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NORTHWEST WILDLIFE PRESERVATION SOCIETY

Woodland Caribou

Rangifer tarandus



By Aisha Uduman

Caribou in British Columbia, though diverse, are all classified as woodland caribou (*Rangifer tarandus*). Caribou are actually what many people recognize as “reindeer”. The caribou in British Columbia have been divided into three distinct ecotypes depending on their behaviour and feeding strategies: mountain, northern and boreal. All three ecotypes appear to be in decline, and the caribou are facing the adverse impacts resulting from land degradation and climate change. Their habitats have been drastically degraded and fragmented due to forestry cut blocks, roads and operations from the B.C. oil and gas industry. Historically, the caribou in British Columbia inhabited close to two-thirds of the province east of the Coast Mountains, however with increasing settlement and expansion, caribou populations have become fragmented, isolated and are now extremely vulnerable.

Characteristics

Caribou are medium-sized members of the Cervidae (deer) family, being larger than mule deer, but smaller than elk and moose. They are medium-brown in colour, and get pale and greyer during the winter as their guard hairs moult. In the winter, these guard hairs insulate body heat as they are hollow and trap air inside them. Male caribou often have white or greyish-white necks, with a slight mane on the underside. Their tail, rump area and a patch above each hoof are also creamy white in colour. Male caribou also have a characteristic palmate brow tine of the antler that points downward over their forehead. Caribou have a short tail, ears and snout which reduce heat loss in the cold winters.

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Adult male caribou are typically 1.6-2.1m (63-83 in) in length and 1-1.2m (39-47 in) height, with females being smaller in size. Males weigh between around 200kg (440 lbs), while females are significantly smaller at 90-135 kg (200 to 300 lbs). During the autumn rut (mating period), males can lose up to 25% of their body weight, while females may lose the same proportion of their weight during particularly adverse winters. Male caribou antlers can reach over 1.5 metres in height. Female caribou also have antlers, as such caribou/reindeer are the only species of cervid in the world whereby both sexes bear antlers. Female antlers are much smaller than males, and some females may have no antlers at all. All caribou lose their antlers by around March, however males actually shed them earlier in January.

Caribou have unique adaptations which allow them to live in very harsh climates. They have large, 4-clawed hooves, Caribou have distinctive tracks which show the presence of dew claws, which further supports them when traveling through snow. Their crescent-shaped, concave hooves spread out when they walk, acting like snowshoes and allowing them to travel easier in deep snow conditions. Spreading out their hooves also helps caribou paddle in the water when swimming and navigating through soggy muskeg, and prevents them from sinking into the softer summer soils. Caribou also have broad well-furred noses to help from frostbite and to heat the cool air before it enters their nasal passages. Caribou also possess the incredible ability to counter-current exchange. A process whereby they maintain cool hoof and leg temperatures, but the blood travelling to their core body and head is warmed, helping them maintain a core temperature of +35 degrees even in -30 degree weather.

Life Cycle

Female caribou live between 10-15 years, while males live between 8-12 years. Caribou have much shorter breeding seasons (rut) compared to other members of the Cervidae family. Most breeding occurs during a one week period in mid-October. Caribou have a polygynous mating system, where dominant bulls breed with multiple females (cows). Females are typically around 2.5-3 years of age when they give birth to their first calf. Pregnant females typically travel to more predator-free areas to calve such as interior forests, peatlands and lakeshores.

With a gestation period of 7-8 months, calves are born in late May to early June the subsequent year. Female Caribou commonly give birth to a single calf, and will only have one calf per year. The calves are dark brown, and almost immediately are able to stand up and travel with their mothers which is necessary in order for them to avoid predators. Females spend several months alone with their calves. Despite this, 50-80% of calves will die before their first year, which poses a serious limitation for the increase and recuperation of caribou populations. Population stability for caribou is said to occur when the survival rate is around 42%, of course dependent on predator abundance and forage accessibility during the first year of life.

