
Project Caribou

An Educator's Guide to Wild Caribou of North America

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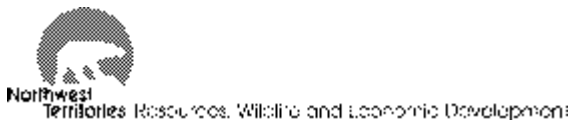
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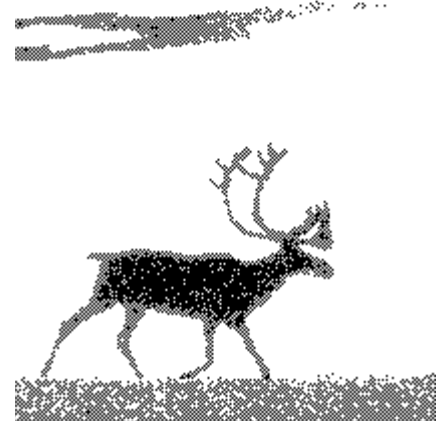
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Case Study

The Porcupine Caribou Herd: The International Wanderers

Prepared by Kirsten Madsen

Range and ecosystem

The Porcupine Caribou Herd is a barren-ground caribou herd that ranges from northeastern Alaska across the northern Yukon to the Mackenzie Delta in the Northwest Territories (NWT). The herd winters in the boreal forest of the Richardson and Ogilvie mountain ranges. In recent years, the herd has most often wintered in the southern part of its range in Canada. The caribou feed among the trees, using their hooves to dig for lichens. Wary of predators, they move to clearings and hilltops with open views to rest and ruminate.

In spring, pregnant female caribou lead the migration to calving grounds located on the coastal plain and foothills of Alaska's Arctic National Wildlife Refuge (ANWR) and the Yukon's Ivvavik National Park. The reason the herd returns each year to traditional calving grounds is not fully understood. However, it is likely that they choose these areas because spring vegetation appears here first. They may also choose these locations because they offer better protection from predators and insects.

After an arduous journey, the females rest in the calving grounds where each cow gives birth to a single calf in early June. The newborn calves struggle to their feet and begin walking within hours of birth. They must quickly learn to follow their mothers during the herd's migration. Though resilient, nearly half the calves die in their first year of life. Travelling with the herd is perilous, and many die of pneumonia, by drowning or by having become separated from their mothers. Predators such as grizzly bears, wolves and golden eagles also prey on the calves.

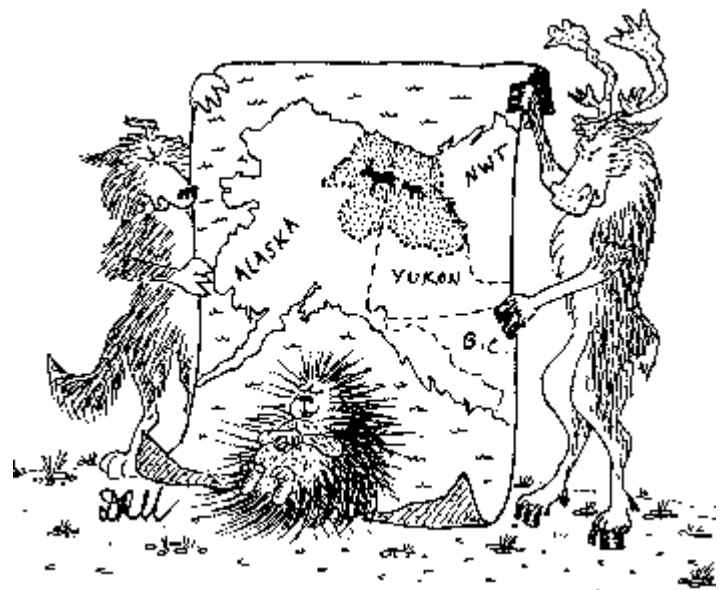
The Porcupine caribou spend the short northern summer moving about the tundra in large groups. They seek relief from mosquitoes and parasitic insects by searching out windswept areas. Among the foods in their summer diet are grasses, sedges and shrubs. Fall migration begins in early September, when groups of caribou begin moving southward towards the boreal

