

**INTERIM REPORT
TO THE NUNAVUT WILDLIFE MANAGEMENT BOARD**

1. PROJECT # 2-13-01

2. Project Title: Distribution and Abundance of Baffin Island Barren-Ground Caribou, March 2014

3. Project Leader: Mitch Campbell

Kivalliq Regional Biologist
Department of Environment
Government of Nunavut
PO Box 120, Arviat, Nu, X0C 0E0
Ph: (867) 857-2828
mcampbell1@gov.nu.ca

***Funding under Project#2-13-01 was originally awarded to Debbie Jenkins (former Regional Biologist – Baffin region, Department of Environment, Government of Nunavut). This project was postponed in April 2014 and underwent revisions/modifications to the project design. This interim report will focus on the revised project proposal and highlight changes from the original.

4. Summary:

The following research effort is designed to estimate the abundance of barren-ground caribou occupying all of Baffin Island using primarily aerial and secondarily ground surveys. The proposed work would combine all Baffin Island subpopulations to provide a Baffin Island wide population estimate and spring distribution map. The need to re-survey the south Baffin study area to verify 2012 survey results and to conduct this survey concurrent with the North Baffin caribou abundance survey was voiced by all south Baffin HTOs during the July 2012 Baffin Island caribou workshop. The declines identified by Jenkins et al (2013) in spring 2012, combined with IQ from communities across the Island, have highlighted the urgent need to develop a management strategy aimed at stabilizing the current declines through informed decision making. In this capacity, the results will be used to inform management decisions that will begin to address community concerns of low caribou abundance and promote the recovery of the population for future generations of Nunavumuit. The results of these studies will provide a benchmark from which the effectiveness of future co-management efforts can be measured and if necessary, modified to meet identified goals.

5. Project Objectives:

The principle goal of this investigation is to determine the abundance and distribution of caribou on Baffin Island. This research is guided by 3 main objectives:

- 1) Observe and record the number and location of caribou within their late winter range.
- 2) Estimate yearling and adult caribou abundance.

3) Involve Baffin HTOs and their representatives with the research program in a meaningful way through both ground and aerial survey efforts and survey planning and reporting.

6. Materials and Methods:

The method proposed is a stratified random transect aerial survey technique utilizing a double observer platform. The method was chosen for reasons of logistic appropriateness as well as methodological rigor. The stratified random transect aerial survey technique is widely accepted as being the most cost effective means of estimating wild populations of ungulates while providing a high level of precision. The use of a double observer platform improves survey accuracy (Campbell et al., 2012). We also propose the survey be flown between March 1st and April 10th, 2014, to maximize sightability and good weather windows while minimizing the chances of large scale movements of caribou.

Strata will be broken down into Medium to High (Strata 4), low (Strata 3), unknown (Strata 2), and no caribou (Strata 1) within the survey area. Aerial survey visual techniques will be applied within each of Strata 4 and 3 with the highest survey intensity applied to strata 4 (20 %) and secondary survey effort applied to strata 3 (10%). Within strata 2 Ground surveys will be conducted utilizing caribou experts selected by the HTOs of the nearest community. Strata 2 areas will be searched utilizing expert hunting and searching techniques captured within IQ and inherent to the Inuit culture. We believe this technique of ground searching is far superior in identifying the use of an area by caribou than any known ground survey techniques for wildlife particularly when considering the expanse and remoteness of the study area. Aerial abundance surveys will only be flown within strata 2 areas when either caribou and/or their sign are reported by ground crews. If caribou and/or their sign are detected within a strata 2 area then the strata area will be re-classified as strata 3 and surveyed at 10% coverage. If neither caribou and/or their sign are observed by the ground crews, the strata 2 area will be re-classified as strata 1 and not surveyed by air. The selection of all strata classes will be made utilizing past aerial survey observations and IQ collected during community consultations prior to the survey effort.

The survey altitude for the strip transect survey will be 120 m above ground level with a mean survey speed of 160 km/hour and a total strip width of 1.0 km (500 meters out of each of the left and right side of the survey aircraft). The proposed survey will include three high wing single engine turbine fixed wing aircraft and one rotary wing aircraft. The multiple aircraft will be used to shorten the survey period, take maximum advantage of good weather windows, and reduce the probability of either double counting and/or under counting (due to movement over time) caribou within the study area. The double observer platform will utilize four independent, dedicated observers, two on the left side of the aircraft and two on the right. Two data recorders, one for the left and one for the right, will record all observations as primary (front) secondary (rear) or both (front and rear) for each of the left side and right side.

7. Project Schedule:

Output or Step	Start Date	End Date	Status
Community Consultations (All Baffin Communities)	10 Dec. 2013	27 Dec. 2014	In Progress

Baffin Island Abundance Survey	1 March 2014	10 April 2014	Not yet initiated
Baffin Island Ground Surveys	1 March 2014	10 April 2014	Not yet initiated
Data Analysis	1 July 2014	20 July 2014	Not yet initiated
Report Writing	1 August 2014	1 Sept. 2014	Not yet initiated

8. Preliminary Results and Discussion:

As previously stated, the need to re-survey the south Baffin study area to verify 2012 survey results and to conduct this survey concurrent with the North Baffin caribou abundance survey was voiced by all south Baffin HTOs during the July 2012 Baffin Island caribou workshop. In response, DOE proposed an aerial survey to cover both North and South Baffin study areas. As a result, changes were made to the survey area, proposed methods (as described in Section 6.), and project schedule (as described in Section 7.) for reasons of logistical appropriateness, methodological rigor, and overall project cost. Revised project activities are scheduled to commence February 2014.

9. Reporting to Communities / Resource Users:

Consultations (both HTO and public meetings) with all Baffin Island communities (including Igloolik and Hall Beach) are in progress. During these consultations DOE staff will work with communities on survey design and implementation based on local knowledge and IQ. Final survey strata will not be confirmed until all communities have had their input into final strata boundaries. Community and HTO consultations are scheduled as follows:

- Iqaluit – December 10th, 2013 (completed) and January 18th, 2014
- Cape Dorset – December 12th, 2013 (completed)
- Pangnirtung – December 13th, 2013 (completed)
- Qikiqtarjuaq – January 20th, 2014
- Clyde River – January 21st, 2014
- Pond Inlet – January 22nd, 2014
- Arctic Bay – January 23rd, 2014
- Igloolik – January 24th, 2014
- Hall Beach – January 25th, 2014
- Kimmirut – January 27th, 2014

Consultations with all Baffin Island HTO, including Igloolik and Hall Beach, following completion of research are planned in 2014.