

Satellite Collaring Barren-ground Caribou

Movements of barren-ground caribou have been tracked by the Government of the Northwest Territories (GNWT) since 1996 using satellite radio collars.

Caribou are usually collared in the late winter and their movements are tracked throughout the year.

This technology is used around the world to monitor herds of migratory caribou and many other kinds of wildlife.

Why do we need collars?

Collars provide key information on caribou throughout the year.

They help us to:

- Define areas for population surveys and other monitoring surveys
- Determine key habitats such as calving grounds, migration corridors and core ranges, and changes in habitat use over time
- Monitor survival rates of caribou (identify where, when and why caribou are dying)
- Assess whether caribou cows return to the same calving ground each year (herd fidelity)
- Understand how caribou respond to mines, roads and other human activities
- Create the weekly Mobile Core Bathurst Caribou Management Zone and assess harvest of individual herds



New collar, left, weighs about a third less than older collar, right, due to a smaller, lighter battery

What kinds of collars do we use?

The collars we use today are much lighter than they used to be. They weigh 800 grams, compared with older collars, which weighed more than a kilogram.

In comparison, a snowmobile helmet typically weighs 1-2 kilograms.

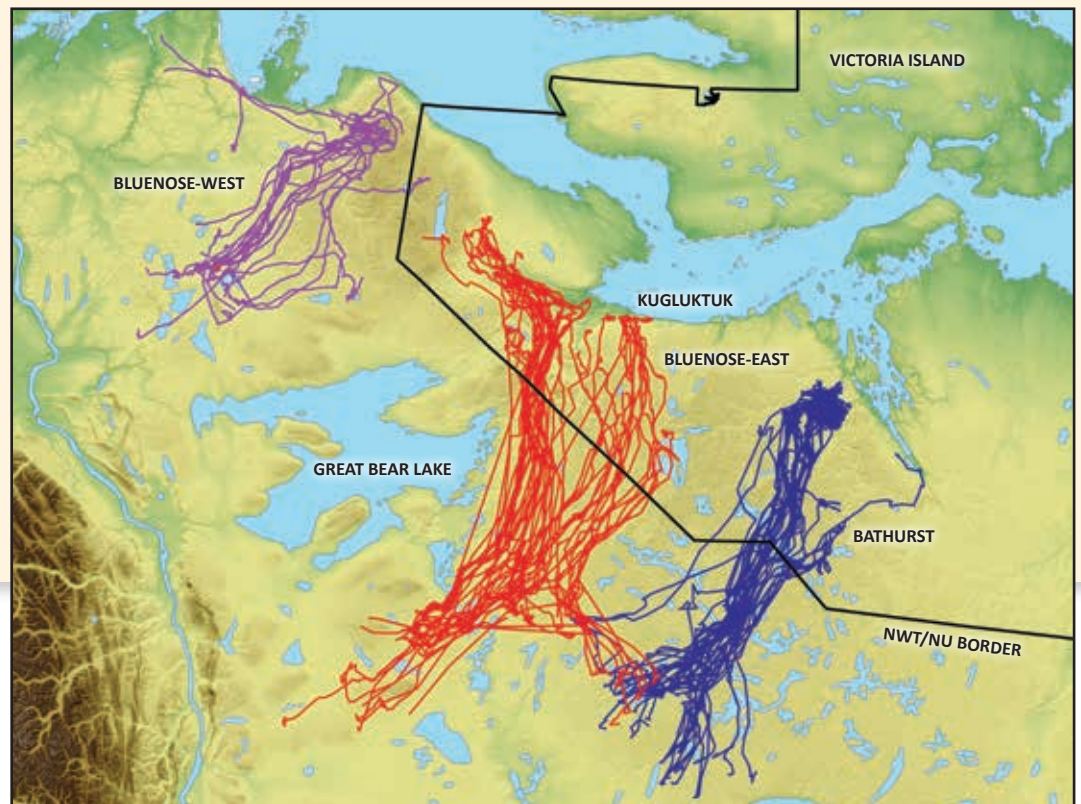
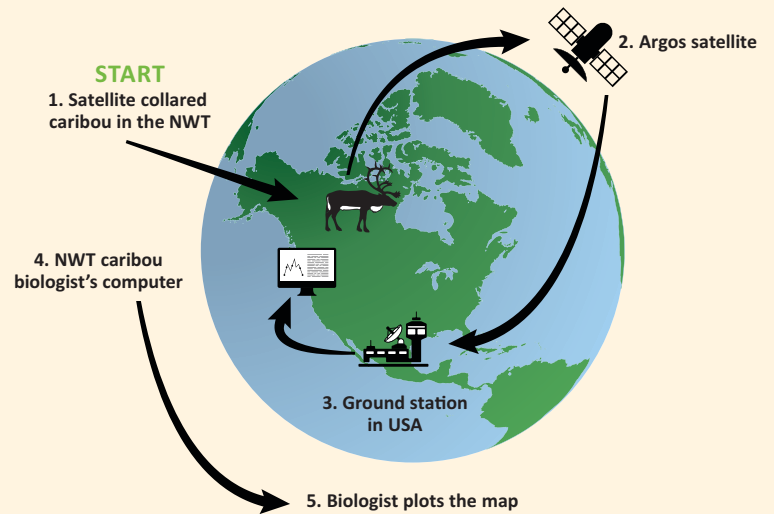
How do satellite collars work?

To fit the collar on the caribou, the animal is captured using a net fired from a helicopter. Specialized helicopter capture crews are able to reduce stress to the caribou with quick pursuits and short handling times. Within 15 minutes of capture, the caribou is collared and released back into the herd. This procedure requires no drugs, and is done following specific animal care and safety guidelines established by the NWT Wildlife Care Committee.

The collars have a GPS, which collects and stores the animal's exact location at intervals during the day. The location data are stored in the collar until they can be sent by satellite and emailed to the caribou biologist's computer. This transfer occurs daily when we are conducting surveys (periods during the spring, summer and fall) and every second day for the rest of the year.

Timed programmable release mechanisms are built into each collar. This means the collar will drop off without any additional capture and handling of the caribou, when the collar is nearing the end of its battery life. Once the collar is on the ground, it can be tracked and retrieved. Collars are often refurbished and used again in future studies.

Migration paths of collared caribou cows from their wintering grounds north to their calving areas (April 15-June 10, 2015).



How many collars do we need?

We need at least 40 collars to get good information on a caribou herd's distribution at any time of year. However, depending on what kind of information we are trying to gather, the preferred number could be as high as 100 collars. Biologists in the NWT have used up to 50-60 collars per herd, while biologists in Alaska have used up to 100 or more collars for each of their herds.

While more collars can provide us with better information, any decision to increase the number of collars on the herd must be balanced with the need for respectful behaviour towards caribou as recommended by Indigenous Elders.

