

# Hudson Strait Common Eider and Polar Bear Surveys

## 2016 Field Season Report

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### Project Overview

The physical characteristics of the Canadian Arctic Ocean have been changing considerably in recent years, due in large part to shifts in the distribution and extent of sea-ice cover. At the same time, industrial interests such as resource extraction are growing in the Arctic. These changes have prompted the development of several marine spatial planning initiatives intended to protect wildlife resources while allowing resource development in the Canadian Arctic. Marine planning requires accurate and current information to be effective. However, available scientific data for credible habitat assessments of marine wildlife in the eastern Canadian Arctic are limited in number, biased by collection method, and outdated. This ongoing project in Hudson Strait aims to address these information gaps. We are studying the distribution and abundance of marine birds in the Hudson Strait-Foxe Basin region throughout the year, as well as the biological and physical factors determining those patterns.



*Cody Dey presenting the findings of our research on local radio in Cape Dorset.*

## Effects of Polar Bears on Eider Colonies

Reductions in the extent of Arctic sea ice have increased the amount of time polar bears spend in terrestrial environments. Because of this, it seems that polar bear predation on common eider nests is increasing. Although the energetic benefits of consuming waterfowl eggs appear to be limited for polar bears, the potential impacts on waterfowl may be large. Our team has been working to understand how sea ice loss is influencing polar bear foraging behaviour, and what effects this might have on common eider duck populations.

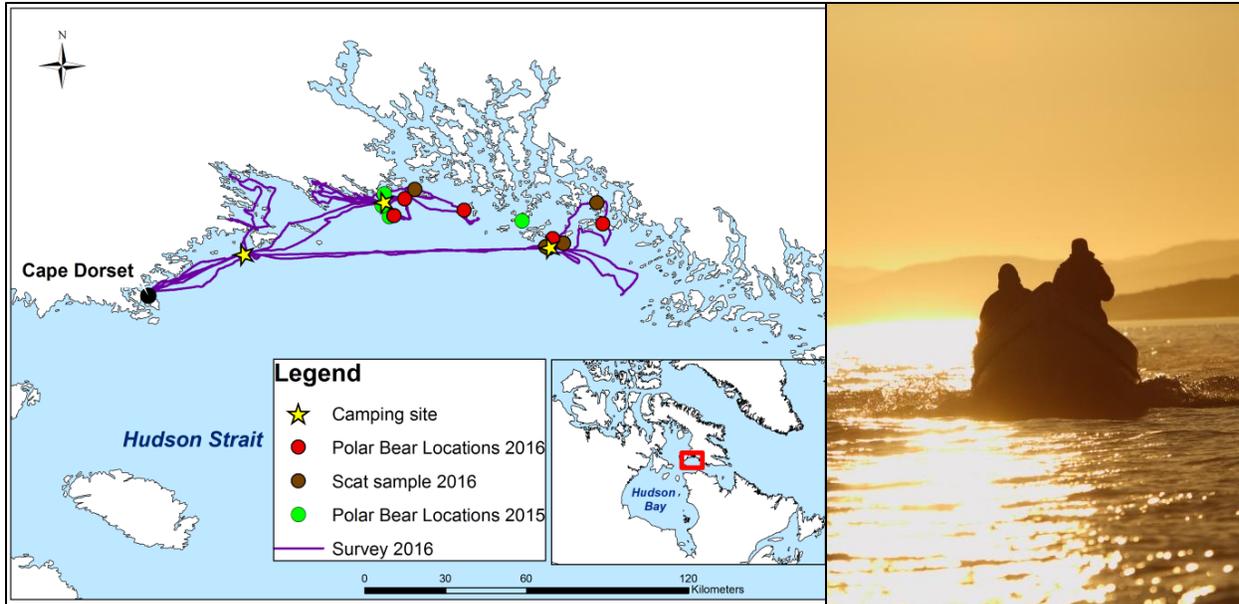
In 2016 we conducted surveys on 58 islands in three main areas in northern Hudson Strait to continue our long-term monitoring of eider populations. While on the islands we counted the



number of active and destroyed common eider nests, and recorded any 'sign' that polar bears had been there, including scat, footprints, and destroyed nests.

This year, we noticed that polar bear predation of eider nests seems to be very localized and site-dependent. In one area, for example, most islands had evidence of polar bear presence, and many nests were depredated. However, in other areas most nests were still active and there were few bears. Inuit local knowledge suggests that more bears are found in the areas we surveyed when there is ice around. According to one Elder, when fast ice is present there can be a bear near every island.





We also conducted boat-based surveys for polar bears around known eider colonies. In general, we saw bears in similar areas as in 2015 (see map above). We encountered 6 polar bears including 1 family group consisting of an adult female accompanied by a cub-of-the-year. To identify individual bears, we remotely biopsied swimming polar bears from freighter canoes to obtain tissue samples. We obtained tissue samples from 4 bears. We also collected 8 scat samples within the study area. The goal of collecting the scat samples is to determine whether individual bears can be genetically identified using non-invasive methods. Genetic analysis is currently underway from the samples collected in 2016.

We have been using the data collected from this research to create computer simulation models of how polar bears might behave in the future. Our models suggest that polar bear predation of eider nests is likely to increase as sea ice melts earlier. Additionally, our model shows that large eider colonies might decrease in size, as eiders spread out to other nesting islands to avoid polar bear predation at large nesting colonies.



## Disease Monitoring

Since 2012, coastal eider colonies in Nunavut and Nunavik have been monitored to detect evidence of avian cholera outbreaks. To date, cholera has been detected near communities in Nunavik (Aupaluk and Inukjuak), as well as at East Bay on Southampton Island. There has been no evidence of avian cholera near Cape Dorset, but monitoring of the islands is ongoing so that if the disease emerges it can be detected as soon as possible.

For more information or to report suspected avian cholera at a colony contact Catherine Soos (Environment and Climate Change Canada, [Catherine.Soos@Canada.ca](mailto:Catherine.Soos@Canada.ca)) or the Canadian Cooperative Wildlife Health Centre (1-800-567-2033).



## Future Plans

- Assessing and quantifying the impact of polar bear predation on common eider population size, age structure and colony persistence.
- Identifying particular areas in Hudson Strait where eiders are likely to decline in numbers, and areas where they are likely to increase.
- Determining how interactions between polar bears, Arctic fox, gull, and human predation on eiders will influence their populations.
- Continued collection of biopsy samples of polar bears to increase sample size.
- Investigating links between common eider colonies and other species that use the same island habitats (e.g. snow buntings, red-throated loons).
- Continued monitoring of avian cholera and other disease epidemics affecting birds.
- Ongoing handover of basic population monitoring to local communities.

## Research Partners

Northern research is logistically complicated and labour intensive, requiring a strong, dedicated crew. We are particularly grateful for the guidance and assistance provided by Numa Ottokie, Salomonie Aningmiuq, Charlie Qiatsuq, Daniel Taukie, Luutaaq Qaumagiaq, Adamie Qaumagiaq, Kovianaqtuliaq Ottokie, Tutuiya Qatsiya, and Peter Ottokie. We also appreciate very much the continued support provided by Adamie Nuna, Annie Suvega, and the Aiviq HTO in Cape Dorset. Importantly, The Nunavut Inuit Wildlife Secretariat and the Qikiqtaaluk Wildlife Board facilitated efficient payment of guides.



*2016 field crew:  
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Sjoerd Duijns.  
Bottom row (L to R)  
David McGeachy, Numa  
Ottokie, and Salomonie  
Aningmiuq.*

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## Contact

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