
	NUNAVUT WILDLIFE MANAGEMENT BOARD Agenda: Regular Meeting 001-2023 March 8, 2023 Iqaluit, Nunavut					
	No:	Item:	Tab:	Presenter:	Maximum Time	
9:00 - 9:02 AM	1	Open Meeting		Chairperson	2 Minutes	
9:02 - 9:03 AM	2	Declaration of Conflict of Interest		Chairperson	1 Minute	
9:03 - 9:05 AM	3	Agenda Review and Approval of RM001-2023 Meeting	1	Chairperson	2 Minutes	
9:05 - 10:00 AM	4	Polar Bear Credit Request by the Government of Nunavut for the Davis Strait Polar Bear sub-population (Decision)	2	Government of Nunavut	55 Minutes	
		BREAK				
10:15 - 11:00 AM	5	Government of Nunavut Request to Modify the Total Allowable Harvest for Muskox in MX-11 from 225 to 300 (Decision)	3	Government of Nunavut	45 Minutes	
11:00 - 11:30 AM	6	Total Allowable Catch Levels for Northern ( <i>Pandalus borealis</i> ) and Striped ( <i>P. montagui</i> ) Shrimp in the Western and Eastern Assessment Zones for the 2023-2024 Season (For Information)	4	Fisheries and Oceans Canada	30 Minutes	
	7	Adjournment of RM001-2023 Meeting		Chairperson		



**SUBMISSION TO THE**

**NUNAVUT WILDLIFE MANAGEMENT BOARD**

**FOR**

**Information:**

**Decision: X**

**Issue:** Qikiqtaaluk Wildlife Board and Pangnirtung Hunters and Trappers Association request to use 16 Davis Strait polar bear tags

**Background:**

- In February 2022, the Nunavut Wildlife Management Board (NWMB) and Government of Nunavut Minister of Environment (ENV) accepted the revised Nunavut polar bear harvest management document, the Harvest and Credit Calculation System (HACCS), and is an accompanying document to the Nunavut Polar Bear Co-Management Plan that was accepted in 2019.
- Section 5.7.2.1 of the HACCS states that credit requests greater than 25% of the subpopulations TAH in a given harvest year may pose a potential conservation concern and will automatically be sent to the NWMB for review.
- On December 16, 2022, the Qikiqtaaluk Wildlife Board (QWB) forwarded ENV their approval of Pangnirtung Hunters and Trappers Association's (PHTA) credit request to use 8 male and 8 female Davis Strait (DS) subpopulation polar bear credits during the 2022/2023 harvest season.
- On Wednesday January 25, 2023, ENV responded with a letter acknowledging this request and informing the QWB that 16 credits is above 25% of the TAH for DS. The current TAH for DS is 61; the 25% threshold is 15.25.
- In this letter, ENV reminded the QWB that credit requests over the 25% threshold would require NWMB approval, as per the HACCS. ENV informed QWB and PHTA that ENV will immediately release 15 tags in accordance with the 25% request threshold. ENV enquired what ratio of tags PHTA would like (i.e., 7 males and 8 females or 8 males and 7 females).
- ENV also indicated they would submit the decision for the extra 1 tag for NWMB approval.

- As per Section 5.7.2.1 of the HACCS regarding the automatic review for credits above the 25% threshold, we are forwarding this request to NWMB for their direction whether or not to release the one additional tag.

**Current Status:**

- Scientific data from the Davis Strait subpopulation indicate a slight decline in polar bear survival which is in line with the current management objective for a slight reduction, but overall, a stable population.
- Scientific data has not found evidence for a relationship between survival and any environmental variables (e.g. sea ice changes, climate changes, seal abundance).
- Per the GN's mandate to ensure stable wildlife populations for sustainable harvesting into future generations and role as polar bear co-management partner, ENV encourages principles of conservation be applied. In the case of the Davis Strait subpopulation, it is relatively stable and ENV does not believe releasing 1 additional credit would present a conservation concern.

**Recommendations:**

1. ENV recommends that the NWMB approves the request for 1 Davis Strait polar bear credit for use by the Pangnirtung Hunters and Trappers Association.



**Qikiqtaaluk Wildlife Board  
Annual General Meeting  
Iqaluit, Nunavut  
December 5-8, 2022**

**Resolution No. QWB-AGM-2022-001**

**WHEREAS** some HTOs have formally requested to use some but not all of their communities' polar bear harvest credits during 2022-23 (i.e., by June 30, 2023);

**THEREFORE, be it resolved that**

The Qikiqtaaluk Wildlife Board (QWB) approves use of polar bear harvest credits as requested by the HTOs and shown in the table below, and

The QWB also hereby requests that the Government of Nunavut issue tags for the use of the duly requested and approved polar bear credits as soon as possible as indicated in the table below:

Community	Polar Bear Sub-population	Credit tags to issued for 2022-2023	
		Male	Female
Pangnirtung	Davis Strait	8	8
Kinngait	Foxe Basin	2	10
Arctic Bay	Lancaster Sound	0	5

**Moved by:** Enookie Inuaraq

**Seconded by:** Roger Etuangat

**In Favor:** ALL (11) .      **Against:** None.      **Abstained:** None.      **Motion passed:** December 8, 2022.

Joiling

James Qillag, Chairperson

Community	Subpopulation	2022-23 Annual Quota at 1:1 Sex Ratio			Preliminary number of additional credits for 2022-23		
		Males	Females	Total	Males	Females	Total
Pangnirtung	Davis Strait	12	12	24	22	13	35

Pangnirtung Hunters and Trappers Organization

Board of Directors

Pangnirtung, Nunavut

Date: 30-Nov-2022

WHEREAS, the HTO would like to enable community hunters to harvest more than the number of polar bears specified in the annual quota(s) for 2022-23,

THEREFORE, be it resolved that

The Pangnirtung HTO requests that the Qikiqtaaluk Wildlife Board approves the use of:

