

Boreal Caribou in British Columbia: a Tale of Research and Management

As the figurehead of the 25 cent coin, caribou are familiar to most Canadians, even if they have never seen the animal itself. Indeed, caribou occur across Canada, except for the Maritimes, and occupy habitats ranging from bogs to mountain tops, to the arctic tundra. These curious and charismatic animals are experiencing population declines throughout the country, whether they live in boreal, mountain or barren-ground areas.

British Columbia is home to three ecotypes of caribou: 1) boreal caribou, which live in the peatlands in the northeastern corner of the province, 2) northern mountain caribou, and 3) southern mountain caribou. Although the latter two both live in mountainous areas, they use their habitats differently. Boreal caribou are considered Threatened across Canada and within BC, and are therefore a focus for management efforts.

As concerns over boreal caribou in BC grew, in 2011 the Province of BC released the *“Implementation Plan for Ongoing management of Boreal Caribou (Rangifer tarandus caribou pop. 14) in British Columbia”*, also known as the BCIP. The BCIP identified several actions needed to decrease the rate of decline of boreal caribou in BC, and recognized the need for a Board to coordinate research and monitoring efforts. Thus was born the Research and Effectiveness Monitoring Board (REMB), comprised of members from both government and industry with a

shared passion for caribou. Research and monitoring work has been funded through an agreement between industry and government, whereby fees and levees for industrial development are channeled towards boreal caribou.

Although small-scale, sporadic surveys had been conducted for boreal caribou in BC, nobody knew how many caribou resided in BC, or whether they were declining in the same way as other populations across Canada. One of the REMB's first tasks was to conduct one of the largest radio-telemetry programs on boreal caribou in Canada: 160 boreal caribou were fitted with radio-collars around their necks. The capture and collaring work was conducted by Brad and Diane Culling (both RPBios) of Fort St. John, two

people with an extraordinary passion for caribou. The telemetry program is continuing to produce data on how boreal caribou use habitat in BC, how they live and die, and how many reside in BC.

According to the latest population count in March 2016, at least 728 boreal caribou occur in BC's herds. Three of these herds share boundaries with Alberta or the Northwest Territories, and since caribou wander between jurisdictions, the population count is a minimum estimate. Surveys of collared caribou have also provided us with information on the number of caribou calves that survive their first ten months. Unfortunately, it's a tough world for baby caribou, and in 2015-16 only one-fifth



Photo submitted by: Megan Watters, RPBio.



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of adult female caribou had a calf (i.e. recruitment rate) in March. Although we do not know the sources of mortality for calves specifically, we have found that 69% of adult females (72 caribou) died from wolves. Three caribou died from predation by wolverine, while two others were harvested, and five died of poor body condition.


During the collaring process, blood and hair samples were collected, and if any died, their organs, bones and tissues were sent for analyses by the Boreal Caribou Health Research Program. Blood tests indicated that the majority of adult female boreal caribou (95%) were pregnant in late winter, suggesting that the low number of calves is not related to low pregnancy rates. Research has also revealed that boreal caribou are afflicted by a number of viral and bacterial pathogens, such as *Erysipelothrix rhusiopathiae*, which appears to become symptomatic, and sometimes fatal, when caribou are malnourished and under stress.

Over the past four years, the REMB has funded a long and varied list of projects that have increased our understanding of boreal caribou in BC, thereby providing valuable support for management decisions. One project, conducted by Dr. Craig DeMars from the University of Alberta, identified preferred habitat types of female caribou during the calving season, when predation is a key factor. Dr. DeMars reported that caribou appeared to calve in areas with a high proportion of fens, and avoided rivers, lakes and human disturbance, where predation risk is higher. An ongoing project with researchers Dr. Gillingham, Dr. Parker and Dr. Johnson from the University of Northern British Columbia is assessing the role of moose, wolves, and disturbance in the survival of boreal caribou. Prophet River First Nation and Wildlife Infometrics collaborated to test a community-based wolf management program within a small boreal caribou range.

Boreal caribou prefer landscapes without a lot of human disturbance, such as roads, urban areas, industrial facilities and other human features. The BCIP identified

restoration of disturbed habitat as an important way to reduce the decline of boreal caribou populations. Therefore, the REMB funded a number of projects to restore habitat for boreal caribou. Golder Associates is leading a pilot project to restore all linear disturbances that are not regenerating naturally in the Parker boreal caribou range. This project will provide insight on what restoration techniques work best for specific disturbances, the costs of restoration, and how boreal caribou and their predators respond to restoration.

While a number of REMB funded projects are ongoing, the BCIP is currently being revised to reflect the wealth of information that has been collected over the past four years. One such change is amending the boreal caribou range boundaries to more closely match the telemetry data. As updated research and monitoring priorities are identified, alternative funding sources are being explored. Boreal caribou are a priority not just for the Province of BC, but for many British Columbians, and work will continue to keep caribou in our boreal forests.

To learn more about the work conducted by the REMB, please visit the website of the BC Oil and Gas Research and Innovation Society: <http://www.bcogris.ca/boreal-caribou>. The REMB hosts a series of webinars each spring and fall, with each webinar highlighting a different boreal caribou research project. Webinars are open to anyone who is interested, and CAB members are encouraged to participate as a means of obtaining CPD points. Planning for this fall's webinar series is underway. Please contact Megan.Watters@gov.bc.ca for information on how to participate. 

Respectfully submitted,
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