

## Central Selkirk Caribou Maternity Pen: 2022 Summary

### Background

The Central Selkirk Caribou Maternity Pen project was developed by the Arrow Lakes Caribou Society (ALCS) to support the recovery of the Central Selkirk herd of Southern Mountain Woodland Caribou. The pen is located in the Kuskanax Creek drainage near the Nakusp Hot Springs, approximately 10 km northeast of the Village of Nakusp, B.C. The pen site was selected based on its elevation (875 m), variable terrain, suitable old cedar-hemlock forest, and accessibility. Pen construction began in fall 2019 and was fully completed in winter 2022 with the help of many volunteers, in-kind contributions, grant funding, and support from the Provincial Caribou Recovery Program. The maternity penning program began operating in 2022.

### Capture

For the first year of operation, captures were limited to the female caribou found on the south side of the Trout Lake-Lardeau River drainage. Selecting caribou from the groups closest to Nakusp decreased helicopter flight times, simplified operations with less caribou, and reduced the risk of altering the caribou's range after release.

Captures occurred on March 24, 2022 from 8 am to 12 pm. Seven adult female caribou and one female yearling (10 months old) were captured and placed in the pen. The yearling came in with her mother to improve her chances of survival. The captured animals were all in fair to good body condition and serology tests later showed that all seven adult caribou were pregnant. Each adult was fitted with ear tags and a GPS/VHF radio collar for tracking and monitoring.



Figure 1: Picture of Cow 03, showing the GPS/VHF collar and ear tags.

## Pen Operations

ALCS developed a digital pen data form using SNAP! software, which made data management easier and allowed for off-site access to data in real-time by veterinarians and researchers.

The maternity pen is located at 2 km on the Kuskanax Forest Service Road (FSR). The FSR partially borders the pen and is used by recreationalists throughout the year. ALCS and local recreational groups developed a Road Access Plan to mitigate impacts of road use on the caribou during penning season. During the 2022 penning season, the majority of activity on the FSR was tourists walking or looking for hiking trails who were not aware of the maternity pen, despite signage. The gate installed at 1 km on the FSR was locked during the calving period to limit traffic and reduce stress on the caribou.

Both the pen fence construction and the remote camera surveillance system were very effective in safeguarding the animals. There were a few sightings of black bears and a grizzly bear near the pen, but the bears showed no interest in the pen and the caribou were apparently not disturbed by their presence.

Temperature management and related heat stress were identified as potential issues that could arise during penning. Temperature in the pen was monitored daily for year-to-year comparison, to find correlations between temperature and animal behavior, and to compare to temperatures at weather stations in core caribou habitat. During the 2022 penning period, daily high temperatures in the pen did not exceed 25°C until July 11<sup>th</sup>. The highest temperature recorded was 29°C at 4 pm on July 12<sup>th</sup>. Nightly low temperatures were 10-15°C during July.

Two large snow piles and two misting stations were built in the pen to provide relief from summer heat. The caribou were observed bedding near the misters, where the ambient temperature was lower than in the rest of the pen. The snow piles were created by pushing snow over the bank near the feeding area. The caribou were frequently seen lying on the snow and eating it once the snow in the rest of the pen had melted.

The platform scale system allowed shepherds and veterinarians to successfully track the weight of most caribou and provided valuable health information throughout the penning season. The caribou's weights were recorded only when they fully stepped onto the scale (Figure 2). The data shows steady weight increases during pregnancy and after calving (Figure 3).



Figure 2: Picture of Cow 05 fully standing on the platform scale, showing her weight on the scale reader.

