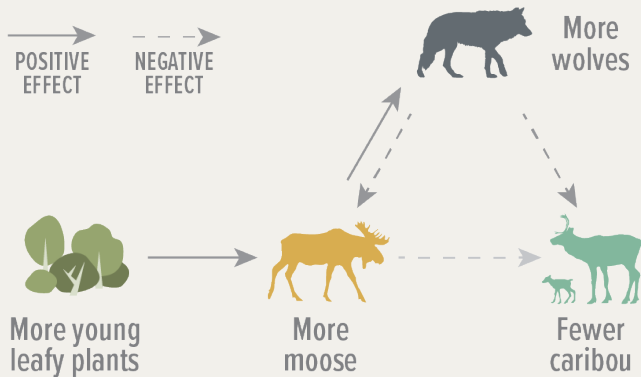


Finding shared solutions for moose and caribou in the Parsnip area

Moose and caribou are integral to British Columbians and ecosystems. Both species have high cultural significance for First Nations communities and are key components of B.C.'s rich biodiversity. Moose are also important as a game species, providing food for many B.C. families.

Human-caused habitat alteration in woodland caribou ranges throughout southern and central B.C. has disrupted the ecological relationship between moose, caribou and their shared predator: wolves. This process is referred to as "apparent competition" and is one of the driving factors behind caribou population declines in B.C.

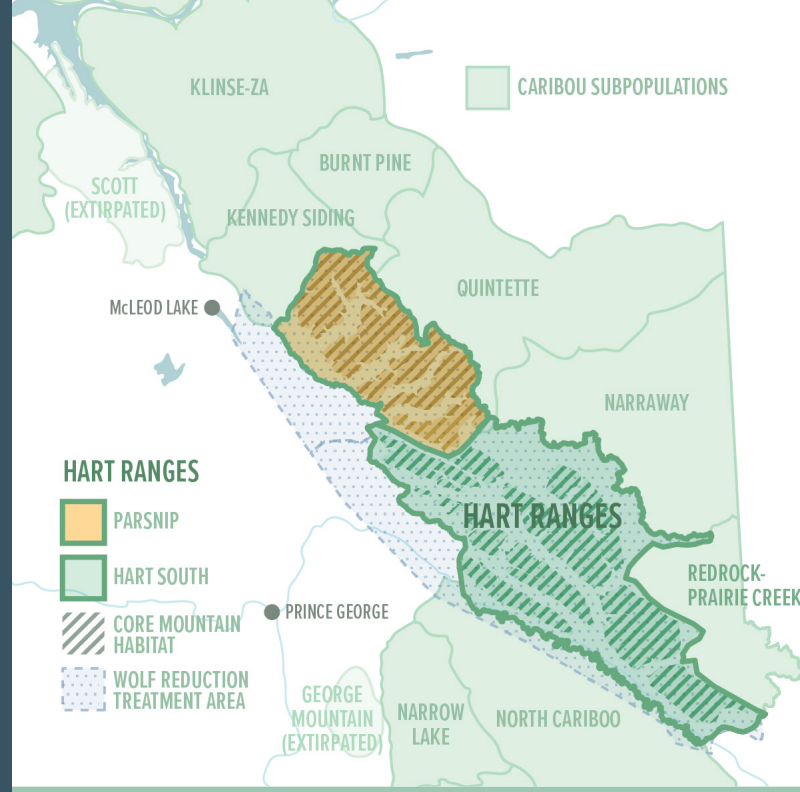


Southern mountain caribou herds in B.C. have been assessed as endangered because of long-term population declines throughout their distribution. In areas of the province, moose populations are in decline for reasons still being investigated. The B.C. government is striving to find shared solutions that allow all three species to share the landscape.

Declines in moose and caribou populations are a source of significant concern for Indigenous peoples, stakeholders, and the broader public. Supporting healthy populations of these species is a high priority for the province.

