



SUBMISSION TO THE

NUNAVUT WILDLIFE MANAGEMENT BOARD

FOR

Information: X

Decision:

Issue: Update on the Department of Environment Long-term Ecosystem Monitoring Program

Background:

- The Government of Nunavut's Department of Environment (DOE) established the Long-Term Ecological Monitoring Program (LTEMP) in 2012 to monitor ecosystem-level changes associated with climate and economic development, and how these changes affect tundra-breeding wildlife. The long-term goal of the program, is to monitor the temporal changes within ecosystems over decades, as opposed to a couple of years.
- The program was run from 2012-2013 and again from 2015-2016 but due to high turnover in departmental staff, there were gaps in the delivery of this program. In order to improve the continuity and efficiency of the program, the DOE decided to collaborate with academic partners.
- The LTEMP is undertaken through a Memorandum of Understanding (MOU) between the University of Alberta, A. Franke, and the Government of Nunavut. Fieldwork, data management and storage, analysis, and reporting are conducted by a team of researchers, led by A. Franke at the University of Alberta in collaboration with the DOE.

Current Status:

- The goal of the LTEMP is to undertake annual monitoring at spatial and temporal scales relevant to monitoring ecosystem components within the summer range of the Qamanirjuaq caribou herd.
- Primary concerns of the project are two-fold: 1) documenting long-term changes associated with climate change and how these may impact ecosystems, and 2) establishing base-line conditions in a region that is under increasing pressure due to its potential for economic development.

- Starting in 2019, intensive monitoring is conducted annually near the community of Rankin Inlet, and extensive monitoring (vegetation and pellet counts) has been conducted periodically at 16 permanent locations established in the summer range of the Qamanirjuaq caribou herd since 2012.
- The intensive monitoring near Rankin Inlet incorporates multiple ecosystem components across three trophic levels (primary producers to tertiary consumers), while extensive monitoring focuses on vegetation and pellet counts. Current components of the monitoring near Rankin Inlet include vegetation, arthropods, songbird community, small mammal community, and some avian predators.
- All data collection is conducted using accepted taxa-specific protocols, including those developed by Arctic tundra ecologists involved in the International Tundra Experiment.
- The Nunavut General Monitoring Program is a significant, long-term funding partner (2019/20 – 2021/22) of the LTEMP.
- Starting in 2019, with support from Nunavut Arctic College (NAC) and the Kivalliq Inuit Association, students enrolled in the NAC Environmental Technology Program were employed through the LTEMP internship program, which was designed to provide science-based, on-the-job training.
- At least two Nunavut Inuit are employed each year; they are involved in all aspects of the field program, but also transfer of local knowledge (e.g., safe travel on the land and sea) and Inuit Qaujimajatuqangit (e.g., working together, innovative thinking, skill development, respect for the land and animals).
- The LTEMP is an ideal program for the integrating community-based monitoring, and the DOE is open to collaborating with co-management partners to expand community involvement. There is potential to increase the participation of Nunavut Inuit students and summer employment of local community members.

Consultations:

- Consultations with Hunter Trapper Organizations in Rankin Inlet and Baker Lake were conducted by the DOE in May 2019.
- Additional consultations are tentatively planned in all relevant communities for February 2020.

Recommendations:

- *N/A*