8 male and 8 female polar bear credits from the Davis Strait subpopulation,

during the 2022-23 license year (i.e., by June 30, 2023)

Moved by: Jaco Seconded by: Patrick

In favour: 5 Against: 0 Motion passed 0

*Acting Chairman*  
Simeonie Keenainak

HTO Chairperson



**SUBMISSION TO THE**  
**NUNAVUT WILDLIFE MANAGEMENT BOARD**  
**FOR**  
**Information:**

**Decision:** **X**

**Issue: Muskox Distribution and Abundance within Central Kitikmeot Group  
Muskox Management Unit MX-11**

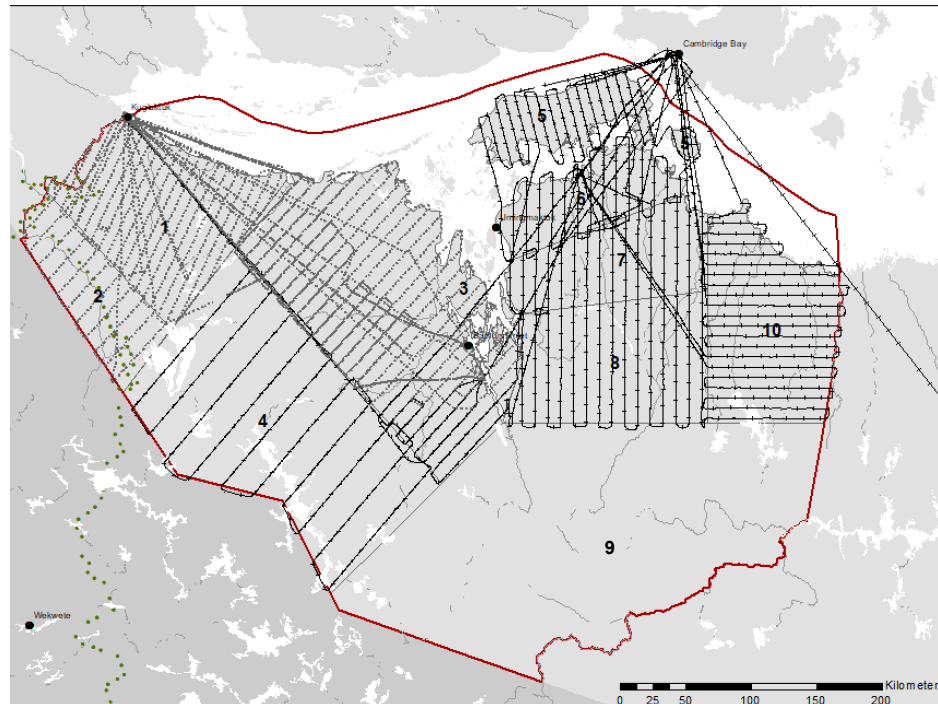
## **Background**

- The Central Kitikmeot Group Muskox Management Unit, MX-11, was created in 2015. This unit is defined to the west by the Coppermine River, to the east by the Perry River, the south by the Northwest Territory border, and to the north by the Northwest Passage.
- In 2013, the western extents of the management unit were surveyed and produced an estimate of 6,746 muskoxen. Based on historic data, we suggest that muskox abundance within the remaining extents of MX-11 was likely in the range of 750 muskoxen. This combined information suggests that the population estimate of MX-11 in 2013 was approximately 7,500 muskoxen.
- Since 2015, there has been a Total Allowable Harvest (TAH) of 225 muskoxen. This represents a harvest rate of approximately 3% of the total estimated 2013 population. The TAH has been allocated as follows; 120 for Kugluktuk, 25 for Cambridge Bay, 40 for Omingmaktok, and 40 for Burnside. Since its establishment, the actual harvest within MX-11 has never reached the TAH of 225.
- Western Kitikmeot communities harvesting in MX-11 are seeking an increase in muskox harvest as an alternative subsistence harvest to caribou to improve food insecurity and to reduce harvest pressure on caribou herds to foster their recovery.

## **Current Status**

- The inclusion of *Inuit Qaujimagajatuqangit (IQ)* into the Distance Sampling random systematic survey design, was focused on recommendation of low, medium, and high-density areas to be surveyed, as well as precautions to be used to mitigate disturbance of pregnant muskox by survey aircraft.
- The MX-11 muskox survey was flown using two Twin Otter fixed-wing aircraft between March 15 and March 27, 2022. All identified survey strata were completed, with the exception of a very few small islands along the Coronation Gulf and within Bathurst Inlet, and the southeastern most strata, Strata 9 (see Figure 1).

- There were a few small islands not surveyed due to persistent poor weather over these areas, and in the case of Strata 9, due to COVID-19 related delays to the survey program.
- Though muskox have been known to occupy some of the missed islands and given Strata 9 is well outside typical harvesting areas, the numbers missed are believed by biologists to be very low and unlikely to significantly impact the final abundance estimate.



*Figure 1: Completed daily flight tracks showing survey strata coverage (dotted and crosshatched lines) by both fixed wing aircraft between March 15 and March 27, 2022.*

- Group sizes observed ranged from 1 to 150 muskox (the group of 150 was a single observation with maximum group sizes of 60 muskoxen for all other large group observations), with an average of 17 muskoxen per group across the MX-11 survey area. In total, 130 groups of muskoxen were used in the analysis during the survey.
- Along with the independent double observer and distance sampling methodology used during this survey, we used mark-recapture distance sampling (MRDS) analytical methods to estimate the probability of detecting muskox. Utilizing these analytical methods we estimated muskox abundance within MX-11 surveyed strata to be 10,246 muskoxen (SE= 2,309.6, CV= 20.4%). The estimate of each stratum is summarized in Table 1:

**Table 1: Estimates of strata from Model 1 (Table 1). Density is in muskox per 100km<sup>2</sup>**

Strata	individuals	N	SE	CIL	CIU	CV	Strata area	Density
1	1041	3,578	885.4	2,143	5,972	24.7%	15,045	23.78
2	31	178	87.4	58	539	49.2%	7,080	2.51
3	479	2,598	594.3	1,628	4,147	22.9%	28,258	9.20
4	242	2,449	1500.7	591	10,145	61.3%	29,945	8.18
5	134	538	204.7	241	1,201	38.1%	5,555	9.68
6	23	99	41.1	40	243	41.5%	6,531	1.52
7	34	146	120.6	28	762	82.8%	9,275	1.57
8	19	81	46.6	24	273	57.3%	14,137	0.58
9	--	--	----	--	----	----	-----	----
10	164	579	237.0	247	1,357	40.9%	14,013	4.13
Total	2167	10,246	2085.6	6,721	15,620	20.4%	129,838	7.89

## Consultations:

- The Ekaluktutiak Hunters and Trappers Organization (HTO), Kugluktuk Angoniatit Association (KAA), and Kitikmeot Regional Wildlife Board (KRWB) met with the Department of Environment (ENV) on December 19, 2022 and Omingmaktok HTO on December 21, 2022. Co-management partners were consulted on the survey and on survey results. During consultations ENV recommended an increase in TAH from 225 to 300 based on a 2.9% rate of harvest. During discussions with the HTOs and KRWB, it was suggested the TAH be increased to an approximate 3.3% harvest rate or a TAH of 350 based on concerns that a high muskox density can increase the likelihood of disease outbreaks.

## Recommendation:

- ENV recommends a TAH increase of 75 muskoxen up to 300 from the current 225, representing a 2.9% rate of harvest of the overall 2022 abundance estimate.
- Based on information and IQ presented during the consultations, ENV recognizes and supports further discussion regarding the increase of the MX11 TAH above the GN recommendation. We look forward to an HTO recommendation based on further closed discussions amongst the HTOs.
- ENV further recommends that the KRWB allocate any proposed increases across the management unit to distribute hunting pressure across the entire management unit. Due to the sedentary nature of muskox, distributing hunting pressure across the management unit should help to maintain local muskox family groups within local hunting areas.



# December 19, 2022



# Muskox distribution and abundance of Central Kitikmeot Group, MX11

## Background

- Established in 2015, MX11 is a new muskox management unit that need to be survey.
- 2013 Survey western section of the management units, 6,746 muskoxen
- Muskox are currently used as an alternative species to promote food security in Western Kitikmeot.
- Current TAH of 225 based on an approximation of 7,500 muskoxen in MX11.

## Objectives

The main goal of this study is to foremost determine the muskox population Estimate in the muskox management unit, MX-11.

In addition, the survey will allow to identify area of high and low muskox density.





# Muskox distribution and abundance of Central Kitikmeot Group, MX11

## Method, Aerial Survey

Line-transect sampling survey, random systematic sampling which implied a  
\*random distribution\*

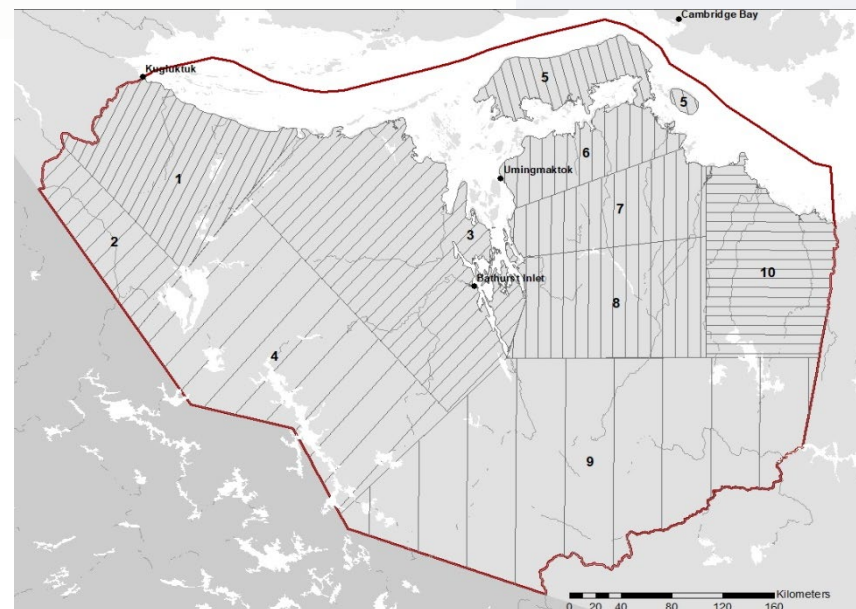
Double-observer platform, independent set up (no auditory/visual clue)

Distances binned at 200; 400; 600; 1,000; and 1,500 m

2 Twin-Otters: 400 feet, 160 km/hr

Table1: Summary of the muskox management unit MX-11 survey design, number of transects allocated in each stratum, and respective planned survey effort.

Stratum	Name	Area (km <sup>2</sup> )	Samplers	Distance Between Transect (km)	Transect Length (km)	On Effort Track length(km)
1	HD_West	15,045	21	8	2,333	1,890
2	LD_West	7,080	11	13	798	534
3	MD_Central	28,257	25	10	3,527	2,843
4	LD_Central	29,945	10	23	1,700	1,278
5	HD_East_N	5,555	20	8	1,143	709
6	LD_East	6,530	15	10	964	656
7	MD_East_N	9,275	16	10	1,241	935
8	MD_East_S	14,136	16	10	1,775	1,446
9	LD_East_2	48,232	10	39	2,016	1,250
10	HD_East	14,012	22	8	2,127	1,749
---	-----	178,058	166	----	17,164	13,801