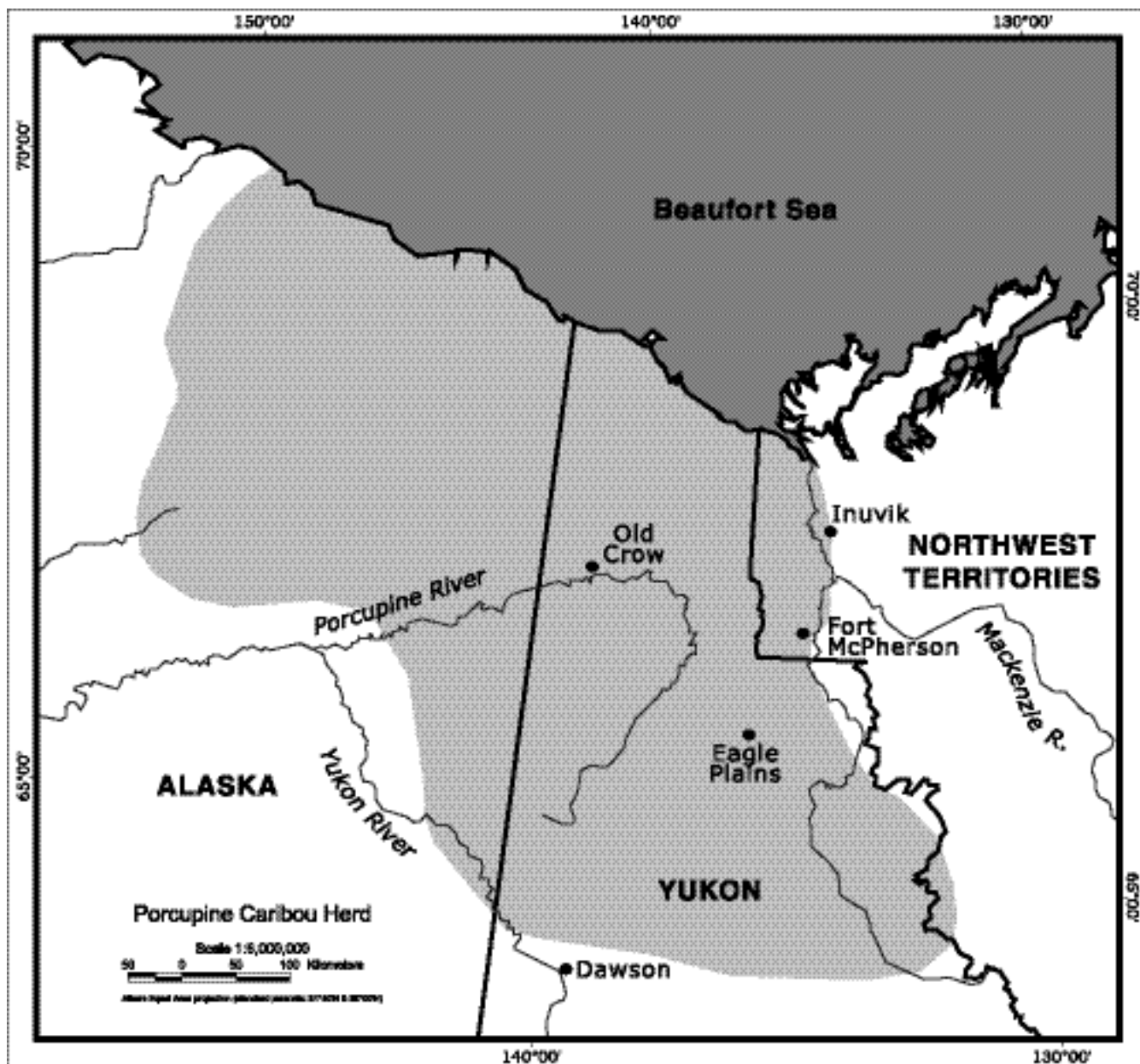
forest. Fall is also mating time. The bull caribou spar with each other to establish dominance. Breeding takes place, and the cycle of the herd continues.

Unique characteristics

The Porcupine Caribou Herd is one of the largest herds of mammals in North America. Currently numbering over 125,000 animals, the herd appears as a massive moving river of caribou passing over the landscape. Each year, the herd completes an arduous journey. The known range of the herd is about 260,000 square kilometres. The herd travels to different habitats within this range on a seasonal basis. Even very young calves travel with the herd, crossing open tundra plain, hills and mountain passes, and swimming swift-flowing streams and rivers. River crossings are particularly treacherous, especially during spring break-up when chunks of ice fill the streams.

