APPENDIX 26 2024 TERRESTRIAL ENVIRONMENT MANAGEMENT AND MONITORING PLAN REPORT

REPORT

Agnico Eagle Mines Limited

Agnico Eagle Mines Limited – Meliadine Division

2024 Terrestrial Environment Management and Monitoring Plan Annual Report

2025-03-27

CA0037600.7607-MEL2024_068-R-Rev0

Distribution List

1 Electronic Copy - Agnico Eagle Mines Limited

1 Electronic Copy - Nuqsana Golder

Study Limitations

On behalf of Agnico Eagle Mines Limited (Agnico Eagle), WSP Canada Inc. (WSP) has prepared this Terrestrial Environment Management and Monitoring Plan (TEMMP) Annual Report for the 2024 Monitoring Period at the Meliadine Gold Mine near Rankin Inlet, Nunavut.

This report was prepared, based in part, on information obtained from Agnico Eagle and other external information sources. In preparing the report, WSP has relied in good faith on the information provided. We accept no responsibility for any deficiency or inaccuracy contained in this report because of our reliance on the aforementioned information.

The findings and conclusions documented in this report have been prepared for the specific application to this Project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the jurisdiction.

With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time and should be reviewed regularly.

If new information is discovered during future work, the conclusions of this report should be re-evaluated, and the report amended, as required, prior to any reliance upon the information presented herein.

Executive Summary

The Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Mine (the Project or the Mine), received a Project Certificate (No. 006) from the Nunavut Impact Review Board (NIRB) in February 2015, and was amended in February 2019 (Amendment No. 001) and in March 2022 (Amendment No. 002). A Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project was prepared for submission with the Project Final Environmental Impact Statement (FEIS; Golder 2014, 2015) and forms a component of the documentation series produced in accordance with the Project, updated and submitted to the NIRB in April 2022 (TEMMP Version 4; Agnico Eagle 2022a). This report addresses requirements of the Terms and Conditions of the NIRB Project Certificate (No. 006), as relevant to the TEMMP.

The objectives of the TEMMP Annual Report are to summarize annual data collected from wildlife and vegetation monitoring programs and to describe natural variation and potential Project-related effects to wildlife populations within and adjacent to the Project. The data was collected according to procedures and sampling or monitoring intervals outlined in the Project's Standard Operating Procedures (SOPs) and the TEMMP. The 2024 TEMMP Annual Report describes monitoring objectives and methods, 2024 survey results, mitigation activities, and management recommendations (i.e., adaptive management). The following summary documents monitoring information collected for the 2024 TEMMP for the Meliadine Project located in the Kivalliq Region of Nunavut.

Incorporation of Inuit Qaujimajatuqangit

- In 2024, Inuit Qaujimajatuqangit (IQ) was collected during five meetings, one site visit, and seven cultural activities. Qaumajuq Environmental Ltd., an Inuit company from Rankin Inlet, led dewatering activities in 2024.

Direct Habitat Loss

- Direct habitat loss is assessed every three years and was last assessed in 2021. An updated assessment for Project-related direct habitat loss is included in this report, with the next assessment scheduled for 2027. A total area of 696 hectares (ha) has been altered due to Project construction, representing 41% of the 2012 Project Approved footprint and 24% of the predicted Project Footprint. This represents a total of 63 ha of direct habitat loss between 2021 to 2024.

Indirect Habitat Loss

- Indirect habitat loss for caribou and wildlife habitat (soils and vegetation) is assessed every three years and was last assessed in 2022. The next full assessment is scheduled for 2025. A summary of a detailed analysis completed in 2024 comparing noise emissions during different levels of operations, caribou hearing thresholds, and the influence of environmental factors is provided in this report.

Soil and Vegetation Monitoring

- Soil and vegetation health monitoring (dust and metals survey) is assessed every three years and was last assessed in 2022. The next full assessment is planned for 2025.

Non-native Plants

- Non-native plant surveys were completed along the All-weather Access Road (AWAR); no non-native plant species were detected.

Environmental Variables

- The maximum annual temperature of 30.0°C was recorded on 10 August 2024 and the minimum annual temperature of -42.4°C was recorded 22 February 2024. The mean annual temperature was -6.9°C. Total recorded annual precipitation was 382.5 mm and snowmelt began 24 May 2024 when the average daily air temperature exceeded 0°C. The green-up date for the RSA was estimated to be 20 June 2024, based on normalized difference vegetation (NDVI) values averaged across the RSA (obtained from MODIS VI satellite). A multi-year summary of environmental variables is provided in this report.

Birds

Shoreline Surveys

- A total of 33 nests of 6 species were detected in 2024.

Point Counts

- A total of 72 counts were completed along 6 transects along the AWAR in 2024. A total of six passerine species were observed, with horned lark being the most commonly observed species. An additional 21 non-passerine species were also incidentally recorded.
- Species richness and diversity were similar among habitats and among years.
- Species density decreased with survey date. Distance from the AWAR and habitat did not appear to have a strong influence on overall bird density.

PRISM

- A total of 24 Program for Regional and International Shorebird Monitoring (PRISM) survey plots were completed in 2024. A total of 27 bird species were observed, with horned lark being the most common. During surveys, breeding evidence was observed for 5 species, with a total of 11 nests recorded.

Raptors

- Arctic Raptors conducted a formal survey and analysis for all known raptor nesting sites in the entire regional study area (RSA) in 2024. The study design included two surveys: one to assess the location of occupied territories during the pre-incubation and incubation periods, and one to assess site productivity during the late brood rearing period. Occupancy models were used to determine influence of disturbance on nest occupancy for peregrine falcons and rough-legged hawks. The analyses did not find an effect of distance to disturbance on nest occupancy for either species.

Pre-Clearance Surveys

- Four bird nests were recorded during pre-clearance surveys in 2024, with one requiring mitigation. Two potential sandpiper nests were recorded based on behavioural observations; however, nests were never identified.

Wildlife Observations

Wildlife Sighting/Track Surveys

- Wildlife sighting/track surveys were completed by Agnico Eagle personnel along the All-Weather Access Road (AWAR) and Mine infrastructure throughout the year.
- A total of 3,296 individuals from 15 identified wildlife species and 8 unidentified wildlife species groups (e.g., duck species [sp.], gull sp., loon sp., ptarmigan sp.) were recorded during surveys along the AWAR in 2024.

- A total of 357 individuals from 12 identified wildlife species and 7 unidentified wildlife species groups (e.g., duck sp., gull sp., loon sp.) were recorded during surveys at Mine infrastructure other than the AWAR in 2024.

Wildlife Incidentals

- There were 100 incidental observations recorded, representing 190 individuals of 11 species and two species groups (i.e., bird sp., ptarmigan sp.), around the Mine site (including the camp area) and the AWAR in 2024.

Den Sites

- Surveys were completed for the Project between May and August 2024 to locate dens of Arctic fox, grey wolf, polar bear, grizzly bear, and wolverine.
- Eleven historical dens were revisited, with seven being active, including two active fox dens. The remaining dens were active with Arctic ground squirrel (sik sik). No new dens were recorded in 2024.

Bird Nests

- Ten incidental bird nests were observed on the Mine site or along the AWAR in 2024.

Incidents and Mortalities

- A total of ten mortalities across five different species were reported at the Project from 20 January to 9 December 2024; all of these mortalities were suspected or confirmed to be caused as a direct result of Project activities, with the exception of two unknown cases. No caribou mortalities were reported in 2024.

Wildlife Deterrents

- Wildlife deterrents (i.e., propane noise cannons and deterrent balloons) were implemented at ten locations to deter birds from nesting on site. All deterrents were removed prior to the caribou migration. Active deterrence, including hazing of incidental observations of wildlife, were also completed by environmental technicians; all activities were successful, with the exception of two instances, both involving Arctic fox.
- Propane noise cannons were not used during the caribou migration period.

Barren-ground Caribou

Caribou Behaviour Monitoring

- Statistical analyses of 2020 to 2024 data found that caribou farther from infrastructure (i.e., greater than 300 m) displayed lower proportions of response behaviours.
- The proportion of response behaviours in caribou groups increased following disturbances, but behaviours usually returned to baseline levels within nine minutes.
- Caribou displayed a greater likelihood of walking, alert, or running behaviours in surveys where there were disturbances such as vehicle traffic.
- Environmental variables (e.g., temperature, wind speed, and insect harassment) were not related to proportion of response behaviours in caribou groups.

Caribou Remote Camera Study

- Between 2020 and 2024, a study was conducted using motion-triggered cameras to study caribou interactions with the Project infrastructure during their annual migration, focusing on the AWAR. In 2023 and 2024, cameras were placed around the Mine site and along the proposed Discovery Road following guidance from the Terrestrial Advisory Group.
- Detections of caribou were reduced compared to data from 2020 to 2023. Cameras did not detect caribou along the AWAR in 2024. While caribou have historically travelled through the Mine area post-calving, in 2024 most caribou stayed west of Meliadine Lake post-calving, then returned directly south based on GPS collared data and reports form community members.
- Pooled data from 2022 and 2023 indicated that road height and road-side slope at each camera location was not related to the number of caribou observed at each camera location, suggesting that differences in the structure of the AWAR do not significantly influence the locations where caribou cross.
- In 2024, caribou were predominantly detected northwest of the Mine site, closer to the west arm of Meliadine Lake, with detections occurring from June 4 to July 7.
- Peak detection of caribou among the cameras deployed along the proposed Discovery Road was in late June and early July, consistent with 2023.

Collared Caribou Inventory

- Individuals from the Qamanirjuaq herd have been present in the RSA for 17 of the 32 years where collar data are available. Since 2011, collared Qamanirjuaq caribou have typically entered the RSA in late June to mid-July and have remained in the RSA for 1 to 5 days.
- Individuals from the Qamanirjuaq herd have been present in the LSA for 16 of the 32 years where collar data are available. Collared caribou typically enter the LSA in early to mid-July and leave the LSA on the same day; some individuals enter the LSA several times over the course of one summer but remain in the LSA for a day or less during each interaction. The length of time Qamanirjuaq caribou are spending in the LSA has not varied since collared caribou began interacting with the LSA in 2006.
- Fewer than 30% of Qamanirjuaq caribou come within 5 km of the Project and 99% of caribou that came within 5 km of the AWAR or Mine for a specific year remained for less than 24 hours. In consideration of these results, impacts to the Qamanirjuaq herd due to the Project have the potential for limited transboundary effects.

Caribou Advisory

- Surveys to monitor migration of the Qamanirjuaq herd through the Project were performed from 12 May to 9 July 2024. Closure of the Mine site was triggered between 12 May to 23 May 2024, with additional closures of the tailings storage facility (TSF) on 5 and 9 July 2024. No closures of the AWAR occurred in 2024.
- Shutdowns affecting different components of the Mine were implemented to facilitate the safe migration of caribou through the Project. The AWAR was not closed during 2024, nor was waterline construction impacted. Vehicle traffic on site, open pit operations, and activities at the Exploration Camp were restricted for 254 hours across 12 days (i.e., 88% of the time across 12 days). Activities at the Main Camp were restricted shutdown for 260 hours across 14 days (i.e., 77% of the time across 14 days).
- No flight cancellations related to the caribou migration occurred in 2024.

Hunter Harvest

- The 2024 Hunter Harvest Study included 61 participants amongst which 41 reported harvesting caribou. A total of 709 caribou were reported as harvested in 2024.
- In addition, a total of 24 muskox, 5 wolverine, and 5 wolves were harvested in 2024. Other reported harvested terrestrial mammals included 5 Arctic hare, 1 ermine, 1 moose, 1 muskrat, 1 red fox, and 3 polar bears. In the marine environment, ringed seal (47 individuals) was the most common species harvested followed by beluga (29 individuals), harp seal (5 individuals), walrus (4 individuals), bearded seal (3 individuals), narwal (2 individuals), and harbour seal (2 individuals).
- More birds were harvested by Rankin Inlet participants in 2024 (441 birds) than in 2023 (202 birds), 2022 (136 birds), and 2021 (394 birds). In 2024, Canada goose and snow goose were harvested at the highest levels and made up 67% of all harvest bird species. Black guillemot, Common eider, greater white-fronted goose, gull sp., loon sp., northern pintail, owl sp., ptarmigan sp., rock ptarmigan, sandhill crane, snowy owl, and tundra swan were also harvested.
- Arctic char (2,661 fish), lake trout (193 fish), and Arctic cod (19 fish) were the most common species caught by anglers. Relatively small numbers of Arctic grayling (six fish) and lake whitefish (1 fish) were caught in 2024.

Table of Contents

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Project Description 1
1.2.1 Concordance with Terms of Reference 3
1.3 Study Area Boundaries 6
1.4 Monitoring Approach 8
1.5 Objectives 8
1.6 Report Organization 8
2.0 REVIEW OF IMPACT PREDICTIONS 8
3.0 INCORPORATION OF INUIT QAUJIMAJATUQANGIT 12
4.0 ENVIRONMENTAL VARIABLES 14
5.0 HABITAT LOSS 16
5.1 Direct Habitat Loss 16
5.1.1 Methods 17
5.1.2 Results 17
5.1.3 Recommendations 17
5.2 Accuracy of Impact Predictions 17
5.3 Indirect Habitat Loss 20
5.3.1 2024 Noise Analysis 20
6.0 SOIL AND VEGETATION MONITORING 24
6.1 Accuracy of Impact Predictions 24
6.2 Recommendations 24
7.0 NON-NATIVE PLANT SURVEYS 25
7.1 Methods 25
7.2 Results 25
7.3 Mitigation 26
7.4 Accuracy of Impact Predictions 26

7.5 Recommendations 26
8.0 BIRDS 27
8.1 Shoreline Surveys 27
8.1.1 Methods 27
8.1.2 Results 27
8.2 Point Count Surveys 29
8.2.1 Methods 29
8.2.2 Results 31
8.3 PRISM 43
8.3.1 Methods 43
8.3.2 Results 43
8.4 Arctic Raptors Research Program 44
8.4.1 Methods 44
8.4.2 Results 45
8.5 Pre-Clearance Surveys 46
8.5.1 Methods 46
8.5.2 Results 46
8.6 Recommendations 47
9.0 WILDLIFE OBSERVATIONS 47
9.1 Wildlife Surveys 48
9.2 Wildlife Incidentals 50
9.3 Den Sites 50
9.4 Bird Nests 51
9.5 Incidents and Mortalities 53
9.5.1 Methods 53
9.5.2 Results 53
9.6 Accuracy of Impact Predictions 55
9.7 Recommendations 56
10.0 WILDLIFE DETERRENTS 56

11.0 MUSKOXEN 57

12.0 BARREN-GROUND CARIBOU 57

12.1 Caribou Behaviour Monitoring 57

12.1.1 Methods 58

12.1.2 Results 59

12.2 Caribou Remote Camera Study 62

12.2.1 Methods 62

12.2.2 Results 63

12.3 Collared Caribou Inventory 64

12.3.1 Methods 65

12.3.2 Results 65

12.4 Caribou Advisory 67

12.4.1 Methods 67

12.4.2 Results 68

12.4.3 Traffic Data 72

12.5 Calving Range 73

12.5.1 Methods 73

12.5.2 Results 73

12.6 Accuracy of Impact Predictions 75

13.0 HUNTER HARVEST STUDY 75

13.1 Methods 75

13.2 Results 76

13.3 Recommendations 78

14.0 CLOSURE 79

15.0 REFERENCES 80

TABLES

Table 1: Concordance Table with Nunavut Impact Review Board Project Certificate No. 006 (Amendment 002) Terms and Conditions 4
Table 2: Summary of Predicted Effects, and Accuracy of Impact Predictions 9
Table 3: Inuit Qaujimajatuqangit captured for Meliadine in 2024 12
Table 4: Climate Conditions Recorded in the Project Area (2024) 14
Table 5: Summary of Environmental Variables, 2015-2024 15
Table 6: Total and Predicted Vegetation Community/Habitat Type loss from Project approval to 2024 19
Table 7: Frequency of Wind Speed Bands and Maximum Distances from Mine Components where Meliadine Noise is Audible to Caribou per Wind Speed Band for Level 3 Operations 22
Table 8: Accuracy of Impact Predictions - Vegetation 24
Table 9: Accuracy of Effects Predictions – Vegetation 26
Table 10: Summary of Nests and Young (Eggs or Juveniles) Observed during Shoreline Surveys, 2018 to 2021, 2023, and 2024 28
Table 11: Distribution of Habitat Types in the LSA. 29
Table 12: Distribution of Plots across Distance to AWAR Categories 30
Table 13: Upland Breeding Bird Species Recorded during Point Counts in 2024 31
Table 14: Mean (± 1SE) Density (Individuals per Hectare) of Passerine Bird Species among Habitats along the AWAR in 2024. 32
Table 15: Passerine Bird Densities by Habitat Type from 2018 to 2024. 34
Table 16: Mean Species Richness of Passerine Birds across Habitat Types along the AWAR, 2018 to 2024. 36
Table 17: Species Diversity of Passerine Birds among Habitats along the AWAR, 2018 to 2024. 38
Table 18: Akaike's Information Criterion Ranking for Candidate Generalized Linear Models for Passerine Density, 2018 to 2024. 41
Table 19: Coefficients and Standard Error of Top Generalized Linear Model for Passerine Density. 41
Table 20: Nests Recorded during 2024 PRISM Surveys 43
Table 21: Bird Nesting Activity and Nests Identified during Pre-Clearance Surveys in 2024 46
Table 22: Wildlife Observations from Wildlife Surveys and Incidental Observations, 2018 to 2024 47
Table 23: Frequency of Wildlife Surveys in 2024 49
Table 24: Incidental Wildlife Observations (2024) 50
Table 25: Incidental Bird Nests and Approximate Location, 2024 51
Table 26: Wildlife Mortalities and Incidents Reported in 2024 53
Table 27: Accuracy of Impact Predictions – Wildlife Incidents 2024 56
Table 28: Meliadine Caribou Behaviour Surveys Data Summary 61
Table 29: Annual Timing of Qamanirjuaq Collared Caribou Presence and Duration in the Regional Study Area and Local Study Area, 1993–2024 66
Table 30: Recorded Down Time in 2024 70
Table 31: AWAR Traffic by Month (2024). 72

Table 32: Accuracy of Impact Predictions – Caribou 75
Table 33: Caribou Harvest Distribution Along the AWAR and within the Rankin Inlet LSA and RSA (1996 to 2001 [NWMB], and 2021 to 2023 [Rankin Inlet HHS]) 77

FIGURES

Figure 1: Project Local Study Area 2
Figure 2: Project Regional Study Area 7
Figure 3: Summary of Annual Minimum, Maximum, and Average Temperatures, 2015-2024 15
Figure 4: Summary of Annual Precipitation, 2019-2024 16
Figure 5: Project Footprint Comparison by Vegetation Community/Habitat Type 18
Figure 6: Real World Thresholds for Caribou Detection of Meliadine Noise 21
Figure 7: Wind Speeds During 2023 Caribou Migration. 22
Figure 8: Level 3 Shutdown at Meliadine; Wind Speed Between 8.2 and 21.6 km/h 23
Figure 9: Mean Densities (± 1SE) of Passerine Species Across Years. 33
Figure 10: Plot of Avian Density Across Years and Habitat Types. Error Bars not Shown for Clarity. 35
Figure 11: Plot of Avian Richness Across Years and Habitat Types. Error Bars not Shown for Clarity. 37
Figure 12: Plot of Avian Diversity Across Years and Habitat Types. Error Bars not Shown for Clarity. 39
Figure 13: Number of Point Counts by Ordinal Date across Years. 40
Figure 14: Predictions from Top GLM Model of Passerine Densities at Point Counts in Response to Ordinal Date. Error Bars not Shown for Clarity. 42
Figure 15: Total Caribou Observed by Date in 2024. 69
Figure 16: Qamanirjuaq Caribou Calving Ranges for 2024 74