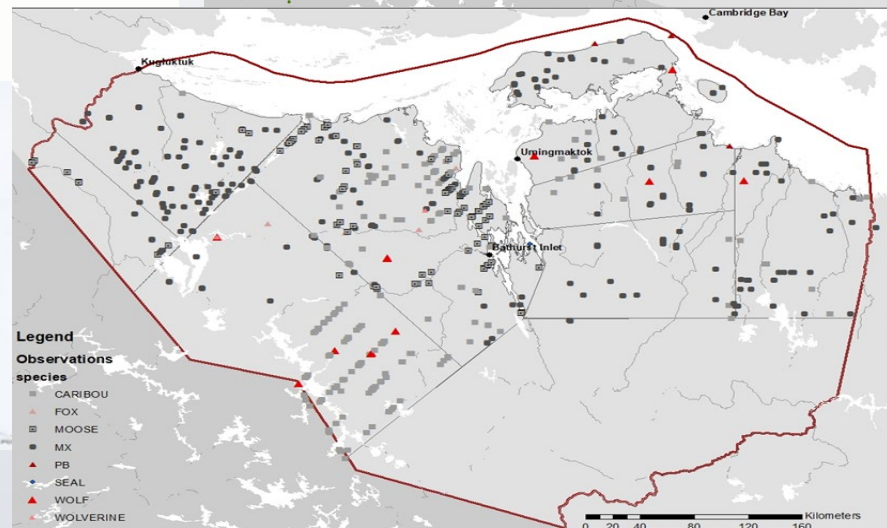
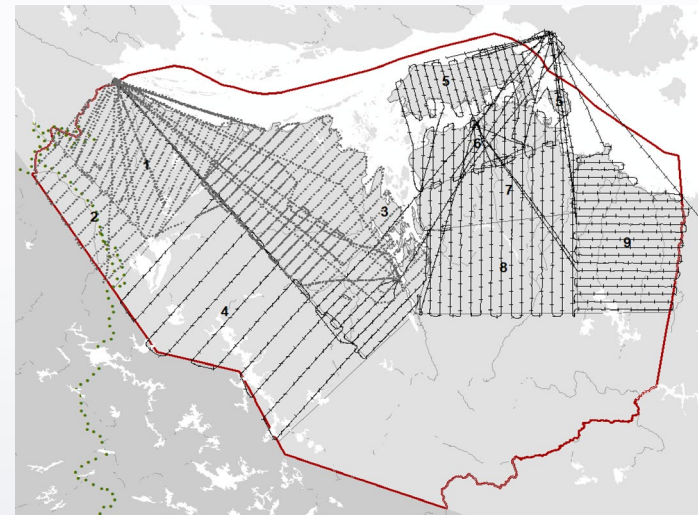


# Muskox distribution and abundance of Central Kitikmeot Group, MX11

## Results

Completed between March 14 and March 27, 2022

Couldn't complete strata 9 (low priority); Covid-19, weather, Budget





# Muskox distribution and abundance of Central Kitikmeot Group, MX11

## Observer bias

15 observers (data recorders excluded)-  
preclude to model observers as covariates

Many observer focused on the last  
bin/horizon

Most observers missed on average 30% of  
the groups by the other observer.

Many of the large groups where detected by  
only one observer

Average group size ~17 animals

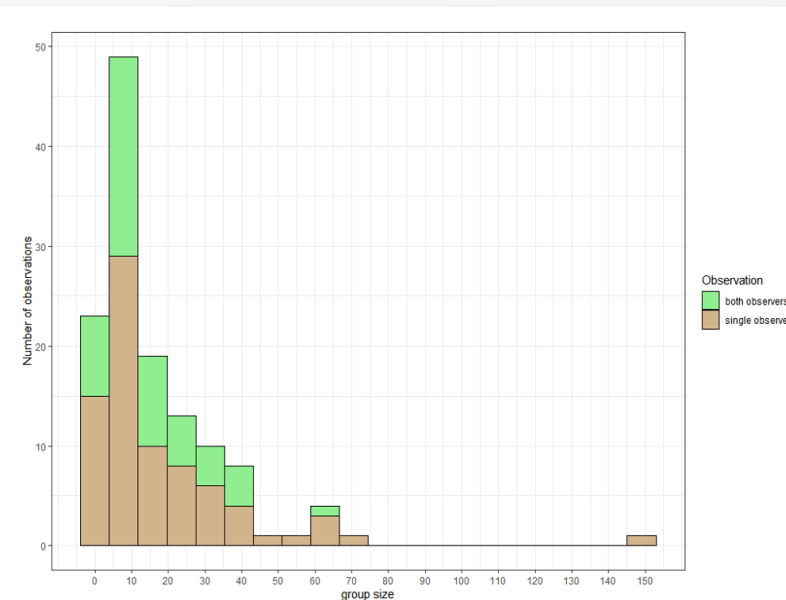
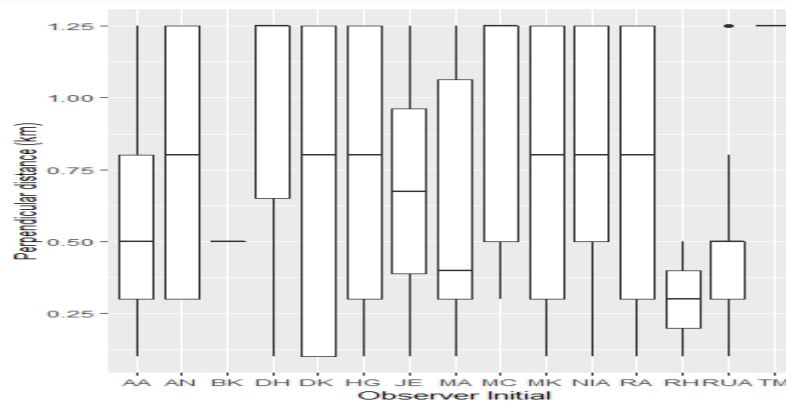


Figure 3: Distribution of group sizes.



# Muskox distribution and abundance of Central Kitikmeot Group, MX11

## Results (Mark-recapture and distance analysis)

Plot of detection function predictions (red dots) and histograms of detections functions for the two levels of visibility. Observations from the outer-most bin were reduced when visibility from this further bin was obscured.

