



MUSKOXEN ABUNDANCE AND DISTRIBUTION, AND CARIBOU
DISTRIBUTION AND CALVING AREAS ON BOOTHIA PENINSULA, NUNAVUT

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Field work summary
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INTRODUCTION

Muskox populations on lower arctic Islands have increased dramatically during the last two decades re-colonizing their historic range. It is important that while ensuring the sustainable harvest of the muskoxen populations, we also provide users with the full potential for harvest.

The status of muskoxen on the Boothia Peninsula (Kitikmeot Region) was last estimated in 1995 (Gunn and Dragon 1998) and since then the community of Taloyoak has reported an increase in the population and required a survey during meeting with the HTO.

Moreover, local knowledge indicates that the increase in the muskox population on Boothia Peninsula induce a movement/colonization of muskoxen towards the south and south-east. This potential population movement has consequences for the dynamic and management of muskox population on the mainland south of the Boothia Peninsula. It has also some consequences for harvest opportunities for Kugaaruk in particular.

Recent aerial survey (May 2004) on Prince of Wales and Somerset Islands (North of Boothia) reported an increasing muskox population but failed to detect caribou. The status of Peary caribou and Island caribou is of concern at the territorial and federal level.

This project aims at (1) updating muskox abundance and distribution in order to recommend a new Total Allowable Harvest (TAH), (2) determine the proportion of calves in the muskox population, (3) analyze the changes in muskoxen distribution and abundance, (4) evaluate the progression of muskox distribution south and south east of the Boothia Peninsula, (5) establish the distribution of caribou during calving and determine main calving areas, and (6) provide preliminary data to develop a study on the status of caribou on Boothia Peninsula.

METHODS

We used aerial strip transect survey method. Each transect covers a 3 km wide strip with a coverage between 20 and 40% of the surveyed areas. The transects were flown with an Helio-Courier on skies at an altitude of 500 feet and at a speed of 130 to 175 km/h. There were two observers in the back of the plane (one on each side) and the pilot and navigator were also spotting animals to reduce the risk of missing some.



All observations were recorded on field data sheets and the locations were recorded in a GPS, as well as the track log during the flights. Each observation was recorded either as in or out of the markers delineating the 1.5km strip on each side of the plane. For large group of muskoxen, in order to reduce disturbance, a first count was done in particular to count calves and a picture of the group was taken to verify the adult count.

The aircraft capability to land off strip allowed us to take breaks between survey blocs.

FIELD RESULTS AND DISCUSSION

Table 1: Flights information

Date	Departure	Return	Flying hours	Distance flown (km)	Remark
20060602	9h45	14h45	5.0	900	Flight from Kugluktuk to Taloyoak
20060603	11h05	21H25	9.8	1475	
20060604					Weather day: Low clouds and fog
20060605	9h25	13h40	4.3	630	Flight ended due to low clouds and fog
20060606					Weather day: Low clouds and fog
20060607					Weather day: Low clouds and fog
20060608	9h15	16h20	5.7	850	Flight ended due to low clouds and wind
20060609	13h15	14h55	1.7	260	Flight ended due to low clouds and wind
20060610	14h00	23h20	8.7	1255	Late start due to low clouds
20060611	9h15	18h35	8.9	1295	
20060612	11h20	20h25	9.1	1355	Field work and Flight from Taloyoak to Kugluktuk
TOTAL			53.2 hours	8020 km	



Figure 1: Study area and flight track from June 03 to June 12, 2006.