Habitat

Woodland caribou extend from British Columbia to Newfoundland. They are found in southern Yukon, B.C., southwestern Northwest Territories, northeastern Washington, northern Idaho, west-central and northern Alberta, boreal and arctic (northern) parts of Saskatchewan, Manitoba and Ontario, Quebec, Newfoundland and Labrador.

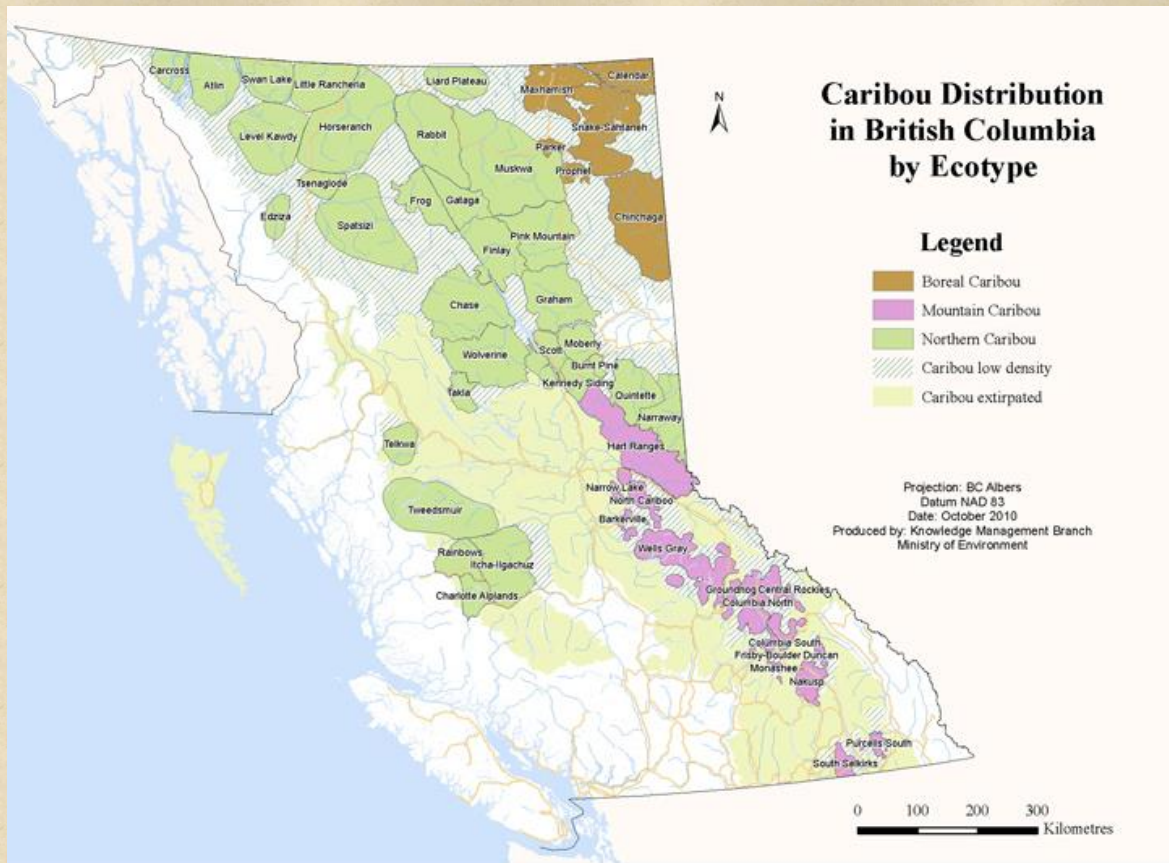
Boreal caribou are found only in the far north-eastern corner of B.C. east of the Rocky Mountains, and live in lower-elevation, relatively flat, open boreal forests and boggy sites adjacent to wetlands.

Mountain caribou are found only in B.C., apart from a single population that extends into Northern Idaho and Eastern Washington in the U.S.A. Mountain caribou spend their winters in old growth forests in higher elevations and are critically endangered.

