

# REPORT SUMMARY ON DOLPHIN AND UNION CARIBOU HERD 2015-2017 RESEARCH PROGRAM, IN NUNAVUT

## Summary

This document is a summary of the information provided in the report entitled: “Fall Population Estimate of the Dolphin and Union caribou herd (*Rangifer tarandus groenlandicus* x *pearyi*), Victoria Island, October 2015 and Demographics Population Indicators 2015-2017.”

The Government of Nunavut has jurisdiction for managing the harvest of the caribou in Nunavut and needs to conduct research and monitoring (population surveys) to inform the management process. This report provides scientific information to help decision-makers in managing the Dolphin and Union caribou herd.





*Population estimate, 2015*

This project followed the 1997 and 2007 methodology, but used 2015 collared caribou locations. By using *in situ* collar data during the survey, this real-time information aimed to increase the precision of the final Dolphin and Union population estimate.

The study area extended from Read Island to Parker Bay. The surveys were divided into an initial reconnaissance survey (October 25, 26, 27 and 31<sup>st</sup>, Figure 1a) that was used to delineate the extent of caribou on the coast followed by a visual systematic survey (October 29, 31<sup>st</sup>; November 2<sup>nd</sup>, 3<sup>rd</sup>, and 5<sup>th</sup>, Figure 1b) that was used for the estimates. Effort for survey strata was allocated using a proportional allocation methodology similar to calving ground surveys of other Barren-ground caribou herds. All transects were surveyed at a speed of 160 km/hr and at an altitude of about 150 meters. All caribou within the predetermined transect width of 800 meters were recorded. Sixteen radio collared Dolphin and Union caribou were tracked daily to index the distribution of the caribou

### Demographic indicators

The Dolphin and Union fall composition survey was performed on October 26 to 29, 2016. The survey area covered from west of Ross Point to Cape Peel and a fixed-wing followed systematic 2 km apart transect lines running perpendicular to the shore line.

The following spring, March 2017, the spring composition survey took place to identify the recruitment of calves by reassessing the number of calves per 100 cows. The area surveyed by helicopter was based on the most recent caribou collar locations.

For the fall and spring composition work, each caribou seen was classified under predetermined criteria: yearlings, calves, bulls, and cows. Sex determination was based on the presence or absence of the vulva patch; females had darker coloration at this body location. Yearlings were characterized by their intermediate-size and straight face profile.

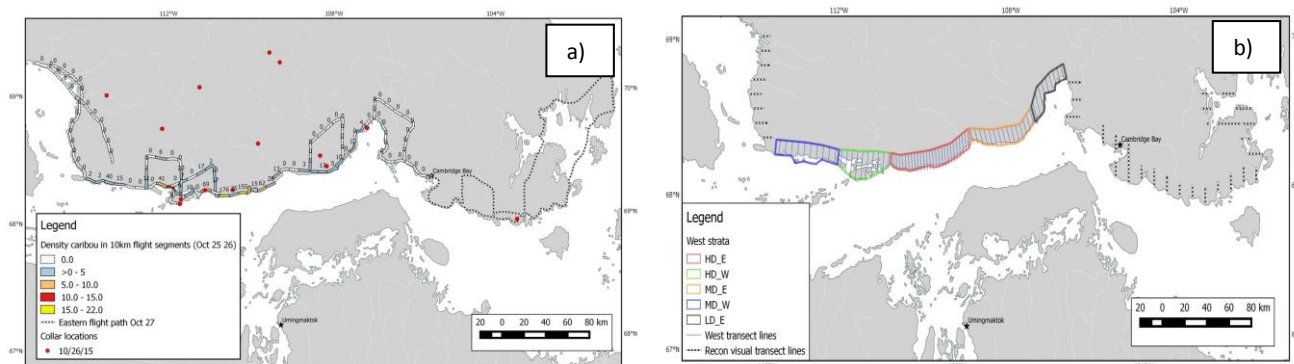


Figure 1: a) Survey tracks of the reconnaissance survey along the south coast of Victoria Island with the collar in red dot and b) visual systematic survey lines.

## Results

## Population estimate, 2015

During the visual survey, 3,083 caribou were counted in 210 groups. The majority of group sizes were 1-10 (median = 10) with sizes up to 135 caribou. The Dolphin and Union caribou herd has undergone a decline from the extrapolated population estimate of  $27,787 \pm 7,537$  (95% CI, 20,250-35,324) animals in 2007 to  $18,413 \pm 6,795$  (95% CI, 11,664-25,182) caribou in 2015 (Figure2). This decline is statistically significant and puts the herd in a “Declining Status” based on the management plan.

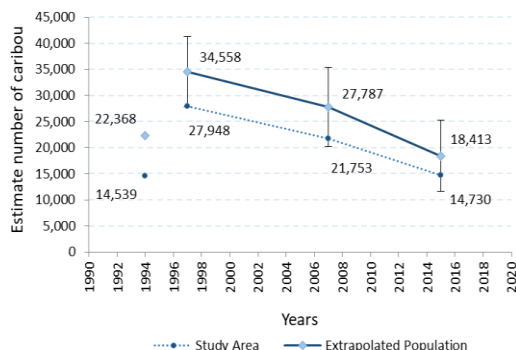


Figure 2: Population estimates of the Dolphin and Union from 1994 to 2015.

### Demographic indicators

The cow survival rate was of 0.70. From the 33 Dolphin and Union fecal samples successfully analysed, only five females were barren. This represents a pregnancy rate of 88% in spring 2015 (15/17 caribou pregnant) and 88% in spring 2016 (14/16 caribou pregnant).

In the fall composition survey, 136 groups were seen and 1,225 caribou was classified; there were 873 cows, 218, calves, 129 yearlings and 134 bulls. The Dolphin and Union calves to cows ratio was 0.25 and has a low bull: cow ratio of 0.15.

During the spring composition survey, to find group of caribou, collar locations were visited. From the 17 collar locations in the study area, 15 were visited and only 2 collars were seen. Thus, 24 groups and 229 caribou were classified. The calf:cow ratio was established at 0.11.

These demographic indicators show no sign of increase in the Dolphin and Union population since the last population survey; declining trend, low cow survival rate, and low productivity.