

NWRT Final Report

NWRT Project Number: 2-21-02

Project Title: South Baffin Collaring

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Summary:

The primary objective of the project was to conduct a GPS collar deployment on South Baffin Island caribou in order to fill in important data gaps for Baffin caribou. Successful and timely recovery of Baffin Island caribou is essential to the traditions and food security of Baffin Island communities. We planned to deploy 25 collars in South Baffin Island utilizing 2022 spring composition surveys to do reconnaissance for caribou groups while gathering complimentary information. These collars would remain on the caribou for 4- 4.5 years and provide multiple daily locations.

Deployment of collars not completed due to Qikiqtaaluk Wildlife Board and HTO concerns associated with transmission of Covid-19 to caribou by researchers.

Project Objectives:

Information collected from this project is critical to understanding several fundamental aspects of Baffin caribou ecology on Baffin Island and this program aims to fill the following data gaps critical to effective population management:

- 1) Overwinter cow and calf mortality (This information is critical to demographic modelling of subpopulations)
- 2) Important habitat use areas, such as calving grounds and migratory pathways and links to habitat characteristic. (Determining site fidelity such as calving and migration areas will allow GN to reduce future impacts on these areas).
- 3) Subpopulation structure and delineation of subpopulations (To successfully manage Baffin Island caribou we need to establish whether there is more than one subpopulation)
- 4) Detect possible effects of industrial developments, such as avoidance of infrastructure (Monitoring the movements and behaviours of caribou near mines and comparing this data with that from caribou away from mine infrastructure will allow us to infer effects of activity and improve future mitigation).
- 5) Reduce required spatial extent for abundance survey; if possible. (Understanding daily and annual movement and delineating subpopulations of Baffin caribou may reduce the spatial extent required during the next abundance surveys. Reducing the spatial extent of these

surveys reduces overall project cost, may increase abundance survey frequency and may increase future survey result accuracy.)

Materials and Methods:

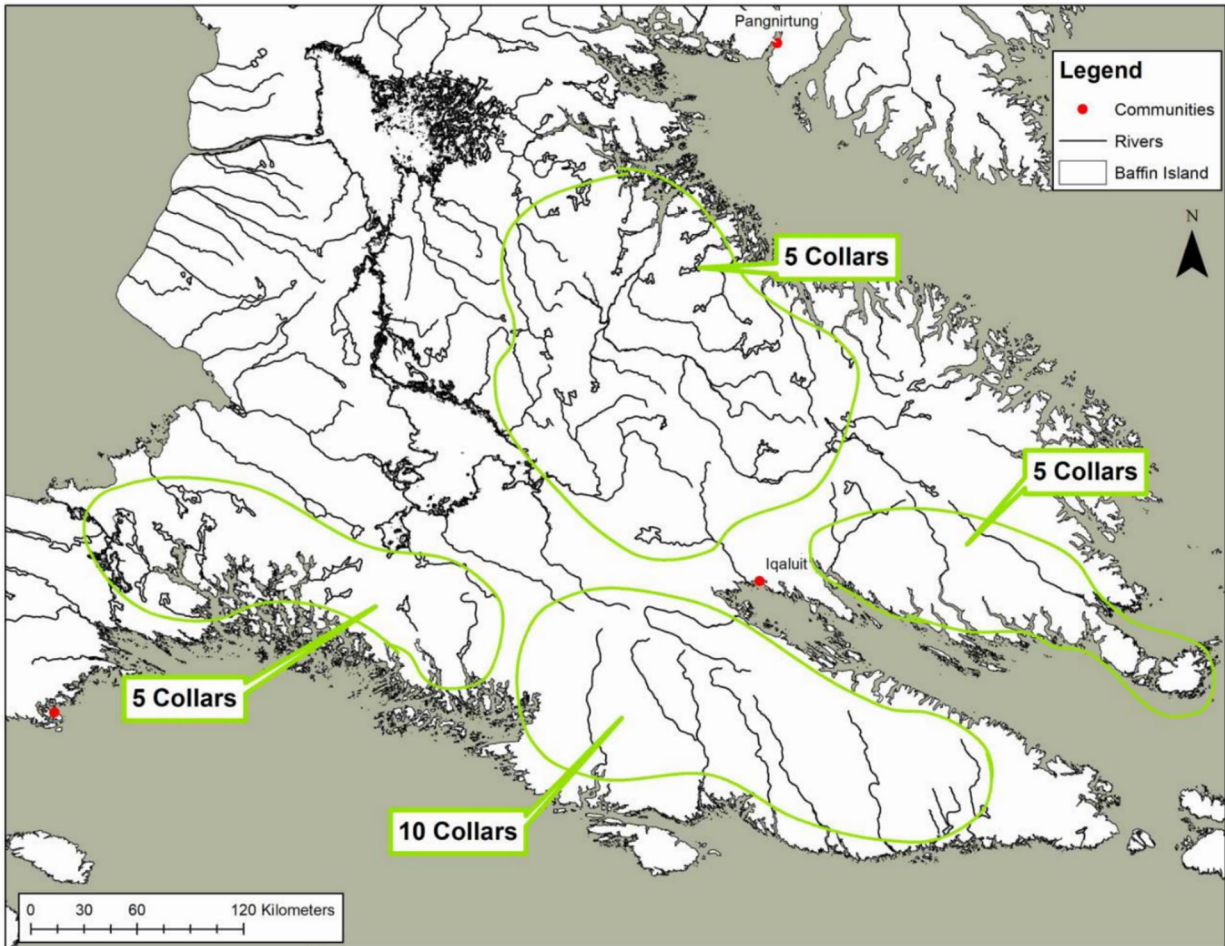
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Twenty-five (25) Telonics Iridium GPS collars, model; Telonics TGW 4577-4 with CR5B release mechanism, were to be deployed in the South Baffin study area (Figure 1). A helicopter was to be used to fly to areas identified by reconnaissance flights (2022 spring composition surveys) and healthy female caribou were to be located and selected for the collaring process by the HTO volunteer. Collars were to be deployed using a helicopter and net-gun with maximum 90 second chase times. The GPS collars would have been programmed to record 6 GPS locations daily and transmit these locations every 4 days via a satellite to the Baffin DOE Office. All collars would remain on the caribou for 4-4.5 years after which they would automatically drop off via a programmable collar release mechanism. As per HTO request the release mechanism are accessible remotely and collars can be dropped early if there are concerns with survival of collared caribou. After the 4 regular life cycle of the collars they would then be collected and refurbished to be used again.

