

**Demande de la CNER faisant l'objet d'un examen préalable #125611**  
**Muskox (*Ovibos moschatus*) distribution and abundance of Central Mainland, Nunavut (MX11)**

# DÉTAILS

## Description non technique de la proposition de projet

Anglais: Project Title: Muskox (*Ovibos moschatus*) distribution and abundance of Central Mainland, Nunavut (MX-11) Applicant: Lisa-Marie Leclerc Government of Nunavut P.O. Box 3771 leclerc@gov.nu.ca 1-867-982-7444 Number of Personnel and Visitors: The permit will need to cover 6 persons; the pilot (TBD), co-pilot (TBD), Biologist (Lisa-Marie Leclerc), Biologist (TBD), Wildlife Technician (Terry Milton), Wildlife Technician Trainee (Lena Davis), community members as observers (TBD). Project Objective: This project aims to provide new scientific information on the muskox abundance and distribution of muskox in the management zone MX-11, to be able to review the current Total Allowable Harvest. Project Location: The project will include the West and Central Portion of the Queen Maud Gulf Bird Sanctuary (QMGS). Figure 1: Map of the Muskox management unit MX-11 (black line), in relation to the Queen Maud Gulf Bird Sanctuary (light green). Project duration: From July 1, 2021 to September 15, 2021. We are looking to be 2-5 days in the QMGS. Method of transportation: This is an aerial survey with no landing in the QMGS. Summary of the activity and rationale: In 2015, new muskox management units were established in Nunavut to represent muskox population boundaries. The management unit MX-11 represents now three old harvest zones; MX-13, MX-14, MX-15, and part of MX-16 and MX-19. Current harvesting rate for the muskox management unit MX-11 is based on muskox numbers estimated in 2013 from the west part and old surveys results, which result to 7,500 adult muskoxen. Although this number is the best available information, it does not accurately represent the current muskox distribution and abundance in the western part of MX-11. To obtain these numbers, we are planning to conduct an aerial survey of MX-11 in summer 2021. The area will be flown with up to 25% coverage, with transect lines spaced 8 to 12 km apart. The transect line will be surveyed at a speed of 160 km/h and an altitude of 150 m. Observers will record the number of muskox and GPS location. This project will aim to provide new scientific information on the abundance and distribution of muskox in MX-11 to be able to review the Total Allowable Harvest. Waste disposal: N/A Potential environment impact and mitigation measure: The muskox survey will commence in mid-July, with the survey area occurring within the QMGS in early August. We will be flying at approximately 150m above the ground with an airspeed of approximately 160kms/hour. This could have a small impact on local wildlife as the aircraft flies overhead, but the wildlife will not be disturbed any further once the area has been surveyed. In the sanctuary, the survey there should be completed between 2 and 5 full days (depending on weather). The percentage of coverage will be adjusted to known muskox distribution, keeping the number of km flown low and the spacing between transect lines wider, where possible, to limit disturbance. In this case, most of the area to be survey in the QMGS will overlap with the dark blue strata shown in Figure 1, which is at a low coverage density of 10%. In addition, the timing of the survey has been selected to minimize overlap with the peak of the breeding bird season in June and July. Measures to avoid dangerous wildlife encounters: No planned landing will occur in the QMGS area, which will limit conflict with or major disturbance to wildlife. Community consultation and involvement: Since this is a Government of Nunavut, Department of Environment -led project, extensive consultation with the community and co-management partners occurred in the preparation of this project. Direction and community support was given at the 2017 September muskox workshop and at the 2017 and 2018 KRWB AGM that this surveyed was desired. HTOs have been involved in the review of the permit application, as well as in the survey design in 2019, 2020, 2021, as well as during a conference call in the summer of 2019 to plan the survey design. In addition, community members will be employed as observers during the survey. Future Plans: This is a short-term duration research project, until there is a need to reassess the Muskox population MX11. Research results will be provided to co-management partners at the Kitikmeot Regional Wildlife Board Annual Meeting, as well as in part of the