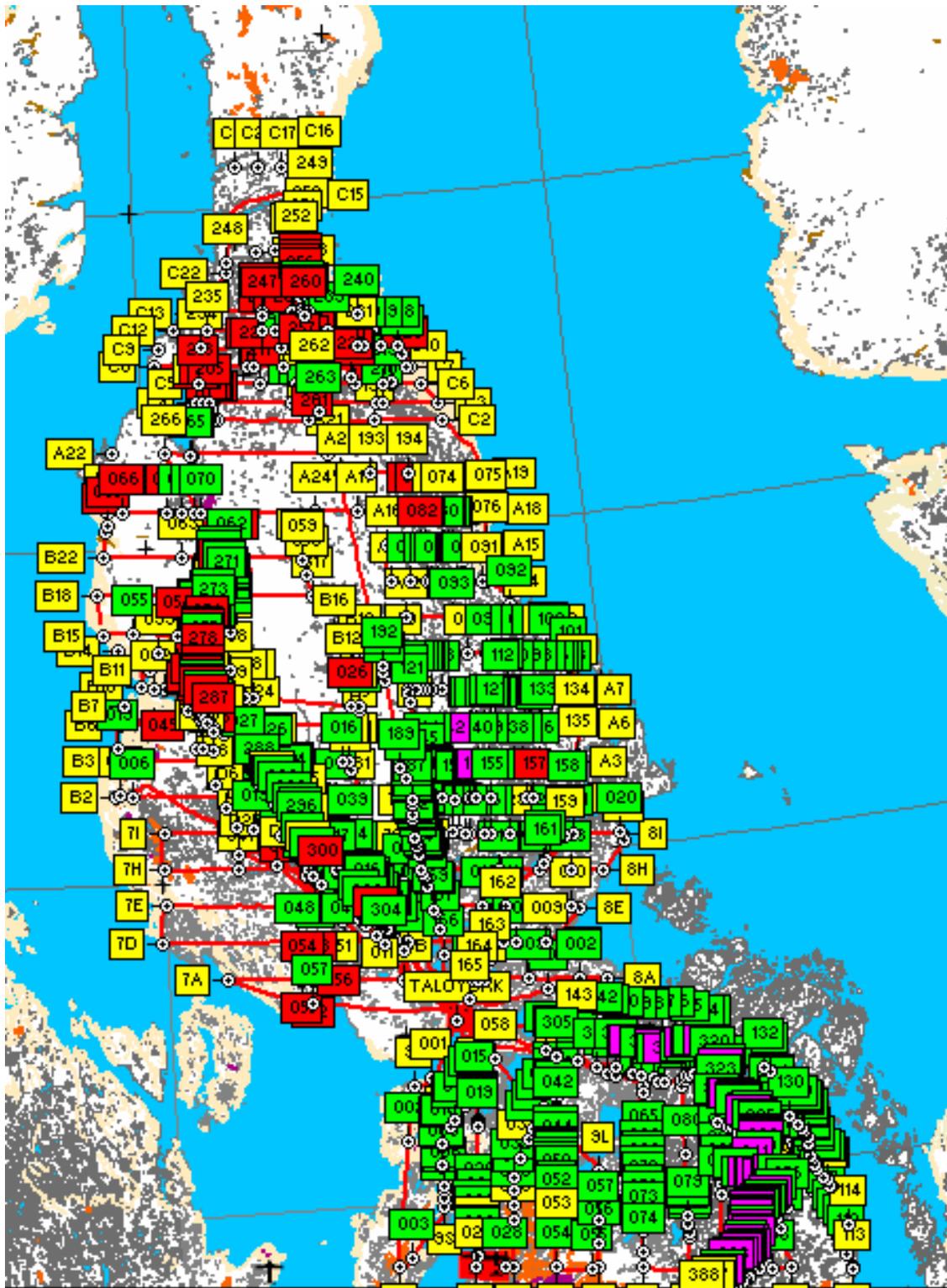


Figure 2: Locations of muskoxen, caribou, and caribou with calves during the survey (Boothia peninsula, 03 – 12 June 2006).

Red = Muskoxen; Green = Caribou; Fuchsia = Caribou with calf; Yellow = Other waypoints

Waypoint numbers is the waypoint ID, NOT the number of animals.

It is too early to present numbers but overall, we observed a good density of muskoxen on the northern part of Boothia and around Pasley Bay. There seem to be a gradient of density from the north (highest) to the south (lowest). From the field observations and previous survey results, it is very likely that the population has been increasing. Calf proportion seems to be high and is consistent with an increasing population. We did not find evidence of muskoxen south and south east of Taloyoak. It seems that they would be still at very low densities in these areas.

Caribou were distributed in most of the southern half of Boothia and on the mainland south of Taloyoak. We were probably a little bit early to observe the calving on Boothia, however, I assume that we were close enough from the calving peak to use the observed distribution as an indicator of calving areas. It is important to note that compare to previous surveys, there was a quasi absence of caribou on the northern end of Boothia. Although I recognize that it can be difficult to distinguish between Barren ground caribou, Island caribou, and Peary caribou, we only observed one caribou that we felt was Peary caribou and only a few that we felt were Island caribou. The variations in distribution compared to previous surveys and satellite collars locations, as well as the apparent low density of Peary and Island caribou will need some more consideration.

Another interesting observation is the difference of behavior of muskoxen on Boothia compared to the West Kitikmeot. The muskoxen groups on Boothia were in general immediately forming a defense circle when the plane was approaching. In contrast, in the West Kitikmeot, muskoxen groups tended to remain loose and animals had a tendency to run away more than forming defense circle. Local hunters in the West Kitikmeot observed a change in muskox behavior over the past few decades (Allen Niptanatiak, personal communication). Some local hunters interpret this change as a result of hunters on snowmachines chasing the animals. This change in behavior may also have some consequences in the vulnerability of muskoxen to predators such as wolves and grizzlies.

Acknowledgement:

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Many thanks to Perry Linton (Pilot) for his dedication to this survey and for sharing his experience and stories of a lifetime flying in the North.

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