

Porcupine Caribou Harvest Management Plan Annual Harvest Meeting 2021

Porcupine Caribou Management Board Recommendations to the Parties February 2021

A. PREAMBLE

In accordance with the Harvest Management Plan (HMP), the Porcupine Caribou Management Board (Board) held the 11th Annual Harvest Meeting (AHM) virtually on February 9 and 10, 2021. The Board convened the meeting to gather input and to deliberate on the harvest management recommendations for the Porcupine Caribou Herd (PCH).

This report presents the Board's recommendations and rationale to the Parties regarding the harvest management zone and associated management actions that should apply to the herd over the coming year. Also included are other related concerns raised during the meeting and the recommendations from the Board regarding those concerns.

B. RECOMMENDED HARVEST MANAGEMENT ZONE AND HARVEST MANAGEMENT ACTIONS

The Board recommends that the PCH be considered in the Green Zone (above 115,000 caribou).

Consistent with the Green Zone harvest management actions (HMP, page 20), the Board recommends that:

- Harvest only the amount needed;
- Licensed hunters receive a maximum of two bull tags;
- Shooting will be accurate and wounded animals will be retrieved; and
- Parties will collect rigorous and verifiable harvest data, to be provided before the Annual Harvest Meeting.

C. RATIONALE FOR BOARD RECOMMENDATIONS

The HMP identifies a suite of indicators that the Board should consider in determining the status of the herd (HMP, page 19). The following provides an overview of the information used in the Board's deliberations regarding the harvest management assessment, the determination of the Colour Zone, and the associated harvest management recommendations.

1. Harvest Management Assessment — Review of Indicators

1.1 Population Size and Trend

1.1.1 Population Size by Photocensus (survey): The primary consideration is the population estimate. A photocensus (survey) was successfully conducted in 2017 and estimated a mean of 218,457 caribou (95% CI = 202,106 to 234,808) caribou. This is well above the threshold for the Green Zone.

1.1.2 Estimated population based on computer program: A range of population estimates were developed using the best available data and an acknowledgement of the uncertainty associated with each value in a population model. No information was available for the number of calves surviving to one year so we used several different rates that have been observed in the past for this herd. We chose a calf survival rate that was reflective of the trend associated with the survival of calves to three weeks old. At the time, we constructed the population estimates using the population model, some harvest data was not available. We estimated harvest using best information from harvesters in those communities and past information about harvest from those communities. We believe the small differences in our estimate of harvest relative to actual harvest was small and unlikely to affect the outcome of the population model estimates significantly. Most model runs found the herd was either stable or increasing with a smaller proportion of the worst-case scenarios indicating that the herd had declined. Based on this outcome, it is extremely likely that the herd is still well within the green zone and not undergoing any significant declines at this time.

1.1.3 Population trend: An increasing trend was apparent from 2010 to 2017 when the population increased from 169,000 to about 218,000. The average annual growth rate during this time period was 1.035 or 3.5%. Since 2017, there is no information to describe the trend of the herd; however, adult female survival has been relatively high in most years. As a result, even with lower parturition in 2019 and 2020, the population model indicates little to no change in the population size.

1.2 Harvest

1.2.1 Total harvest: Harvest data was available for all users except the Inuvialuit in 2019-20. Based on the reported and estimated information provided by the Parties, the total minimum Canadian harvest for 2019-20 was estimated to be 3,075 caribou. Data this year, as in the past several years, is considered to be a minimum estimated harvest. Although not available, Inuvialuit harvest in 2019-20 was at least moderate relative to historical harvests (e.g. 600 to 1,000 caribou possibly) so significant harvest was missed in our data collection this year. The Inuvialuit are reviewing the community-based monitoring program that was suspended in 2020 and will be looking to once again implement harvest data collection in coming years. For this reason, we believe the estimate of 3,075 is low compared to what was actually harvested by all Parties in Canada.

This total estimated harvest has fluctuated since 2010 when the HMP was implemented. Annual variation in harvest can be accounted for by changes in caribou availability along with some differences and variability in success in harvest reporting each year. Overall, improvements are being made in community harvest-reporting programs. The Canadian harvest is likely between 1% and 2% of the 2017 population estimate of approximately 218,000 caribou. Based on the information provided, current Canadian harvest is not a major concern, and together with anticipated Alaskan harvest, is well within the sustainable limit for the herd at this time.