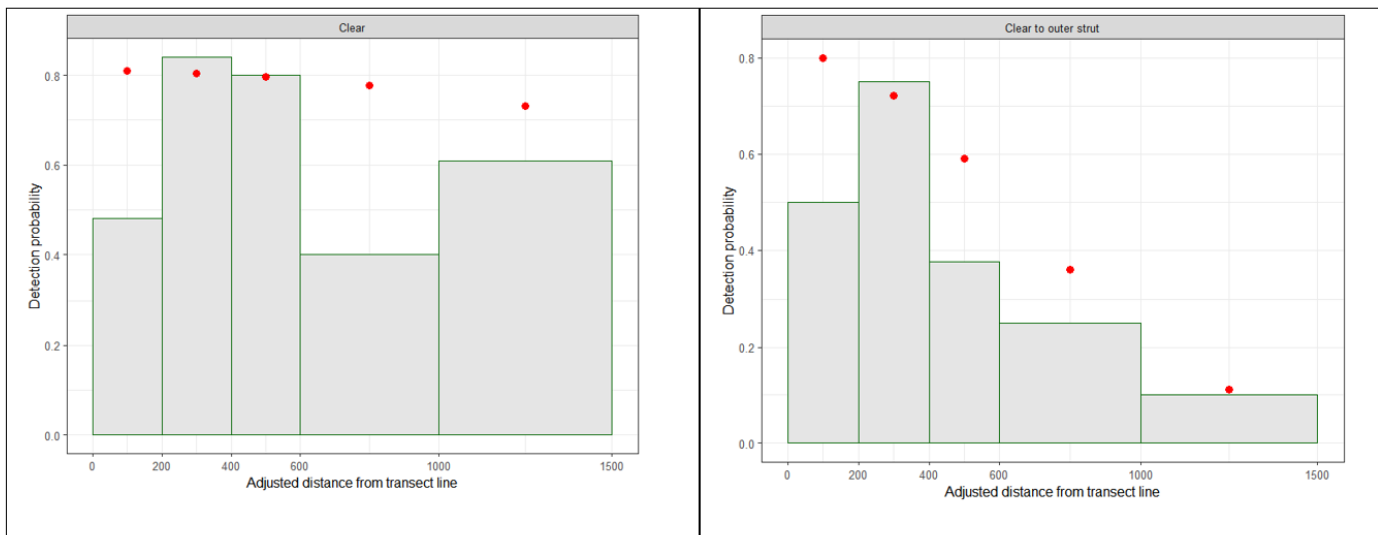


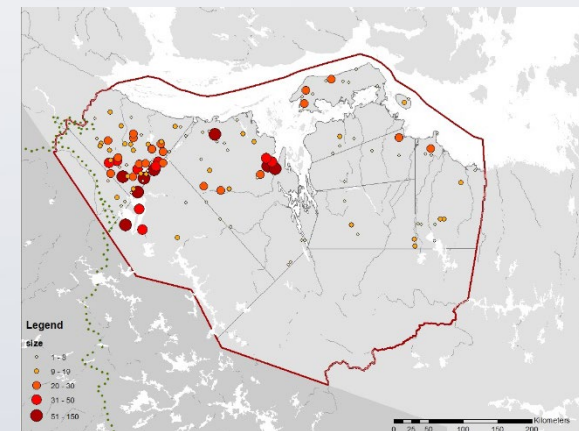
Figure 10: MRDS detection probability estimates (red dots) and observed detection histograms for 2 levels of visibility from model 1



# Muskox distribution and abundance of Central Kitikmeot Group, MX11

**Table 4: Sensitivity of estimates to left truncation (LT), right truncation (RT) and DS only analyses. Percent change is in comparison to the first model/estimate listed (Table 3, model 1). Goodness of fit test p-values are also given**

Data/model	groups	Individuals counted	N	SE	Conf. Limit		CV	% change	GOF p
MRDS vis model (Table 3 model 1)	130	2167	10,246	2085.6	6,721	15,620	20.4%		0.142
MRDS vis model LT 200	114	2000	11,408	2922.3	6,594	19,734	25.6%	11.3%	0.102
MRDS vis model RT 1000	90	1385	9,820	1808.2	6,828	14,124	18.4%	-4.2%	0.274
MRDS vis model group size of 150 reduced to 75	130	2092	9,487	1580.8	6,816	13,204	16.7%	-7.4%	0.142
DS vis model	130	2167	8,294	1641.4	5,486	12,540	19.8%	-19.0%	0.021
DS vis model LT 200	114	2000	9,075	2271.6	5,280	15,595	25.0%	-11.4%	0.012





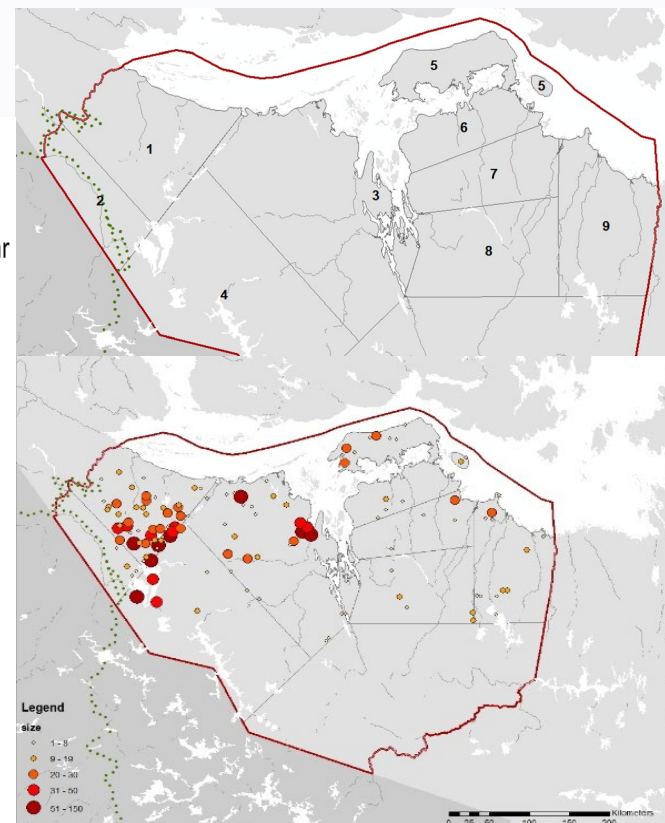
# Muskox distribution and abundance of Central Kitikmeot Group, MX11