APPENDICES

APPENDIX A
Allowable Work Activities per Operational Level

APPENDIX B
Invasive Plant Species Monitoring Report, 2024

APPENDIX C
Shipping Inspection Forms, 2024

APPENDIX D
CESS Non-Native and Invasive Species in Nunavut

APPENDIX E
Bird Surveys and PRISM Plots Summary, 2024

APPENDIX F
Arctic Raptors Research Program Report, 2024

APPENDIX G
Den Survey, 2024

APPENDIX H
Meliadine Project Caribou Behaviour Study, 2024

APPENDIX I
Meliadine Project Caribou Trail Camera Study, 2024

APPENDIX J
Caribou Observations and Advisory, 2024

APPENDIX K
2024 Calving Range

APPENDIX L
Hunter Harvest Study, 2024

Acronyms

Acronym	Full Term
AI	Artificial Intelligence
AIC	Akaike Information Criterion
ATV	All Terrain Vehicle
AWAR	All-Weather Access Road
CCME	Canadian Council of Ministers of the Environment
CESCC	Canadian Endangered Species Conservation Council
ECCC	Environment and Climate Change Canada
ERM	ERM Consultants Canada Ltd.
FEIS	Final Environmental Impact Statement
GIS	Geographic Information System
GLM	Generalized Linear Model
GN	Government of Nunavut
GN DoE	Government of Nunavut Department of Environment
GNWT ECC	Government of Northwest Territories Department of Environment and Climate Change
GPS	Global Positioning System
HHS	Hunter Harvest Study
HTO	Hunters and Trappers Organization
IOL	Inuit Owned Lands
IQ	Inuit Qaujimajatuqangit
KEAC	Kivalliq Elders Advisory Committee
KHTO	Kangiqliniq Hunters and Trappers Organization
KivIA	Kivalliq Inuit Association
LSA	Local Study Area
MOU	Memorandum of Understanding
N/A	Not Applicable
NIRB	Nunavut Impact Review Board
NRV	Natural Range of Variability
NWMB	Nunavut Wildlife Management Board
PRISM	Program for Regional and International Shorebird Monitoring
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percent Difference
RIBR	Rankin Inlet Bypass Road
RSA	Regional Study Area
SARA	Species At Risk Act
SLRA	Screening Level Risk Assessment
SNU	Statues of Nunavut
SOP	Standard Operating Procedures
spp.	Species

Acronym	Full Term
SQG	Soil Quality Guidelines
UAS	Unmanned aircraft system
UTM	Universal Transverse Mercator
TAG	Terrestrial Advisory Group
TBD	To Be Determined
TEMMP	Terrestrial Environment Management and Monitoring Plan
TEMMP Report	Terrestrial Environment Management and Monitoring Plan Annual Report
TK	Traditional Knowledge
ToR	Terms of Reference
VEC	Valued Ecosystem Component
WRSF	Waste Rock Storage Facility
WSP	WSP Canada Inc.

1.0 INTRODUCTION

1.1 Background

The Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Mine (the Project), located in the Kivalliq Region of Nunavut (Figure 1), received a Project Certificate (No. 006) from the Nunavut Impact Review Board (NIRB) in February 2015 (with Amendment 001 in February 2019 for saline discharge activities and with Amendment 002 in March 2022 for saline discharge activities and the Waterlines proposal). The subsequent Water Licence and leases allowed for the construction of a gold mine and ancillary facilities including an All-weather Access Road (AWAR), barge unloading facilities, lay-down area, and a fuel tank farm in Rankin Inlet, NU. A conceptual Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Mine was prepared for submission with the Project Final Environmental Impact Statement (FEIS; Golder 2014, 2015). The TEMMP will be reviewed and updated on an as-needed basis as the Mine proceeds from detailed design and construction through operations, closure, and post-closure. The TEMMP was updated in April 2022 and was issued to the NIRB (TEMMP Version 4; Agnico Eagle 2022a). Version 5 of the TEMMP is currently being drafted with inputs from the Terrestrial Advisory Group (TAG).

This report addresses requirements of Project Certificate No. 006, which were first included in the 2017 Annual TEMMP Report (Golder 2018) and are listed in Table 1 of this report. The 2024 TEMMP Annual Report (this document) is the seventh of a series of annual TEMMP summary reports for the Mine and captures the fifth year of operations (Mine operations commenced in 2019). The purpose of this report is to summarize the 2024 data collected from wildlife and vegetation monitoring programs and to describe natural variation and potential Project-related changes in wildlife populations within and adjacent to the Mine. The 2024 Annual TEMMP Report describes monitoring objectives and methods, annual results, mitigation activities, and management recommendations (i.e., adaptive management). The Mine is anticipated to be operational through to 2031, with closure and post--closure activities continuing until 2037.

1.2 Project Description

The Project is located approximately 25 km north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson Bay, the Project site is located on a peninsula between the east, south, and west basins of Meliadine Lake (63°1’23.8’’ N, 92°13’6.42"W), on Inuit Owned Lands (IOL).

Mine facilities on surface include a plant site and accommodation buildings, ore stockpiles, a tailings storage facility (TSF), two waste rock storage facilities (WRSFs), an incinerator, landfarms (A and B), a landfill, a water management system that includes collection ponds, water diversion channels, retention dikes/berms, and water treatment plants.

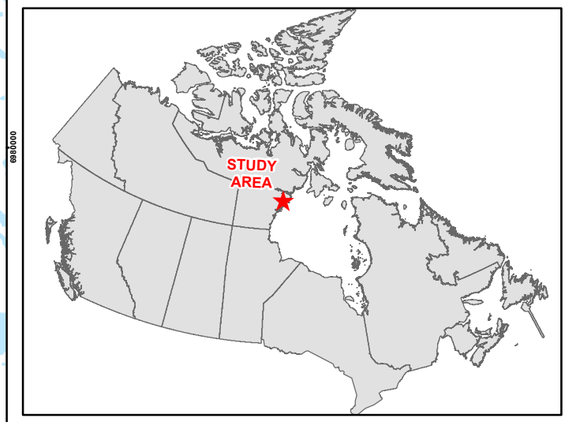
Environmental baseline studies were completed in the Project area prior to Project approval and integrated into the current Project design according to the TEMMP (Agnico Eagle 2022a). Vegetation and wildlife Valued Ecosystem Components (VECs) were identified in consultation with regulatory agencies, the Kivalliq Inuit Association (KivIA), and the Kangiqliniq Hunters and Trappers Organization (KHTO). Vegetation VECs include plant populations and communities, listed (rare) plant species, and traditional use plant species. Wildlife VECs include ungulates (caribou [*Rangifer tarandus groenlandicus*] and muskox [*Ovibos moschatus*]), carnivores (grey wolf [*Canis lupus*] and polar bear [*Ursus maritimus*]), raptors, waterbirds, and upland birds (including migratory birds). Further details on VEC selection can be found in the FEIS (Golder 2014) and the TEMMP (Agnico Eagle 2022a).

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Tiriganiaq Deposit
Meliadine Lake
Parallel Lake
All-weather Access Road
Little Meliadine Lake (LML)
Iqalugaarjuup Nunanga Park
Meliadine River
Meliadine River Bridge
Manned Gate
Char River Bridge
Municipal Road
Prairie Bay
Rankin Inlet Bypass Road
Rankin Inlet
Hudson Bay

LEGEND

- MINE FOOTPRINT (2024)
- APPROVED PROPOSED TERRESTRIAL LOCAL STUDY AREA (LSA)
- ALL-WEATHER ACCESS ROAD (AWAR)
- RANKIN INLET
- WATERCOURSE
- WATERBODY
- TERRITORIAL PARK



0 2,500 5,000
1:125,000 METRES

REFERENCE(S)
1. BASE DATA OBTAINED FROM AGNICO EAGLE LIMITED.
2. DATUM: NAD83 PROJECTION: UTM ZONE 15

CLIENT
AGNICO EAGLE MINES LIMITED
AGNICO EAGLE

PROJECT
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
PROJECT LOCAL STUDY AREA

CONSULTANT
wsp

YYYY-MM-DD	2025-03-19
DESIGNED	JW
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

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1.2.1 Concordance with Terms of Reference

Concordance with Terms and Conditions of NIRB Project Certificate No. 006 (Amendment 2) is reflected in Table 1. NIRB recommends the following related to standardization of data for monitoring programs:

> *"all monitoring plans should be designed so that results from these programs can be coordinated with ongoing regional initiatives or programs with relevant government organizations, or regional authorities." NIRB guidelines, Section 9.3, page 78-79.*
>
> *"When designing data collection or baseline studies, it is recommended that the Proponent coordinate with ongoing programs with relevant developments, government organizations, regional authorities, and researchers. This recommendation applies to data collected for the Nunavut General Monitoring Program (NGMP), as per Article 12 of the Nunavut Land Claims Agreement (NLCA), the Proponent's project-specific monitoring programs, as well as any regional monitoring initiatives in which the Proponent will participate. The Proponent is expected to coordinate on any initiatives undertaken by government organizations in respect to the NGMP and to liaise with the NGMP Secretariat whenever possible." NIRB guidelines, Section 7.7.1, page 40-41.*

Agnico Eagle will comply with these principles and has already established several programs that involve collaborations with regional initiatives and contribute to monitoring cumulative effects. These include:

- **Caribou Collar Program:** Support the Government of Nunavut's (GN) caribou satellite-collaring program for the Qamanirjuaq herd (and other herds in the Kivalliq Region that may interact with the Mine), facilitating monitoring of cumulative effects at the herd level (Agnico Eagle 2022a; Sections 2.2 and 4.7).
- **Regional Muskoxen Surveys:** Agnico Eagle has provided the GN Department of Environment (DoE) with in-kind contributions and support for previous muskoxen surveys and may continue to do so when requested.
- **Hunter Harvest Program:** Agnico Eagle renewed its Collaboration Agreement with the KHTO to develop and implement a methodology to document harvesting around the Meliadine Mine, and to participate in Mine site studies and monitoring. This will contribute to an understanding of cumulative effects by increasing understanding of the regional distribution and seasonality of hunting (Agnico Eagle 2022a; Sections 2.2 and 4.8).
- **Raptor Monitoring Program:** Agnico Eagle, in collaboration with the Arctic Raptor Project, implemented a raptor monitoring program (Agnico Eagle 2022a; Section 4.9). This will directly align monitoring efforts at Meliadine with this long-term regional research program, which involves government, non-government, Indigenous communities, and academic partnerships.
- **Waterfowl and Shorebird Monitoring:** Agnico Eagle, in collaboration with Environment and Climate Change Canada (ECCC), agreed to implement the Program for Regional and International Shorebird Monitoring (PRISM) (Agnico Eagle 2022a; Section 4.11). This will directly align monitoring efforts at Meliadine with other Agnico Eagle properties for waterfowl and shorebirds.
- **Wildlife Surveys**: Agnico Eagle conducts wildlife surveys along the AWAR and around the Mine site with Environmental Technicians (Agnico Eagle 2022a; Section 4.3) and also receives monthly wildlife reports for along the AWAR from KHTO. This will contribute to an understanding of cumulative effects in the region by collecting routine wildlife survey data (including caribou) and assist in anticipating large herd migrations, communicating with the KHTO, KivIA, and managing mine activities during migration events.

Table 1: Concordance Table with Nunavut Impact Review Board Project Certificate No. 006 (Amendment 002) Terms and Conditions

Term	Condition	Annual Report Section
37	The Proponent shall incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g., surveys of plant populations in previously disturbed areas) into its Terrestrial Environment and Monitoring Plan. Any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment (GN DoE).	7.0
38	The Proponent shall conduct sampling to determine baseline levels for metals in soils found in areas with berry-producing plants near the Project area and shall update relevant vegetation sections within the Terrestrial Management and Monitoring Plan to incorporate ongoing monitoring of these parameters prior to commencing operations.	6.0
39	The Proponent shall develop and establish an on-going monitoring program to determine the distribution, abundance, and health of vegetation species used as caribou forage (such as lichens) near Project areas, prior to commencing operations.	5.1, 6.0
40	The Proponent shall review, on an annual basis, all monitoring information and the vegetation mitigation and management plans developed under its Environmental Management Plan and Terrestrial Environment Management and Monitoring Plan (TEMMP) and adjust such plans as may be required to effectively prevent or reduce the potential for significant adverse project effects on vegetation abundance, diversity and health, taking into account lessons learned at other northern mining developments where appropriate.	5.1, 6.0
44	In consultation with the Government of Nunavut (GN) and other relevant parties, such as the Terrestrial Advisory Group, the Proponent shall further develop its Terrestrial Environment Management and Monitoring Plan (TEMMP) to include increased caribou monitoring across the regional study area and additional details on the scope and design of monitoring programs. The Proponent shall also demonstrate consideration for contributing to existing and planned regional monitoring initiatives associated with terrestrial wildlife and wildlife habitat and the incorporation of Inuit Qaujimaningit, Inuit Qaujimajatuqangit, Traditional and Community Knowledge, as appropriate. Monitoring should be adequate to test impact predictions, monitor impact thresholds and trends over time, and to support implementation of mitigation measures as proposed in the Final Environmental Impact Statement and any subsequent Addenda submitted by the Proponent. The Proponent in consultation with the Terrestrial Advisory Group shall revise the 2021 Technical Memorandum entitled “Collared Caribou Meliadine All-Weather Access Road Interactions” describing the crossings and deflections of caribou in relation to the all-weather access road as assessed using caribou collar data and shall provide a copy to the NIRB prior to construction/installation of the waterlines.	3.0, 8.2, 8.3, 11.0, 12.0, 13.0
45	The Proponent shall demonstrate consideration for cooperating with existing and planned regional and/or community-based monitoring initiatives associated with terrestrial wildlife and wildlife habitat that produce information pertinent to mitigating project-induced impacts. The Proponent shall give special consideration for supporting regional studies of population health and harvest programs for Qamanirjuaq caribou which help address areas of uncertainty for Project impact predictions.	3.0, 9.0, 13.0
46	The Proponent shall update its Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project to include a detailed harvest study prepared in consultation with the Government of Nunavut (GN) and other affected parties. The design of the harvest study should demonstrate consideration for the following: a. Hiring of a dedicated local survey coordinator through local Hunters and Trappers Organizations (HTOs) and provision of adequate resources for the HTOs to run the program; b. The potential effects on caribou populations and on caribou behaviour resulting from increased human access caused by the all-weather access road and associated roads and trails; and, c. Increasing local knowledge of the project development areas, including establishing baseline harvesting levels prior to unrestricted public access on the all-weather access road.	13.0
47	The Proponent shall share information with the Government of Nunavut (GN) relating to the migration of caribou and include the GN as a party respecting caribou monitoring and movement through Project development areas, including the all-weather access road and associated roads and trails.	12.0
52	The Proponent shall undertake periodic surveys and a habitat assessment for muskoxen in the regional study area by partnering with, or complementing, the existing regional muskox monitoring programs.	11.0
53	Prior to construction of Project infrastructure including the waterlines and Phase 2 of the all-weather access road, the Proponent shall conduct a survey that is sufficient to locate any dens of foxes, bears or wolverines that could be damaged or destroyed during construction or operation of the Project.	9.3
54	The Proponent shall ensure that road safety barriers, or berms, or waterline coverings associated with Project infrastructure, all-weather access road and associated roads/trails and the waterlines are constructed to allow for the safe passage of caribou and other terrestrial wildlife while achieving the objective of separating public road use with Project-related mine traffic or transport of saline effluent.	9.0, 12.4
55	In consultation with the Government of Nunavut (GN) and other affected parties, the Proponent shall set thresholds for direct mortality of wolf, grizzly bear, polar bear, wolverine, and fox to ensure monitoring and mitigation for the Project is responsive to undesirable rates of mortality. The Proponent shall reach an agreement with the appropriate Designated Inuit Organization regarding compensation or any direct mortality of wildlife resulting from the Project.	9.5

Table 1: Concordance Table with Nunavut Impact Review Board Project Certificate No. 006 (Amendment 002) Terms and Conditions

