
Project Caribou

An Educator's Guide to Wild Caribou of North America

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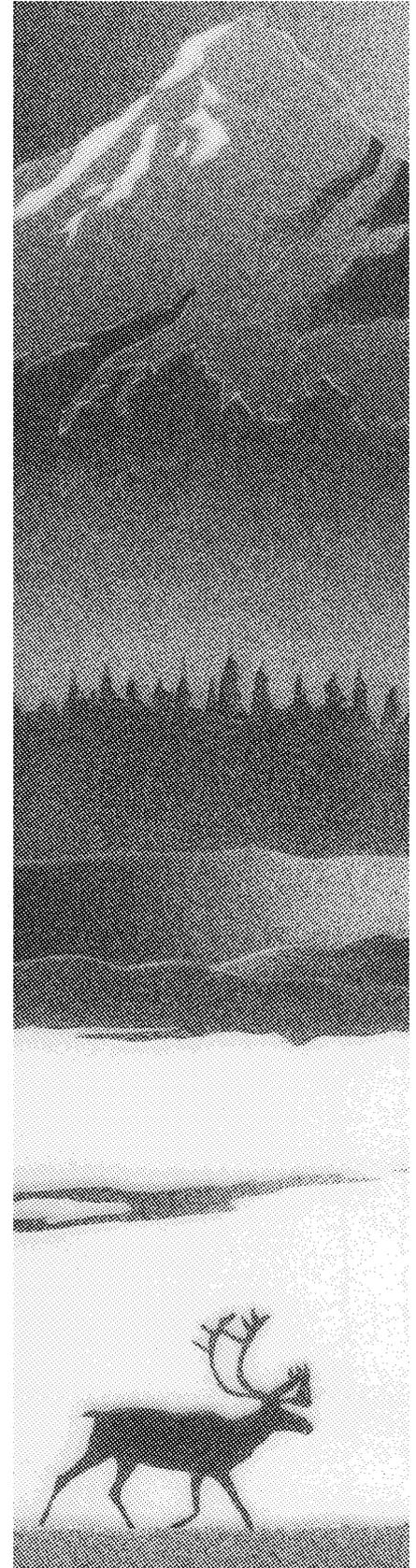
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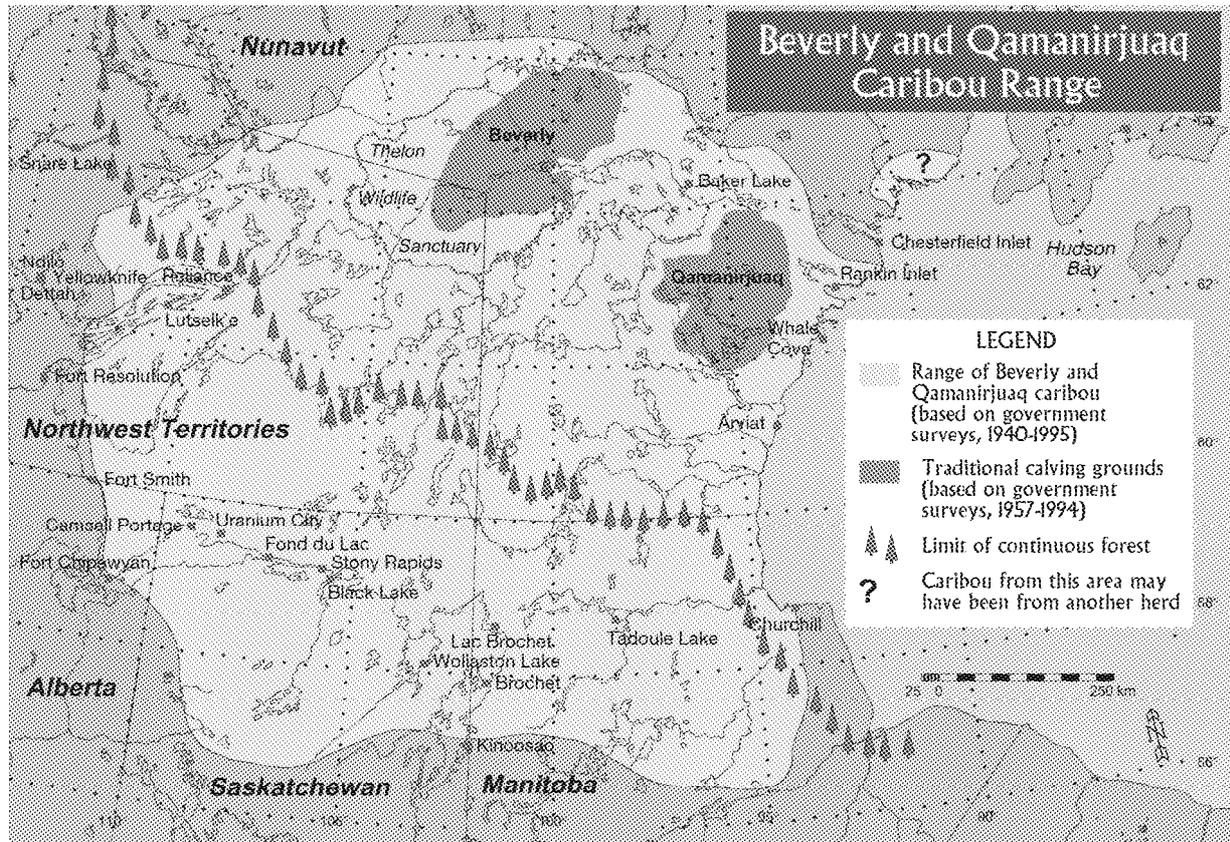
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Case Study