The herd's annual migration brings them close to several northern communities. The indigenous people of these communities have an ancient relationship with the caribou, relying on the bounty of the herd for food, clothing and an intimate connection to the land. Though the people of these northern communities have experienced many changes, this relationship with the caribou remains strong. The Porcupine herd has returned year after year, and the people of the north rely on them to do so.





Cultural and social significance

The Porcupine herd is hunted by Gwich'in, Northern Tutchone, Han, Inuvialuit and Inupiat from 17 communities. Some of these groups have relied on this herd for centuries to provide food, clothing and shelter. But the ties between the people and the herd go much deeper. The Porcupine herd is part of their entire social and cultural fabric.

The Inuvialuit of the Mackenzie Delta area of the Northwest Territories traditionally hunted the Porcupine caribou to provide food for themselves and their sled dogs. They used hides with fur intact to make parkas and fur boots. Today, Inuvialuit hunters from Tuktoyaktuk and Aklavik begin to harvest Porcupine caribou in July, when the caribou stray near to their whaling camps on the Arctic coast. Inuvialuit and Dene hunters, including Tsiigehchic from Inuvik and Fort McPherson, are able to hunt the caribou in the late summer as they move southward through the Richardson Mountains.

The Gwich'in people of Old Crow, Yukon, are one of the most consistent users of the Porcupine herd. Each year, the herd passes very close to the village on its migration across the Porcupine River. The relationship between the people and the caribou is an ancient one. A fleshing tool made from caribou antler that is at least 1,350 years old has been found near Old Crow. Ancient wooden fences, which were used to guide and trap the caribou, have also been found near the village. For thousands of years, the Gwich'in have lived off the land and taught their children how to hunt, use and care for their most important resource, the caribou. In the past, the Gwich'in used nearly every part of the caribou: fat for light and cooking, hides for clothing and shelter, and bones for needles, fish hooks, and ornaments.

Today, many of these traditions are still passed on. Young people are shown how to hunt wisely, share the meat and give thanks. They also learn how to preserve the meat and prepare the hides. Elders share their knowledge of traditions with their people. The fall hunt along the Porcupine River is one of the most important times of the year. The herd's arrival is anxiously awaited. The animals are in prime condition after a summer of feeding on the tundra. A supply of caribou is needed to last through the long winter, and the entire community is

involved in the hunt and preparation of the meat. In an isolated community such as Old Crow, which has no road access, caribou meat provides a healthy, nutritious staple.

The people of Old Crow value their subsistence lifestyle and relationship with the caribou. Norma Kassi, a former member of the Yukon Legislative Assembly from Old Crow says, "We have lived here for thousands of years, and we know what we need to sustain us. The caribou are our life. We must safeguard them forever." Johnny Abel, a former Chief of the Vuntut Gwich'in Tribal Council, put it this way: "I sure don't want to see our kids, one or two hundred years from now, reading about the caribou in storybooks and about how we used to live."

Historical and current status

Between 1972 and 1998, the Porcupine Caribou Herd has numbered as low as 100,000 animals and as high as 180,000 animals. Reliable estimates of the herd's size before the early 1970s are not available. The number of animals in the herd grew steadily until about 1989. Since then, their numbers have been decreasing slightly. It is normal for caribou populations to fluctuate. At this point, the herd appears healthy. It is not being over-harvested and is still occupying its traditional range.

A 1998 photo census of the Porcupine herd estimated the herd to contain 129,000 animals. The last count, in 1994, estimated the herd at 152,000. The causes of this recent decline are not fully understood, but poor weather conditions in the early 1990s may be responsible. When there is deep snow during the winter, caribou may be in poor condition because they must work harder to dig for lichens. In the same way, when the snow melts later in the spring than normal, the arrival of caribou on the calving grounds may be delayed, and the health of the young calves may be poorer. These conditions did occur for several years in the early 1990s, and the herd may still be feeling the effects. Even though the herd has declined, the caribou are in good condition, and as long as there are no more unusual environmental events the herd may begin to increase.

Current and future threats

The Porcupine Caribou Herd faces a possible threat on its calving grounds. The desire to exploit oil and gas reserves on the coastal plain has led to debate about opening up the Arctic National Wildlife Refuge to exploration and development. Most of the Refuge is designated as "wilderness"; however, a section of the coastal plain known as the "1002 Lands" was left out of the Wilderness designation. It is up to the U.S. Congress to decide the fate of the 1002 Lands. It is not known what the effect of exploration and development would be on this herd or on the 7,000 northern aboriginal people who depend on it.