## Estimates

A model averaged estimate from Table 5 is 10,246, (SE=2309.6, CI=6,715-15,940, CV=20.4%). Estimates for strata from Model 1 are below. Strata specific estimate precision was low. The highest density of muskox was in Strata 1 with similar densities in strata 3 to 5.

Table 5 Estimates of strata from Model 1 (Table 1). Density is in muskox per 100km<sup>2</sup>

Strata	individuals	N	SE	CIL	CIU	CV	Strata area	Density
1	1041	3,578	885.4	2,143	5,972	24.7%	15,045	23.78
2	31	178	87.4	58	539	49.2%	7,080	2.51
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7	34	146	120.6	28	762	82.8%	9,275	1.57
8	19	81	46.6	24	273	57.3%	14,137	0.58
9	164	579	237.0	247	1,357	40.9%	14,013	4.13
Total	2167	10,246	2085.6	6,721	15,620	20.4%	129,838	7.89



**\*\*Last TAH of 225 was set on a population of approximatively 7,500 animals (1/3, 6,746 muskoxen)**





## Muskox distribution and abundance of Central Kitikmeot Group, MX11

Based on survey results, the current recommendation is made for managing muskoxen in Muskox Management Unit MX11:

- ENV recommends a TAH increase of 75 muskoxen up to 300 from the current 225, representing a 2.9% rate of harvest of the overall 2022 abundance estimate.
- ENV further recommends that the KRWB allocate any proposed increases across the management unit to distribute hunting pressure across the entire management unit. Due to the sedentary nature of muskox, distributing hunting pressure across the management unit should help to maintain local muskox family groups within local hunting areas.

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THANK YOU  
QUANAQUTIN  
MERCI

# **HTO Consultations on muskox distribution and abundance, Muskox Management Units MX-11**

December 2022 and January 2023



Department of Environment, Government of Nunavut, Iqaluit, Nunavut

## Executive Summary

Representatives of the Government of Nunavut, Department of Environment (ENV) conducted a consultation with the Hunters and Trappers Organization (HTO) of Ekaluktutiak HTO (EHTO), Kugluktuk Angoniatit Association HTO (KAA), and Kitikmeot Regional Wildlife Board (KRWB) on December 19, 2022, and with the Omingmaktok HTO on December 21, 2022. The primary purpose of these consultations was to inform the community members of the results of the 2022 abundance estimate of MX-11 and discuss management recommendations that the affected HTOs would like to see implemented. The consultation was also a way to receive and collect additional local and traditional knowledge insight to complement the survey report.

This report attempts to summarize the comments made by HTO board members during the consultation on December 19 and 21, 2022, the proposed HTOs recommendations, and the accommodation from ENV.

## **Preface**

This report represents the Department of Environment's best efforts to accurately capture all the information that was shared during consultation meetings with the Hunters and Trappers Organizations.

The views expressed herein do not necessarily reflect those of the Department of Environment, Nunavut or Government of Nunavut.

## Table of Contents

Executive Summary.....	i
Preface .....	ii
Table of Contents.....	iii
1.0 Report Purpose and Structure .....	4
2.0 Purpose of Consultations .....	4
2.1 Format of Meetings .....	4
3.0 HTO Consultation Summary.....	4
3.1.1 HTO Consultation Summary-2022 .....	5
4.0 Conclusion- Next Steps .....	7
Appendix I .....	8
PowerPoint Presentation:.....	8

## 1.0 Report Purpose and Structure

This report is intended to collate and summarize comments, questions, concerns, and suggestions raised during a consultation held with the Ekaluktutiak HTO (EHTO), Kugluktuk Angoniatit Association HTO (KAA), Kitikmeot Regional Wildlife Board (KRWB) on December 19, 2022 and with the Omingmaktok HTO on December 21, 2022 about the results of the muskox distribution and abundance survey of the muskox management unit MX-11 and management recommendations. The summary and notes herein only reflect what was shared during the meeting.

## 2.0 Purpose of Consultations

The primary purpose of the meetings, organized and led by Government of Nunavut, Department of Environment (ENV), was to engage the HTOs in an ongoing dialogue on the survey results of the muskox management unit MX-11 and solicit feedback on the report, gather additional local knowledge, and discuss future management recommendations. The results from the 2022 population survey were communicated during the meeting. The affected HTOs were consulted as the designated representatives as per the *Nunavut Agreement* (NA).

### 2.1 Format of Meetings

The meeting was held during the afternoon and was about two hours in length. Meetings were facilitated and led by the Regional Biologist (Lisa-Marie Leclerc), who was the primary presenter. The Acting Wildlife Manager (Mitch Campbell) and Kugluktuk Conservation Officer (Russell Akeeagok) were present as observers. The presentation format was informal and was in-person with the KAA and online via Microsoft Teams with the EHTO and KRWB. The HTO board members were invited to ask questions or raise concerns and recommendations.

## 3.0 HTO Consultation Summary

The objectives of the meeting were made clear to the HTO. However, since we are planning to submit harvest recommendations to the Nunavut Wildlife Management Board for their March 2023 Regular Meeting, in the interest of reporting the survey results as soon as possible, no report available in advance of the December 19 meeting. However, following the meeting, the summary report and the PowerPoint presentation were made available to the HTOs to help discuss recommendations with the HTO Board members in the hopes of providing more meaningful engagement. Muskoxen are important economically and an alternative source of country food when caribou meat becomes scarce. Several HTO members stated the importance of sustaining the muskox to a certain number to assure the continuation of their harvest rights and food security.