The Beverly Caribou Herd: Continental Wilderness Travellers

Prepared by Leslie Wakelyn

Range and ecosystem

Beverly caribou have migrated across the northern Canadian landscape for thousands of years, travelling as far as 2,000 km each year. The range used by this herd over the past 60 years extends across a huge and diverse area, from the boreal forests of Saskatchewan, across the subarctic taiga of the NWT, to the arctic tundra of west-central Nunavut (see Beverly and Qamanirjuaq caribou range map). The total range used by the herd during this period extends almost 1,000 km from south to north, from the Clearwater River and Reindeer Lake areas of northern Saskatchewan, to the Pelly and Garry lakes area of Nunavut. In some years, however, the caribou have remained north of their historical forested winter range in northern Saskatchewan and Manitoba. Because the herd overlaps with Bathurst caribou on the west and the Qamanirjuaq herd on the east, it is difficult to determine the western and eastern limits of the Beverly range. However, Beverly caribou range is at least 600 km from west to east, from Great Slave Lake, NWT, to somewhere east of Dubawnt Lake, Nunavut, and from the Slave River in Alberta across northern Saskatchewan to somewhere near Nueltin Lake in Manitoba.

The Beverly herd of barren-ground caribou migrates northward each spring to the calving grounds, and then travels back toward the more southerly winter range in July, and again each fall. Every year Beverly caribou return to the same general area for calving, although not to the same specific location. Consequently, the Beverly herd's traditional calving grounds (the total area known to be used for calving over many years) are much larger than the area used in any particular year. The Beverly herd's calving grounds (approximately 38,400 km²) extend from the area around the lower Thelon River and Beverly and Aberdeen lakes, north towards the Back River and Pelly and Garry lakes, and have been described by surveys in 23 years between 1957 and 1994. Calving ground surveys found that most

Beverly caribou calved in the southeastern half of the traditional calving grounds between 1957 and 1974, but that calving occurred primarily in the northern portion of the calving ground since 1980. That is why the entire traditional calving grounds, not just the area used for calving in one year, are important to the herd over the long-term.

Unique characteristics

Unlike all other mainland barren-ground caribou herds, which spend part of their annual cycle in coastal areas, Beverly caribou remain inland year-round. The landscape through which the Beverly herd travels can be characterized as primarily wilderness, including hundreds of wild rivers and lakes, and one of the largest protected natural areas in North America, the Thelon Wildlife Sanctuary. Human habitation on the range is limited to 10 small communities around the fringes of the range, and five others nearby.

The wide-ranging movements of Beverly caribou take them across several political boundaries as they travel through portions of three provinces and two territories. The traditional calving grounds are in Nunavut, while most of the spring and fall migration range is in the NWT. Residents of Saskatchewan communities account for much of the harvest of Beverly caribou. The Beverly and Qamanirjuaq Caribou Management Board (BQCMB) was established in 1982 to deal with the multi-jurisdictional nature of the caribou herds. In the late 1970s, a confrontational situation existed among the several governments and many communities that had vested interests in management of Beverly and Qamanirjuaq caribou, and Aboriginal peoples were not included in decision-making processes. Over the years, the BQCMB has successfully brought people from these different governments, communities and cultures together to discuss issues and make recommendations for conservation and management of Beverly and Qamanirjuaq caribou and their habitats. The Board has fostered multi-jurisdictional and multi-cultural cooperation as a result of greater understanding and respect for diverse values and points of view, which has had positive ramifications far beyond caribou management issues. (For more information on the BQCMB refer to the Qamanirjuaq caribou case study in this guide.)

