August 22, 2019

Re: Predator Reduction for Caribou Recovery

The British Columbia Caribou Recovery Program is considering an emergency 2-year approval to initiate predator reduction programs for the Tweedsmuir-Entiako, Hart Ranges, and Itcha-Ilgachuz herds commencing the winter of 2019/2020.

The Province aims to achieve self-sustaining caribou populations in identified herds, and intends to discuss recovery actions through herd planning. How this occurs will be informed through herd planning. Herd planning provides an opportunity to discuss science supported recovery actions, bring forward local and traditional knowledge, consider competing interests, and ultimately provide recovery recommendations to government decision makers.

While herd planning is the preferred comprehensive method for engagement on caribou recovery, it is time consuming. Declining herds like the Tweedsmuir-Entiako, Hart Ranges, and Itcha-Ilgachuz herds cannot afford delay, as each year of continued declines increases the likelihood of the caribou populations dropping below levels from which they can be feasibly recovered.

To this end the Province has initiated this engagement process, outside of herd planning, specifically on predator reduction as it is an urgent recovery action.

Background
British Columbia is home to 54 herds of woodland caribou (*Rangifer tarandus*). Despite significant investments in managing these herds, caribou populations have become threatened in the past three decades, going from 40,000 animals decades ago to approximately 15,500 today.

The reasons for caribou population declines are complex, and differ across the province. Scientific evidence indicates that habitat alteration and loss, due to natural resource development and recreation, as well as increases in predation are the main factors.

Although landscape scale habitat management is needed to support self-sustaining caribou populations, it may be decades before the benefits of such decisions are realised. Direct management of predators has the most rapid effect.

Wolves
Wolves are caribou's principal predator in B.C. and high wolf numbers are associated with declining caribou populations through "apparent competition". Land clearing increases forage availability for moose/deer/elk allowing their numbers to grow. With more of these animals on the landscape, wolf populations also grow. Although moose/deer/elk are the primary prey of wolves, a higher number of

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caribou are incidentally killed because of increased predator density. The interaction of caribou, wolf, and moose/deer/elk populations can be managed to the benefit of caribou by either managing moose/deer/elk or directly reducing wolf populations.

For threatened caribou populations decreasing the number of wolves in caribou habitat is the quickest and most effective management tool to reverse population trends in the short term. Wolf reduction has been used over the last five years in the Central Group of Southern Mountain Caribou resulting in a shift from an average rate of decline of 15% per year to an average of 15% increase per year. Multiple years of wolf reduction has resulted in a decrease of wolf recolonization rates in the area and adjacent areas.

Wolf reduction will not recover a herd to a self-sustaining population and therefore is never carried out as the sole recovery action, but is being considered as an immediate measure while herd planning will identify all recovery actions needed.

Cougars

Although wolves are the most common predator of caribou, cougars can also contribute to caribou mortality, specifically in more southern herds. Cougar predation on adult caribou has been confirmed in the Itcha-Ilgachuz caribou herd. Three cases of cougar predation on adult radio-collared caribou have been documented, all occurring in low elevation winter habitat in 2012, 2018 and 2019. Between 2018-2019 cougar predation comprised 20% of known mortalities for radio-collared caribou in this herd. Cougars are a habitual predator which can develop a search image and hunting strategy on specific prey species. For small and declining ungulate populations, such as sheep or caribou, once a search image is developed for a prey species, one specialist cougar can have significant impact on a small population. While confirmed cougar predation is low for radio-collared adult caribou and may be reflective of opportunistic predation by cougars on caribou in this herd, it is likely significant enough to negatively impact the Itcha-Ilgachuz caribou herd. With the current steep population decline of the Itcha-Ilgachuz caribou herd (40% decline between 2018-2019), a targeted removal of cougars in the localized area where cougar predation is occurring will likely have substantial benefit to this herd.

