Researching Viruses in Barrenground Caribou 2023-2025

COMMUNITY-BASED CARIBOU HEALTH SURVEILLANCE PROGRAM
ACTIVITY UPDATE – JULY 2024

UNIVERSITY OF CALGARY

Kutz Research

DR. FRANK VAN DER MEER'S GROUP

PARTNERS:

Kugluktuk Angoniatit Association

Tłı̨chǫ Ndek'àowo
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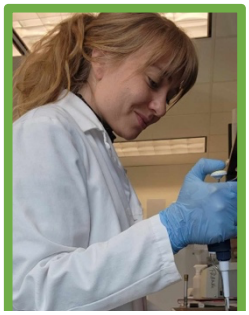
WHAT IS THE ISSUE?

Viruses are pathogens that can only multiply inside living cells, and that can negatively affect wildlife survival, reproduction, and population dynamics. Climate change stressors in the Arctic may increase these effects through the emergence of new viruses, more disease spread, and limiting animals' ability to prevent and fight infections.

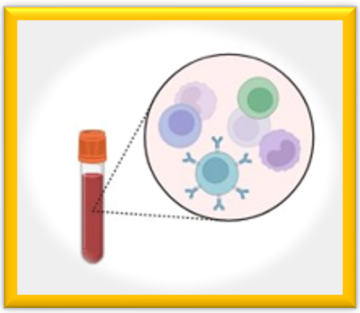
It is important to understand what viruses circulate in barrenground caribou and how these agents affect caribou. Currently, when we look to see whether a caribou has been exposed to a virus, the only tests available to us are tests that were created for domestic cows. Our goal is to i) develop tests that are specific for caribou (i.e., more exact tests), and ii) better understand the role viruses play in caribou populations.



Jessie at work in the lab.
Email: jessie.olson1@ucalgary.ca

WHAT ARE WE DOING?

Jessie Olson, raised in Yellowknife, is a University of Calgary Master's student supervised by virologist Dr. Frank van der Meer. Her project "*Biodiversity and Impacts of Viral Infections on Barren-ground Caribou Health*" is supported by the Cumulative Impact Monitoring Program (NWT CIMP) and is part of a large partnership (Tłı̨chǫ Government, Ekwǫ̀ Nàxoèhdee K'è program, Kugluktuk Angoniatit Association, Governments of Nunavut and NWT, and University of Calgary). Jessie is working on laboratory tests to understand which viruses are present in caribou.



Spleens and lymph nodes from the harvester-sampling kits are vital in creating these tests, and the efforts put into collecting them are greatly appreciated!

<u>Step I:</u> First, we are **analyzing caribou tissues from harvester-sampling kits** to find out what viruses are present.

<u>Step II:</u> Once the viruses are known, we will **develop blood tests** to detect which caribou have been exposed to them. The blood-on-filter-paper samples collected by harvesters can then be used for barrenground caribou virus testing.

WHY DOES THIS MATTER?

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) lists barrenground caribou as "Threatened." Many herds have suffered dramatic declines and contributing factors to these declines are poorly understood but viruses likely play a role. Knowing what viruses are in caribou and having good tests to detect them in samples from hunter-sampling kits will help us understand how viruses may be linked to caribou population health and dynamics.

Environment and Climate Change Canada | Environnement et Changement climatique Canada

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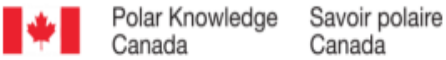
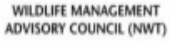
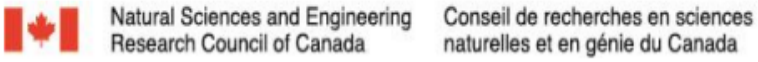
NWT CIMP
Northwest Territories Cumulative Impact Monitoring Program

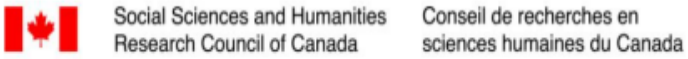
THANK YOU TO ALL THOSE WHO MAKE OUR RESEARCH IN THE ARCTIC POSSIBLE

The Kutz Research Group works closely with arctic communities, territorial governments, and industry partners to investigate and monitor wildlife health in the North. The information and results presented here are a direct result of these collaborations. We thank all our collaborators and funders who have made this broader program successful. Please contact Susan Kutz skutz@ucalgary.ca if you have any questions about this program.









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