

# Wolf Reduction to Support Caribou Recovery in British Columbia: Frequently Asked Questions

## Why don't we let wolf and caribou populations find a natural balance?

Wolf abundance is regulated by the abundance of their primary prey species including moose, deer, and elk; caribou are not a primary prey species of wolves. Because wolf abundance is not regulated by caribou abundance, wolves can continue to predate caribou populations to extirpation. This is called apparent competition where there is an indirect interaction between two or more prey species (e.g., moose and caribou) through a shared predator (e.g., wolves)<sup>1-4</sup>.

## Wolves have always been around, why are they a problem now?

Although wolves are not new to British Columbia, their numbers have increased because of landscape change in core and matrix caribou habitat. The additional early seral habitat created by forestry has generally created improved habitat conditions for the primary prey that support wolf populations, and therefore increased wolf populations<sup>5</sup>. Broad-scale reduction of wolves and other predators was commonplace until the late 20<sup>th</sup> century. The combination of predator removal and additional early seral habitat resulted in artificially high densities of ungulates. When broad-scale predator removals ceased to allow for more natural predator/prey systems, wolf populations increased based on the availability of the artificially elevated primary prey abundance, resulting in greater wolf abundance than previously existed in caribou habitat. This wolf predation has resulted in caribou population declines. Currently, the federal recovery strategy for caribou identifies < 3 wolves/1000 km as a target wolf density in caribou range to support recovery efforts<sup>6</sup>. Known minimum wolf densities in areas where wolf removals are being considered all exceed this federal target wolf density. In the absence of effective long-term habitat and/or alternative prey management to achieve these densities, direct wolf management must be undertaken to achieve caribou conservation goals. The increase in wolf abundance in caribou habitat is further exacerbated by the linear features (e.g. roads and seismic lines) associated with resource extraction that increase the risk of caribou predation by wolves<sup>7-9</sup>.

## How many wolves were removed in British Columbia and how much did it cost?

In 2018/2019 a total of 180 wolves were euthanized to support recovery of eight caribou herds at total cost of \$825,000.

## Does managing wolf populations work to support caribou recovery?

The reduction of wolves has been the most effective short-term tool to reverse caribou declines as assessed in a recently published paper that compared the outcomes of different caribou management activities<sup>10</sup>. Reducing wolves reversed caribou population declines in five of the seven areas where wolf reduction was conducted. The two instances where wolf reduction did not successfully reverse population declines can be explained by either low rates of wolf reduction, or being applied to an extremely small caribou population. Although this report identified predator removal as the most effective management tool, it noted that this benefit is further enhanced when paired with other recovery tools. A recent assessment of the effectiveness of recent wolf reductions to support caribou recovery in BC identified similar positive effect to caribou abundance, transitioning caribou herds in the South Peace from years of decline to an increasing population<sup>11</sup>.

## If reducing wolves is effective at reversing population trends why don't we just reduce wolves in all areas with caribou?

Although reducing wolf populations has reversed caribou population declines where it has been applied, it is not a one-time management intervention. Wolf reduction, at the scale necessary to recover caribou, is expensive and if the habitat factors that support primary prey are not addressed, then wolf reduction would need to be continued indefinitely to maintain the benefit to caribou. When wolf reduction is stopped, the managed areas are quickly recolonized and the risk of wolf predation to caribou will return<sup>12,13</sup>.

## There are many species that predate on caribou, why are we picking on wolves?

Ongoing monitoring of caribou has demonstrated that wolves are the leading cause of adult mortality for caribou in many populations. Caribou have co-existed with other predators like wolverine and grizzly bears for centuries and are expected to be able to tolerate predation from these predators. Additionally, wolves have been demonstrated to be able to sustain high levels of reduction without risk of

extirpation, and rapidly recolonize areas when active reduction is stopped<sup>12,13</sup>. There is little risk of permanently extirpating wolf populations in the areas where wolf reduction is applied, whereas wolverine and grizzly bear are also species of management concern due to low reproductive rates and sensitivities to human disturbance.

## Why do we remove wolves using helicopters, is there not a more ethical way to reduce wolf populations?

Aerial removal is the most effective and humane method to reduce wolf populations and does not produce by-catch. Monitoring of removal activities is carried out to ensure safety, efficacy and the humane treatment of animals. Aerial removal methods used in BC are consistent with the most current guidelines for wild animal euthanasia in field conditions<sup>14</sup>. The effectiveness of wolf reduction is an important factor to consider because if wolf populations are not sufficiently reduced, rates of caribou predation will not be reduced meaning the wolves that were killed died for no benefit.

## How do we move to a state where wolf reduction is no longer necessary?

The high abundance of wolves that pose the risk to caribou are the result of modified landscapes that support higher abundance of primary prey<sup>15</sup>. Unless the underlying habitat factors that support primary prey are addressed, the elevated predation risk to caribou due to apparent competition will remain. To achieve self-sustaining caribou populations which is the goal of recovery, caribou core and matrix habitat must be managed to reduce the proportions of early seral habitat that supports elevated primary prey populations.

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