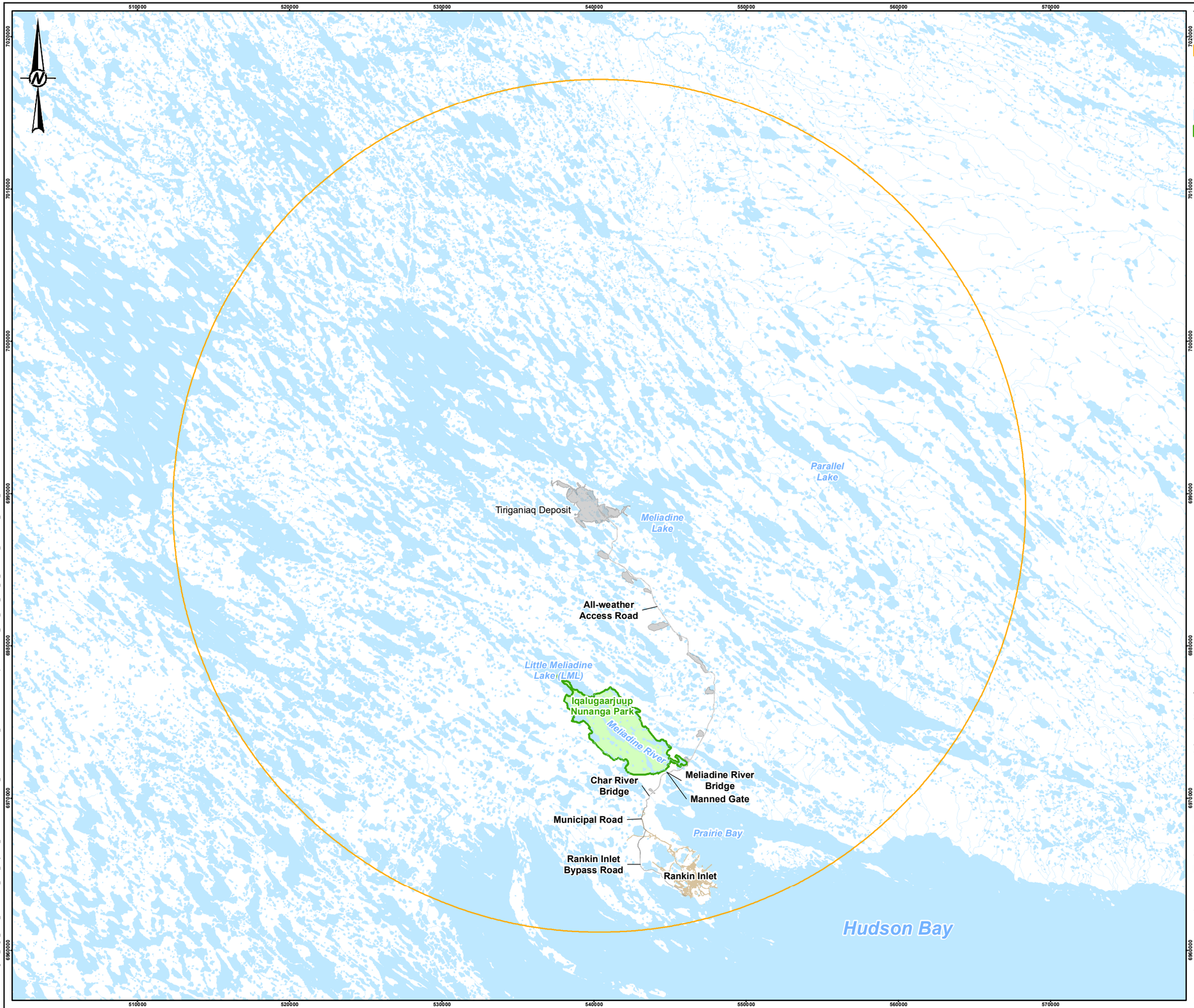
Term	Condition	Annual Report Section
56	The Proponent shall report annually to the NIRB regarding its terrestrial environment monitoring efforts, with inclusion of the following information: a. Description of all updates to terrestrial ecosystem baseline data; b. A description of the involvement of Inuit in its monitoring programs; c. A detailed presentation and analysis of the distribution relative to Project infrastructure and activities for caribou and other terrestrial mammals observed during surveys and incidental sightings; d. Results of the annual monitoring program, including field methodologies and statistical approaches used to support conclusions drawn; and, e. An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as standard weather summaries.	1.2.1, 3.0, and 4.0, 9.0, and 12.0
57	Within its annual report to the NIRB, the Proponent shall incorporate a review section which includes: a. An examination for trends in the measured natural variability of Valued Ecosystem Components in the region relative to the baseline reporting; b. A detailed analysis of wildlife responses to operations with emphasis on wildlife behaviour, mortalities and displacements (if any), responses to operations of the all-weather access road and associated access roads/trails, and the waterlines; c. A demonstration and description of how the monitoring results, including the all-weather access road and associated access roads/trails, and waterlines contribute to cumulative effects of the project; and, d. Any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program.	8.1, 8.2, 9.1, and 12.1
59	If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance based on the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.	9.4
61	Prior to bird breeding season, the Proponent shall either conduct clearing activities or identify and install nesting deterrents (e.g., flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities. If clearing is to take place during the nesting season, a nest survey should take place to identify nests and any identified nests must remain undisturbed until the young have fledged or left the nest. Any nests identified shall be included as part of the annual reporting for the Terrestrial Environmental Management and Monitoring Plan (TEMMP).	8.4, 10.0
62	The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Management and Monitoring Plan (TEMMP), until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.	9.4,10.0
71	The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Kivalliq Inuit Association and communities.	8.0
72	The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Protection Plan and Terrestrial Environment Management and Monitoring Plan (TEMMP) prior to construction. The key indicators for follow up monitoring under this plan will include upland birds (including migratory birds), waterbirds, raptors, and seabirds including migration and wintering.	8.0
73	The Proponent's monitoring program shall assess and report, on annual basis, the extent of terrestrial habitat loss due to the Project to verify impact predictions and provide updated estimates of the total Project footprint.	5.1
74	The Proponent's Terrestrial Management and Monitoring Plan (TEMMP) shall include mitigation measures implemented to prevent the use of water attenuation ponds by waterfowl and waterbirds and monitoring that assesses whether the mitigation measures are working or revised, or further deterrent measures are required.	8.0, 10.0
75	The Proponent shall implement mitigation measures and monitoring programs to limit the attraction of predators and scavengers to Project facilities in the TEMMP and other plans such as the Landfill and Waste Management Plan as appropriate.	9.1, 9.2, 9.5,10.0
105	The Proponent is strongly encouraged to consider incorporating information obtained from local outfitting and guiding businesses into its Hunter Harvest Survey where possible, and to include these organizations as potential respondents to surveys undertaken.	13.0
118	The Proponent shall include in an updated Terrestrial Wildlife Management and Monitoring Plan (TEMMP), plans for increased caribou monitoring efforts including weekly winter track surveying and summer and fall surveys undertaken on foot twice per month. These results shall be reported to the NIRB with the Proponent's annual reporting requirements. The Proponent shall, in consultation with the Terrestrial Advisory Group or appropriate parties, develop a decision tree outlining mitigation and monitoring steps to be implemented when caribou in specified group sizes are observed within specified distances of the Project's AWAR and waterlines.	TEMMP (Agnico Eagle 2022a, Section 3.1.8, 4.2, 4.3, 4.4, 5.0 and Appendix II) 9.1, 12.5

Table 1: Concordance Table with Nunavut Impact Review Board Project Certificate No. 006 (Amendment 002) Terms and Conditions

Term	Condition	Annual Report Section
119	The Proponent shall include within its updated Terrestrial Wildlife Management and Monitoring Plan (TEMMP), a commitment to establishing deterrents along the all-weather access road (AWAR) at any areas where it is observed that caribou are attracted to the AWAR and their presence may present a risk of collisions with traffic along the AWAR (such as areas where caribou are utilizing the AWAR to facilitate movement, areas where caribou may be licking minerals/road salt from the road, areas where caribou are gathering to avoid insects, etc.). Prior to the waterlines becoming operational, the Proponent shall specify within the TEMMP and/or Spill Contingency Plan measures that will be implemented to prevent caribou from accessing or being exposed to water spilled or otherwise released from the waterlines.	TEMMP (Agnico Eagle 2022a, Appendix II and Appendix III)
132	The Proponent shall, in consultation with the groups listed as Responsible Parties above, and any other parties considered by the Group to be necessary, establish a Terrestrial Advisory Group (TAG). The TAG shall hold its first meeting prior to any construction/installation of the waterlines. The central mandate of the TAG will be to continually review and refine impact management, mitigation, and monitoring details within the Terrestrial Environment Management and Monitoring Plan (TEMMP). The TAG Members will collaborate to share and consider methods, results, and analysis from caribou and terrestrial environment studies and monitoring Inuit Qaujimaningit, Inuit Qaujimajatuqangit, Traditional and Community Knowledge shared by knowledge holders, and other terrestrial environment monitoring data as it becomes available. The Proponent will consider the information shared by the TAG Members for incorporation into the Project's impact management, mitigation, and monitoring measures related to the protection of terrestrial wildlife and wildlife habitat as appropriate. Agnico Eagle shall be responsible for demonstrating how the information shared and considered by the TAG has been incorporated into the Project's impact management, mitigation, and monitoring measures related to the protection of terrestrial wildlife and wildlife habitat as appropriate.	3.0

1.3 Study Area Boundaries

The Local Study Area (LSA) includes a 500-m buffer around the Project footprint and includes a 1,000-m buffer around the AWAR and the Rankin Inlet Bypass Road. The total area of the LSA is 10,598 ha (Figure 1). The Regional Study Area (RSA) encompasses an area that includes a 28-km radius centered around the Project, including Rankin Inlet, for a total area of 246,300 ha (Figure 2). Further details on the justification for study area sizes can be found in the FEIS (Golder 2014) and the TEMMP (Agnico Eagle 2022a).



LEGEND

- MINE FOOTPRINT (2024)
- REGIONAL STUDY AREA (RSA)
- ALL-WEATHER ACCESS ROAD (AWAR)
- RANKIN INLET
- WATERCOURSE
- WATERBODY
- TERRITORIAL PARK



0 5 10

1:250,000 KILOMETRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE LIMITED.
2. DATUM: NAD83 PROJECTION: UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

PROJECT REGIONAL STUDY AREA

CONSULTANT

wsp

YYYY-MM-DD	2025-03-19
DESIGNED	JW
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
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1.4 Monitoring Approach

Wildlife monitoring is an essential tool in protecting and maintaining wildlife in the vicinity of the Project. A comprehensive monitoring strategy has been implemented and is adapted to meet the objectives of the management strategy and methods set out in the TEMMP (Agnico Eagle 2022a), as required. Monitoring programs evaluate the effectiveness of mitigation measures and assess Project-related effects predictions. For all wildlife monitoring programs there is a certain level of uncertainty or unpredictability; therefore, residual effects identified during monitoring may require implementation of adaptive management strategies. Outcomes of adaptive management may include increasing, decreasing, or no change to mitigation and/or monitoring, or implementing special studies to further understand Mine-related effects.

To evaluate the accuracy of effects predictions, a series of quantitative monitoring indicators have been developed within the broad categories of habitat distribution, wildlife distribution, wildlife richness, wildlife diversity, wildlife abundance, and environmental health. Previous monitoring was conducted during the construction phase and continued into the operations phase. Some of the objectives below may not be answered at this time or will be addressed qualitatively until more data under operations is obtained.

1.5 Objectives

The primary objectives of this 2024 TEMMP Annual Report include:

- Collecting information that will assist Agnico Eagle to determine if there are effects on the terrestrial environment and if these effects were accurately predicted in the FEIS.
- Reporting the results of the 2024 monitoring programs.
- Summarizing the monitoring strategy implemented over the course of the year.
- Evaluating the function and validity of implemented monitoring strategies.
- Summarizing adaptive management strategies.
- Providing management recommendations for 2025.
- Allowing regulators to contribute advice for improving monitoring and management.

1.6 Report Organization

Within each section of this report, data is presented that will be tracked over the life of the Project. Recommendations for enhancement to the TEMMP are presented at the end of each section for consideration and may be incorporated into the TEMMP for subsequent years. The TEMMP is an evolving plan that will reflect adaptive management, recommendations during previous years, as well as advances in Project development. Changes will be captured in future revisions of the TEMMP, as needed.

2.0 REVIEW OF IMPACT PREDICTIONS

A summary of the impact predictions proposed in the updated TEMMP (Agnico Eagle 2022a) is provided in Table 2. If Project impacts exceed the thresholds, an internal review of mitigation is triggered, and adaptive management is implemented where applicable. The corresponding sections of this TEMMP Annual Report, where monitoring indicators are discussed, are listed.

Table 2: Summary of Predicted Effects, and Accuracy of Impact Predictions

Monitoring Indicator	Proposed Thresholds	Surveyed in 2024?	Exceeded in 2024?	Monitoring Methods	Frequency of Data Collection	Annual Report Section Reference
Vegetation (Wildlife Habitat)						
Habitat Loss	No greater than: Terrestrial – 2,951 ha Aquatic – 515 ha	Yes	No	Aerial photographs, satellite imagery, ground surveys, GIS analysis	Every 3 Years	5.0
Habitat Degradation by Contamination	No effects to plant health from dust deposition SLRA – TBD	No	N/A	Vegetation and Soil Samples	Every 3 Years	6.0
Habitat Reclamation following Mine Closure	N/A	No	N/A	Ground Surveys, Vegetation Plots, Mapping	Once pre-construction baseline (2017) and 3 times Post-Closure	N/A
Habitat Degradation by Contamination	No non-native plant species established	No	No	Invasive Plant Survey of AWAR	Annually	7.0
Ungulates						
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	Yes	No	Aerial photographs, satellite imagery, ground surveys, GIS analysis	Every 3 Years	5.0
Sensory Disturbance	<10% caribou deflections from AWAR	Yes	No	Caribou satellite collar data, special studies and caribou behaviour monitoring	Daily / Weekly	5.3, 12.0
Vehicle Collisions	No more than 1 ungulate/year	Yes	No	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	Daily	9.5
Hunting by Rankin Inlet Residents	TBD after 3 years of data collection, in collaboration with the GN[(a)]	Yes	TBD	Hunter Harvest Study	Collected throughout the year and reported annually	13.0
Other Project-related Mortality	No more than 1 ungulate/year	Yes	No	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	Daily	9.5
Exposure to Contaminated Water or Vegetation	SLRA – TBD	No	N/A	Vegetation and Soil Samples	Every 3 Years	6.0

Table 2: Summary of Predicted Effects, and Accuracy of Impact Predictions

Monitoring Indicator	Proposed Thresholds	Surveyed in 2024?	Exceeded in 2024?	Monitoring Methods	Frequency of Data Collection	Annual Report Section Reference
Predatory Mammals						
Project-related Mortality	20 Arctic fox/year	Yes	No	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance.	Daily	9.5
Raptors						
Disturbance of Nesting Raptors	To be determined in consultation with GN and Alastair Franke, related to occupancy and productivity.	Yes	No	Active Nest Monitoring	Nests within 200 m – Daily Nests from 200 to 1,000 m – Weekly	8.2
Project-related Mortality	No more than 1 raptor/year	Yes	No	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	Mine Site-Daily AWAR – 2x/Week	9.5
Waterbirds						
Habitat Loss and Degradation	No more than 515 ha of aquatic habitat	Yes	No	Aerial photographs, satellite imagery, ground surveys, GIS analysis	Every 3 Years	5.0
Disturbance of Nesting Waterfowl	TBD once NRV is established through consultation with ECCC and GN	Yes	N/A	Shoreline Surveys	Annually	9.4
Exposure to Contaminated Water or Vegetation	SLRA – TBD	No	N/A	Vegetation and Soil Samples	Every 3 Years	6.0
Project-related Mortality	No more than 1 waterbird/year	Yes	No	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	Mine Site-Daily AWAR – 2x/Week	9.5

Table 2: Summary of Predicted Effects, and Accuracy of Impact Predictions

Monitoring Indicator	Proposed Thresholds	Surveyed in 2024?	Exceeded in 2024?	Monitoring Methods	Frequency of Data Collection	Annual Report Section Reference
Other Breeding Birds						
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	Yes	No	Aerial photographs, satellite imagery, ground surveys, GIS analysis	Every 3 Years	5.0
Exposure to Contaminated Water or Vegetation	SLRA – TBD	No	N/A	Vegetation and Soil Samples	Every 3 Years	6.0
Changes in Breeding Bird Populations	TBD once NRV is established through consultation with ECCC	Yes	No	Breeding Bird Plots and Transects, PRISM	Breeding Bird – Every 3 Years PRISM – Plots surveyed over 2 years every 5 Years	8.0

(a) Proposed thresholds will be established in collaboration with the GN and other relevant parties, such as TAG members.

AWAR = All-Weather Access Road; ECCC = Environment and Climate Change Canada; GN = Government of Nunavut Department of Environment; NRV = Natural Range of Variability; PRISM – Program for Regional and International Shorebird Monitoring; SLRA = Screening Level Risk Assessment; TEMMP = Terrestrial Environment Management and Monitoring Plan (Agnico Eagle 2022a); ha = hectares; m = metres; N/A = not applicable; TBD = to be determined.

3.0 INCORPORATION OF INUIT QAUJIMAJATUQANGIT

In 2021, Agnico Eagle established the Kivalliq Inuit Elders Advisory Committee (KEAC), which is a group that provides invaluable guidance to Nunavummiut and Nunavut operations teams. Comprised of 21 Elders from the communities of Baker Lake, Chesterfield Inlet, Rankin Inlet, Whale Cove, and Arviat, the KEAC keeps local communities informed about Agnico Eagle's mining activities and future plans, and also provides Inuit Qaujimajatuqangit (IQ), a body of Inuit Traditional Knowledge, Inuit Societal Values (ISV), and a set of guiding community principles. Agnico Eagle acknowledges that IQ is continually learnt and continues to glean IQ from the KEAC through various conversations related to the Meliadine Mine. A Terrestrial Advisory Group (TAG) was formed in 2022 and formalized via creation of the Terms of Reference in 2023 as a collaborative forum to discuss the application of IQ, Traditional Knowledge (TK), and western science to mitigation and monitoring programs for caribou movement in the Project area.

In 2024, IQ was collected during five meetings, one site visit, and seven cultural activities with the KEAC, between February and November (Table 3). Qaumajuq Environmental Ltd., an Inuit company from Rankin Inlet that employs certified Inuit staff for the provision of environmental services to the private sector and regulatory agencies, led the dewatering activities that took place in 2024.

Table 3: Inuit Qaujimajatuqangit captured for Meliadine in 2024

Month	Topic	Participants	Venue	Inuit Qaujimajatuqangit
February	Update on Meliadine Mine Extension	▪ KEAC	Rankin Inlet	▪ Agnico Eagle provided an update on the Meliadine Extension withdrawal and amendment to water license Type A. ▪ Elders supported the amendment to the water license and would like to see the mine life extended beyond 2031. They were disappointed the Meliadine Extension was not approved.
February	Rankin Cultural Foundations Training	▪ Elders – Rankin Inlet ▪ KEAC ▪ Agnico Eagle employees	Rankin Inlet	▪ Elders shared life experience and cultural knowledge with training participants regarding Rankin Inlet, its history, and evolution. A wide range of topics were discussed, including life before the arrival of the Nickel Mine, the profound impact of colonization and integration on their lives, and their experiences working at the Nickel Mine. Stories of traditional hunting, fishing, and gathering practices were shared, along with the art of igloo building. Significant historical events were also discussed, including the Land Treaty Agreement, the advancement of technology, the challenges of living through the COVID-19 pandemic, and their perspective on the proposed Meliadine Mine extension.
March	Sealift and Operation Update	▪ Elders – Rankin Inlet ▪ KEAC	Rankin Inlet	▪ Agnico Eagle provided a Sealift and Operational Update, including a summary of the 2023 and 2024 sealift operations, a summary of results from the MMSO program, a Meadowbank update on closure planning and exploration activities, a Meliadine update on caribou migration monitoring and AWAR road security measures, and a Sanajiksanut update summarizing 2023 hires and training programs. A presentation was delivered, and questions were answered.

Table 3: Inuit Qaujimajatuqangit captured for Meliadine in 2024

Month	Topic	Participants	Venue	Inuit Qaujimajatuqangit
March	International Women's Day Conference (cultural activity)	▪ Dr. Levinia Brown ▪ Agnico Eagle employees	Rankin Inlet	▪ On March 8, to celebrate International Women's Day, Agnico Eagle hosted a conference featuring Dr. Levinia Brown, an Elder from Dawson Inlet, who shared some of her knowledge and life experience with Meliadine Mine employees.
April	Elders Site Counselling	▪ John Tatty ▪ Agnico Eagle employees	Rankin Inlet	▪ John Tatty, a member of the KEAC, provided on-site counseling services to local employees, with the session taking place over tea and Bannock.
June	Cross Cultural Training Review with Employment & Culture Committee	▪ Employment & Culture Committee (including members of KIA)	Rankin Inlet	▪ The purpose of the meeting was to conduct a review of the cross-cultural training program with the Employment & Culture Committee members for both Meliadine and Meadowbank/Amaruq sites. Inuit Qaujimajatuqangit and Inuit Societal values were discussed in the training program.
June	KEAC – Annual General Meeting	▪ KEAC	Baker Lake	▪ All 20 members of the KEAC convened to discuss ongoing topics, review relevant studies, share recommendations, and exchange knowledge on Inuit Qaujimajatuqangit. The meeting agenda encompassed a range of topics, including a summary of KEAC activities in 2023 and the Reconciliation Action Plan, updates on the Meliadine Mine permitting process and environmental monitoring (particularly shellfish community-based monitoring), the Meadowbank Mine life cycle and social transition strategies, counselling services at both the Meliadine and Meadowbank mine sites, the Sanajiksanuut Training and Employment program, and the Meadowbank Mine's environmental monitoring efforts, specifically focusing on caribou migration and dust monitoring.
August	Pistol Bay Falls Site Visit	▪ Elders – Whale Cove ▪ HTO – Whale Cove (Issatik) ▪ KIA	Pistol Bay Falls, Keewatin Region	▪ The Pistol Bay Falls offset site was shown to Whale Cover Elders and KIA to discuss the fish study/offset at Pistol Bay. Questions were answered and comments gathered from the Elders regarding the project.
September	KEAC Attendance at Water License Public Hearing	▪ KEAC	Rankin Inlet	▪ Dorothy, David, and Janice were briefed in preparation for the Water License Public Hearing. Discussions were had around caribou and illustrating migration routes in annual cycles using a video and the water level issue at NWB.
September	Rankin Inlet Cultural Foundations	▪ Elders – Rankin Inlet ▪ KEAC	Rankin Inlet	▪ Elders participated in the Cultural Foundations Training through story telling on their experience growing up in Rankin Inlet.
September	Elders Counseling at Meliadine	▪ Rosie Oolooyuk ▪ Agnico Eagle employees	Meliadine Mine	▪ Rosie Oolooyuk provided on-site counselling to local employees, with the meeting held with country food being served.