The Porcupine Caribou Herd is not only sensitive to human activity on its calving grounds; development on the herd's winter range or migration routes could also affect the health of the herd. Such development would fragment the herd's range, possibly limiting the animals' access to good food areas during the cold winters.

Hunting pressure is another possible stress on the herd. Aboriginal peoples in 17 communities hunt this herd. Non-aboriginal hunters from these communities and from larger cities such as Whitehorse also hunt the caribou. Before the construction of the Dempster Highway, there was no road access for hunters. The Dempster Highway cuts through part of the winter range of the herd, allowing easier hunting access for both local and outside hunters. Managers of the herd and those who depend on it must keep a careful account of the number of animals killed and weigh this against the herd's productivity.

There are several possible threats to the Porcupine Caribou Herd due to events that are occurring on a global scale. Activities of people on the other side of the country and the world may affect this northern caribou herd. Pollution from large industrial centres can travel great distances. Lichens gathered in Canada's far north show traces of contamination caused by pollution. Because caribou eat lichens in such quantity, there is the possibility that contaminants could harm the caribou and those who eat them. In the years following the explosion of the Chernobyl nuclear reactor, levels of radioactive cesium rose in the herd. However, the level of contamination was found to be low enough to present no health risk to humans eating the caribou.

Another change that may affect the Porcupine herd is global warming. Researchers and northern peoples are keeping close track of changes, such as temperature and snow depth, to gauge the effects of global warming. If global warming continues, it may affect weather patterns, snow depth, insect numbers and the spread of diseases, all of which could have an impact on the Porcupine herd.

Management and study

Wild animals like caribou take little notice of political boundaries. Because the Porcupine Caribou Herd ranges internationally, it presents a challenge to managers and others interested in the welfare of the herd. The International Porcupine Caribou Board was established to provide advice and recommendations to improve cooperation and coordination between Canada and the U.S. in managing the Porcupine herd. This Board consists of four members from Canada and four members from the U.S.

In Canada, efforts to protect the herd resulted in the creation of the Porcupine Caribou Management Board, which represents aboriginal groups and the Yukon, NWT and federal governments. The objective of this board is to ensure the conservation of the herd and its habitat, making sure that the herd will always be able to provide for the subsistence needs of the traditional users who depend on it.

Many studies of the Porcupine caribou herd are conducted jointly by Canadian and American wildlife agencies, First Nation organizations and co-management agencies. There are several ongoing studies of the Porcupine herd. Aerial photographs of the herd are taken every three years in late June or early July, when the caribou are gathered in large groups. Radio transmitters attached to a sample of caribou help the researchers locate the various groups. The caribou are then counted from the photographs to obtain a population estimate. Researchers also attempt to make a composition count of the herd, estimating the numbers of cows, calves and bulls.

Radio-collared cow caribou are also located each year to see where they are having their calves. Determining the location of major calving grounds helps managers identify the herd's critical habitat. Researchers also survey the cows one month after calving to estimate the

survival of the calves during their critical early days. There are also several programs set up to keep track of the caribou harvest. Questionnaires and interviews with hunters are set up in an attempt to monitor the number of caribou taken by hunters each year. Since 1985, the Porcupine caribou harvest has ranged between 3,000 and 5,000 animals per year. This harvest rate is lower than 3% of the total herd, an acceptable harvest.

There are also a number of impact studies being done to try to determine the potential effects of oil development in the 1002 Lands area of the Arctic National Wildlife Refuge.

Because the Porcupine Caribou Herd has such a large range, tracking the herd's migrations over great distances across Alaska, Yukon and NWT is difficult and expensive. In 1997, the Yukon government purchased and fitted ten satellite collars as a practical way to track the herd's movements over a long period of time. Five agencies and co-management bodies were part of this program. In March 1999, biologists will replace the old

collars with new ones that will be good for another three years. Caribou locations, updated each week, are viewed eagerly on the Internet by schoolchildren and others interested in the herd's movements.

The Porcupine herd is truly one of the last of the great herds of animals that once roamed this continent. It is a vital part of the northern environment.

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To view the latest locations of the caribou with satellite collars, check out:

www.taiga.net/satellite/index.html