1.2.2 The percentage of cows in the harvest: Cows made up 37% (1,115 cows of 3,075 caribou) of the reported harvest. Generally, when caribou are readily available over the winter period, we see an increase in the relative proportion of cows in the harvest. The composition of the harvest this year was likely reflective of when the bulk of caribou were available for harvest (e.g. following the rut). This level of cow harvest is not concerning when the herd is high in the Green zone and in particular when it is stable or increasing near its recent historic high.

1.2.3 Hunters' needs met: Arctic Borderlands Ecological Knowledge Society (ABEKS) data indicated that about 65% of respondents range-wide met their needs in 2019-20. This result is above average and ranks among the top three results since 2010. Notably, Old Crow, Tsiigehtchic, and the Inuvialuit of Aklavik reported higher than average results for having their needs met.

1.3 Population dynamics

1.3.1 Survival: With the switch to satellite GPS collars, the PCTC can now provide annual estimates of adult female survival in addition to yearling female and adult bull survival. In 2019-20, adult female survival was high, at 90.5%. In recent years, this survival rate has been relatively high, averaging 88% between 2012 and 2019. When the adult female survival is greater than 85%, the herd is generally either stable or increasing. When this survival rate drops below this value, it is typically indicative of a declining herd. Yearling females had good survival (86.3%) as did the adult bulls in 2019-20 (73.4%). These are all average or slightly above average values for survival.

1.3.2 Calf birth rate and calf survival: The parturition rate for adult cows greater than or equal to four years of age was 80%. This is below the long-term average of 82% and it is the second year in a row when a lower than average pregnancy rate was observed. Over the past two years, this rate has declined from the previous three years. Together with the slight declines in body condition noted in 1.4.1 through 1.4.3, this may signal some stress in the herd. This rate will continue to be monitored, and if consecutive years of low ratios are observed, concern may be warranted.

1.3.3 Peak of calving: The Alaska Department of Fish and Game has been undertaking a greater number of calving surveys in recent years to identify which collared caribou are pregnant and where they give birth. As a result, calving data in recent years has been relatively high quality. This year's peak of calving was June 1, which is the same as the long-term average. Most calving occurred on the coastal plain in Alaska in or immediately adjacent to the 1002 Lands of the Arctic National Wildlife Refuge. .

1.3.4 Bull ratio: No surveys to determine the ratio of bulls to adult cows have occurred in recent years. In 2010, the rut count results showed 57 bulls per 100 cows. Rut counts were planned for 2012, 2013, and 2017, but they were unsuccessful due to herd mixing with the Central Arctic caribou, adverse weather conditions, and herd movements. It is expected with the current harvest rate that the bull ratio is likely similar to the 2010 survey.

1.4 Body Condition

1.4.1 Average backfat: In 2019-20, we had backfat measurements reported for 80 cows and 61 bulls, for a total of 141 caribou. Most of these caribou were harvested post-rut in November and December. It is anticipated that bulls measured in November would have substantially less fat than prior to the October rut. Female backfat averaged 1.6 cm while male backfat average 1.3 cm.

1.4.2 Hunter assessment: A total of 140 caribou, 76 cows and 64 bulls were reported in the caribou sampling initiative (CSI) program this year. In 2019-20, hunters reported that, on average, harvested caribou were in good shape for the time of year (cows averaged 2.9 and bulls averaged 2.7 out of a possible rank score of 4). Most samples came from the Dempster Highway and GNWT sample collections.

1.4.3 Health: ABEKS data found that body condition in spring was poorer than earlier in fall in all years. In some years, this difference appears to be more significant and may be related to the condition of caribou going into winter. Over the past five years, there has been an annual decline in body condition although spring condition still remains average.

1.5 Habitat

1.5.1 Snow conditions: In 2019-20, snow depth was above average in the Ogilvie and Eagle region, whereas snow densities were average throughout all regions. There appears to be a trend toward an increasing snow depth in the Eagle region in particular. Most caribou were distributed in areas with deeper than average snow depths. Although no snow data is available for the areas in Alaska where the herd wintered, indications from field crews were that snow was deep and relatively dense. No major crust layers were detected throughout the range where March captures occurred.