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Northern caribou are the most common ecotype in B.C., with populations stretching from west-central into northern B.C. When calving, northern caribou are found in alpine areas, and they spend winters in lower-elevation pine forests or wind-swept ridges.

Caribou in B.C. occupy a much smaller region than their historic range, largely due to habitat loss and fragmentation, hunting, poaching and predation. The first recorded decline occurred in the southern Kootenays and the Okanagan, shortly following the arrival of Europeans in B.C. in the mid-18th Century. Continued decline occurred in central B.C. so much so that caribou were no longer found east of Okanagan Lake by the late 1950's. Huge populations of caribou have been lost from south and central B.C., an estimated 40% decrease in B.C. from their historical range.

Caribou are always on the move, with most movement occurring in spring before calving, and before the autumn rut and winter. Movement can be local or varying in terms of elevation, where the caribou move to lower elevations in winter and higher elevations in summer. Their constant movement makes it hard to predict predator relationships, but also ensures that they do not deplete lichen resources or trample vegetation to an irreversible extent.

Behaviour

The diet of caribou is limited to tree and ground lichens in winter, which allows them to live in habitats quite geographically separated from other deer species as caribou are the only large mammal to be able

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to survive on lichens as their main winter food source. In summer, their diet extends to grasses, willows, sedges, horsetails and shrubs.

Woodland caribou usually congregate in groups (herds) of 10-25 individuals. During the rut season, one male caribou will attempt to gather a larger group of females together, while trying to keep other males away. During the rut, males attempt to assert dominance and attract mates using their large antlers to engage in violent, brawling battles. The larger males with bigger antlers tend to do most of the mating as a result. When calving, the females discourage predators by moving to isolated areas.

They tend to make grunting or snorting noises, and a herd of snorting caribou might sound similar to a group of pigs.

Threats

The chief predator of caribou, are grey wolves. These two species have existed in a predator-prey balance for millennia. Wolf packs will try to separate individual caribou from the herd and run them down, tiring weaker individuals. Large male caribou are able to utilize their antlers and sharp hooves in defense of wolves. After wolves, to a lesser extent, cougar, black bears, grizzly bears and wolverine are other predators. Bears mostly prey on caribou calves as the alert adults are too fast.

However far and away, the greatest threats to caribou populations come in the form of humans. In British Columbia, boreal caribou herds are classified as threatened and mountain caribou endangered under the Canada Species at Risk Act (SARA). Currently, 15 out of 31 northern caribou herds are listed as threatened as well. British Columbia contains nearly the entire global population of mountain caribou. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designates the western Canadian populations of Woodland caribou as vulnerable.

Threats for caribou in British Columbia are habitat fragmentation, loss of food supply and shelter habitat (particularly in winter), changes in predator/prey relationships, and human access, which has caused increased disturbance and makes caribou vulnerable to illegal activities and predation. Many of the threats to the different caribou ecotypes overlap, however there are some slight differences, which will be explained below.

Human access into caribou habitat makes them more vulnerable to predation and increases the potential for disturbance. All ecotypes of caribou now have to avoid roads, corridors and disturbed habitats of oil well sites and forestry cut-blocks. Ploughing roads and operating machinery (e.g. construction machinery, skidoos and other vehicles) in caribou habitat makes it easier for wolves and cougars to enter caribou habitat, increasing the risk of predation. Human-caused disturbances such as forest harvesting and creating networks of roads in caribou habitat cause fragmentation, and create additional open areas which draw in species such as moose and deer, which in turn attracts an increasing number of predators.

To a lesser but still important extent, caribou face threats such as hunting and poaching, noise disturbance from industry developments operating in or near their habitat, light pollution, parasites and disease, and climate change. Climate change - in particular, fluctuating winter conditions - can make travel more difficult for caribou and impact their ability to forage in the already resource-depleted winter conditions.

What We Can Do To Help

- Volunteer to help organizations like the Northwest Wildlife Preservation Society.