Français: Titre du Projet: Distribution et abondance des boeufs musclés (*Ovibos moschatus*) du Centre du continent, Nunavut (MX-11) Applicant: Lisa-Marie Leclerc Government of Nunavut P.O. Box 3771 leclerc@gov.nu.ca 1-867-982-7444 Quantités de personnel et visiteurs: Sous ce permis, il y aura 6 personnes: le pilote, le co-pilote, la Biologiste (Lisa-Marie Leclerc), le technicien de la faune (Terry Milton), l'apprentie technicienne (Lena Davis) et les observateurs de la communauté. But du projet: Ce projet a pour but d'amasser des nouvelles données scientifiques sur la distribution et l'abondance des boeufs musclés (*Ovibos moschatus*) du Centre du continent, Nunavut (MX-11), et ainsi de déterminer les quotas de chasse en vigueur avec plus d'exactitude. Location du projet: Le projet s'effectuera dans les parties ouest ainsi que dans la zone centrale du Sanctuaire d'Oiseaux de Queen Maud Gulf. Figure 1: Carte de la zone de gestion du boeufs musclés (MX-11) (ligne noire) en relation avec le Sanctuaire d'Oiseaux du Queen Maud Gulf (en vert pâle). Durée du projet Ce projet prendra place du 1er juillet 2021 au 15 septembre 2021. Pendant le projet, nous serons dans le Sanctuaire d'Oiseaux du Queen Maud Gulf pour une durée 2 à 5 jours seulement. Méthode de transport: Ce projet est un survol aérien sans atterrissage dans le Sanctuaire d'Oiseaux du Queen Maud Gulf. Résumé de l'activité: En 2015, de nouvelles zones de gestions ont été établies au Nunavut afin de mieux représenter la délimitation des populations de boeufs musclés. La zone de gestion MX-11 est constituée de trois anciennes zones de chasses : MX-13, MX-14, MX-15 et d'une partie de MX-16 et MX-19. Le quota de chasse pour cette zone de gestion MX-11 a été établi à partir de l'estimée de la population en 2013 qui a fait l'inventaire de boeufs musclés seulement à l'ouest de la zone MX-11 et des

[illegible]



ualliani ilangani uvani MX-11mi. Pijaanginni hapkuninnga amigaitilaanginnik, hivunikhaliuliqtugun piluni tingmitikkut qaujiharutitik uumani MX-11mi aujani 2021mi. Ininga tingmidjutiqarniaqtuq piluni imaatan 25%ngujumik takuvikhanik, piqarluni nalrujunik tingmivikhanik ungahilaarutiqaqtunik 8nik 12nun kilaamatanik (km) ungahiknirnik. Taapkuat nalrujut tingmidjutikhat qaujihaqtauniaqtun kajumiktilaakkut 160 km/h qulvahiktillaqarlunilu imaatan 150 m (miitanik). Qunngiaqtut titiraqniaqtait kaffiuaakhainnik umingmait iliuraqlugillu GPS-kut humiinngit. Una havaakhaq piniaqhimaquq tuniluni nutaanik nalunaqtumik kangiqhidjutitik amigaitilaanginnik humittaakhainniklu umingmainni uvani MX-11mi ihiviuriami Tamatkiutiinni Pijaaqtuni Angujauttaaqtuni. Taimaitkaluaqhuni una amigaitilaanga ihuatqijaugluaqhuni hailihimaquq naunaitkuti, pingittuq ihuatqijaugumik tautungnarninginni taja umingmainni humittaakhainnik amigaitilaanginniklu uvani ualliani ilangani uvani MX-11mi. Pijaanginni hapkuninnga amigaitilaanginnik, hivunikhaliuliqtugun piluni tingmitikkut qaujiharutitik uumani MX-11mi aujani 2021mi. Ininga tingmidjutiqarniaqtuq piluni imaatan 25%ngujumik takuvikhanik, piqarluni nalrujunik tingmivikhanik ungahilaarutiqaqtunik 8nik 12nun kilaamatanik (km) ungahiknirnik. Taapkuat nalrujut tingmidjutikhat qaujihaqtauniaqtun kajumiktilaakkut 160 km/h qulvahiktillaqarlunilu imaatan 150 m (miitanik). Qunngiaqtut titiraqniaqtait kaffiuaakhainnik umingmait iliuraqlugillu GPS-kut humiinngit. Una havaakhaq piniaqhimaquq tuniluni nutaanik nalunaqtumik kangiqhidjutitik amigaitilaanginnik humittaakhainniklu umingmainni uvani MX-11mi ihiviuriami Tamatkiutiinni Pijaaqtuni Angujauttaaqtuni. Iqqakut humungaqtukhat: Pingittuq Piniaqnahuginikkut avatimi hulaqutitik imaalu ingattaqtihimainnikkut qanuriliurutikhat: Umingmainni qaujihaqniq aullaqtirniaqtuq qitkani- Julymi, qaujihaqnikkut iningani piniaqtuq iluani Queen Maud Tariungani Tingmianun/ Qupanuanun Hapummiviani atulihaaliqqat August. Tingminiaqtugu imaakiaq 150m qulaani nunaup kajumiktilaqaqluni imaakiaq 160kms/ikaaqnirmi. Una pidjutittaarungnarhijuq mikijumik hulaqutimik tahamaniittunun huradjanun taimaatan tingmiti qulautirutaanin, kihimi huradjaq pilaqutiffaarutiqaqalimaittun ininga iniqtauqpat qaujiharnirmin. Talvani hapummivingmi, qaujiharniq iniqtauniarungnarhijuq uvani 2nik 5niklu naahimajuni ubluni (pidjutiqaqluni qanurinningani hilaup). Avvakua takuvikhanik ihuaqhaqtauniaqtuq ilihimajaujuni umingmait humiininginnun, pipkainikkut amigaitilaanginnik kilaamitanik (km) tingmidjutitik ikiklihimaninginnun ukuallu ungahiktilaanginnik akunnainni nalrujuni hilikhijuummiqninginni, humilu pijaaqqat, kikliqaqtittijumanikkut hulaqutitik. Taimaittuq uvani, tamatqiuvsjangniaqtun iniit qaujihaqtaujukhat uvani Queen Maud Tariungani Tingmianun/ Qupanuanun Hapummiviani qaliriigutiginiaqtun uumani tunguktingajumi qaliriikhimajuni nunami tautungnaqtuq Naunaitkutimi 1mi, taamna ikittunik tautukvikhanik amigaitilaanginni imaatan 10%mik. Taimaatullu, ublukhait qaujiharnirvingmi pihimajun mikhilaaqtittumanikkut qaliriigutitik piqpialirutaani ivajuni tingmiani/qapanuani pidjutainni June-mi July-milu. Qanuriliurutikhat pingittaami qajangnaqtuni huradjaq akkuqtuutainnik: Piniaqhimaangittut mitaamiknik uvani Queen Maud Tariungani Tingmianun/ Qupanuanun Hapummiviani, taimaatan kikliqaqtipkainiaqtuq ihuangidjutitik taapkununga imaaluunniit angijunik hulaqutitik huradjanun. Nunallaani miiturutitik ilaupkainirniklu: Taimainman una Nunavut Kavamangani, Avatilqijikkut Havagvianin-hivuliqtaungman havaakhaq, amigaittun miitirutit nunallaani ukunanilu atuni-aupkainikkut paannarijani pivaktun hivunikhaliuqnikkut uumani havaakhami. Hivunikhaliurutit nunallaaminllu ikajurutit tunijauvaktun uvani 2017mi Septembermi umingmakkut katimadjutimi uvanilu 2017mi 2018milu KRWB Katimarjuarutimi una qaujiharniq pijumajauninganik. Anguhiqijit katimajit (HTOs) ilauvaktun ihivriuhinirmi laisighamik ukturutimi, uvanilu qaujiharnikkut qanuridjutikhaanun May 2019, 2020, 2021mi, imaalu hivajautikkut miiturutimik aujani 2019mi hivunikhaliuqnikkut qaujiharnikkut qanuridjutikhaanun. Taimaalu, nunallaamiutat havaktitauniaqtut qunngiaqtiulutik qaujiharutimi. Hivunikhani Hivunikhaliurutit: Una ikittunik-ublunik hivituniquqtuq naunaijarnikkut havaguti, pijukhaudjutiqaqiat