Table 3: Inuit Qaujimajatuqangit captured for Meliadine in 2024

Month	Topic	Participants	Venue	Inuit Qaujimajatuqangit
October	Elders Counseling at Meliadine	▪ Rosie Oolooyuk ▪ Jack Kabvitok ▪ Agnico Eagle employees	Meliadine Mine	▪ Rosie Oolooyuk and Jack Kabvitok provided on-site counselling to local employees, with the meeting held with tea and bannock being served.
November	Elders Counseling at Meliadine	▪ Dr. Levinia Brown ▪ Agnico Eagle employees	Meliadine Mine	▪ Dr. Levinia Brown provided on-site counselling to local employees, with the meeting held with tea and bannock being served.

IQ= Inuit Qaujimajatuqangit; KEAC = Kivalliq Elders Advisory Committee.

4.0 ENVIRONMENTAL VARIABLES

A summary of climate conditions collected on site in 2024 are presented in Table 4. Data was collected from 1 January to 31 December 2024 through the on-site meteorological station and rain gauges.

Table 4: Climate Conditions Recorded in the Project Area (2024)

Environmental Variable	Value[a]
Temperature (°C)	
Mean Annual Temperature	-6.9
Maximum Annual Temperature	30.0
Minimum Annual Temperature	-42.4
Precipitation (mm)	
Total Annual Precipitation	382.5[b]

(a) Values reported from 1 January to 31 December, collected by Agnico Eagle staff from the on-site weather station. Due to issues encountered with the weather station that resulted in data gaps, weather data from Rankin Inlet has been used in lieu.

(b) Measured using Geonor Precipitation Gauge.

°C = Celsius; mm = millimetre

The maximum annual temperature of 30.0°C was recorded on 10 August 2024 and the minimum annual temperature of -42.4°C was recorded for on 22 February 2024. The mean annual temperature was -6.9°C (Table 4). Total recorded annual precipitation was 382.5 mm, and snowmelt began 24 May 2024 when the average daily air temperature exceeded 0°C. Total precipitation includes both rain and snowfall. The green-up date for the RSA was estimated to be 20 June 2024, based on normalized difference vegetation (NDVI) values averaged across the RSA (obtained from MODIS VI satellite). Environmental variables will continue to be monitored on an on-going basis.

A multi-year summary of environmental variables is presented in Table 5. Temperature data is available from 2015 onwards, while precipitation data is available from 2019 onwards. Additionally, number of days where temperature exceeded 20°C have been included, as requested by KivIA. These data are summarized in Table 5 and Figure 3 and Figure 4.

Table 5: Summary of Environmental Variables, 2015-2024

Year	Mean Annual Temperature (°C)[(a)]	Maximum Annual Temperature (°C)[(a)]	Minimum Annual Temperature (°C)[(a)]	Precipitation (mm)[(b)]	Estimated Date of Snowmelt	Estimated Green-up Date	Days with Temperature Higher than 20°C
2015	-11.0	43.4	-41.9	not reported	31-May-15	not reported	4
2016	-9.3	26.1	-40.8	not reported	04-Jun-16	not reported	15
2017	-9.7	25.8	-43.9	not reported	20-May-17	not reported	15
2018	-11.3	27.5	-46.8	not reported	09-Jun-18	not reported	15
2019	-10.2	21.8	-45.4	344.6	06-Jun-19	not reported	31
2020	-9.7	30.0	-41.8	179.8	07-Jun-20	not reported	25
2021	-8.3	27.4	-39.8	366.2	29-May-21	not reported	16
2022	-9.3	29.1	-39.8	269.5	28-May-22	21-Jun-22	18
2023	-7.8	27.0	-39.8	188.8	08-May-23	26-Jun to 12-Jul-23	25
2024	-6.9	30.0	-42.4	382.5	24-May-24	20-Jun-24	15

(a) °C = degrees Celsius.

(b) mm = millimetres

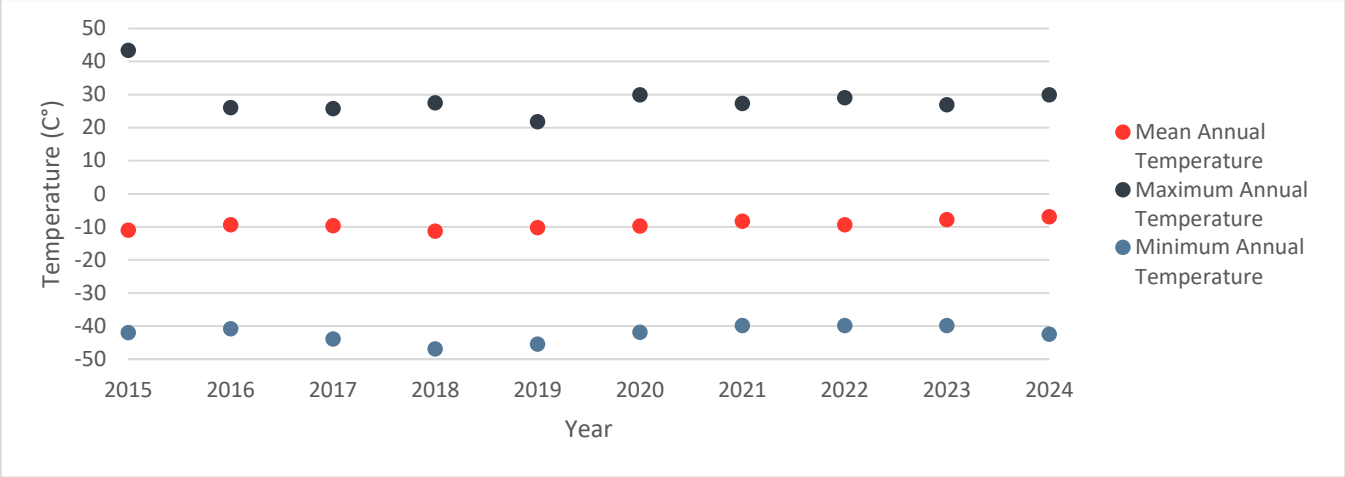


Figure 3: Summary of Annual Minimum, Maximum, and Average Temperatures, 2015-2024

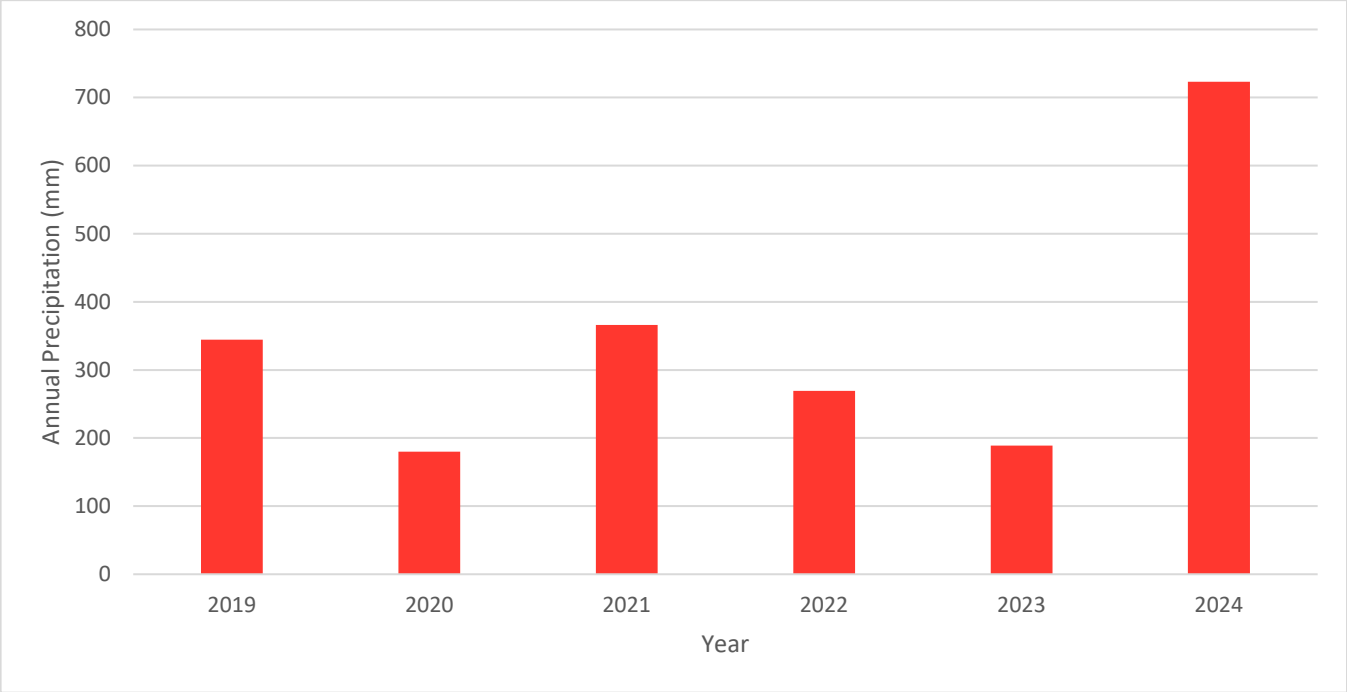


Figure 4: Summary of Annual Precipitation, 2019-2024[1]

5.0 HABITAT LOSS

5.1 Direct Habitat Loss

The vegetation component of the TEMMP (Agnico Eagle 2022a) outlines how Agnico Eagle plans to reduce Project-related effects to vegetation populations and communities and, consequently, wildlife habitat.
The monitoring plan includes both environmental and follow-up monitoring. The objective of this component of the TEMMP Annual Report is to determine if direct vegetation/habitat loss due to the Project footprint stays within impact prediction of 2,951 ha (Golder 2014).

The Project footprint was last reported in the 2021 TEMMP Annual Report (Agnico Eagle 2022b). The footprint that was analyzed included all developments being completed as part of the construction phase. Construction of the waterlines that runs parallel with the AWAR is ongoing. As such, any disturbance relating to this activity, if any, has yet to be accounted in the Project footprint and will be captured following the next scheduled analysis following completion of the waterline construction. However, the design of the waterlines includes placement within the right-of-way of the AWAR, so is unlikely to result in direct disturbance of vegetation.

Follow-up monitoring occurs at three-year intervals, with the next scheduled for 2027 following results presented in this report. The follow-up monitoring is used to provide feedback to Mine operations to determine if the goals and objectives are being met.

[1] Precipitation values not available from 2015-2018.

5.1.1 Methods

The Project development area was delineated through aerial photographs, satellite imagery, and historical ground surveys, and calculated using ArcGIS software. The actual area of the Project footprint will be compared to the permitted area and monitored over the life of the Project at key phases of development, or at 3-year intervals (Agnico Eagle 2022a).

A CAD file with the most current Project footprint from 2024 was obtained from Agnico Eagle and digitized to determine impacts to vegetation communities/habitat type due to the Project. The footprint layer was compared against 2024 Satellite imagery and laid over the vegetation unit layer available for the Project and developed by Golder (2012). Each vegetation community/wildlife habitat disturbed by the Project was selected and calculations were made using ArcGIS to determine the area (ha) of each habitat type replaced by the Project footprint.

Changes to vegetation communities/habitat types were assessed for the maximum predicted Project footprint (Agnico Eagle 2022a), which should have the largest magnitude and geographic extent of effects to vegetation. The maximum predicted Project footprint includes Project site and associated infrastructure (e.g., tailings storage facility [TSF], open pits, waste rock storage facilities, and camp), the AWAR and the approved covered waterlines between the Project and Rankin Inlet and the proposed infrastructure within the boundary of the Hamlet of Rankin (associated roads, floating dock, laydown yard and tank farm).

A portion of the bypass road connecting Rankin Inlet and the AWAR (Figure 5) was not included in this assessment because this portion was developed outside the original Project LSA as per the Hamlet's instruction. This portion of the road is 4 km in length and 10 m wide.

5.1.2 Results

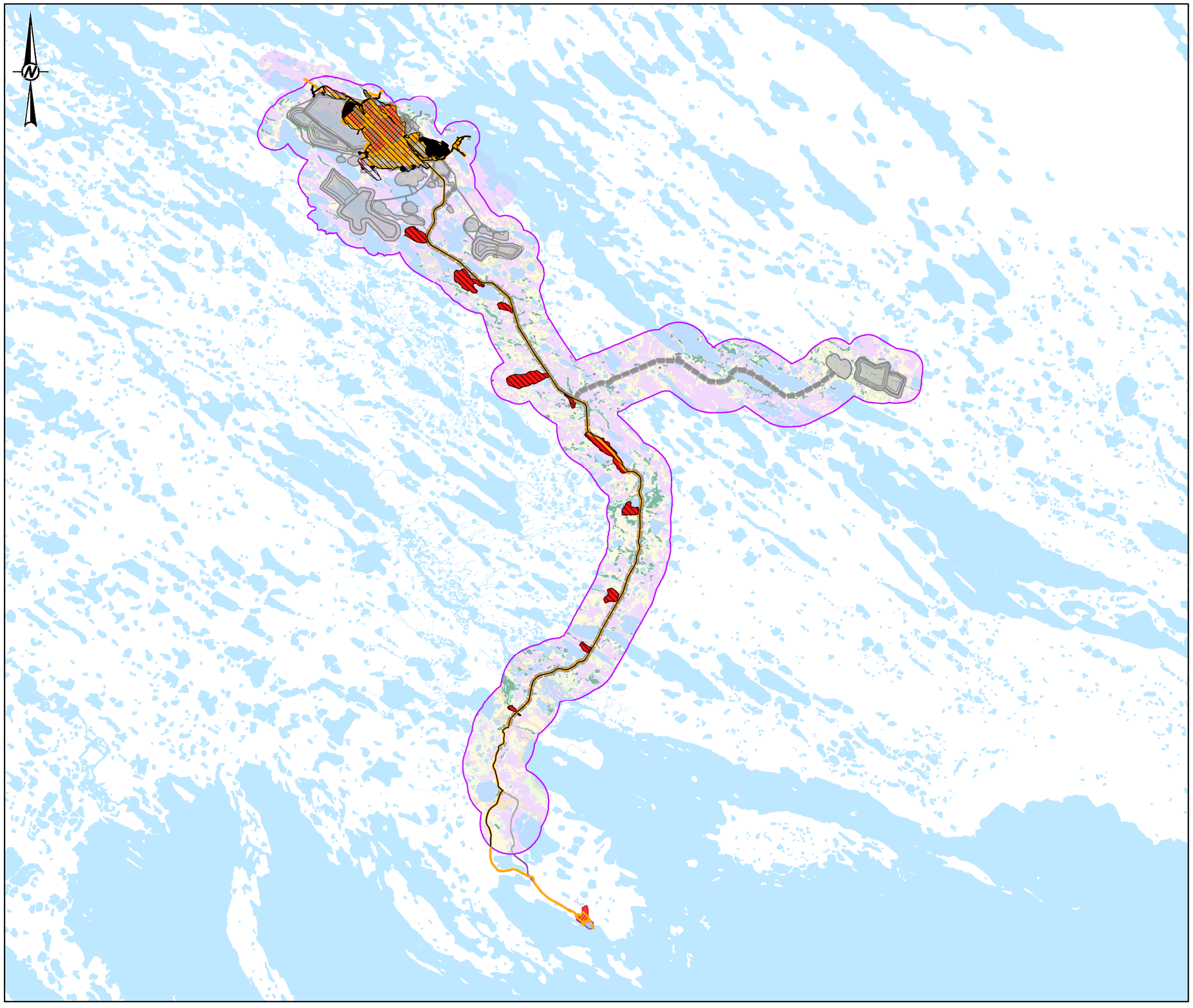
As of January 2024, a total area of 696 ha has been altered due to Project construction, representing 41% of (59% less than) the 2012 Project Approved footprint (1,682 ha) and 24% of (76% less than) the predicted Project Footprint (2,951 ha; Golder 2014; Table 6). The footprint that was analyzed included all developments being completed as part of the construction phase and subsequent approvals (Figure 5). Follow-up monitoring occurs at three-year intervals, with the next scheduled for 2027. The follow-up monitoring is used to provide feedback to Mine operations to determine if the goals and objectives are being met. Depending on the results, actions may be considered such as modifying and/or implementing additional mitigation.

5.1.3 Recommendations

The Project footprint is currently 41% of (59% smaller than) the total approved footprint. Follow-up monitoring should continue to occur at 3-year intervals as monitoring studies are used to provide feedback to Project operations to determine if the goals and objectives are being met. Depending on the results, actions may be considered such as modifying and/or implementing additional mitigation.

5.2 Accuracy of Impact Predictions

Impact predictions related to habitat loss is summarized in Table 6. Terrestrial and aquatic habitat loss is currently below these predictions. Effects to plant health from dust deposition were not scheduled for assessment in 2024. Plant health related to dust deposition is assessed at 3-year intervals from baseline (2017) as per the TEMMP (Agnico Eagle 2022a). The second assessment occurred in 2019 to align with the first year of construction, while the third assessment occurred in 2022. The next assessment is scheduled for 2025.



