

MUSKOX (*Ovibos moschatus*) DISTRIBUTION AND ABUNDANCE, MUSKOX MANAGEMENT UNITS MX-09, WEST OF THE COPPERMINE RIVER, AUGUST 2017. bDDDJ____^ ^ AP^{5b}<~~~~(^^__) Building Nunavut Together Nunavu liuqatigiingniq Bâtir le Nunavut ensemble



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REPORT ON MUSKOX DISTRIBUTION AND ABUNDANCE, MUSKOX MANAGEMENT UNITS, MX-09, AUGUST 2017

Summary

This short document is a summary of the information provided in the report entitled: "Muskox (*Ovibos moschatus*) distribution and abundance, in muskox management units MX09, West of the Coppermine river, August 2017."

This report is a document that put the research into context, identifies the diverse methodology used, describes the results, as well as provides future monitoring and management recommendations.

The Government of Nunavut has jurisdiction for managing the harvest of the muskox in Nunavut and needs to conduct research and monitoring (population surveys), along with consultations with Hunter and Trapper Organizations (HTOs) and communities, to inform the management process. This report provides scientific information and recommendations to help decision-makers manage muskox.



This summary is based on the information in the full English version of the research report on the muskox of the West of the Coppermine River conducted in August 2017. The original English copy of the report has been provided for reference. bンハンリュュージ ヘア⁵⁶くぐーマハ・こうの Building *Nunavut* Together *Nunavu* liuqatigiingniq Bâtir le *Nunavut* ensemble



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Information

During the last century, muskox on the upper Rae-Richardson River Valley were able to persist on the landscape, while the species was near extirpation in Nunavut. Therefore, the muskox of the West of the Coppermine River, MX-09, are the westernmost indigenous muskoxen in North America.

This herd plays an essential role in the lives of Inuit people and it highly valued from a spiritual, economic, cultural, and harvesting perspective. The community of Kugluktuk is the only community subsisting on this herd.

In 1980, the muskox population in the area was estimated to be 869 animals. Based on relatively comparable systematic population surveys, this population peaked in 1988 to 1,295 animals before it plummeted and remained stable. Based on these 1995 and 2007 survey results, the conclusion made was that the population remained, at best, stable around 540 animals.

Since caribou herds in this region of Nunavut are declining in numbers, and thus becoming harder to hunt, harvesters are seeking alternative sources of meat, such as muskox, to address food security. The conservation and recovery of this small population of muskox is thus a priority for future management.

Objectives

This project aims to address concerns of Inuit, as well as to provide new scientific information for 2017. Therefore, the main objectives of this study of MX-09 are to:

- 1. Determine the total estimated number of muskox
- 2. Determine muskox distribution and density; and
- 3. Determine calf:adult ratio and group size.

Methods

Study Area

The study area is the muskox management unit MX-09, also known as the West of the Coppermine River management unit. The boundaries for this area are to the west and south of the Nunavut boundary with the Northwest Territories and, to the north, the coast line of the Dolphin and Union Straight. Muskox management unit MX-09 is separated to the east from the adjacent muskox management unit MX-11 by the Coppermine River.

Survey area

То maximize the coverage area investigated, anticipated muskox distribution pattern were obtained from past ground surveys, hunter observation, and Inuit Traditional Knowledge. Since it was reported that muskox groups are still found in low numbers and mostly uniformly distributed across MX-09. the whole b)))JJ2 × A?5<Cd)C2 Building Nunavut Together Nunavuliuqatigiingniq Bâtir le Nunavut ensemble



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management unit was surveyed at 16% coverage and 8.5 km spacing between transect lines, with no strata of different effort allocation (Figure 1).



Figure 1: Transect lines flown in August 2017, representing 16% coverage, of the muskox management units MX-09.

Aircraft configuration

A systematic transect line survey was flown with a fixed-wing single engine turbine aircraft, a grand caravan. The transect lines were surveyed at a speed of 160 km/hr and the survey altitude of about 121 meters above ground level (AGL). The strip transects included 800 meters on each side of the aircraft. Observers on both sides of the plane were responsible for continuously searching for, spotting, and counting muskox including the number of calves. Incidental sightings of caribou, grizzly bear, wolverine, and wolf were also recorded.

Results

Distribution

The survey was conducted from the community of Kugluktuk from August 25th to August 30th, 2017. During the survey, 18 groups of muskoxen were seen, both on and off-transect. Larger groups of muskoxen, of 16-19 adult animals, were mainly distributed North of Dismal Lake, and 25 km from the coast South of Stapylton Bay. Most muskoxen sighted were found between Emagyok and Dismal Lake (Figure 2).



Figure 2: Muskox distribution, on and off transect, in the management unit MX-09 during the survey, where the number of animals per group was classified into group of 0-1, 2-7, 8-11, 12-15, and 16-19 animals.

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Group Characteristic and estimate

The majority of groups observed were small groups of 2 to 11 adults. The average number of adults (+1 year and older) per group was 6.21 ± 6.6 (S.D.). During the visual survey 87 adult muskoxen were counted on transect. Overall, the muskox density of the study area was low at 0.010 muskox / km². The estimated number of muskox in the management unit MX-09 is 539 ± 150 (S.E.) (Figure3). This shows that this population has remained stable since the early 90s. Thus, the current status estimated through this survey is also supported by the observations of local hunters.

Recommendations

Based on these results, the following recommendations, according to the management plan, should be taken into consideration: the Department of Environment is recommending to the Nunavut Wildlife Management Board to maintain a TAH of 20 for the Muskox Management Units MX-09.



Figure 3: Muskox population estimate for MX-09 over time, estimated from aerial surveys conducted from 1980 through 2017.