

Why – Collections of murres and fulmars during the 2007/08 (International Polar Year) breeding seasons were used to examine the diet of these species in across Nunavut in relation to climate change. These studies showed that the murres and fulmars in the region were still mostly eating cold-water species (Arctic cod), but were eating some warm water species (capelin). We also found that 80% of the fulmars and 10% of the murres in 2007/08 had ingested marine plastics in their guts. We are working with partners at McGill University and Acadia University to update this work, and assess the current status of how climate change is potentially affecting seabirds in the region in relation to prey and plastics.

Currently in the Canadian Arctic there are low levels of shipping and oil exploration related activities as compared to many other regions. As offshore oil and gas activities might proceed in Baffin Bay and Davis Strait, there is a need to assess the current levels of oil-related contaminants exposure in marine species, and the potential effects. The Strategic Environmental Assessment in the Baffin Bay-Davis Strait will consider possible types of oil and gas related development activities that could one day be proposed within the Canadian waters of Baffin Bay and Davis Strait outside of the Nunavut Settlement Area. This includes the associated adverse effects, benefits, and management strategies.

What we want to do – We would like to work with local hunters that can collect approximately 30 murrelets, 30 fulmars, 30 guillemots, 30 kittiwakes and 30 eiders in the both the Qikiqtarjuaq and Pond Inlet regions near the colonies. Ideally we would do these collections in locations as consulted by the community. These birds will be frozen and shipped to Iqaluit to be dissected by the Nunavut Arctic College students. They will be assessed for their diet to follow up on work done over 10 years earlier. We will also use these birds to assess ingested plastics, which were also found during the 2007/08 studies.

Hunters and researchers collected 4 species of bird around Qikiqtarjuaq in 2018. The birds and mussels were tested for chemicals known to be associated with oil. All birds were then dissected by students at the Nunavut Arctic College in Iqaluit. For each bird fresh tissue sample was collected and stored at -80°C in order to preserve the genetic material. For each species a tool (called a ToxChip) will be developed that will target parts of the genes that are known to be sensitive to exposure to oil-related contaminants. Levels of gene activity will be compared to the oil-related contaminant concentrations. This information will be used to assess how different species may be affected by oil-related contaminants.

Where - Ideally we would do these collections in locations as consulted by the community, therefore the work may take place within the NWAs and outside.

Potential concerns/questions – All birds will be collected with hunters. All carcasses will be dissected and used to the benefit of answering as many questions as the community and researchers are interested in.

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hunters. Seabird collections will occur far enough from the colonies to avoid disturbing nesting birds. During the colony surveys, minimum distances will be maintained to avoid disturbance.

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Measures to avoid dangerous wildlife encounters: We will minimize the risk of dangerous encounters with wildlife through safe camping procedures. We will store all food in appropriate containers, we will remove all garbage from camping sites, and we will work together as a team to ensure individual safety. We will have firearms in camp and in the boats. We will also carry bear deterrents such as bear spray and bear bangers. We will also rely on the advice of local guides regarding safe camping locations.

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Community consultation and involvement: We plan to hire local boats and guides/hunters from Qikiqtarjuaq and Pond Inlet to assist with the field work for this project. Community consultations in Qikiqtarjuaq and Pond Inlet are planned for January/February 2022. We are also working closely with the Canadian Wildlife Service in Iqaluit to ensure that the research aims are in line with their priorities.

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Future plans within the protected area: This is planned as a one year project currently. A report on this project and all the colony data will be submitted to CWS and the communities in the winter of 2021-2022. We will also communicate project summaries with the communities in person during an appropriate ACMC or related meeting.

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