Tweedsmuir-Entiako, Hart Ranges, and Itcha-Ilgachuz Herds

Predation by wolves is a cause of the decline in the Tweedsmuir-Entiako, Hart Ranges, and Itcha-Ilgachuz herds as demonstrated by reduced herd size, poor calf recruitment, and high rates of adult female mortality. Unless there is an immediate reduction in the loss of caribou to predation, recovery is not likely.

The Province is recommending wolf reduction as the following factors exist in the Tweedsmuir-Entiako, Hart Ranges, and Itcha-Ilgachuz herds:

- wolf densities are over the recommended target of less than 3 wolves per 1,000 km^2 (Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada, 2014) within the herds' critical habitat;
- on-going monitoring indicates that predation is the main cause of mortality and the proximate reason for recent population declines; and
- these herds may have the best chance for recovery based on current population numbers.

The objective of this wolf reduction program is to reverse caribou population decline in the Tweedsmuir-Entiako, Hart Ranges, and Itcha-Ilgachuz herds. Additionally, in the Itcha-Ilgachuz herd area, targeted reduction of cougars in a known mortality hotspot is proposed to remove cougars that have likely begun to focus on caribou as a prey source.

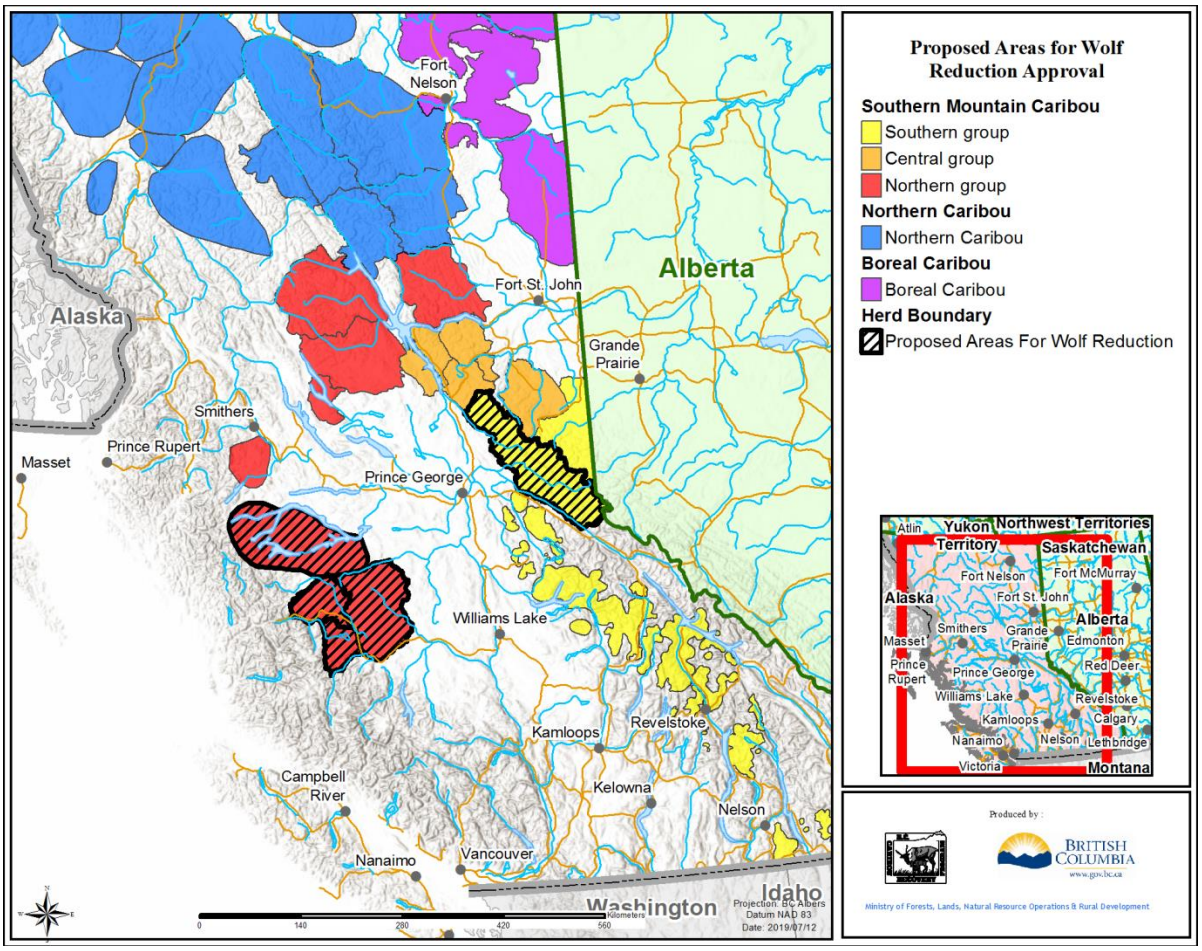

Figure 1. Areas proposed for predator reduction in relation to the provincial distribution of caribou.

Approach

To reverse caribou population declines, high rates of wolf removal (>80%) must be achieved. When wolf reduction has occurred without high rates of removal there was no response in caribou populations. To ensure sufficient rates of removal a combination of radio collaring and aerial shooting is used. The deployment of radio collars allows scientists to locate packs to ensure that all members of a pack are euthanized.

Aerial removal is the favoured method as it is considered the most effective and humane method to thoroughly reduce wolf populations. Monitoring is carried out to ensure safety, efficacy, and the humane treatment of animals. Aerial removal is consistent with the most current guidelines for wild animal euthanasia in field conditions (AVMA Guidelines for the Euthanasia of Animals, American Veterinary Medical Association 2013).

