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Why – Collections of murre 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 murre 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 murre 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 murre, 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.

▷ΔΛΝϚ: Pourquoi - Des collections de guillemots et de fulmars pendant les saisons de reproduction 2007-2008 (Année polaire internationale) ont été utilisées pour examiner le régime alimentaire de ces espèces dans tout le Nunavut par rapport aux changements climatiques. Ces études ont montré que les marmettes et les fulmars de la région se nourrissaient encore principalement d'espèces d'eaux froides (morue arctique), mais mangeaient certaines espèces d'eaux chaudes (capelan). Nous avons également constaté que 80% des fulmars et 10% des marmettes en 2007/08 avaient ingéré des plastiques marins dans leurs intestins. Nous travaillons avec des partenaires de l'Université McGill et de l'Université Acadia pour mettre à jour ce travail et évaluer l'état actuel de la façon dont les changements climatiques affectent potentiellement les oiseaux de mer dans la région par rapport aux proies et aux plastiques.À l'heure actuelle, dans l'Arctique canadien, les niveaux d'activités liées à la navigation et à l'exploration pétrolière sont faibles par rapport à de nombreuses autres régions. Étant donné que les activités pétrolières et gazières extracôtières pourraient se poursuivre dans la baie de Baffin et le détroit de Davis, il est nécessaire d'évaluer les niveaux actuels d'exposition aux contaminants pétroliers chez les espèces marines et les effets potentiels. L'évaluation environnementale stratégique dans la baie de Baffin et le détroit de Davis examinera les types possibles d'activités de développement liées au pétrole et au gaz qui pourraient un jour être proposées dans les eaux canadiennes de la baie de Baffin et du détroit de Davis à l'extérieur de la région du règlement du Nunavut. Cela comprend les effets indésirables, les avantages et les stratégies de gestion associés.Ce que

[illegible]

Days on site: 4

Total Person days: 24

Operations Phase: from 2021-06-01 to 2021-09-30

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Pond Inlet area	Marine Based Activities	Marine	NA	NA	Hunters will be based out of Pond Inlet. Hunting will occur within 200km of town
Qikiqtarjuaq	Marine Based Activities	Marine	NA	Na	Hunters will be based out of Qikiqtarjuaq. Hunting will occur within 200km of town

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ᓴᑭᑭᖅᑕᖅᐱᖅ	Susanne Emond - Jeannie Baker	Sululiit Area Co- management Committee	2021-03-04
ᓴᑭᑭᖅᑕᖅᐱᖅ	Alison Kopalie	Nattivak HTO	2021-02-09
ᑦᑎᑕᑦᓄᖅ	Mr. Ootovak	Mittimatalik Hunter and Trappers Organization	2021-02-24

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$$\Delta^b C d_C \sim \sigma \Delta^q \sigma^q$$

Aᑭᓇᐱᓂᔪᕈᕋᒃ ᐸᓄᓂ Aᑭᓇᐱᓂᔪᕈᕋᒃ	ᖅᗛᐸᓂᖅ ᐱᓄᓂᖅ	ᖅᗛᓂᓴ ᐱᓄᓂᖅ ᖅᗛᓲᓄᓂᐱᓂᔪᕈᕋᒃ	ᖅᗛᖅ ᐱᓄᓂᖅ	ᖅᗛᕐᓂᖅ ᖅᗛᓂᔪᕈᕋᒃ ᐼᓄᓂᐱᓂᔪᕈᕋᒃ
Marine Based Activities	ᐱᓄᓂᖅ ᐱᓄᓂᔪᕈᕋᒃ ᐸᓄᓂᖅ	1l	All waste will be taken back to town and disposed of properly.	NA

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Five seabird species will be sampled by local hunters. All of the species are locally abundant and common. The proposed 30 individuals from each species, from each site, is well within the sample size that would result in an impact at the population level. Importantly, these sample sizes are set in consultation with communities and in-line with sample sizes needed to assess contaminants in a meaningful way.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

Two small boats in each region (Pond Inlet and Qikiqtarjuaq) will be used.

SECTION H2: Disposal At Sea

No disposal at sea will occur.

SECTION 11: Municipal Development

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We will be sampling birds while they are foraging or travel over the water.

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The birds will be collected by local hunters

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Local hunters will be hired to complete this work, funding application pending.

Miscellaneous Project Information

[illegible]

NA

Cumulative Effects

The bird collections proposed are part of a cumulative effects study on seabirds, including plastic pollution, legacy contaminants, and oil-related contaminants.

Impacts

$\omega \rightarrow \omega \Delta^{\epsilon_b} C D \sigma^{\epsilon_c} \Gamma^c$ $\Delta^c \cap \Gamma D C \dot{\sigma}^c \dot{\gamma}^c$ $\Delta^b \dot{\gamma}^b C D \Gamma L \dot{\gamma}^c$

[illegible]
$$(P = \langle b \rangle \Delta \langle p \rangle \cap \langle a \rangle \langle b \rangle^c, N = \langle b \rangle \langle p \rangle \langle \langle \langle a \rangle \langle b \rangle^c \rangle \langle \langle \langle a \rangle \langle p \rangle \rangle \langle b \rangle \rangle \langle \langle \langle a \rangle \langle p \rangle^c \rangle^c \rangle, M = \langle b \rangle \langle p \rangle \langle \langle \langle a \rangle \langle b \rangle^c \rangle \langle \langle \langle a \rangle \langle p \rangle \rangle \langle b \rangle \rangle^c \rangle, U = \langle b \rangle \langle \langle \langle a \rangle \langle p \rangle^c \rangle \rangle)$$



List of Project Geometries

1	polygon	Pond Inlet area
2	polygon	Qikiqtarjuaq