naunaijaffaaqtaujukhanguqqat una Umingmainni amigaitilaanginni uvani MX11mi.  
Qaujiharnikkut pidjutit tunijauhungujun ukununga atuni-aulapkainikkut paannarijani uvani  
Kitikmeot Aviktuqhimanirniani Uumajulirinikkut Katimajiinnun Ukiuq tamaat Miitiquviani,  
taimaalu ilaupluni miitigatiigiiknikkut havagutini Anguhiqijiit Katimaviinnun Inungnullu.

**Personnel**

Personnel on site: 0

Days on site: 20

Total Person days: 0

Operations Phase: from 2021-07-01 to 2021-09-15

## Activités

Emplacement	Type d'activité	Statut des terres	Historique du site	Site à valeur archéologique ou paléontologique	Proximité des collectivités les plus proches et de toute zone protégée
Study area MX-11	Researching	Crown	not applicable	not applicable	Cambridge Bay, Kugluktuk, Bathurst Inlet, Bay Chimo and Queen Maud Gulf Bird Sanctuary

### Engagement de la collectivité et avantages pour la région

Collectivité	Nom	Organisme	Date de la prise de contact
Cambridge Bay	Beverly Maksagak	Hunters and Trappers Organization	2021-01-12
Kugluktuk	Amanda Dumond	Hunters and Trappers Organization	2021-01-12
Gjoa Haven	Enuk Pauloosie	Hunters and Trapper Organization	2021-04-13

## Autorisations

Indiquez les zones dans lesquelles le projet est situé:

Transboundary  
Kitikmeot

### Autorisations

Organisme de régulation	Description des autorisations	État actuel	Date de l'émission/de la demande	Date d'échéance
Service canadien de la faune	CWS permit was submitted in February 2021	Applied, Decision Pending	2021-02-24	
Gouvernement du Nunavut, ministère de l'Environnement	Permit granted- permit number 2021-34	Active	2021-03-05	2021-12-15

### Project transportation types

Transportation Type	Utilisation proposée	Length of Use
Air	fixed-wing	

### Project accomodation types

Collectivité



## Utilisation de matériel

Équipement à utiliser (y compris les perceuses, les pompes, les aéronefs, les véhicules, etc.)