LEGEND

- MINE FOOTPRINT (2024)
- MINE FOOTPRINT (2021)
- MINE FOOTPRINT (2018)
- PROPOSED PROJECT INFRASTRUCTURE (2012)
- APPROVED MINE FOOTPRINT (NIRB PROJECT CERTIFICATE NO. 006)
- APPROVED TYPE A WATER LICENCE FOOTPRINT (NWB 2AM-MEL1631)
- APPROVED PROPOSED TERRESTRIAL LOCAL STUDY AREA (LSA)
- ALL-WEATHER ACCESS ROAD (AWAR)
- WATERCOURSE
- WATERBODY

PLANT COMMUNITY CLASSIFICATION

- BIRCH SEEP
- DISTURBED
- HEATH TUNDRA COMMUNITY
- LICHEN-HEATH (CETRARIA LICHEN)
- LICHEN-HEATH (HAIR LICHEN)
- LICHEN-ROCK COMMUNITY
- RIPARIAN WILLOW OR BIRCH
- SEDGE COMMUNITY
- UNVEGETATED SAND
- WATER

0 2,500 5,000

1:125,000 METRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED.
DATUM: NAD 83 PROJECTION: UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

PROJECT FOOTPRINT COMPARISON BY VEGETATION COMMUNITY/HABITAT TYPE

CONSULTANT

wsp

YYYY-MM-DD	2025-03-19
DESIGNED	NM
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

PROJECT NO.	DOC.	REV.	FIGURE
CA0037600.7607	2000/2200	0	5

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Table 6: Total and Predicted Vegetation Community/Habitat Type loss from Project approval to 2024

Vegetation Community Type	Vegetation Community Type Description	Total Area of LSA (ha)	Project Predicted Impacts (ha)[a]	Approved 2012 Project Footprint (ha) [b]	2018 Project Impacts (ha)	2021 Project Impacts (ha)	2024 Project Impacts (ha) [c]
Heath							
Lichen-Rock Community	characterized by crustose lichens growing on the boulders or rocks that predominate on eskers or rocky plateaus	233	43	37	28	25[e]	25[e]
Lichen-Heath (*Cetraria* Lichen)	occurs on lower slope positions, often below the lichen-health – hair lichen community, on more rapidly drained sandy substrates	560	131	86	35	46	48
Lichen-Heath (Hair Lichen)	occurs almost exclusively on the higher ridges of slopes and on drumlin and esker crests, where the ground cover consists of a high percentage of black and green hair lichens	601	156	110	59	69	70
Heath Tundra Community	occurs on uplands and slopes of most ridges characterized by gently rolling to undulating terrain with rapidly to well-drained soils	4,036	1,250	722	222	297	332
	Heath subtotal	***5,429***	***1,581***	***956***	***343***	***438***	***474***
Wetland/Riparian							
Birch Seep	occurs on imperfectly poor to poorly drained soils such as the edges of solifluction lobes, on the slopes of some eskers, in stream valleys and along transitions to some sedge associations	305	109	87	10	11	11
Sedge Community	occurs adjacent to lakes and streams on very poorly drained soils and in low-lying areas	2,449	562	1	85	127	149
Riparian Willow or Birch	typically occurs along the banks of stream courses; characterized by imperfectly drained, nutrient enriched soils	12	2	351	<1	<1	<1
	Wetland/Riparian subtotal	***2,767***	***702***	***440***	***95***	***138***	***160***
Un-vegetated							
Disturbed [d]	cleared areas and access roads associated with the Project as well as various natural disturbance features	<1	0	<1	<1	<1	<1
Un-vegetated (Sand)	associated with steep sandy slopes and the margins of rivers and lakes; limited to no vegetation cover	182	36	8	6	5	5
Water	associated with waterbodies and watercourses	2,221	631	278	40	52	57
un-vegetated subtotal		***2,403***	***666***	***286***	***46***	***57***	***62***
Total		**10,598**	**2,950**	**1,682**	**484**	**633**	**696**

Note: Some numbers are rounded for presentation purposes; totals may not equal the sum of the individual values.

(a) Project predicted Impacts from Project FEIS (Golder 2014)

(b) 2012 Approved Project Footprint

(c) Impacts to vegetation communities/habitat types from Project approval to December 2024.

(d) Disturbance includes areas that were already disturbed at baseline conditions when the vegetation community/habitat type mapping was developed.

(e) Habitat loss was estimated based on CAD file and footprint updates provided by Agnico Eagle annually. The project footprint has been adjusted as the project progresses; therefore, some vegetation communities may show higher impacts in 2018 than in 2021 and 2024.

5.3 Indirect Habitat Loss

Indirect effects to wildlife are associated with changes in habitat that can alter the movement and behaviour of individuals in the vicinity of the Project as a result of sensory disturbance. Indirect effects are addressed through several of the monitoring programs per the TEMMP.

Caribou behaviour monitoring is presented in Section 12.1 of this report. Across all years studied (i.e., 2020 to 2024), caribou groups tended to show greater response behaviours (i.e., running, alert) when in smaller groups or when within 300 m of a road (ERM 2025a). Further, collar data analyzed in 2023 as part of the Commitment 38 Analysis indicated that 1% of collared caribou deflected close to the Mine/AWAR, which is below the action threshold of 10% in the TEMMP (Anico Eagle 2022b; WSP 2025). The Commitment 38 Analysis is discussed in more detail in 12.0.

For nesting birds, site-specific nest management plans may be required if birds are within the Project footprint. Point count data analysis completed for this report indicated overall species richness and diversity have not changed from 2018 to 2024 along the AWAR (see Section 8.2.2). The 2022 soil and vegetation health field program included visual inspections for dust accumulation (WSP 2023a). Dust accumulation was noted along the AWAR and at several locations within the Mine (WSP 2023a), which may result in indirect habitat loss for nesting birds as habitat suitability may be reduced. Additionally, visual inspections of dust accumulation are completed by Agnico Eagle weekly at the Mine and twice a week along the AWAR. Results of these surveys indicated that dust fall was similar to that of previous years. Per the FEIS (Golder 2014), dust generation from Project vehicles along the AWAR and Mine roads is expected but loads to overall dust accumulation in the area were considered negligible.

Indirect Project effects are assessed through soils and vegetation monitoring every three years, to align sampling years with the first year of construction in 2017. Soil and vegetation monitoring were last completed in 2019 and in 2022; the next full assessment is scheduled for 2025.

5.3.1 2024 Noise Analysis

In 2023, members of the TAG had expressed concerns that caribou may be able to hear noise from Meliadine operations, potentially resulting in sensory disturbance and indirect habitat loss from avoidance. A detailed analysis comparing noise emissions during different levels of operations (due to adaptive mitigation), caribou hearing thresholds and the influence of environmental factors was completed in 2024 and presented to TAG members.

The analysis considered noise emissions during Full Operations, Level 1 Operations, Level 2 Operations and Level 3 Operations from both the Mine and the AWAR. Changes related to mining activities associated with each level are provided in Appendix A. For review, monitoring thresholds leading to each level change revolve around caribou proximity and include instances where no caribou are within 10 km (Full Operations), 50 or more caribou are within 10 km of the Mine (Level 1), 50 or less caribou are within 5 km of the Mine (Level 2), and 50 or more caribou are within 5 km of the Mine. Further, the AWAR is closed if 50 or more caribou are within 100 m of the road. Results showed little difference in decibel levels between the former Level 1 and Level 2, but a 12 dBA decrease in noise emissions between Full Operations and Level 3 Operations. Decibel levels were compared against the hearing threshold of the most sensitive caribou (a conservatism), as described in Perra et al. (2022), but also considered potential masking of anthropogenic noise sources from environmental factors, namely wind. Four wind speed bands were used in the analysis ranging from low (<8.2 km/h) to very high (>32.4 km/h). The lowest band limits were based on wind speed thresholds resulting in insect harassment (Weladji et al. 2003). By combining the caribou hearing threshold and the natural background noise data, masking by natural

environmental noise is evident since wind noise exceeds (is louder) than reindeer hearing thresholds (Figure 6). The maximum distances from mine-related components (i.e., the Mine and the AWAR), under conservative assumptions, where caribou may detect mine-related noise per wind speed band are summarized in Table 7. It is important to note that hearing thresholds represent what caribou can hear and do not represent disturbance thresholds. The percentage of occurrence of each wind speed band during the 2023 caribou migration period is summarized in Table 7 and visually displayed in Figure 7, along with the period of Mine closures (highlighted in red). Percentage of occurrence of low wind speeds where the audible distance from Mine Components during Level 3 Operations are greatest was 14%, second lowest only to very high speeds (3%). The majority of this period (62%) had moderate wind speeds, with 86% of the period in wind speed bands of moderate and above. Within the moderate wind speed band, modelled noise does not extend beyond the 3.5 km mitigation monitoring zone (Figure 8).

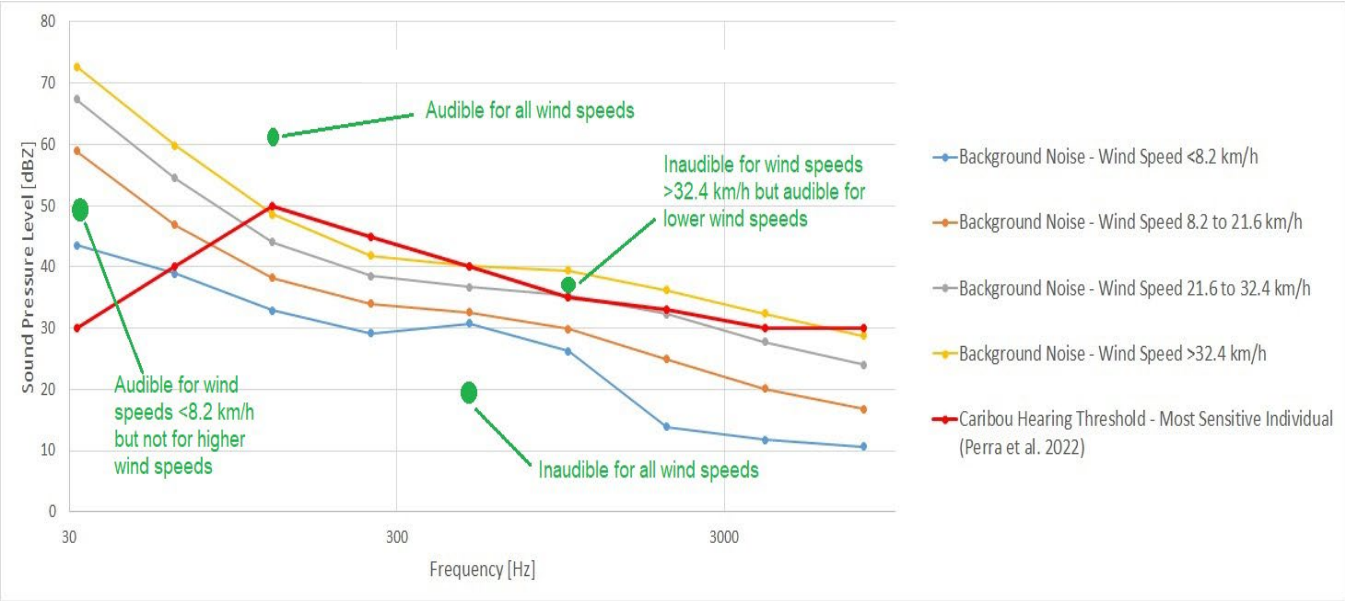


Figure 6: Real World Thresholds for Caribou Detection of Meliadine Noise

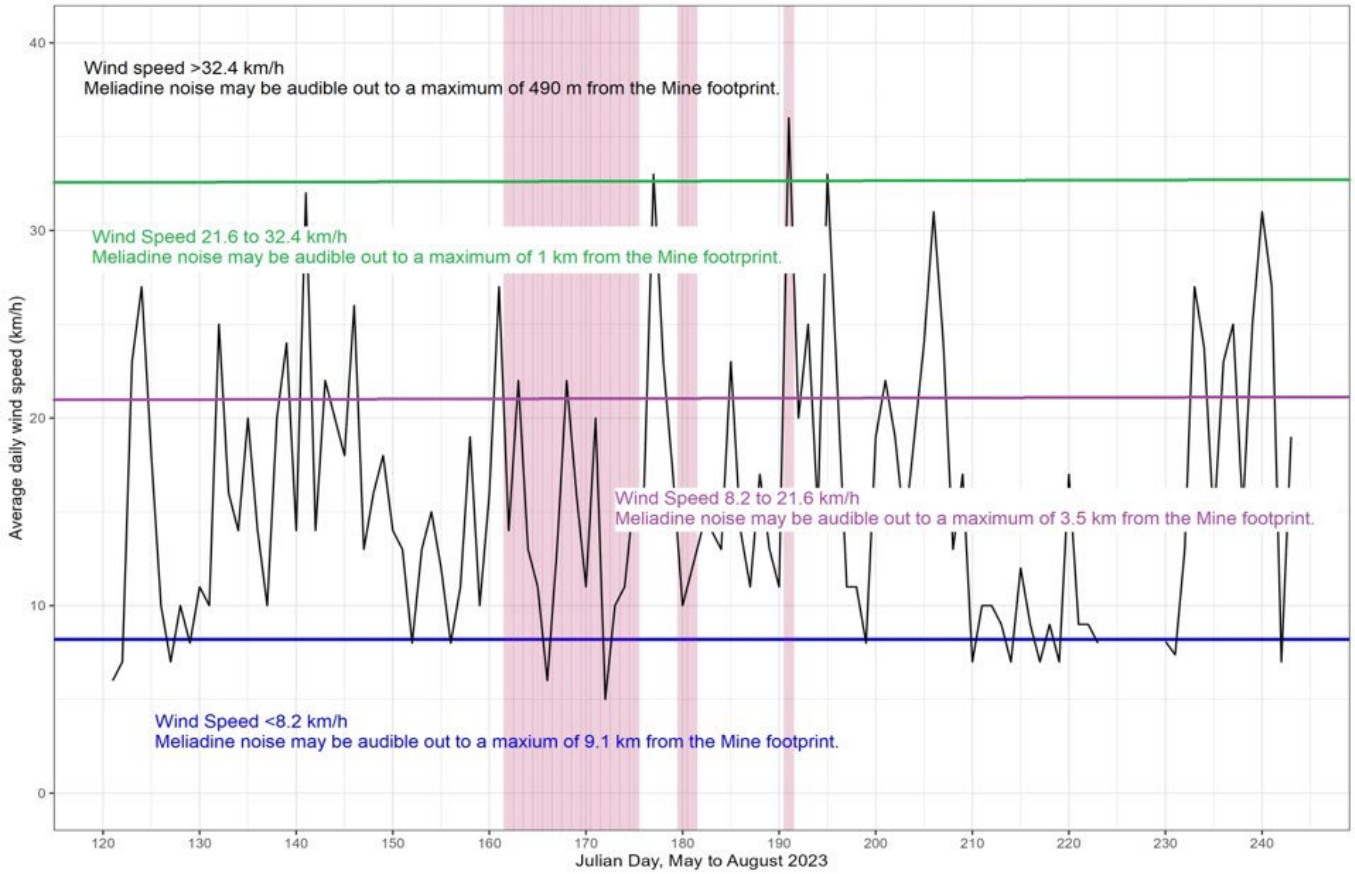
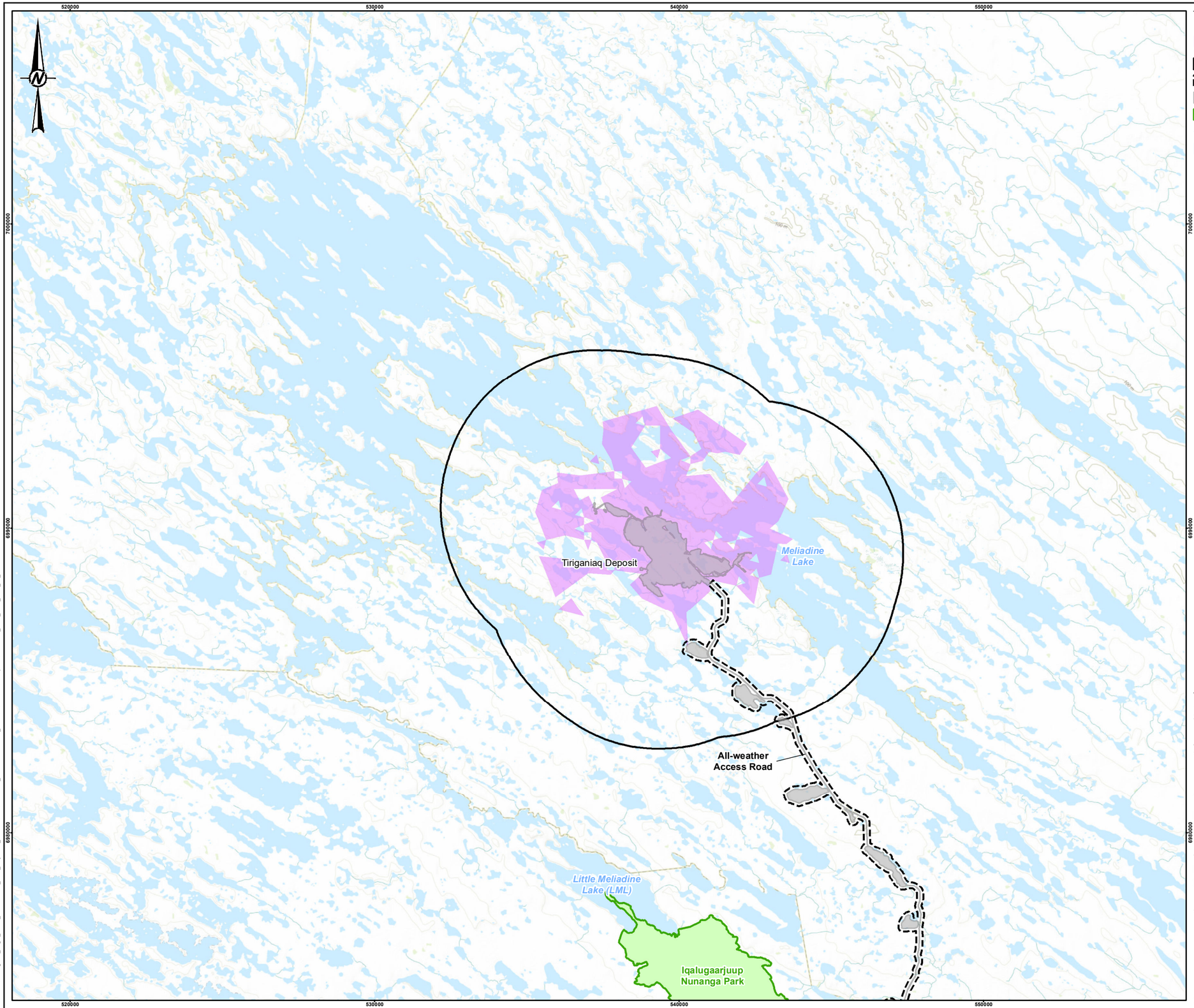


Figure 7: Wind Speeds During 2023 Caribou Migration.

Table 7: Frequency of Wind Speed Bands and Maximum Distances from Mine Components where Meliadine Noise is Audible to Caribou per Wind Speed Band for Level 3 Operations

Wind Speed Band	Frequency of Wind Speed Band Occurrence during Caribou Migration (May to August)	Maximum Audible Distance
Low Wind Speed (<8.2 km/h)	14%	9.1 km
Moderate Wind Speed (8.2 – 21.6 km/h)	62%	3.5 km
High Wind Speed (21.6 – 32.4 km/h)	23%	1 km
Very High Wind Speed (>32.4 km/h)	3%	490 m

Note that frequencies have been rounded to the nearest whole percentage and may not sum to 100%.



LEGEND

- AREA WHERE CARIBOU MAY HEAR NOISE FROM MELIADINE OPERATIONS
- MITIGATION MONITORING ZONE (MINE)
- MITIGATION MONITORING ZONE (AWAR)
- MINE FOOTPRINT (2024)
- TERRITORIAL PARK
- WATERCOURSE
- WATERBODY

0 2,500 5,000

1:125,000 METRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE LIMITED.
2. DATUM: NAD83 PROJECTION: UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

LEVEL 3 SHUTDOWN AT MELIADINE; WIND SPEED BETWEEN 8.2 and 21.6 km/h

CONSULTANT

wsp

YYYY-MM-DD	2025-03-19
DESIGNED	VY
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0037600.7607	2000/2200	0	8

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The analysis completed took several conservative approaches that likely overestimate the spatial extent of areas where caribou may hear noise from Meliadine operations. These included using the most conservative case of hearing thresholds for caribou from literature (i.e., assuming all caribou have the same hearing capacity as the most sensitive individual), where in reality a wide range of hearing sensitivity has been demonstrated (Perra et al. 2022). The analysis also assumes caribou are always downwind from sources of noise, where crosswind or upwind locations would likely further reduce audibility. Finally, maximum distances (Table 7) are related to where caribou will hear anthropogenic Mine-related noise, which is different from distances where noise-related disturbance occurs. The sound level that results in disturbance of caribou is likely higher than the detection threshold.