The Parsnip caribou herd is in need of management action

From 2009 to the last survey completed in 2017, moose population densities in the Parsnip area have remained relatively stable (around 1,100 moose, supporting a population of approximately 45-50 wolves). However, only 120 caribou remain in the Parsnip caribou herd, down from approximately 230 caribou in 2006. Studies conducted over this period suggest that wolf predation was the primary proximate cause of adult female mortality. In 2020, an aerial wolf reduction program was initiated to reduce predation pressure on caribou and help the Parsnip herd recover.

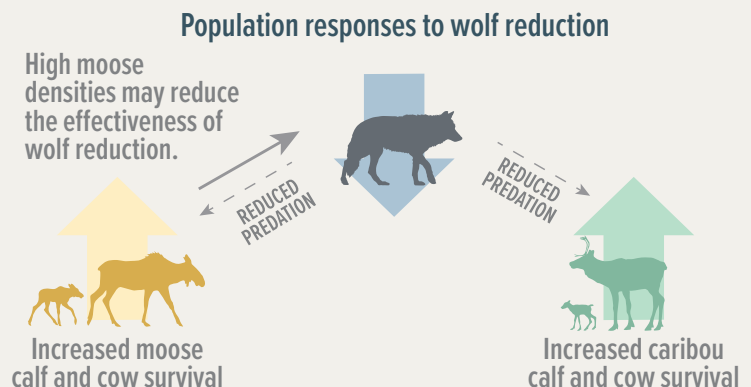


The Hart Ranges caribou subpopulation includes two herd areas, Parsnip and Hart South, separated by the Parsnip River headwaters.

Comparing management scenarios for the Parsnip caribou herd

The B.C. government's overall management objective is to support self-sustaining caribou and moose populations in the region. Moose prefer low-elevation habitat with young deciduous vegetation, while caribou prefer higher elevations with mature coniferous habitat where they are less likely to encounter predators such as wolves. Therefore, we support a holistic strategy that prioritizes caribou in core mountain areas and allows moose to thrive in other parts of the landscape outside of important caribou range.

In the short term, population management actions to support recovery of the Parsnip caribou herd include increasing the moose harvest and reducing wolf populations. In the long term, **habitat protection and management of old growth conifer forests within core mountain habitat and the surrounding range are critical components of caribou recovery.** While wolf reduction programs are conducted strictly to benefit caribou in the short term, they also lessen predation on moose, increasing moose survival in those areas, hence the need to manage moose populations in tandem.



Research indicates that wolf densities more than 6.5 wolves/1000 km² are likely to lead to caribou population declines, while densities lower than 3 wolves/1000 km² can maintain or increase caribou populations. To better understand what different management actions would mean for moose and caribou in the Parsnip region, we modelled how moose and wolf population dynamics would change under different scenarios.

Key Takeaways

The ultimate objective for caribou recovery is to move toward an ecosystem that supports self-sustaining caribou populations. While habitat management is essential for long-term recovery, habitat recovery happens slowly over many decades. **Based on past research and these modeling results, population management actions such as wolf reduction and moose management are recommended to prevent further caribou population declines in the short term.**

Rather than focus on just one species, it is important for the area to support resilient caribou and moose populations. **We believe it is possible to support both species by targeting caribou recovery actions in core mountain areas while supporting moose habitat enhancement in other parts of the region.**

Paired with wolf reduction, **we expect that a combined cow and bull moose harvest in caribou habitat of the Parsnip will support caribou recovery efforts without compromising the moose population.**