Cultural and social significance

Aboriginal people across the Beverly range historically depended on caribou for much of their food, clothing and shelter. Today, the Beverly herd is harvested by residents from about 15 communities in Manitoba, Saskatchewan, Alberta, the NWT and Nunavut located on or near the range of this herd. Use of the Beverly caribou herd remains very important for sustaining the culture and traditional lifestyles of Dene, Metis and Inuit people.

The traditional lifestyle of the group of Dene known as Etthen-eldeli-dene (caribou eaters) was attuned to the life patterns of caribou. Before the coming of the fur trade, these Dene were nomadic, following a continuous pattern of movement between the forests and the tundra. The Dene of this era were dependent on caribou for most of the basic necessities, so they followed caribou northward to their summering grounds on the tundra, and returned each year to spend winter in the forest. Some families stayed south of the tree line all year, while others spent most of the summer on the "barren-grounds." Although other sources of food were sometimes available when caribou were not, caribou always provided essential materials for clothing and shelter. For example, tents consisted of a framework of poles bound together at the top and covered with as many as 70 caribou skins.

The primarily nomadic lifestyle of the Dene ended in the 1940s and 1950s, when people began living in permanent settlements. Several Dene communities were strategically established on a major migration route of the Beverly herd in northern Saskatchewan, where caribou could be harvested during both fall and spring migration between winter range and calving grounds. These two major harvests provided people with a year-round supply of meat, which was eaten fresh during fall and spring, frozen in winter, and dried during summer. However, this food supply was only available when Beverly caribou wintered around or south of the Dene communities, when the migration route brought caribou within hunting range. When Beverly caribou wintered far from these communities, they were not accessible to the Dene, and much hardship resulted.

Availability of snow machines, aircraft, and modern communication devices has helped make Beverly caribou more accessible to Dene from northern Saskatchewan and Manitoba, although these options of gaining access to the herd are not always affordable. In the winter of 1998, for example, Beverly caribou were found in Saskatchewan only along the Manitoba border and in the northeastern corner of the province. Consequently, hunters from communities in northern Saskatchewan travelled as far as 200 km north to hunt caribou in the NWT that winter.

Famine and hardship resulting from the unpredictable movements and distribution of caribou from year to year were familiar to Dene people. One Dene explanation for the occasional scarcity of caribou was that caribou never die unless killed, and that if a caribou is captured or mistreated its spirit will warn other caribou to stay away from that area.

Historical and current status

The number of caribou in the Beverly herd has been estimated by government biologists numerous times over the past 50 years. However, caribou counts on the spring and winter ranges from the late 1940s to the 1960s did not provide adequate information for determining whether the herd was increasing or decreasing. Actual population size during this period was probably higher than estimates based on surveys (between 100,000 and 275,000 caribou), because caribou were missed during surveys, and the size of surveyed groups was often underestimated.

Calving ground surveys from 1971 to 1980 suggested that the herd was declining. Total herd size was estimated to be about 105,000 in 1980. Biologists believed that the herd would soon be in trouble if the number of animals harvested were not reduced. However, many Inuit hunters believed that the herd was actually increasing, or that it was using different parts of the range, and did not agree that hunting was a problem.

Surveys of Beverly caribou conducted in the 1980s indicated increasing herd size. Population estimates were 125,000 in 1982 and 190,000 in 1988. The 1994 population survey of the Beverly herd indicated that the trend had continued, resulting in a herd size of 276,000 caribou.

Current and future threats

Until recently, Beverly caribou have not had to contend with too many obstacles or human-caused disturbances across most of their range, as land use activities such as mineral exploration have been more prevalent elsewhere, such as in both of the neighbouring caribou ranges (Bathurst and Qamanirjuaq). Beverly caribou have also had the luxury of spending part of their annual cycle feeding and travelling on lands protected within the Thelon Wildlife Sanctuary. Furthermore, the lands between the Sanctuary and Saskatchewan are primarily wilderness. However, there is no certainty that this situation will continue, given the pro-development policies of current governments and ongoing expansion of mineral exploration activities in the Canadian north.

Roads, mineral exploration and mines currently pose the greatest threat to Beverly caribou and their habitat. The potential cumulative effects of development activities on Beverly caribou are of particular concern. Roads are a major threat to Beverly caribou, because they can increase human access, act as barriers to caribou movements, and reduce habitat availability. Roads that provide new access to caribou for unregulated hunters from southern Canada, such as the new Athabasca Road from Points North to Black Lake Saskatchewan, are the greatest concern. These roads create the potential for significantly increased harvest levels, as restrictions on use of roads for harvesting are very difficult to establish and enforce. In addition, caribou movements across roads can be blocked if traffic volume is high or if snow walls are created by plows. Roads on the Beverly calving ground and post-calving areas could result in loss of critical habitat, because caribou with calves avoid areas near roads.