6.0 SOIL AND VEGETATION MONITORING

The scope of the landscape component of the TEMMP Annual Report is to report on levels of metals in berry producing plants, sedges, lichen and soil chemistry potentially affected by the Mine. To evaluate the potential for adverse health effects to terrestrial life associated with changes in environmental quality due to chemical releases from the Project, the existing (or baseline) conditions of the environment must first be understood. Soil and vegetation monitoring was first conducted in 2017 to inform the baseline conditions. Monitoring is completed on a three-year interval, first initiated in 2019 (first year of operations). The last soil and vegetation assessment was completed in 2022 (Agnico Eagle 2023); the next complete soil and vegetation assessment is expected in 2025.

Local vegetation cover is predominantly characterized by heath tundra and lichen-heath communities. Low-lying areas between the drumlins and eskers are dominated by sedge wetlands, shallow ponds and various shallow and deep-water lakes. The main change from the Mine on the landscape is direct disturbance, which will be a long-term effect as the recovery of vegetation is slow in Arctic environments (Burt 1997).

6.1 Accuracy of Impact Predictions

Soil and vegetation monitoring was last completed in 2022. A summary of the impact predictions in the TEMMP (Agnico Eagle 2022a) is provided in Table 2. Specific thresholds for vegetation and wildlife habitat monitoring are outlined in Table 8.

Table 8: Accuracy of Impact Predictions - Vegetation

Monitoring Indicators	Threshold	Exceeded in 2024?	Adaptive Management	Monitoring Method	TEMMP* Section
Wildlife Habitat Loss	Terrestrial – 2,951 ha Aquatic – 515 ha	No	Not currently identified	Ground Surveys, Mapping, GIS Analysis	5.0
Habitat Degradation by Contamination	No effects to plant health from dust deposition	N/A	Not currently identified	Vegetation and Soil Samples	6.0
Habitat Reclamation Following Mine Closure	Not applicable	N/A	Not currently identified	Ground Surveys, Vegetation Plots, Mapping	5.0

TEMMP = Terrestrial Environment Management and Monitoring Plan (Agnico Eagle 2022a), AWAR = All-weather Access Road.

6.2 Recommendations

Results from the 2022 soil and vegetation health monitoring indicated that soil characteristics and vegetation health remain comparable to baseline conditions, with the exception of a small, localized area near the WRSF and Tailings Facility. This area showed high arsenic concentrations in the soil and vegetation. Further validation will be required for the samples with high arsenic concentrations.

The next surveys are scheduled to be completed in 2025. Indications of vegetation stress, poor vigour, or plant die-back that are not related to natural causes (e.g., disease, pest damage, etc.) will be documented if they are observed during the annual non-native plant species surveys. If it appears that the vegetation stress may be caused by dust, soil and vegetation sampling may be implemented prior to the 3-year sampling period, as required, to determine whether changes in the growth media is influencing plant health and/or establishment.

7.0 NON-NATIVE PLANT SURVEYS

The spread of non-native species across the landscape is a concern for the Inuit. Construction equipment and operation activities can result in the introduction of, or spread of, non-native vegetation species. Thus, Project Certificate No. 006 includes T&C 36 and 37 to prevent and minimize the introduction of non-native plants during pre-construction, construction, operations, temporary closure and maintenance, closure, and post-closure. Pre-construction surveys were completed during the baseline studies completed during 1998, 2008, and 2009 surveys (Volume 6, SD 6-5; Golder 2014).

This section includes the methods, results, and mitigation measures to minimize the spread of non-native invasive plant species resulting from Mine activities. The GN and ECCC define a non-native species as ‘an organism that is not normally found in a region’ (CESCC 2010). Additionally, according to Section 91 of *The Wildlife Act*, Statues of Nunavut (SNU) 2003, c 26, invasive species shall not be released into a habitat in which that species does not belong or never naturally occurred. Any introductions of non-native plant species must be promptly reported to the GN DoE. Non-native plant monitoring surveys occurred in 2018 prior to Mine operations initiation and in 2019, when Mine operations commenced.

7.1 Methods

Non-native plant surveys were completed along the length of the AWAR from 31 August to 4 September and included the Mine Site, AWAR, active and inactive borrow pits, Itivia shipping area, and Pump Road (ERM 2025b). A grid-based method was used for comprehensive coverage, which consisted of infrastructure survey cells and road survey cells. Infrastructure survey cells were surveyed using 50 m by 50 m grid cell sampling units, while elongated 250 m by 30 m grid cell sampling units were used along roads. Surveys consisted of foot-based transects or rapid roadside surveys. Foot-based transects were completed with surveyors walking an ‘S’-shaped search pattern. Rapid roadside surveys including scanning areas adjacent to roads from a vehicle travelling at approximately 5 km/h. Data collection was completed using ArcGIS Field Maps and Survey123. Survey123 forms were informed by Invasives BC (formally Invasive Alien Plant Program [IAPP]) standard data fields and included the following fields:

- Species and location
- Abundance (i.e., percent cover) in grid cell
- Distribution in grid cell
- Density per patch
- Life stage/phenology

Non-native plant surveys are described in greater detail in Appendix B.

7.2 Results

A total of 2,915 infrastructure and road cells were surveyed in 2024, with no non-native invasive species detected (ERM 2025b). Additional details are provided in Appendix B.

7.3 Mitigation

The 2024 survey was the sixth consecutive year of non-native species monitoring for Meliadine since operations commenced.

The early detection of non-native invasive plant species is important, as preventing these species from becoming established is the most effective mitigation that can be employed. Invasive plants identified as a concern by the GN DoE will be reported to the GN, including location of the species (i.e., global positioning system [GPS] coordinates and map), species identification and photographs of the species in question.

In addition, to further mitigate the risk of non-native invasive species introduction, the following measures have been implemented by Agnico Eagle during Project operation, per the TEMMP (Agnico Eagle 2022a):

- Where possible, utilize existing access trails and roads.
- Limit the width of access roads and the size of workspaces.
- Inspect and clean new equipment arriving to site from the ship loading area prior to entering the Project area. Shipping inspection sheets from 2024 are provided in Appendix C.
- Complete non-native invasive plant monitoring surveys every year during operations to identify problem areas. Surveys should be targeted for areas with a high potential of occurrence such as along the AWAR, Project footprint, and ship loading areas.

7.4 Accuracy of Impact Predictions

No non-native invasive plant species occurrences were observed in the Project Area. A summary of the effects predictions proposed in the TEMMP (Agnico Eagle 2022a) is provided in Table 9. Specific thresholds for vegetation and wildlife habitat monitoring are outlined in Table 9.

Table 9: Accuracy of Effects Predictions – Vegetation

Monitoring Indicators	Threshold	Exceeded in 2024?	Adaptive Management	Monitoring Method	TEMMP* Section
Habitat Degradation by Contamination	No non-native invasive plant species established	No	See Section 7.3	Non-native invasive Plant Survey of AWAR and Project site	7.0
Habitat Reclamation following Project Closure	N/A	N/A	Not Currently Identified	Ground Surveys, Vegetation Plots, Mapping	5.0

TEMMP = Terrestrial Environment Management and Monitoring Plan (Agnico Eagle 2022a), AWAR = All-weather Access Road.

7.5 Recommendations

The Canadian Endangered Species Conservation Council (CESCC; 2010; Appendix D) has developed posters that show non-native species and invasive species in Nunavut. These should be displayed at the Mine site and incorporated into on-boarding materials. If any non-native and invasive species are incidentally observed on site, they should be eradicated through mechanical control such as hand pulling, as practical for the terrain on site. If hand pulling with a shovel, the plant material should be collected in bags and disposed of at an offsite location. A vegetation ecologist should be consulted prior to removal. Chemical herbicide treatments are not recommended to be used at this point as the native vegetation/habits in the tundra are very sensitive to impacts.

8.0 BIRDS

Four survey methods were employed in 2024 for monitoring waterfowl, waterbirds and upland birds: shoreline surveys, point counts, Program for Regional and International Shorebird Monitoring (PRISM) surveys and pre-clearance surveys. The following sections are a summary of the 2024 Bird Surveys and PRISM Plots Summary Report (Appendix E; Agnico Eagle 2025a). The Arctic Raptors Research Program is described in Section 8.4 with the full report provided in Appendix F.

8.1 Shoreline Surveys

8.1.1 Methods

The shorelines of all waterbodies within 200 m of the Project were surveyed by two observers, on foot, to locate and identify nesting waterbirds. Observers walked along the edge of each waterbody. Specifically, one observer walked 5 m from the water's edge while the second observer walked 15 m from the water's edge. If a nest was found, nest stage (e.g., egg laying, incubating, nestlings etc.) and nest productivity (i.e., the number of offspring) were recorded. If a nesting bird showed signs of distress, the nest was not approached to avoid nest abandonment. Shoreline survey methods are described in greater detail in the TEMMP (Agnico Eagle 2022a) and the 2024 Bird Survey Report (Appendix E).

8.1.2 Results

Shorelines were surveyed from June 22 to July 1, 2024. Appendix E presents additional information on survey timing and weather conditions, as well as survey results by location.

A total of 33 documented or potential nests of 6 bird species were observed within 200 m of the Mine and AWAR while conducting shoreline surveys in 2024. Of these 33 nests, 21 nests were from the ten most encountered species, summarized in Table 10. Of these 21 nests, the number of young (e.g., eggs or juveniles) could be determined for 7 nests, totalling 24 young (Table 10). An additional 4 nests were detected for 3 other species: one greater scaup (*Aythya marila*) nest with 7 eggs, 1 horned lark (*Eremophila alpestris*) nest with 5 eggs and 2 sandhill crane (*Antigone canadensis*) nests, 1 with 2 juveniles and one with 2 eggs.

A total of 33 bird species, of which 20 species were waterbirds, were recorded during 2024 waterbird shoreline surveys (Appendix E). The top three most encountered bird species were Canada goose (*Branta canadensis*), least sandpiper (*Calidris minutilla*), and herring gull (*Larus argentatus*). All observations of birds and nests made during shoreline surveys are presented in Appendix E.

Table 10: Summary of Nests and Young (Eggs or Juveniles) Observed during Shoreline Surveys, 2018 to 2021, 2023, and 2024

Common Name	Scientific Name	2018		2019		2020		2021		2023		2024	
		Young[a]	Nests	Young[a]	Nests	Young[a]	Nests	Young[a]	Nests	Young[a]	Nests	Young[a]	Nests
American pipit	*Anthus rubescens*	0	0	0	0	0	0	13	2	5	2	0	0
Cackling goose	*Branta hutchinsii*	4	3	18	4	6	2	48	16	0	0	0	0
Canada goose	*Branta canadensis*	18	16	39	14	14	6	25	6	11	4	16	18
Cackling/Canada goose[b]	*Branta* spp.	0	0	0	0	0	0	Unid. [b]	2	0	0	0	0
Greater scaup	*Aythya marila*	0	0	0	0	0	0	0	0	0	0	7	1
Greater white-fronted goose	*Anser albifrons*	0	0	3	1	0	0	0	0	0	0	0	0
Herring gull	*Larus argentatus*	0	0	0	1	0	0	0	0	Unid.[b]	4	Unid.[b]	3
Horned lark	*Eremophilia alpestris*	4	1	0	0	3	1	0	0	0	0	5	1
Lapland longspur	*Calcarius lapponicus*	2	4	5	1	4	1	9	3	Unid.[b]	1	0	0
Least sandpiper	*Calidris minutilla*	0	2	0	0	4	2	16	4	2	8	4	4
Long-tailed duck	*Clangula hyemalis*	0	0	0	0	0	0	Unid.[b]	1	8	1	0	0
Northern pintail	*Anas acuta*	0	0	0	0	0	0	8	1	0	0	0	0
Pacific loon	*Gavia pacifica*	0	0	0	0	0	0	2	1	0	0	0	0
Peregrine falcon	*Falco peregrinus*	0	2	0	1	0	0	0	0	0	0	0	0
Sandhill crane	*Antigone canadensis*	0	0	2	2	0	0	Unid.[b]	1	1	2	4	2
Savannah sparrow	*Passerculus sandwichensis*	0	0	0	0	11	2	0	0	Unid.[b]	2	0	0
Semipalmated plover	*Charadrius semipalmatus*	0	0	4	1	0	1	32	8	4	5	4	4
Tundra swan	*Cygnus columbianus*	2	1	0	0	0	0	0	0	6	3	0	0
Willow ptarmigan	*Lagopus lagopus*	0	5	1	1	0	0	0	0	0	0	0	0
Total		**30**	**34 (20)[c]**	**72**	**26 (20)[c]**	**35**	**15 (13)[c]**	**121**	**45 (40)[c]**	**37**	**31 (9)[c]**	**40**	**33 (10) [c]**

(a) Eggs, nestlings, or fledglings were counted to observers' best ability while minimizing disturbance to nests.

(b) Used when nest inaccessible (i.e., on island in waterbody) and identification could not be confirmed; Unid. = Unidentifiable.

(c) Number in parentheses refers to the number of nests for which an egg count could be determined.

8.2 Point Count Surveys

Upland bird plots, or point counts, were distributed along transects on either side of the AWAR. The objective of the point count surveys was to estimate the effects of increased traffic along the AWAR on the density, species richness and distribution of upland breeding birds along the AWAR and how these effects might diminish with increasing distance from the road (Agnico Eagle 2022a). Per the TEMMP, point counts are completed every three years, with previous surveys being completed in 2018, 2019, 2020, and 2021, with no surveys being completed in 2022 and 2023. The following provides a summary of point count surveys completed in 2024, with additional information provided in Appendix E.

8.2.1 Methods

8.2.1.1 Field Surveys

In 2024, point counts were completed by Nunavut Environmental Consulting Ltd. Point count plots are located within 1 km on either side of the AWAR, with the first plot occurring 50 m from the road edge with subsequent plots occurring at distances of 150 m, 250 m, 500 m, and 1000 m from the road edge. A total of 72 plots were surveyed across six transects. Each transect contained 12 plots, with six on either side of the AWAR. Surveys at point counts are five minutes in duration, with all species detected by sight or sound recorded within concentric circles (i.e., <50 m from surveyor, between 50 to 100 m from surveyor). All observations over 100 m from the plot centre are treated as incidentals. Plots within two transects (Transects 2 and 3) were re-surveyed due to inappropriate weather conditions during the initial survey.

8.2.1.2 Data Analysis

In 2024, point counts occurred later in the day than previous years with 34 plots (47%) beginning after 10:00 am. Due to the potential of decreased bird activity later in the day, which could influence density analyses, a 10:00 am cutoff was used to qualify which data was included based on established protocols for point count surveys (e.g., Ralph et al. 1993, RIC 1999; Government of Alberta 2013; Ontario Breeding Bird Atlas 2021). The decision was supported by a t-test that showed a significant decrease of birds counted after 11:00 am compared to those recorded prior ($t_{76.74}$ = -2.90, p <0.01). The remaining 38 plots used in the analyses had sufficient coverage of available habitats and distribution across habitat type (Table 11) and distance from the AWAR (Table 12).

Table 11: Distribution of Habitat Types in the LSA.

Habitat Type[a]	Percent of LSA (%)	Number of 2024 Point Count Plots used in Analysis[b]
Birch Seep	4.7	2 (5.3%)
Heath Tundra Community	46.2	17 (44.7%)
Lichen-Heath (*Cetraria* Lichen)	3.2	4 (10.5%)
Lichen-Heath (Hair Lichen)	1.6	3 (7.9%)
Lichen-Rock Community	2.5	4 (10.5%)
Sedge Community	19.0	8 (21.1%)
Water	22.8	0 (0%)

(a) Values based on Ecological Landscape Classification data (Golder 2014; habitat of one plot outside LSA inferred from field habitat call in 2021.

(b) Percent of plots presented in brackets.

Table 12: Distribution of Plots across Distance to AWAR Categories

Distance from AWAR (m)	Number of 2024 Plots used in Analysis
50	6
150	6
250	6
500	7
750	7
1000	6

8.2.1.2.1 Individual Species Analysis

A species-level analysis calculated the mean density of individual passerine species detected during point count surveys among each habitat type in 2024. Density was calculated as the number of individuals of each species per hectare detected at each point count, averaged across point counts with each habitat type. For example, a point count circle is a 100 m radius circle, or 3.14 ha, so a single individual detected at a point count would have a density of 0.32 birds/ha (1 bird/3.14 ha). Changes in the average density of each species within habitat types from 2018 to 2021 and 2024 were calculated to illustrate measured differences between the survey years.

8.2.1.2.2 Community Analysis

A community-level analysis examined the total density, species richness, and an index of species diversity of all passerine species measured in each habitat type for each year. Density was calculated as the number of individuals per hectare (summed across species) detected at each point count, averaged across point counts within each habitat type. Species richness was calculated as alpha richness, or a count of the number of species detected at a point count. Diversity was calculated as the Shannon's H-index using the 'vegan' package in R (Oksanen et al. 2019).

For each metric (density, richness, and diversity), a two-way analysis of variance (ANOVA) was calculated in R version 4.4.2 (R Core Team 2024) to determine if habitat type or year were significant predictors of variation.

8.2.1.2.3 Generalized Linear Models

Generalized linear models (GLMs) assuming a normal distribution were estimated to test for the effects of categorical year ('Year'), habitat type ('Habitat'), distance of the point count from the AWAR ('Distance'), and ordinal day of year ('Date') on the density or passerines detected at each point count. A random effect for observer was included in models to account for variation in estimation of bird densities among observers. Akaike's Information Criterion (AIC) was used to assess the best fit among candidate models, and all models within ΔAIC of 2.0 of the top model were considered equally viable models. 'Distance' and 'Date' were normalized between 0 and 1 prior to use in models, rather than using raw meters or ordinal date. A value of 0 would represent the minimum value sampled (i.e., 50 m from the AWAR) and a value of 1 would represent the maximum value sampled (i.e., 1,000 m from the AWAR).

8.2.2 Results

8.2.2.1 Individual Species Results

Point counts were completed from June 20 to June 22 and June 27, 2024. Six passerine species were observed within 100 m of observers during point count surveys in 2024 (Table 13). Horned lark was the most commonly observed upland breeding bird species (n=68), followed by Lapland longspur (*Calcarius lapponicus*; n=44), with both of these species being recorded on all six transects. American pipit (*Anthus rubescens*) and white-crowned sparrow (*Zonotrichia leucophrys*) were the least commonly observed species (n=2 for both species). An additional 24 bird species were incidentally recorded, including shorebirds, waterbirds and upland breeding birds outside of 100 m from observers (Appendix E). No upland breeding bird species at risk were recorded during point count surveys in 2024.

Table 13: Upland Breeding Bird Species Recorded during Point Counts in 2024

Common Name	Scientific Name	Number of Observations[(a)]
American pipit	*Anthus rubescens*	2
Common redpoll	*Acanthis flammea*	7
Horned lark	*Eremophila alpestris*	68
Lapland longspur	*Calcarius lapponicus*	44
Redpoll species	*Acanthis* sp.	4
Savannah sparrow	*Passerculus sandwichensis*	19
White-crowned sparrow	*Zonotrichia leucophrys*	2

(a) Excludes incidental observations (i.e., individuals recorded beyond 100 m).