The deployment was planned for late March/early April 2022 when the temperatures were low and there is sufficient snow cover to reduce the likelihood of caribou injury. In order to effectively find groups of caribou, particularly at the low densities that are currently present on Baffin Island, the collar deployment was planned to run simultaneous to the 2022 spring composition survey. The 2022 spring composition survey, in addition to helping us determine the productivity and vigour of Baffin caribou, was to function as a recon for the collar deployment crew. These surveys were conducted with rotary winged aircraft and consist of high grading areas where caribou are known to occur based on existing collar data and Inuit Qaujimagatuqangit (IQ).

To ensure protocols were being followed, maintain project transparency and to incorporate Inuit Qaujimagatuqangit into selection of caribou and search locations a designated HTO Observer was to accompany collar crews and directly observe all activity. Caribou locations would have been analyzed using various spatial techniques to determine presence of critical habitats, seasonal range, migratory corridors, and sub-population affiliations. The collar data (i.e. locations) was to be analysed using the minimum convex polygon method or similar. This method delineates home ranges by creating a minimum bounding convex polygon that encompasses all sampled location points.

Table 1. Proposed South Baffin caribou GPS telemetry collaring program study area. Green represents approximate collaring locations



Results:

Discussion/Management Implications:

Deployment of collars not completed due to Qikiqtaaluk Wildlife Board and HTO concerns associated with transmission of Covid-19 to caribou by researchers.

Baffin Island caribou are of the barren-ground subspecies, *Rangifer tarandus groenlandicus*. This subspecies can be further divided into two separate ecotypes: taiga wintering and tundra wintering. Baffin Island caribou generally remain on Baffin Island and ancillary Islands year-round and therefore are of the tundra wintering ecotype. Tundra wintering caribou generally occur in small groups and vary widely in their migratory behaviour. This can make surveying more difficult as the animals tend to be distributed unevenly across the landscape and occur in smaller groups than the taiga wintering ecotypes, particularly when their abundance is low.

Programs such as GPS telemetry collaring can prove to be invaluable to resource managers by increasing effectiveness of corresponding research programs and reducing overall costs. Unfortunately,

this program was not completed due to HTO and RWO concerns related to Covid-19. The GN had purchased the telemetry collars and precured the aircraft in preparation for the upcoming project. The GN still prioritizes these types of programs and will continue to pursue community support in the future with hopes of deploying the purchased collars in the near future. One of the major limitations with this type of program is that they often lack support from community members due to concerns with handling of wildlife. The GN continues to work with HTOs and the RWO to find solutions for the concerns associated with deployment.

Although this project was not completed and no collars were deployed the GN still prioritizes this type of research. Distributional data is necessary for planning and effectively implementing upcoming abundance surveys and ongoing monitoring of Baffin Island caribou to ensure effective population recovery. This type of information is often used to determine the impacts of various land-uses including development projects on caribou behaviour, Zone of Influence (ZOI) determination and habitat loss.

Reporting to communities/resource users:

Some HTO/community consultations took place in early 2020 and throughout 2021. However, Covid-19 related travel restrictions, meeting restrictions and office closures caused many meetings to be cancelled at the last minute. To date we have attempted to stay in contact through email, phone, teleconference and in-person meetings when possible. All HTOS have been provided up-to-date project results and we will continue to provide results to co-management partners when available.

References:

None. Project not completed.