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- Support caribou research, population monitoring and other initiatives which target their survival and reproduction. More research will result in more publicity for this iconic and declining species of British Columbia.
- If you are intending to travel in potential caribou habitat, make sure to leave your dog at home! Any dog (regardless of size/resemblance to a wolf) may cause caribou unnecessary stress.
- Take an active role in scientific monitoring: report sightings of caribou, and note information such as numbers, location, if calves were noticed. Take photos if possible.
- As much as possible, avoid traveling in caribou habitat in winter - there are many other spectacular places to explore. Contact the visitor centre in any national/provincial parks where caribou are known to exist, and they will guide you appropriately.
- Get involved and campaign for the conservation of caribou habitat! In central and southern parts of the province, over 2.2 million hectares of high-suitability winter habitat have been reserved from road construction and forest harvesting. Protection of caribou winter habitat is key in order for their populations to recover.
- Support provincial and national parks which act to preserve vital caribou habitat. Bowron, Cariboo Mountains and Wells Gray provincial parks together protect over 760,000 hectares of habitat for a range of wildlife species, caribou included.

Other Interesting Facts

Caribou make “clicking” noises when they run! This sound is due to tendons slipping over the bones in their feet. Some people compare the sound to a group of tourists snapping photos with their cameras!

Boreal caribou are considered an “umbrella species”: management and conservation efforts to protect boreal caribou will help many other species which similarly live in and depend on the boreal forest.

Caribou and reindeer are the same species and range widely over the northern hemisphere on 3 continents; North America, Europe and Asia.

Caribou can tolerate -60 degrees and exist further north than any other deer species.

Caribou are strong swimmers and their air-trapping fur allows them extra buoyancy.

The caribou is proudly represented on the Canadian quarter.

Caribou are swift and can run at 65 km/hr. Caribou calves can be up on their feet within 15 minutes of birth!

Caribou like other deer, draw upon calcium reserves in their skeleton to help grow their huge antlers. Caribou antlers are the largest for their relative size of any other cervid species.

Vast caribou herds in northern Canada are almost akin to wildebeest herds in the Serengeti. They are extremely resilient, forming epic migrations over huge ranges with predators following.

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Where & When to view the animal.

Caribou are very shy animals and are not used to human interaction. You may encounter woodland caribou in subalpine areas above the treeline in the summer, where they migrate in attempt to get relief from insects. They also may be seen near developments in winter, when they migrate to lower elevations. However, care and caution must be advised in order to not disrupt the caribou or their fragile environment, as the result of human expansion and development pose a huge threat to the caribou.

Bibliography

Web Resources:

The B.C. Ministry of Environment has a lot of useful, updated information about caribou, especially this interesting map of the distribution of woodland caribou by ecotype.

http://www.env.gov.bc.ca/wld/speciesconservation/caribou_by_ecotype.html

A recent report by the Canadian Parks and Wilderness Society (CPAWS) focusing on efforts made to conserve Canada's Boreal Caribou

http://cpaws.org/uploads/CPAWS_Caribou_Report_2014.pdf

Report by the B.C. Ministry of Environment on Caribou, with a lot of ecotype-specific information regarding the Caribou in B.C.

http://www.env.gov.bc.ca/wld/frpa/iwms/documents/Mammals/m_caribou.pdf

The COSEWIC Assessment and Update Status Report for the Woodland Caribou and its different populations gives a lot of information about distribution, habitat requirements and threats facing the Woodland Caribou.

http://freegrassy.net/wp-content/uploads/2010/03/cosewic_woodland_caribou_report_thomas_Gray_2002.pdf

The Species At Risk Act (SARA) published a Recovery Strategy for Woodland Caribou (boreal population)

http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_caribou_boreal_caribou_0912_e1.pdf

The Strategy for the Recovery of Mountain Caribou in British Columbia, prepared by the Mountain Caribou Technical Advisory Committee gives a good overview of past and present recovery and management techniques for the Woodland Caribou within the Southern Mountains National Ecological Area.

http://www.env.gov.bc.ca/wld/documents/mtcaribou_rcvrystrat02.pdf

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