Horned larks were recorded in all habitats in 2024 and occurred with the highest density in Heath Tundra Community habitat (Table 14). Lapland longspur densities were highest in Birch Seep habitat (Table 14). Savannah sparrow (*Passerculus sandwichensis*) densities were highest in Sedge Community habitat (Table 14). White-crowned sparrow were only recorded in the Heath Tundra Community (Table 14). American pipit (*Anthus rubenscens*) densities were highest in Lichen-Heath (*Cetraria* Lichen) habitat (Table 14). Low densities of common redpoll (*Acanthis flammea*) were observed in Lichen-Heath (Hair Lichen) and Heath Tundra Community habitat, while an unknown redpoll species (*Acanthis* sp.) was also observed at low densities in Heath Tundra Community habitat (Table 14). American robin (*Turdus migratorius*) was not detected in 2024.

Overall, most species saw a decrease in density in 2024. A downward trend has been observed in American pipit since 2019, which continued in 2024 (Figure 9). Savannah sparrows were observed at the lowest density since monitoring began in 2018 (Figure 9). American robin, common redpoll, and white-crowned sparrow have had densities less than 0.1 birds/ha every year (Figure 9).

Table 14: Mean (± 1SE) Density (Individuals per Hectare) of Passerine Bird Species among Habitats along the AWAR in 2024.

Common Name	Scientific Name	Habitat Type					
		Birch Seep	Heath Tundra Community	Lichen-Heath (Cetraria Lichen)	Lichen-Heath (Hair Lichen)	Lichen-Rock Community	Sedge Community
American Pipit	*Anthus rubescens*	0.00 + 0.00	0.00 + 0.00	0.05 + 0.05	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00
American Robin	*Turdus migratorius*	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00
Common Redpoll	*Acanthis flammea*	0.00 + 0.00	0.01 + 0.01	0.00 + 0.00	0.05 + 0.05	0.00 + 0.00	0.00 + 0.00
Horned Lark	*Eremophilia alpestris*	0.21 + 0.11	0.30 + 0.07	0.21 + 0.13	0.16 + 0.07	0.13 + 0.08	0.03 + 0.02
Lapland Longspur	*Calcarius lapponicus*	0.21 + 0.21	0.13 + 0.03	0.11 + 0.07	0.05 + 0.05	0.00 + 0.00	0.10 + 0.04
Savannah Sparrow	*Passerculus sandwichensis*	0.00 + 0.00	0.04 + 0.02	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00	0.06 + 0.04
White-crowned Sparrow	*Zonotrichia leucophrys*	0.00 + 0.00	0.02 + 0.01	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00
Redpoll Sp.	*Acanthis* sp.	0.00 + 0.00	0.02 + 0.01	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00	0.00 + 0.00

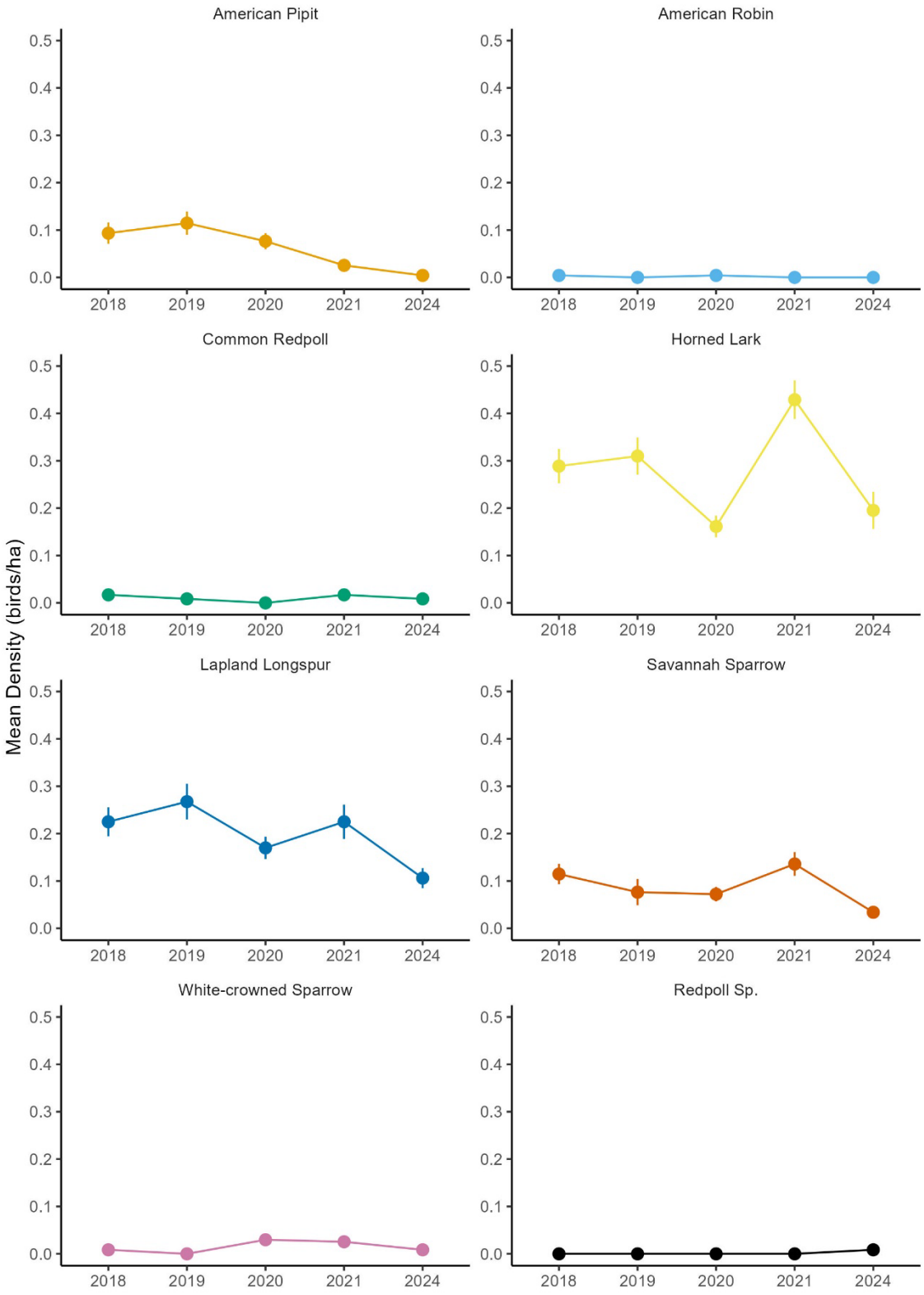


Figure 9: Mean Densities (± 1SE) of Passerine Species Across Years.

8.2.2.2 Community Results

Total passerine density at the point count level ranged from 0 to 1.91 birds per hectare (ha) in 2024. Heath Tundra Community had the greatest density of birds in 2024 (Table 15). Birch Seep, Lichen-Heath (*Cetraria* Lichen), Lichen-Heath (Hair Lichen), and Sedge Community had similar densities (Table 15). The lowest densities were observed in Lichen-Rock Community habitats (Table 15).

The total mean density of birds was lower in 2024 than 2021, but comparable to other survey years, with 0.72 ± 0.10 birds/ha. The mean density (± 1SE) of passerine birds at the point count level was not significantly different among habitat types ($F_{5,316}$=1.33, p=0.25), but varied among year ($F_{4,316}$=5.60, p<0.01; Figure 10). A Tukey's test for pairwise comparisons showed that 2020 had significantly lower density than 2018 (p=0.02), 2019 (p<0.01), and 2021 (p<0.01), but no significant difference to 2024 (p=0.36).

Table 15: Passerine Bird Densities by Habitat Type from 2018 to 2024.

Habitat	2018		2019		2020		2021		2024	
	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE
Birch Seep	2	0.80 + 0.48	2	0.64 + 0.00	2	0.16 + 0.16	3	0.74 + 0.28	2	0.64 + 0.32
Heath Tundra Community	34	0.80 + 0.06	34	0.89 + 0.09	34	0.42 + 0.06	33	0.93 + 0.08	17	1.05 + 0.15
Lichen-Heath (Cetraria Lichen)	6	1.06 + 0.26	6	0.80 + 0.18	6	0.80 + 0.16	6	0.90 + 0.17	4	0.56 + 0.20
Lichen-Heath (Hair Lichen)	6	0.74 + 0.27	6	0.69 + 0.21	6	0.80 + 0.16	6	0.85 + 0.20	3	0.53 + 0.11
Lichen-Rock Community	5	0.64 + 0.17	5	0.38 + 0.19	5	0.83 + 0.13	5	0.76 + 0.08	4	0.16 + 0.09
Sedge Community	19	0.72 + 0.09	19	0.85 + 0.14	19	0.59 + 0.09	19	0.92 + 0.11	8	0.48 + 0.19

SE = standard error

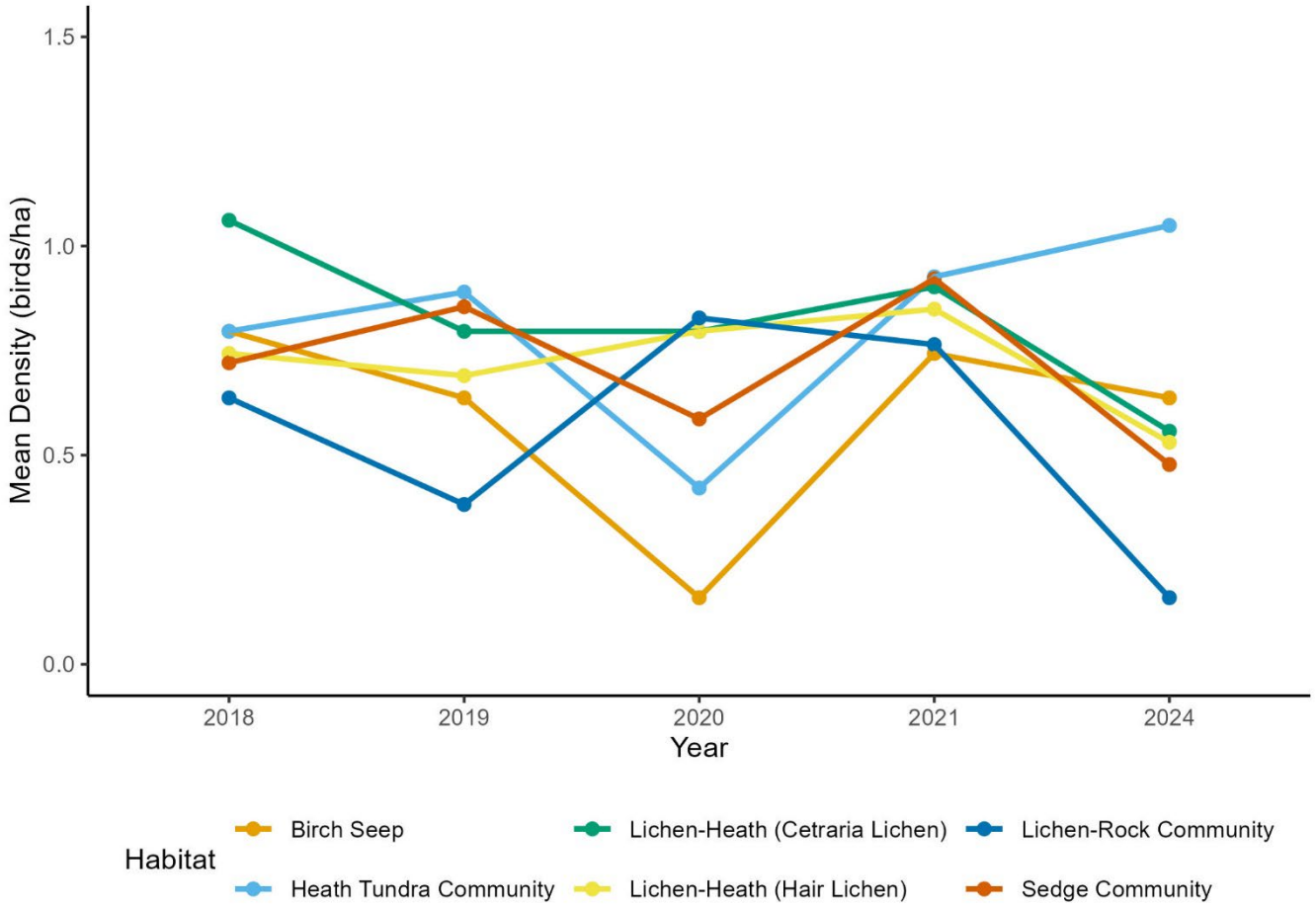


Figure 10: Plot of Avian Density Across Years and Habitat Types. Error Bars not Shown for Clarity.

Species richness at the point count level varied from zero to three species detected in 2024. Mean species richness was lower in 2024 (1.63 ± 0.16 species per plot) than 2021 (1.81 ± 0.09 species per plot) but was comparable to other years. Heath Tundra Community habitat (2.12 ± 0.19 species per plot) had the highest mean richness in 2024 (Table 16). Lichen-Rock Community habitat (0.75 ± 0.25 species per plot) had the lowest richness in 2024 (Table 16). A two-way ANOVA showed that species richness was not different among habitat types ($F_{5,316}$=1.09, p=0.36) or among years ($F_{4,316}$=1.39, p=0.24; Figure 11).

Table 16: Mean Species Richness of Passerine Birds across Habitat Types along the AWAR, 2018 to 2024.

Habitat	2018		2019		2020		2021		2024	
	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE
Birch Seep	2	2.00 + 1.00	2	1.00 + 0.00	2	0.50 + 0.50	3	1.67 + 0.33	2	1.50 + 0.50
Heath Tundra Community	34	1.82 + 0.13	34	1.68 + 0.14	34	1.24 + 0.16	33	1.70 + 0.13	17	2.12 + 0.19
Lichen-Heath (Cetraria Lichen)	6	2.00 + 0.52	6	1.50 + 0.22	6	1.83 + 0.17	6	2.00 + 0.26	4	1.25 + 0.48
Lichen-Heath (Hair Lichen)	6	1.83 + 0.48	6	1.33 + 0.21	6	2.33 + 0.56	6	1.50 + 0.34	3	1.67 + 0.33
Lichen-Rock Community	5	1.20 + 0.37	5	0.80 + 0.37	5	2.00 + 0.45	5	1.80 + 0.20	4	0.75 + 0.25
Sedge Community	19	1.63 + 0.16	19	1.68 + 0.17	19	1.68 + 0.24	19	2.05 + 0.19	8	1.25 + 0.45

SE = standard error

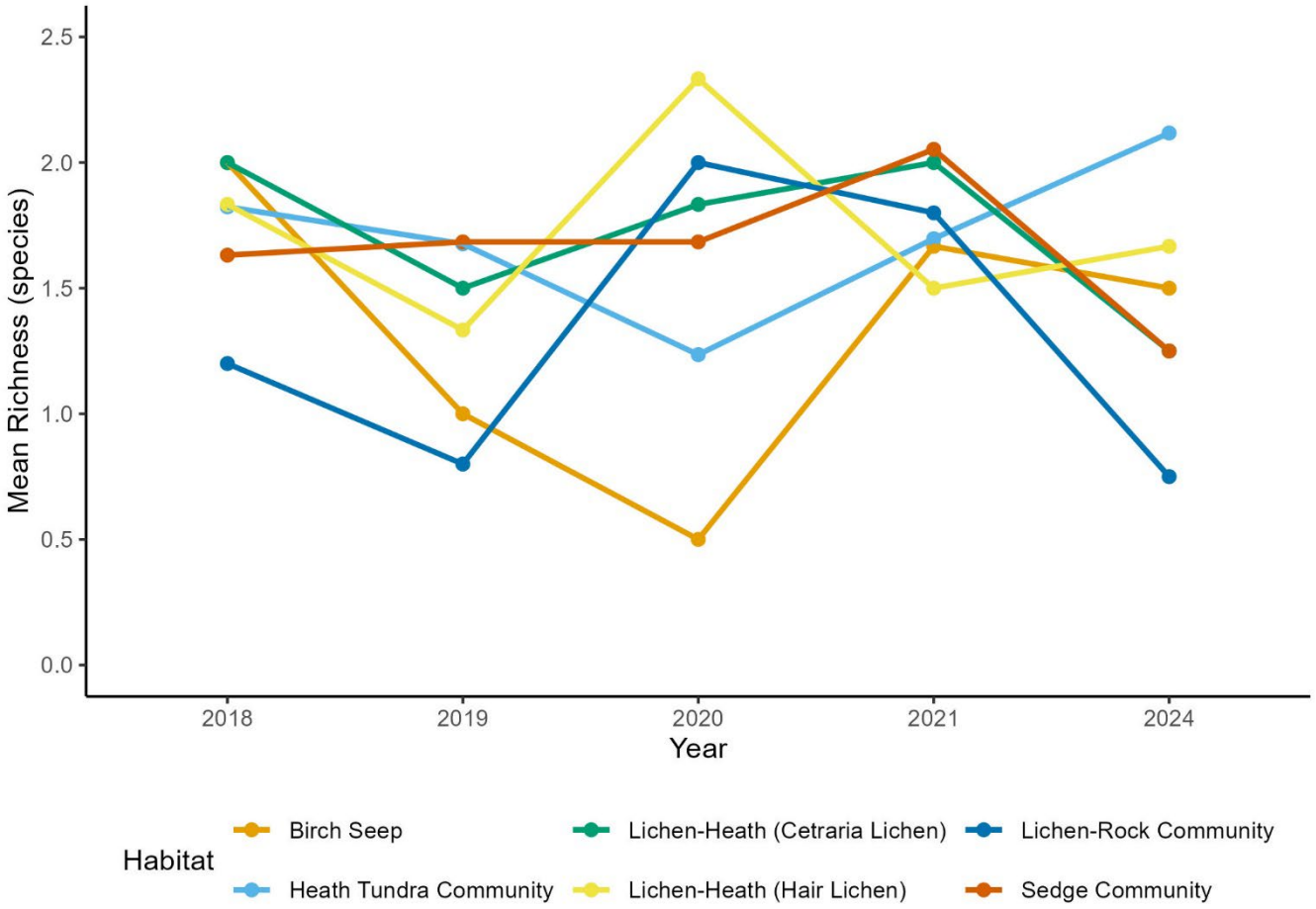


Figure 11: Plot of Avian Richness Across Years and Habitat Types. Error Bars not Shown for Clarity.

Species diversity at the point count level varied from 0 to 1.10 in 2024. Mean species diversity was comparable in 2024 (0.43 ± 0.07) to all other years. Mean species diversity was highest in Heath Tundra Community habitats in 2024 (Table 17). Lowest species diversity was recorded in Lichen-Rock Community habitats (Table 17).
A two-way ANOVA showed that differences in species diversity were not significant among habitat types ($F_{5,316}$=0.63, p=0.64) or years ($F_{4,316}$=1.00, p=0.42; Figure 12).

Overall, these results indicate that only density was lower in 2020 compared to other survey years. Species richness and diversity have not changed from 2018 to 2024 along the AWAR. Differences in density in 2020 may be explained by survey timing later in the season than other years (Figure 13). Moderate values for richness, diversity, and density suggest that time of year was adequate for surveys in 2024.

Table 17: Species Diversity of Passerine Birds among Habitats along the AWAR, 2018 to 2024.