Mineral exploration and mines are the most frequent major developments on Beverly caribou range, and the potential for new mines is increasing. Exploration and mining of uranium has been the greatest concern in the past for communities that harvest Beverly caribou, and many uranium mines are operating in northern Saskatchewan. Recently, however, exploration for gold and diamonds has increased throughout the NWT and Nunavut, and exploration for base metals (zinc, copper, nickel) is also occurring. Although most of the recent exploration boom has occurred northwest of the Beverly

range, prospecting permits and mineral claims are active on Beverly range, including the calving grounds.

Activities associated with mining which have potential negative effects on Beverly caribou include frequent low-level aircraft flights (during exploration and development), construction of roads and airstrips, frequent travel by supply trucks on all-weather and winter roads, mine construction and operation, and pollution of land and water by toxic substances. These activities can result in loss of habitat, increased human access, and disturbance to caribou. In northern Saskatchewan, many uranium mines on caribou range are also sources of potential contamination to wintering Beverly caribou. The possible negative impacts of mineral exploration and mining on caribou are difficult to predict and assess because of variability in factors such as caribou movements and weather, and because measurable effects of disturbance may take a long time to develop.

Climate change over the next 40 years has significant potential to affect Beverly caribou and their habitat. Global warming may result in changes in snow depth and hardness, timing of spring melt, summer temperatures, and abundance of insects and parasites. These changes will affect herd size, migration patterns, and seasonal distribution of Beverly caribou.

Management and study

The BQCMB has compiled much of the information available from government surveys and satellite-monitoring studies between 1940 and 1995 concerning the distribution and movements of Beverly and Qamanirjuaq caribou. This information has been used to create reference materials intended to assist conservation of caribou and caribou habitat, by providing tools for use during impact assessment, protected areas planning and land use planning. The BQCMB has published a report and a map atlas on CD-ROM which contain background information about the caribou herds and caribou range, the BQCMB, and land use activities on caribou range; ratings for sensitivity of caribou and caribou range to land use activities during annual life cycle periods; maps showing seasonal caribou ranges; and information about the data used to create maps. (See the Qamanirjuaq caribou case study for more information about the BQCMB.)

Approximately half of the traditional Beverly calving ground is currently protected from development activities because it lies within the boundaries of the Thelon Wildlife Sanctuary. A small part of the winter range along the south shore of Lake Athabasca in Saskatchewan is also protected within Athabasca Sand Dunes Wilderness Park. The rest of the Beverly range is currently unprotected, although the Saskatchewan government has proposed three new protected areas on Beverly caribou winter/early spring range.

Biologists with the provincial and territorial governments review applications for land use permits, land leases and major development projects which are proposed on the Beverly range, and make recommendations intended to protect caribou and caribou habitat. Government members of the BQCMB also review applications for activities on the Beverly range, and make recommendations to the agencies that approve these projects, such as the Department of Indian Affairs and Northern Development (for the NWT) and the Nunavut Impact Review Board (for Nunavut). Aboriginal representatives on the BQCMB raise issues that are relayed to governments and others.

The latest survey of the Beverly calving ground occurred in 2000. Information provided by this survey will help biologists to determine the overall health and trends (increasing, decreasing or stable) of the Beverly herd, and to identify areas that should be protected from development activities because of their importance to calving caribou.

The BQCMB and NWT government have proposed that satellite radio-collars be used to monitor the movements and distribution of Beverly caribou, and several agencies have made funding commitments for a two-year satellite-monitoring study. However, the study will not proceed until support from all Beverly range communities is obtained. Information from the study would help to identify seasonal ranges, migration routes, and areas that are used by more than one caribou herd (Beverly, Bathurst and Qamanirjuaq), and to locate caribou for harvesting.

The NWT government is developing a proposal to monitor contaminant exposure in Beverly caribou as part of a larger study to determine whether levels are increasing, decreasing or remaining the same over

time. Three caribou herds from across the NWT and Nunavut, including the Beverly herd, have been selected for long-term monitoring. Field collections will be conducted in cooperation with local hunters and trappers organizations or other appropriate local First Nation organizations, and local hunters will help with planning and conducting caribou collections. Community consultation, sample collection and laboratory analysis for Beverly caribou were proposed for 2000/2001.

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