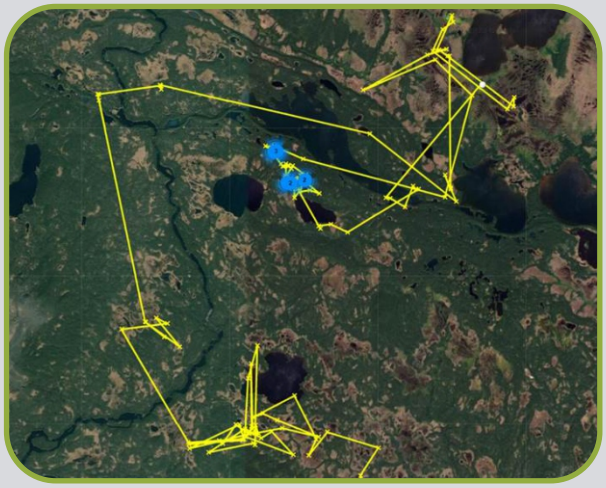
NBCKC Monitoring Practices for Boreal Caribou

TELEMETRY
RADIO COLLARS

HOW DOES IT WORK?

- Global Positioning Systems (GPS) and/or Very High Frequency VHF) radio transmitters are attached to collars; these collars are worn by the animal.
- Depending on the type of tracking system, the collar will emit a VHF signal that can be detected usually within a few kilometers of the animal, and/or send data to the observer's computer.



WHAT CAN BE MEASURED?

- Radio collars are used for monitoring distribution, movement, activity, survival, and habitat use. If the collar is retrieved promptly, cause of death can be investigated.
- Opportunistic sampling at the time of collaring also allows for the collection of information related to caribou health, disease, and body condition.

WHAT (AND WHO) IS REQUIRED?

- Costs include collar purchase and satellite download fees, as well as aircraft time (for the deployment, possible relocation, and retrieval of collars).
- Fitting of collars should be done by experienced technicians. Monitoring of incoming remote data is important, particularly for the early detection of mortality signals.
- Local community members can identify good locations for collar deployment.

WHEN CAN IT BE USED?

Use: Radio collars are best suited to broad-scale studies. Radio collar data can be collected at any time of the year, over many years.

Avoid: Collars are typically not fitted on calves due to concerns that collar size and weight might impact calf survival or maternal behavior

Previous boreal caribou application: The Newfoundland and Labrador Department of Fisheries and Land Resources uses combination GPS/VHF collars as the primary method of monitoring boreal caribou populations. At the time of collar installation, data and biological samples are also opportunistically collected.

Photo credit: Richard Neville

KEY CONSIDERATIONS

- It is a common practice in Canada to combine telemetry studies with aerial survey studies to determine population trend, size, density, and recruitment. Using the datasets together allows users to estimate detection rates and improve precision of population estimates.
- Usually, female caribou are targeted for collaring programs, as this information is pertinent for estimating survival and recruitment. However, if funding is adequate, collaring of male individuals permits the study of sex-differences in habitat use, distribution or behaviour.

Photo credit: Joseph Townley

Cost:	Logistical Complexity:	Capture/Handling:
$$$	MODERATE-COMPLEX*	YES

*Logistical complexity highly dependent on availability of qualified staff and on optimal capture conditions

For more information, including regional subtleties and method particularities, please refer to decision tree, detailed write-ups and suitability tables 1 and 2. The information contained in this factsheet is intended for rapid communication and summary purposes only.

Photo credit: Laura Finnegan