Type d'équipement	Quantité	Taille – Dimensions	Utilisation proposée
n/a	0	0	0

Décrivez l'utilisation du carburant et des marchandises dangereuses

Décrivez l'utilisation de carburant :	Type de carburant	Nombre de conteneurs	Capacité du conteneur	Quantité totale	Unités	Utilisation proposée
Aviation fuel	fuel	0	0	0	Gallons	Fueling of the aircraft will be done mainly in Kugluktuk and Cambridge Bay. Pending in-kind support, landing and refueling might take place at TMAC and Sabina. No fuel cache will be done for this project.
n/a	hazardous	0	0	0	Gallons	n/a

Consommation d'eau

Quantité quotidienne (m3)	Méthodes de récupération de l'eau proposées	Emplacement de récupération de l'eau proposé
0		

# Déchets

## Gestion des déchets

Activités du projet	Type des déchets	Quantité prévue	Méthode d'élimination	Procédures de traitement supplémentaires
Aerial surveys	Déchets combustibles	zero liter	none applicable	none applicable

## Répercussions environnementales :

The muskox survey will commence in mid-July, with the survey area occurring within the QMGS in early August. We will be flying at approximately 150m above the ground with an airspeed of approximately 160kms/hour. This could have a small impact on local wildlife as the aircraft flies overhead, but the wildlife will not be disturbed any further once the area has been surveyed. In the sanctuary, the survey there should be completed between 2 and 5 full days (depending on weather). The percentage of coverage will be adjusted to known muskox distribution, keeping the number of km flown low and the spacing between transect lines wider, where possible, to limit disturbance. In this case, most of the area to be survey in the QMGS will overlap with the dark blue strata shown in Figure 1, which is at a low coverage density of 10%. In addition, the timing of the survey has been selected to minimize overlap with the peak of the breeding bird season in June and July.

# **Additional Information**

**SECTION A1: Project Info**

**SECTION A2: Allweather Road**

**SECTION A3: Winter Road**

**SECTION B1: Project Info**

**SECTION B2: Exploration Activity**

**SECTION B3: Geosciences**

**SECTION B4: Drilling**

**SECTION B5: Stripping**

**SECTION B6: Underground Activity**

**SECTION B7: Waste Rock**

**SECTION B8: Stockpiles**

**SECTION B9: Mine Development**

**SECTION B10: Geology**

**SECTION B11: Mine**

**SECTION B12: Mill**

**SECTION C1: Pits**

**SECTION D1: Facility**

**SECTION D2: Facility Construction**

**SECTION D3: Facility Operation**

**SECTION D4: Vessel Use**

**SECTION E1: Offshore Survey**

**SECTION E2: Nearshore Survey**

**SECTION E3: Vessel Use**

## **SECTION F1: Site Cleanup**

## **SECTION G1: Well Authorization**

## **SECTION G2: Onland Exploration**

## **SECTION G3: Offshore Exploration**

## **SECTION G4: Rig**

## **SECTION H1: Vessel Use**

## **SECTION H2: Disposal At Sea**

## **SECTION I1: Municipal Development**

### **Description de l'environnement existant : Environnement physique**

N/A

### **Description de l'environnement existant : Environnement biologique**

N/A

### **Description de l'environnement existant : Environnement socio-économique**

N/A

### **Miscellaneous Project Information**

### **Identification des répercussions et mesures d'atténuation proposées**

The muskox survey will commence in mid-July, with the survey area occurring within the QMGS in early August. We will be flying at approximately 150m above the ground with an airspeed of approximately 160kms/hour. This could have a small impact on local wildlife as the aircraft flies overhead, but the wildlife will not be disturbed any further once the area has been surveyed. In the sanctuary, the survey there should be completed between 2 and 5 full days (depending on weather). The percentage of coverage will be adjusted to known muskox distribution, keeping the number of km flown low and the spacing between transect lines wider, where possible, to limit disturbance. In this case, most of the area to be surveyed in the QMGS will overlap with the dark blue strata shown in Figure 1, which is at a low coverage density of 10%. In addition, the timing of the survey has been selected to minimize overlap with the peak of the breeding bird season in June and July.

### **Répercussions cumulatives**

# Impacts

## Identification des répercussions environnementales

		PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
<b>Construction</b>																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
<b>Exploitation</b>																										
Researching		-	-	-	-	-	-	-	-	-	-	-	-	M		-	M	M	-	M		-	P	P	-	-
<b>Désaffectation</b>																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Négative et non gérable, M = Négative et gérable, U = Inconnue)

# Site du projet



## Liste des géométries de projet

1	polygon	Study area MX-11
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