Winter implementation is necessary, as snow cover is required for locating wolves and slows their movement and dispersal as aircraft approach. Ground trapping and hunting alone are not effective but may be helpful to supplement an aerial removal program. A co-ordinated program could maximize efficiency and effectiveness. Wolf reduction programs cost $200,000 - $500,000 per herd per year. Cougar reduction also occurs during the winter, but is ground based. Cougars are not able to be effectively reduced from the air as they are not typically encountered in open areas, and their escape strategy is to retreat to cover or climb into a tree where they cannot be seen from aircraft. Experienced

hound handlers will be contracted to target cougar within the treatment area where cougar predation has occurred on caribou.

Adaptive Management
An adaptive management approach will be utilized to understand how caribou, moose/deer/elk, and wolf populations respond to wolf reduction. The wolf reduction program may be adapted based on population responses. When wolf reduction activities are stopped, a rapid recovery of wolf populations is expected and will maintain consistent predation pressure on caribou until the primary prey they rely on reach lower densities that will promote self-sustaining caribou populations.

Primary Prey Management- Moose/Deer/Elk
Recovery to self-sustaining caribou populations will ultimately depend on the ability to successfully manage habitat disturbance and primary prey (such as moose, elk, deer and/or wild horse populations) abundance within each range. Predator reduction is a short-term approach. Managing primary prey to target densities that support caribou recovery is an intermediate-term approach (i.e. 10-20 years). Habitat management and recovery is often the ultimate goal, but may take decades to unfold. Moose/deer/elk management, through habitat management or hunter harvest for example, may be required in conjunction with predator reduction. However, the timing and intensity of such actions will vary will be informed through herd planning.

Engagement Process
Time is of the essence with this project, therefore the province is conducting a 30-day consultation from August 22, 2019 to September 22, 2019 regarding the predator reduction proposal for these 3 herds. Letters like this have been sent out to Indigenous communities and targeted stakeholders. These groups will also be invited to participate in herd planning meetings in the fall of 2019.

For more information visit www.gov.bc.ca/caribou or to provide feedback on this consultation package, email – caribou.recovery@gov.bc.ca

Yours truly,

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