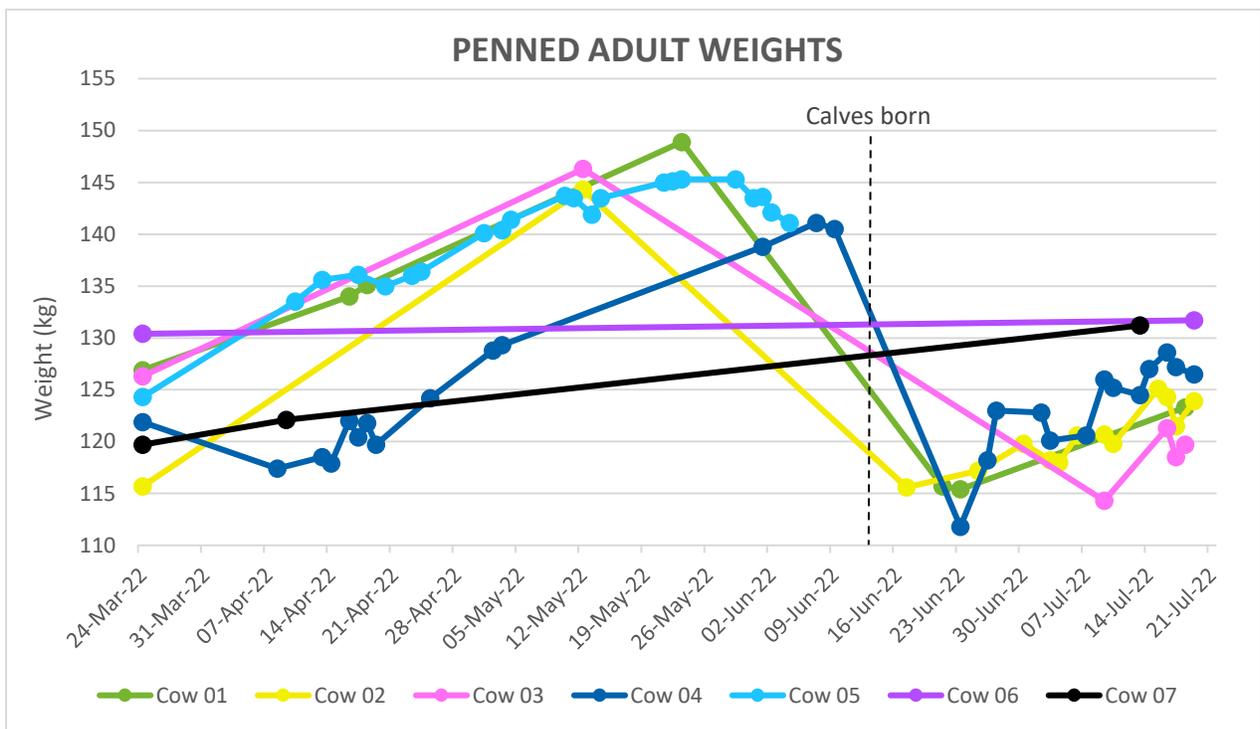


Figure 3: Penned adult weights through the penning season. The first weight was recorded during capture processing and the following weights were recorded by the platform scale system.

The female yearling showed incredible growth throughout her time in the pen. She was consistently one of the first caribou at the feed troughs for each feeding and frequently visited the trough at the platform scale, allowing for shepherds and veterinarians to closely monitor her weight. The yearling gained 24 kg throughout her time in the pen, with an approximate growth rate of 0.2 kg per day.

### Calving

Three female calves and three male calves were born in the pen between May 24<sup>th</sup> and June 11<sup>th</sup>. All were healthy at birth and weighed 8-10 kg. Each calf was assessed shortly after birth and fitted with a radio collar and ear tag. Each dam tended closely to their calf and there were no abandonment issues. The caribou remained a tight-knit group after calving and the calves all enjoyed playing together. During their six to eight weeks spent in the pen, the calves grew at a rate of approximately 0.5 kg per day.

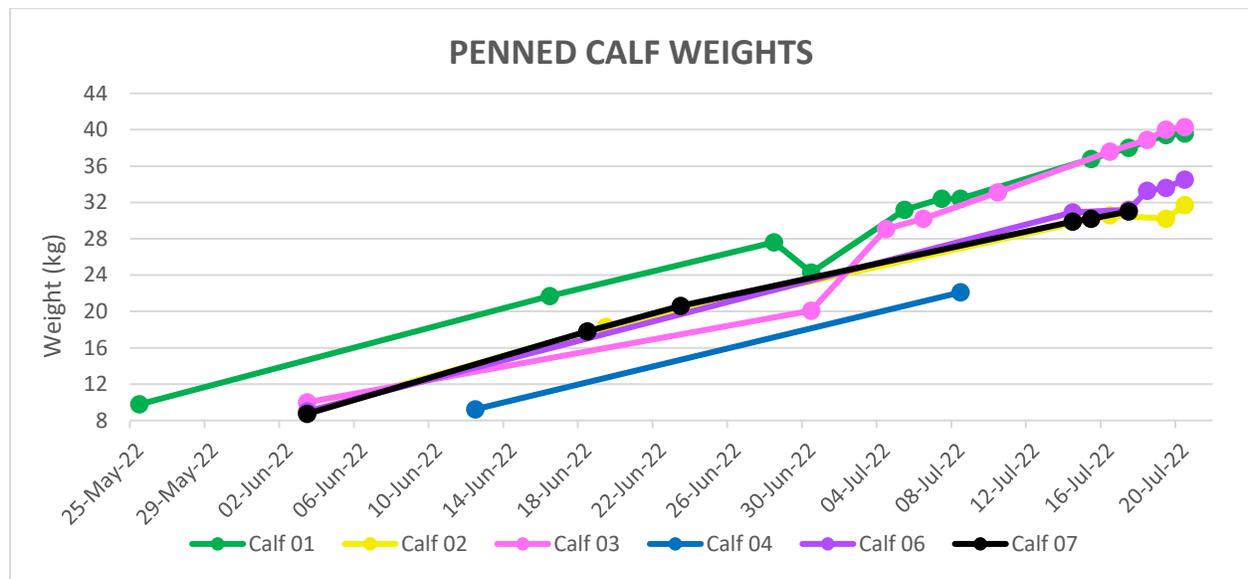


Figure 4: Calf weights recorded during their time in the pen. Some of the first weights were from when they were captured at 24-48 hours old. The majority of the weights were recorded by the platform scale system.

Wildlife veterinarian Dr. Amélie Mathieu and veterinary technician Dan Wallon were on staff at the pen during the calving period to assess the neonates and intervene as needed. Veterinary intervention was required when the oldest cow in the pen was unable to deliver a malpositioned stillborn. The cow unfortunately succumbed to a severe uterine infection 16 days later despite intensive medical care.

### Release

All cows and calves were released from the pen into their natural habitat at 5:00 am on July 22 2022, after spending 120 days in the pen. The caribou exited the pen shortly after the wall was opened and began travelling upslope. GPS collar data showed the group was in the alpine by the afternoon.

A mortality signal was received from one of the male calf GPS collars three days after release. The carcass was located along the path the group travelled to the alpine after release. While the mortality

site showed signs of predators, the cause of death could not be determined given the carcass was severely scavenged by the time it was recovered.

The caribou and their calves have shown an impressive site fidelity, travelling back to their known ranges after release. The caribou stayed together as one group before separating into single cow-calf pairs or small groups. One cow-calf pair moved to a portion of historic Central Selkirk caribou range where female caribou have not been sighted in many years. Overall, habitat use since release has been consistent with their movement in years prior to being placed in the pen.

The success of the 2022 penning season is a step in the right direction towards the recovery of the southern mountain caribou in the Central Selkirks.