

## Revelstoke Maternal Penning Project Summer Update 2019



*Pregnant caribou a day after release into maternity pen 2018*

The Revelstoke Caribou Rearing in the Wild (RCRW) project was launched in 2014 to conduct maternal penning. It is a collaborative, community-led, not-for-profit society and it is in the process of completing a 5-year pilot.

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 has declined substantially since the 1990's from over 200 to 147 caribou, as of the 2017 census, but has been stable from 2004 to 2017.

**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 Objectives** A complete list of objectives and measures of success are listed at the end of this Factsheet.

### Snapshot of Results

The average annual penned calf survival rate for the past 5 years is 44% compared to the estimated wild survival rate which was 20.4% in 2014 and up to 36% in 2018.

A final report summarizing both scientific findings and the multi-stakeholder collaboration of the society will be complete by November 2019.

### 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: 56% 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 YLY

Released: 12 cows, 9 calves, 1 male

Calf Survival to March 2018: 4

Cow Survival to March 2018: 11

Penned Calf Estimated Survival Rate over Wild

Calves at 10 months of age: 36.4% vs 27%

### Year 5 Final Year (2018)

Captured: 20 cows (17 pregnant)

Births: 14 calves born alive (3 died: 2 breech, 1 stillborn to cow that was injured by wolverine prior to capture)

Released Cows: 17 cows (3 died during or soon after calving)

Released calves: 11 calves (2 euthanized after injury in pen, 1 orphaned and sent out for care)

Calf Survival to March 2019: 9 (1 killed by predation, 1 unknown fate)

Cow Survival to March 2019: 14 (2 killed by wolves, 1 dead by condition)

Penned Calf Estimated Survival Rate over Wild

Calves at 10 months of age: 53% vs 36%.

Record high temperatures at the pen through the spring of 2018 averaged above 25°C and were a concern for animal welfare. All animals were released sooner than anticipated due to multiple in-pen mortalities, the cause of which is still inconclusive and will be further explored in the final report.

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### Learnings

This pilot has continuously improved upon health and welfare protocols. 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. Wildlife cameras allowed us to detect predators and delay releases until none were known to be in the vicinity.

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. The RCRW outreach team has provided education on caribou ecology to ~450

students in west Kootenay schools since 2015.

The projects' penning activities over the past 5 years have contributed:

- Beneficial information on the operation of a maternal penning facility,
- Development of protocols and techniques for the capture, health testing, monitoring and care of wild caribou,
- Insights into the nutritional requirements of caribou during penning, and
- Engineering requirements for effective husbandry, penning and electric fence infrastructure.

A final report will be released in the fall of 2019, indicating the overall results, recommendations and proposed next steps for this conservation tool.

Land-use and wildlife managers need to continue applying a suite of conservation tools that further recovery efforts. This will increase the chances of achieving the long-term survival of deep snow mountain caribou.

Recovery measures for the Columbia North herd include:

- Habitat protection,
- Predator and prey management,
- Closure of critical winter habitat to snowmobiling
- Implementation of Best Management Practices by the heli-skiing industry,
- A moratorium on new commercial recreation operations within critical caribou habitat
- 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 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. 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.

Throughout this project, researchers and wildlife veterinarians have obtained and archived samples for a holistic assessment of local caribou herd health including DNA and other analyses on blood, tissue and hair samples.

We are actively engaging with the Splatstin and various levels of government to encourage the exploration of new potential project leadership in the near future. Succession planning includes assisting in the investigation of the feasibility of building a pen site at a higher elevation. 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.

The RCRW Society is extremely proud of our accomplishments. The RCRW knows that with the increased prominence of the Columbia North 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, our many partners 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](http://rcrw.ca/contributors).

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

[Rcrw.ca](http://Rcrw.ca)

[facebook.com/RevelstokeCaribou](https://facebook.com/RevelstokeCaribou)

**To provide feedback write:**

[rcrwsociety@gmail.com](mailto:rcrwsociety@gmail.com)

*Photo: Spring 2018 capture crew after 3 days in the field.*



## Revelstoke Caribou Rearing in the Wild Program Objectives

### Objective 1

Determine if maternal penning can improve the survival of captive-reared calves, relative to wild born calves, in the Columbia Mountains Ecosystem (CME).

Our measure of success will be:

- a. 90% survival of calves in captivity, and
- b. Increase in survival of captive-reared calves relative to wild born calves, by a factor of 2 – 3 at the end of March, annually, and over the duration of the five year pilot.

### Objective 2

Depending upon the results of Objective 1, the project will use captive rearing as a management tool to achieve a population level effect in the North Columbia caribou subpopulation by:

- a. Increasing the caribou calf recruitment rate in the entire sub-population; and
- b. Contributing to an increase in the sub-population growth rate ( $\lambda$ ).

Our measure of success will be:

- a. Increase the population-level recruitment rates relative to historic recruitment (10-16%) since the mid 1990's;
- b. Demonstrate a measureable increase in the population growth rate over the term of the pilot project.

### Objective 3

Determine whether maternity penning in CME is

- a. Logistically feasible and
- b. Whether animal welfare can be maintained to ensure no cost to the population from maternity penning, and enable us to meet objective 1.

Our measure of success will be:

- a. mortality of pregnant female caribou (mortality rate), from capture to release, from the pen is no greater than 5% over a 5 year period;

### Objective 4

Use data from 5-year pilot to assess whether maternity penning is a viable tool to reduce the rate of decline and increase the size of the Columbia North sub-population.