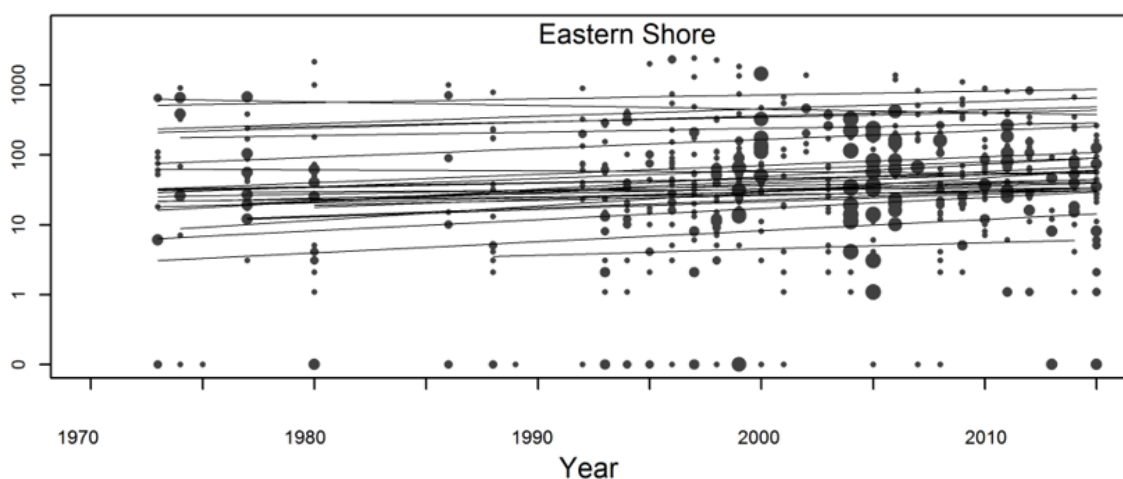


Figure 4 Counts of American black ducks along the Eastern Shore of Nova Scotia, 1973-2015

Achievements and Lessons Learned:

After the frustrations of 2015 and 2016, we are well-prepared for work in 2017. We have already acquired a suitable water craft and motor for work, and we have been coordinating field timing with NS DNR. Currently everything is lined up well for our plans.

Despite the challenges, we continue to move new management scientific information on this area ahead. We have 1 paper submitted and 1 in prep on the winter survey data for this region, which is very interesting because it runs counter to a lot of trends for these species elsewhere.

Next Steps:

Working with Glen Parsons at NS DNR, we will monitor use of the new type of nest shelter out on selected islands in 2017, ones that should provide shelter for nesting birds but which lack the environmental problems (heat, moisture, “trap”) of the barrels. A PhD student will also be here to carry out the sampling we planned for blood, trace elements, isotopes and fatty acids in birds along the Eastern Shore, to look at nutrition and health of the marine bird community in that area. These, along with the final analyses and write up of the tracking data plus Molly Tomlik’s analyses of habitat change and nesting success of eiders at the ESI WMA, will provide powerful information for wildlife managers in deciding how to improve habitats in this area for declining birds.



Mark Mallory
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