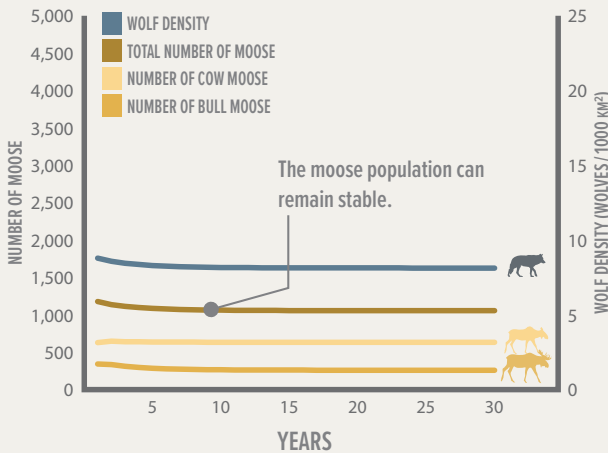
Unchecked moose population increases will lead to rapid recolonization by wolves. **Without an additional cow moose harvest, longer and more intensive wolf reduction efforts will be required for the Parsnip caribou herd to persist.**

Careful monitoring and a holistic, collaborative approach working with Indigenous Governments and stakeholders will be key to finding shared solutions for moose and caribou populations in the Parsnip.

SCENARIO 1



BULL MOOSE HARVEST, NO WOLF REDUCTION



Without wolf reduction, the Parsnip caribou herd is at **high risk of future decline.**

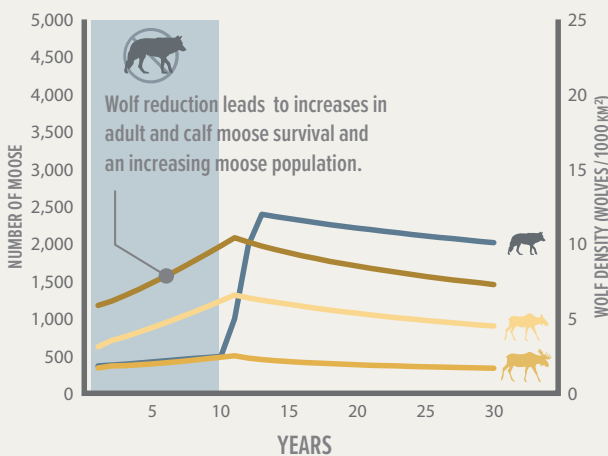


52
BULLS/YEAR

SCENARIO 2



BULL HARVEST ONLY, 10-YEAR WOLF REDUCTION



Once wolf reduction stops and because of high moose numbers, wolf numbers grow to densities that are unsustainable for caribou, putting the Parsnip caribou herd at **high risk of future decline.**

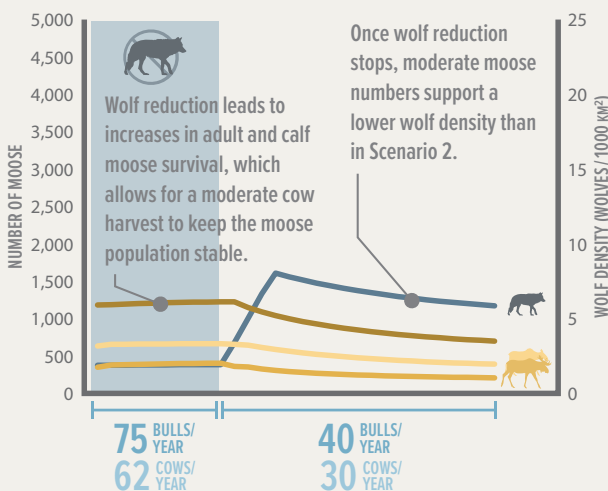


133
BULLS/YEAR

SCENARIO 3



BULL AND COW HARVEST, 10-YEAR WOLF REDUCTION



Wolf numbers grow less rapidly and reach densities that put less predation pressure on caribou. The Parsnip caribou herd is at **lower risk of decline.**



The moose cow harvest can be reduced following wolf removals to ensure that the moose population remains stable but at a lower density.

Each scenario assumes the level of landscape disturbance remains the same. While forest harvesting may contribute to moose declines in some areas of B.C., in other areas it can create favourable habitat conditions for moose and increase the overlap between moose and caribou. Habitat protection, habitat restoration, and changing industry practices to create habitat conditions that are more favourable to caribou could reduce the need for predator and primary prey management in the long term.

