

Revelstoke Caribou Maternal Penning Project Winter/Fall Update 2017



Adult caribou cows feeding from a trough – May 2017

The Revelstoke Caribou Rearing in the Wild (RCRW) project was launched in 2014 to conduct maternal penning and is a collaborative, community-led, not for profit society. The program is beginning its 5th season of a 5-year pilot, ending March 2019.

Maternal penning involves placing pregnant caribou in a 9.3 hectare predator-proof pen, from late March until mid-July allowing newborn calves to gain strength and agility. At this time of year, both adult and calf mountain caribou are at higher risk of predation outside the pen. In July, the animals are released back into the wild.

Population Update - The Columbia North subpopulation (part of the Revelstoke-Shuswap caribou recovery planning unit) has declined substantially since the 1990's from over 200 to 147 caribou, as of the 2017 census.

Why all the effort? The Columbia North subpopulation is the largest and most stable herd within the Revelstoke-Shuswap recovery planning unit. The small sizes of other subpopulations in the planning unit reduce their likelihood of recovery success.

Program Overview- Annual penned calf survival rate for the past 3 years has been 42.8%, which is double the survival rate of calves born in the

wild (varying between 20 - 27%). The project's target is 45% survival of pen born calves to 10 months of age.

The primary objective of the 5-year pilot is to double calf survival over that of wild-born calves, measured annually through a recruitment census at 10 months of age. If successful, the second objective is to increase population size. Modeling indicates that a minimum of 20 healthy cows and their calves would need to be released from the pen to increase the population at the herd level.

The five-year time frame of the pilot project allows for averaging calf survival results, which vary annually due to factors such as weather events, predation and accidents.

Annual Summaries:

Year 1 (2014 – capture in late March)

Captured: 10 cows (9 pregnant); 2 young of last year (YLY)

Released: 10 cows, 2 YLY, 9 calves

Calf Survival to March 2015: 2

Cow Survival to March 2015: 10

Penned Calf Estimated Survival Rate over Wild Calves at 10 months of age: 22% vs 20%.

Year 2 (2015 – capture in late March)

Captured: 18 cows (16 pregnant); 1 YLY

Released: 17 cows, 1 YLY, 11 calves

Calf Survival to March 2016: 9

Cow Survival to March 2016: 15

Penned Calf Estimated Survival Rate over Wild Calves at 10 months of age: 60% vs 22%

Year 3 (2016 – capture in late March)

Captured: 12 cows (11 pregnant);

Released: 12 cows, 7 calves

Calf Survival to March 2017: 4/5

Cow Survival to March 2017: 11

Penned Calf Estimated Survival Rate over Wild Calves at 10 months of age: 36% to 45% vs 27%

Year 4 (2017 – capture in early April)

Captured: 12 cows (11 pregnant); 1 male YL

Released: 12 cows, 9 calves, 1 male

Calf Survival to March 2018: 8 as of November 2017

Cow Survival to March 2018: TBD

Year 5 – Final Year (2018)

Target Capture plans: 17- 20 cows

In 2018 the number of cows captured meets baseline requirements to initiate an increase at the population level. Capturing 18 cows equates to ~24% of females in the herd.

Learnings

- This pilot continuously improves upon health and welfare protocols; the highest priorities of the project. The RCRW continues to adapt best practices based on recommendations from wildlife veterinarians, caribou shepherds and biologists. Starting in year three, RCRW hired a veterinarian to live on site throughout the May and June calving period.
- Protection from predators is another top priority. The robust electric fence constructed around the pen has effectively kept predators out.
- The pen is within caribou herd range, but at a lower elevation than caribou naturally calve. Starting in 2018, snow will be stockpiled within the pen to provide cooling areas for pregnant cows to mitigate potential impacts related to heat stress.
- Kids and adults love to help caribou! Since the beginning of the 2017/18 penning season, over 208 volunteer hours have contributed to picking 175 kg of lichen for caribou to eat during their first 10 days in the pen. Lichen picking targets for this cycle are 300kg; that's 80 large soccer ball bags full of lichen! The RCRW outreach team has provided education on caribou ecology to ~450 students in west Kootenay schools since 2015.

- Population models for the North Columbia herd indicate that capturing 30% of the adult female population (23 cows) over a 10-year period would result in a small and slow increase in population size of 1.5%/year, *if*, maternal penning is applied in addition to other recovery measures such as moose reduction and habitat protection.
- The projects' penning activities over the past 4 years have contributed:
 - Beneficial information on the operation of a maternal penning facility,
 - Development of protocols and techniques for the care of wild caribou,
 - Insights into the nutritional requirements of caribou during penning, and
 - Engineering requirements for effective penning and electric fence infrastructure.
- The preliminary conclusion? Maternal penning works, but in small increments, and is not a "silver bullet". Land-use and wildlife managers need to continue applying a suite of conservation tools that further recovery efforts. This will ensure the long-term survival of deep snow mountain caribou.

What else is being done for caribou in the area?

Recovery measures for the Columbia North herd include:

- Habitat protection,
- Predator and prey management,
- Closure of critical areas to public recreation,
- Implementation of Best Management Practices by commercial operators,
- The RCRW caribou maternal pen
- Research and monitoring
- Habitat restoration and
- Increased compliance and enforcement.

Federally, a [protection assessment](#) and [protection study](#) of caribou herds in BC is underway in conjunction with the province.

The RCRW supports all methods of caribou recovery where and when appropriate, to ensure that southern mountain caribou remain on the landscape for the long term.

Next steps and the future of the RCRW - As the pilot program draws to a close, the RCRW reflects that this programs' success is a direct result of strong engagement from diverse stakeholders and active community participation. Heading into our fifth year, we have increased our knowledge about how calves survive in the wild, and have bolstered awareness and education on mountain caribou in Revelstoke and beyond.

RCRW has met its goal to double pen-born calf survival over that of wild-born calves while knowing that capture requires at least 20 pregnant cows per year over a 10-year period to increase the population of the herd.

RCRW have continuously learned about the requirements of wild caribou. We will continue to learn more as we investigate the feasibility of building a pen site at a higher elevation, and as we conduct DNA and other analyses on blood, tissue and hair samples of caribou that have been archived as a result of this project.

RCRW will be directly contacting funders and supporters to inform them that the RCRW Society will conclude its 5-year pilot, in March 2019, as originally intended. We will actively engage with various levels of government to encourage the exploration of new potential project leadership in the near future. The RCRW will ensure a thorough transfer of knowledge to other organizations or stakeholders interested in applying maternal penning as a recovery method to augment the Columbia North or other southern mountain caribou herds.

In the event that there is no interest in furthering the pilot project, directors of the RCRW will ensure that project information and data are made available to the public via our website and other information platforms, and will proceed with disposing of assets, with eventual (2+ years from last capture date) dissolution of the society.

The RCRW Society is extremely proud of our accomplishments, and have provided evidence that the concept of maternity penning has potential as a recovery tool when applied in conjunction with other recovery actions. The RCRW knows that with the increased prominence of the North Columbia herd, and recent resources committed to caribou recovery, that both the provincial and federal governments are in a strong position to meet their mandate and obligation to carry out recovery of this endangered species.

Acknowledgements - We are grateful to the many funders and dedicated volunteers of all ages that make this project possible. To see a full list of supporters and board members please go to rcrw.ca/contributors.



Aerial view of the 9.3 hectare caribou maternity pen

To learn more about Revelstoke Caribou Rearing in the Wild please visit:

rcrw.ca
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