### 3.1.1 HTO Consultation Summary-2022

**Issues:** Muskox distribution and abundance, Muskox Management Unit: Central Kitikmeot Group MX-11; The muskox population estimate for this management unit is higher than recorded in previous surveys which suggests an increase in Total Allowable Harvest (TAH) from where it currently stands.

**Purpose of the Consultations:**

A consultation was organized in Kugluktuk on Ekaluktutiak HTO (EHTO), Kugluktuk Angoniatit Association HTO (KAA), Kitikmeot Regional Wildlife Board (KRWB) on December 19, 2022.

The primary purpose of the meeting was to engage the HTO in an ongoing dialogue on the muskox survey, review the report, and talk about future management recommendations. The meeting was an opportunity to inform the audience that ENV is supportive of increasing the current TAH to 300 based on previously used harvest proportions applied to previous survey estimates.

**Date:** December 19, 2022

**Representatives:**

ENV: Lisa-Marie Leclerc, Russell Akeeagok, Mitch Campbell, Richard Akana

KAA: Kevin Klengenber, Myles Peterson, Randy Hinanik, Kevin Ongahak, Nigel Allukpik, Billy Mcwilliam, Larry Adjun (Chair), Allen Nip, Amanda Dumond (Manager).

ETHO: Peter Evalik, Bobby Greenley (Chair) Beverly Maksagak (Manager)

KRWB: Peggy Adjun

**Summary of the Discussion:**

During the presentation, HTO members made comments and asked questions to ensure they understood the research methodology and results. Since the HTOs were involved during all phases of this project, issues and concerns around design and field methods were already well understood by many of the meeting attendees. However, a concern regarding the exclusion of small islands off the coast north and east of the survey area were raised. Some muskoxen have been seen on these islands that are part of the muskox management unit. We were able to survey most islands at the head of Bathurst Inlet as well as Melbourne Island, but weather and poor visibility conditions prohibited us from surveying most of the islands north of the mainland and west of the inlet. Since the overall area of these islands was small, having included these in the final analysis would likely not significantly change the final estimate. Additional questions spoke to the exclusion of the southeastern most stratum 9 and possible impacts to the MX-11 estimate. Although the entire Stratum 9 was not flown, we are confident that this again is likely not a major concern due to the expected very low densities expected to have been there and the extremely small amount of harvest within that portion of the MX-11 Management zone.

It was clarified that the last 2013 survey, only 1/3 of the management unit was flown resulting in an estimate of 6,746 muskoxen; with the remaining extents likely having a low abundance of approximately 750 muskoxen (based on historic observations). If these approximations are correct, a population estimate of 7,500 muskoxen would likely have occupied those extents during this survey period. From this estimate, the current Total Allowable Harvest (TAH) of 225 was established. The 2022 survey

produced a new abundance estimate for MX-11 of 10,246 muskoxen; this result indicates that since the last population estimate the population has grown and is doing well under the current TAH which would suggest considerable room to increase harvest within the Management zone. During the consultation ENV recommended an increase in TAH from 225 to 300 using a harvesting rate of about 3%. It was pointed out that the current quota is not filled, and the current harvesting pressure has been well below 3% on this population.

Discussions took part among the users as to how the proposed TAH of 300 can be shared between HTOs; recommended potential allocations were made of 120 for Kugluktuk, 120 for Cambridge Bay, and 60 for Bay Chimo and Bathurst Inlet. It was also recommended by some members to allocate proposed increase based on muskox densities, which varies across the management unit.

A member raised concerns about the health and the high density of muskox east of Kugluktuk (Stratum 1). With increased muskox densities, there is a higher likelihood of disease outbreaks. Thus, a proposal was made to increase the harvest rate from 3% to 3.3% corresponding to increasing the TAH from 300 to 350 animals. The rationale behind this was that increasing the TAH above the GN recommendation would have a positive effect of controlling density dependent disease and utilize the additional TAH that provided for growth during the years leading up to the 2022 survey. This would also have the potential of stabilizing growth while offering more harvesting opportunities in a sustainable fashion.

The HTOs requested additional time to have a separate discussion with their board members and their users to forge their recommendations and share it with ENV for consideration. As a way forward, we decided that the HTOs and KRWB will be informing the GN of their recommendations on or around January 17 2023, dependent upon when the boards will hold their first meeting in the new year.

Informing their regrets, a separate phone conversation with Omingmaktok occurred on December 21, 2022. We took the opportunity to share the main findings of the muskox survey, the results, and the current recommendations. Questions were asked about where the high-density areas are located and highlighted during the conversation.

#### **Recommendation to the GN:**

No feedback from the HTOs or RWO was received as of the writing of this report.

## **4.0 Conclusion- Next Steps**

The ENV will finalize the muskox report with the additional comments provided during the meeting and distribute it to the co-management partners. When planning the 2022 muskox survey on the mainland, ENV will consider the comments and suggestions made during the HTO consultation and the formal recommendation provided by the RWO and HTOs.

Based on the information received the ENV will make a submission for new harvest management actions to NWMB.

