

# Winter 2020 Cape Breton Moose Survey

## May 2020

### Summary

An aerial moose population survey was undertaken between March 2 and 16, 2020. This survey was a cooperative operation led by the Nova Scotia Department of Lands and Forestry, and included Parks Canada, the Unama'ki Institute of Natural Resources and the Confederacy of Mainland Mi'kmaq. The study area covered all five of Nova Scotia's Cape Breton Moose Management Zones and Cape Breton's Highlands National Park. Two separate survey methods were employed to assess the moose population.

The first survey method used a stratified random block sample design based on methods developed in Alaska (Gasaway et al. 1986). This survey only covered the Greater Highland Ecosystem (GHE) and has been the method used to assess moose population in Cape Breton for the past 20 years. The GHE is made up of the Cape Breton Highlands National Park, as well as moose zones one, two, five and most of three. Transects across the entire study area are flown to determine moose density on survey units (low, medium and high). A selection of survey units from each density class are chosen at random to be further examined. This gives an average moose density across the region. Based on this density, we calculate the expected number of moose on the landscape.

The second survey method used was distance sampling (Buckland et al. 2001). Distance sampling involves flying transect line across an area and recording the location and number of animals observed. This information is then used to estimate the density of animals on the landscape based on how the number of animals seen from the helicopter drops off as you look farther away from the helicopter. This survey method gave us separate density estimates for each moose zone and the park. It also allowed us to calculate the calf/cow ratio and adult sex ratio of the moose population

Historically moose were extirpated from Cape Breton prior to the 1940s. In the late-1940s, 18 moose were reintroduced to the park. Over time, moose numbers increased, and animals spread across most of western Cape Breton until, in the early 2000s, the moose population became hyper-abundant. This led to over-browsing and likely contributed to the abnormal forest succession that occurred in the central highlands, replacing softwood forests with grassland "moose savannah". Efforts have been undertaken to help restore the health of this important ecosystem.

Survey results show that the moose population has declined over the last 5 years but has increased since last year. In the GHE, the moose population was estimated to be around 4,800 in 2015, 1,300 in 2019 and 2,300 in 2020. These numbers show how wildlife often experience population cycles and they also show the importance of continued monitoring. We found a calf/cow ratio of 329 calves per 1,000

cows and an adult sex ratio of 606 bulls per 1,000 cows. These numbers indicate a healthy population that has the potential to grow. We also know that moose are not equally distributed across the landscape. Moose densities were much lower in moose zones three and four (0.1 and 0.05 moose/km<sup>2</sup>, respectively) compared to moose zones one, two and five (0.76, 0.46, and 0.76 moose/km<sup>2</sup>, respectively). The park had a moose density of 1.47 moose/km<sup>2</sup>. Based on these densities there should be 1,200 moose in the five moose zones and 1,400 moose inside the park, for a total of 2,600 moose across the entire area. When we compared the estimates and accuracy of the two survey methods, we found that they produced similar results for moose in the GHE.

Aerial surveys, biological samples and reported harvest data from licensed harvesters along with traditional knowledge provided by Mi'kmaq harvesters, suggest that the population is healthy but below what would be considered ideal. Based on this information no changes have been made to the 2020 moose license allocations, but monitoring will continue. Recommendations on moose management are made jointly by representatives of the Province and the Assembly of Nova Scotia Mi'kmaq Chiefs. The Department of Lands and Forestry and the Assembly are committed to implementing enhanced monitoring of all moose harvesting in the Highlands. The goal is to use all the information gathered in collaboration to create an adaptive moose management strategy to ensure that a sustainable moose harvest will continue for all Nova Scotian's in the future.

The annual moose draw opens at 7:00 am on May 11, 2020 and will close on June 8 at midnight. The electronic draw takes place June 15 and winners will be contacted on or after that date.