1.5.2 Major fires: In 2019, there were 41 fires in Alaska and nine fires in Yukon. 2019 had the second most fires within the herd's older range boundary and included several fires >10,000 ha in size; however, most fires occurred on the periphery of the range in 2019 in Alaska. Work is currently occurring to map lichen cover across the PCH range, with a goal of annual estimates of lichen cover since 1984 to present. If successful, this may provide a better metric to report on the impact of fire and the crude quantity of lichen available to the herd across its winter range through time.

1.5.3 Weather and Climate: Weather and climate information specifically based on ABEKS data was not available.

1.5.4 Human activity: There were no additional detectable increases in human footprint in 2019-20. Potential projects in the range include oil and gas developments in the 1002 Lands and also in the Eagle Plains area, in addition to some mineral exploration at the southern edge of the herd's range in Yukon. The Yukon Land Use Planning Council has recently completed a study of historic seismic lines recovery in the Eagle Plains area.

2. MANAGEMENT ACTIONS

The Board recommends management actions consistent with the Green Zone, as outlined in the HMP (page 20) as follows:

- Harvest only the amount needed;
- Licensed hunters receive a maximum of two bull tags;
- Shooting will be accurate and wounded animals will be retrieved; and
- Parties will collect rigorous and verifiable harvest data, to be provided before the Annual Harvest Meeting.

2.1 Harvest only the amount needed: In the Green Zone, Aboriginal harvest is not restricted. Cows and bulls may be harvested (HMP, page 13). Consistent with the HMP, the Board recommends no restrictions be placed on caribou harvesting by Aboriginal hunters.

2.2 Licensed hunters receive a maximum of two bull tags: Management of licensed harvest is clearly laid out in the HMP. The Board, therefore, recommends no changes.

2.3 Shooting will be accurate and wounded animals will be retrieved: The Board recommends the continuation of hunter education and awareness programs conducted by the Parties as outlined in Essential Requirements of the Plan on pages 27 and 32 of the HMP. To this end, the Board intends to continue to coordinate with the Parties on communication and hunter education initiatives, such as sight-in-your-rifle events.

2.4 Parties will collect rigorous and verifiable harvest data, to be provided for the Annual Harvest Meeting: Overall improvements are being made in community harvest-reporting programs, although data submissions to the PCMB continue to be late. The Board would like to remind the Parties of the milestone dates and deliverables for harvest data submission provided in the HMP IP (Appendix 8). Harvester participation in these programs varies by community and in some communities is known to be low. The Board continues to express concern on its ability to effectively recommend management options in the absence of complete harvest data from all communities.

D. RECOMMENDATIONS REGARDING OTHER CONCERNS

1. Parties' technical staff meet this year to discuss harvest reporting programs.

Action item 3.2.3 of the HMP Implementation Plan (IP) requires a formal review the effectiveness of harvest reporting methods and programs. As discussed and acknowledged this year and at previous AHMs, a number of Parties continue to experience challenges with consistent and timely harvest data collection and reporting. It was therefore recommended at the 2021 AHM that PCMB coordinate a workshop-style meeting with subject-matter experts to discuss PCMA Parties' harvest reporting-related challenges, concerns, and successes. Recommendations regarding action item 3.2.2 in the HMP IP would be an anticipated outcome of the proposed workshop.

2. Parties review the HMP and IP with respect to whether an evaluation should be completed. and report back their recommendations at the 2022 AHM.

An administrative review of the IP was completed in 2015-16 and a full review in accordance with IP action item 3.3.1 to evaluate the effectiveness and need for any revisions of the HMP and IP was initially scheduled for 2021.

The Board recommends that Parties be well prepared to discuss this topic at the 2022 AHM. While it may not be necessary to make any adjustments to the HMP and/or IP, careful consideration should be given by the Parties prior to the 2022 AHM whether the HMP and IP are meeting the needs of individual Parties and user groups and whether any adjustments may be required.