## **Appendix I**

### **PowerPoint Presentation:**

**SUBMISSION TO THE**  
**NUNAVUT WILDLIFE MANAGEMENT BOARD AND**  
**NUNAVIK MARINE REGION WILDLIFE BOARD**  
**FOR**

**Information: X**

**Decision:**

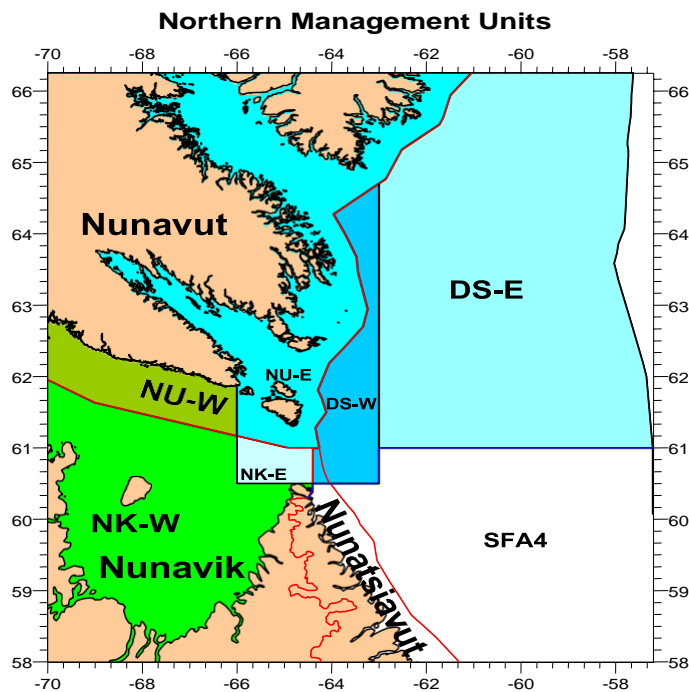
**Recommendation:**

**Issue: Total Allowable Catch levels for Northern (*Pandalus borealis*) and Striped (*Pandalus montagui*) Shrimp in the Western and Eastern Assessment Zones for the 2023-24 season**

**Map:**

Blue areas – Eastern Assessment Zone

Green areas – Western Assessment Zone



Northern shrimp (*Pandalus borealis*)



Striped shrimp (*Pandalus montagui*)

## **Background**

Two shrimp species (*P. borealis* and *P. montagui*) occur in the Northern shrimp fishery that takes place in the Davis Strait and eastern Hudson Strait. The Total Allowable Catch (TAC) for each species is set for two distinct stock assessment zones, the Western Assessment Zone (WAZ) and the Eastern Assessment Zone (EAZ) (see Map). The TAC is further distributed into management units within these zones.

The fishery in these areas operates April 1 – March 31. Harvesting activity typically commences in May to June, subject to ice conditions.

Where this fishery occurs within and adjacent to the Nunavut Settlement Area (NSA) and Nunavik Marine Region (NMR), decisions and recommendations on TAC and harvest levels for each species are requested annually from the Nunavut Wildlife Management Board (NWMB) and the Nunavik Marine Region Wildlife Board (NMRWB) (the Boards).

This briefing note is intended to mark upcoming decisions and recommendations that will be requested from the Boards for the 2023-24 fishing season. DFO will provide the necessary and most recent science information to support Board decision making as soon as it becomes available to initiate a joint hearing process on this issue with the NMRWB. A meeting of the Northern Shrimp Advisory Committee (NSAC) will occur on April 4-5, 2023 where stakeholders will discuss TAC options for both species in the WAZ and EAZ. A consultation summary will be provided.

## **Science Advice**

Fisheries and Oceans Canada's (DFO) Science sector conducts full stock assessments of *P. borealis* and *P. montagui* on a two-year cycle with updates in interim years. A full stock assessment is planned for 2023 and scheduled to occur in mid-February. Timing of the shrimp science survey, coupled with the time necessary to analyze the data and formalize the advice does not allow for earlier availability. As such, peer-reviewed science advice was not available at the time of this submission and will be provided to the Boards for their consultations, once the assessment has concluded and information published.

### Summary of Request

A subsequent briefing note will be submitted to provide science information and a summary of consultations from the NSAC. Recognizing that fishing begins in the WAZ and EAZ as early as May, decisions and recommendations on the following matters will be requested as soon as possible:

#### **Western Assessment Zone:**

1. Decisions on harvest levels for *P. borealis* and *P. montagui* in the NU W (within the NSA) and NK W (within the NMR) management units, respectively.
2. Recommendations on the overall TAC for *P. borealis* and *P. montagui* in the WAZ.

#### **Eastern Assessment Zone:**

1. Decisions on harvest levels for *P. borealis* and *P. montagui* in the NU E (within the NSA) and NK E (within the NMR) management units, respectively.
2. Recommendations on the distribution and allocation of the TAC for *P. borealis* within the Davis Strait management units (DS W, DS E).
3. Recommendations on the overall TAC for *P. borealis* and *P. montagui* in the EAZ, respectively.

**Table 1. Summary of requested decisions and recommendations, WAZ.**

<b>Area (Management Unit)</b>	<b><i>P. borealis</i></b>	<b><i>P. montagui</i></b>
<b>NSA (NU W)</b>	Harvest level decision NWMB	Harvest level decision NWMB
<b>NMR (NK W)</b>	Harvest level decision NMRWB	Harvest level decision NMRWB
<b><i>TOTAL (WAZ)</i></b>	<i>TAC recommendation (combined total of decisions) NWMB and NMRWB</i>	<i>TAC recommendation (combined total of decisions) NWMB and NMRWB</i>

**Table 2. Summary of requested decisions and recommendations, EAZ.**

<b>Area (Management Unit)</b>	<b><i>P. borealis</i></b>	<b><i>P. montagui</i></b>
<b>NSA (NU E)</b>	Harvest level decision NWMB	Harvest level decision NWMB
<b>NMR (NK E)</b>	Harvest level decision NMRWB	Harvest level decision NMRWB
<b>DS E</b>	TAC distribution and allocation recommendation NWMB	<i>*Not applicable bycatch</i>
<b>DS W</b>	TAC distribution and allocation recommendation NWMB & NMRWB	
<b><i>TOTAL (EAZ)</i></b>	<i>TAC Recommendation NWMB &amp; NMRWB</i>	<i>TAC Recommendation NWMB &amp; NMRWB</i>

**Prepared by:** Fisheries Resource Management, Fisheries and Oceans Canada

**Date:** February 3, 2023