Habitat	2018		2019		2020		2021		2024	
	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE	N	Mean ± SE
Birch Seep	2	0.52 + 0.52	2	0.00 + 0.00	2	0.00 + 0.00	3	0.42 + 0.21	2	0.32 + 0.32
Heath Tundra Community	34	0.48 + 0.07	34	0.44 + 0.06	34	0.29 + 0.07	33	0.41 + 0.07	17	0.61 + 0.09
Lichen-Heath (Cetraria Lichen)	6	0.62 + 0.21	6	0.33 + 0.15	6	0.56 + 0.11	6	0.59 + 0.13	4	0.33 + 0.19
Lichen-Heath (Hair Lichen)	6	0.58 + 0.20	6	0.23 + 0.14	6	0.69 + 0.25	6	0.29 + 0.19	3	0.46 + 0.23
Lichen-Rock Community	5	0.27 + 0.16	5	0.13 + 0.13	5	0.58 + 0.25	5	0.53 + 0.13	4	0.00 + 0.00
Sedge Community	19	0.38 + 0.09	19	0.45 + 0.09	19	0.46 + 0.11	19	0.60 + 0.09	8	0.35 + 0.17

SE = standard error

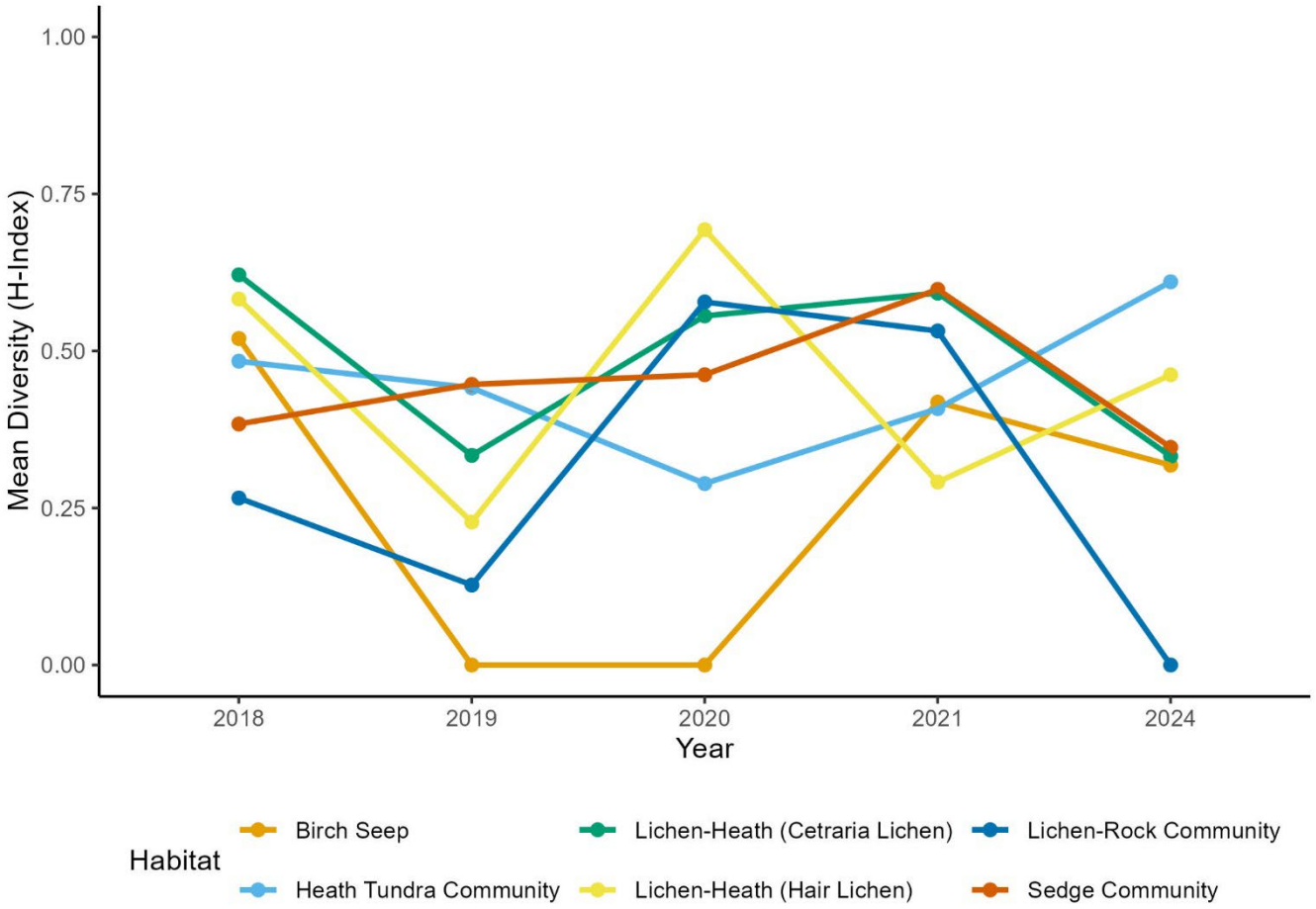


Figure 12: Plot of Avian Diversity Across Years and Habitat Types. Error Bars not Shown for Clarity.

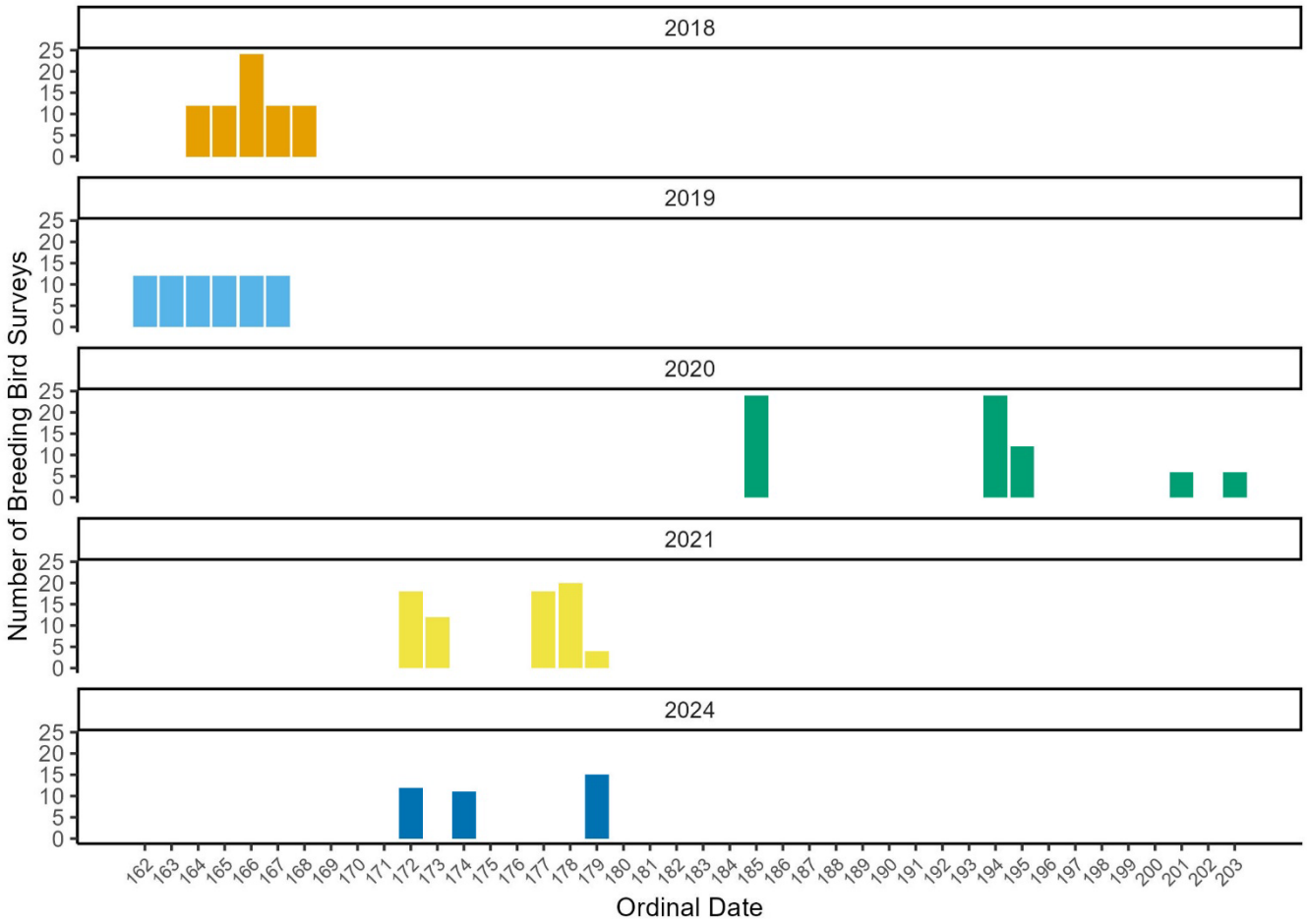


Figure 13: Number of Point Counts by Ordinal Date across Years.

8.2.2.3 Generalized Linear Mixed Model Results

The top model for explaining variation in species density was the Ordinal Date model, which included a random effect for observer (Table 18). The intercept in the model estimated the null expected density of a point count to be approximately 0.92 birds per hectare (Table 19). Ordinal Date had a negative effect on density (β=-0.40, SE=0.13), indicating that bird density was highest earlier in the season, and lowest later in the season (Table 19; Figure 14). Year was not included in the top model, suggesting that survey timing may have influenced lower bird densities seen in 2020. The top model remained the same between 2021 and 2024.

Table 18: Akaike's Information Criterion Ranking for Candidate Generalized Linear Models for Passerine Density, 2018 to 2024.

Model Structure	AIC [a]	ΔAIC [b]
Date	409.80	0.00
Year + Date	413.47	3.67
null	414.64	4.84
Year	415.04	5.24
Distance	420.10	10.30
Year + Distance	420.57	10.77
Date + Habitat	428.67	18.87
Habitat	434.35	24.55
Year + Habitat	435.61	25.81
Habitat + Distance	439.87	30.08
Habitat * Distance	444.25	34.45

(a) Akaike's Information Criterion

(b) Change in AIC between the given model and the top model. Top model sets are determined using a threshold of ΔAIC less than 2.

Table 19: Coefficients and Standard Error of Top Generalized Linear Model for Passerine Density.

Variable	Coefficient	Standard Error
Intercept	0.92	0.11
Date	-0.40	0.13

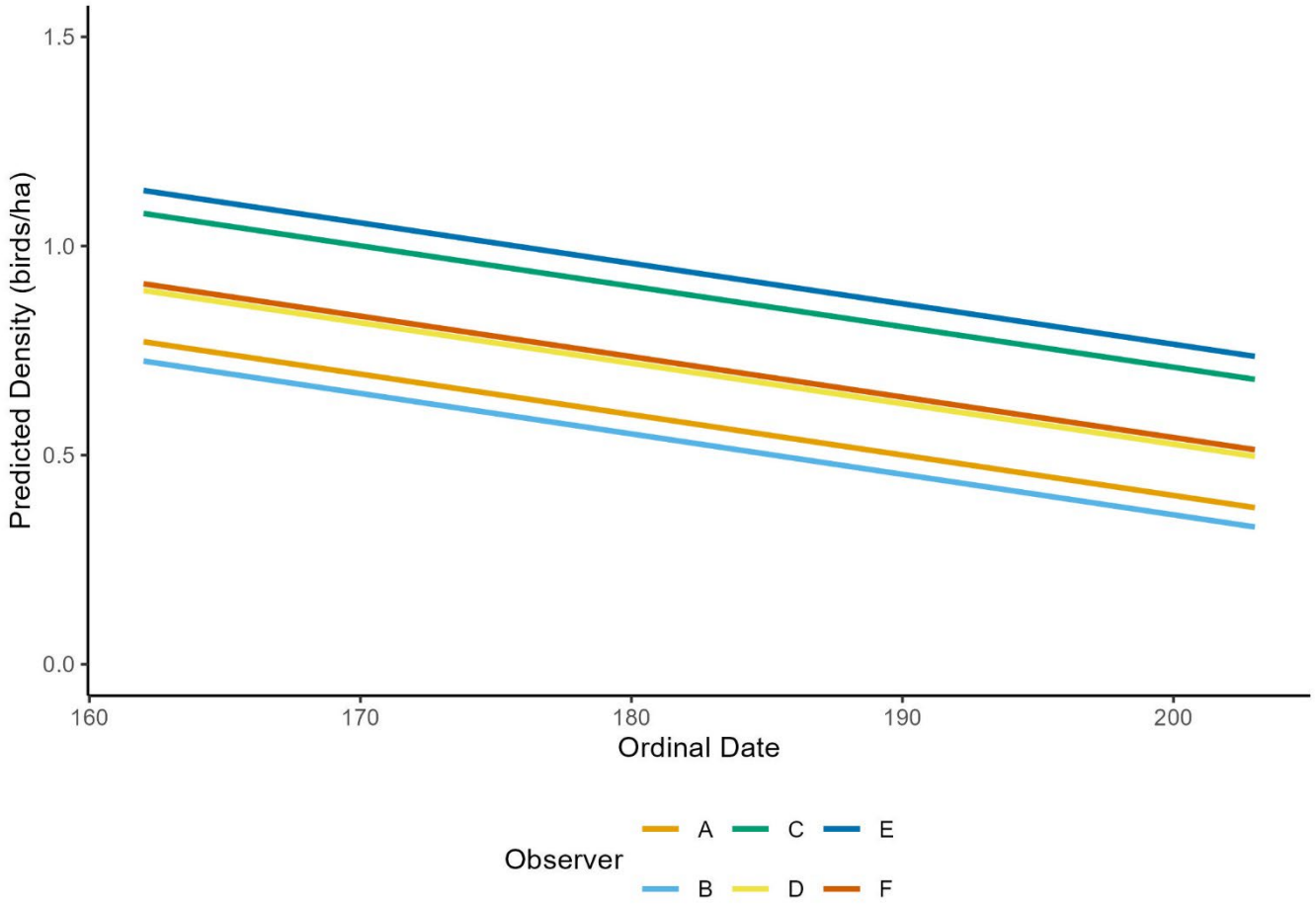


Figure 14: Predictions from Top GLM Model of Passerine Densities at Point Counts in Response to Ordinal Date. Error Bars not Shown for Clarity.

8.3 PRISM

The PRISM is a standardized method for monitoring shorebirds in the Canadian Arctic (Bart et al. 2005). PRISM surveys are designed to document population numbers of Arctic breeding shorebirds, describe the distribution and habitat associations of shorebirds, and monitor trends in population size (Bart et al. 2005). The PRISM surveys conducted as part of monitoring for the Project will contribute to regional knowledge in an effort to set population targets and assist with management and conservation of these species (EC 2012). All PRISM data are submitted to ECCC for inclusion in their regional database.

As per recommendations from ECCC, Agnico Eagle has committed to completing PRISM surveys over 2 years, every 5 years (Agnico Eagle 2022a). A total of 16 plots were chosen by ECCC at the Meliadine Mine. Ten plots were surveyed by Golder (now WSP) in June 2018 and 16 plots were surveyed in June 2019. Due to significant road closures during post-calving caribou migration between 15 and 30 June 2023, one PRISM plot was completed in 2023. This survey was discarded given the limited amount of plot data collected. The following provides a summary of 2024 surveys, with additional information provided in Appendix E.

8.3.1 Methods

In 2024, 24 plots were surveyed by Nunavut Environmental Consulting Ltd. on behalf of Agnico Eagle. Pre-determined plots initially developed by ECCC were surveyed.

At each plot, field personnel walked transects spaced 25 m apart and used GPS geolocation to orient along transect lines. Field personnel documented all birds (i.e., absolute abundance) occurring within the plot, as well as breeding status and habitat conditions.

8.3.2 Results

A total of 27 bird species were observed, with horned lark being the most common species observed. A total of five species with evidence of breeding were detected in 2024, with a total of 11 nests recorded (Table 20). The most common breeding bird species observed during the survey was Canada goose. Additional information on the results of the PRISM survey can be found in Appendix E.

Table 20: Nests Recorded during 2024 PRISM Surveys

Common Name	Scientific Name	Number of Nests Observed
Canada goose	*Branta canadensis*	4
Horned lark	*Eremophila alpestris*	2
Least sandpiper	*Calidris minutilla*	1
Sandhill crane	*Antigone canadensis*	2
Semipalmated plover	*Charadrius semipalmatus*	2
	Total	**11**

8.4 Arctic Raptors Research Program

The following is a summary of the 2024 Arctic Raptors Research Program, completed by Artic Raptors (Appendix F; Arctic Raptors 2024). The Arctic Raptors Research Program is designed to address the following monitoring indicators for nesting raptors are outlined in the TEMMP (Agnico Eagle 2022a):

- Monitoring Indicator 1; Disturbance of nesting raptors — To be determined in consultation with GN and Alastair Franke, related to occupancy and productivity.
- Monitoring Indicator 2; Projected-related mortality — To be determined in consultation with GN and Alastair Franke.

The TEMMP requires the protection of species at risk during the breeding season (T&C 59 and 60) and requires that disturbance to birds is minimized through consistent monitoring (T&C 59, 71, and 72), including nest-specific mitigation where necessary (T&C 61 and 62). Peregrine falcons (*Falco peregrinus*) were assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in November of 2017, and were ranked “Not at Risk”. The responsible Minister rendered a decision on the recommendation made by COSEWIC, and peregrine falcons are no longer considered to be threatened. This report meets the T&Cs outlined by NIRB by documenting and mapping raptor nesting sites within 1.5 km of the Project infrastructure, including minimum “no disturbance” or activity setback buffers.

8.4.1 Methods

Two structured surveys were conducted in 2024. The focus of these surveys was to search known nesting sites for the presence of cliff-nesting raptors. In addition to the structured surveys, favourable habitat was searched opportunistically when ferrying between known sites, camps, or other Mine infrastructure and when raptors or signs of site use (e.g., whitewash, orange-colored lichen, and unused nests) were observed. Sites were considered occupied if one or more adults displayed territorial or reproductive behaviour (e.g., vocalization and/or flight behaviour associated with defense of breeding territory or presence of nest building, nest, or eggs). Locations with partially built or unused nests without detection of breeding aged adults were noted as such (e.g., old stick nest; no birds detected). Raptor monitoring in 2024 involved one ground-based survey via snowmobile between 17-21 and 27-29 May, and one helicopter survey on 11 and 12 August. Additional ground monitoring of potential nesting habitat (e.g., natural cliffs, quarries, and borrow pits) in coastal areas were completed by boat. Not all nesting territories were surveyed in 2024 due to presence of caribou in proximity to the Mine, resulting in a mine shutdown.

In any given year, the status of a nesting site is limited to one of only two outcomes: occupied or not occupied. Although estimation of nesting site occupancy can serve as a metric of population status, detection of nesting pairs is imperfect, and estimating the proportion of occupied sites without accounting for detection error can lead to underestimation of true occupancy. Occupancy modelling estimates parameters that influence occupancy and simultaneously accounts for imperfect detection (i.e., missed occupancy) (Appendix F).

In addition, environmental covariates can be added to an occupancy model to test whether they influence the above parameters using a logit link function. Multi-year occupancy was calculated in *R* (R Core Team 2019) using the *unmarked* package (Kellner et al. 2023). When appropriate, data were standardized.

Occupancy was analyzed separately for peregrine falcons and rough-legged hawks (*Buteo lagopus*). No gyrfalcons (*Falco rusticolus*) were detected. To analyze occupancy, the total number of nesting sites was filtered to include only those nesting sites that were occupied at least once between 2022 and 2023 for both species. Two candidate models were selected *a priori* to estimate the effect of distance to anthropogenic disturbance on detection probability (*p*) and occupancy (ψ). Candidate models were fit and selected using Akaike Information Criterion (AIC).

8.4.2 Results

Monitoring for breeding raptors has occurred consistently in the area associated with the Meliadine Project infrastructure for decades. Surveys have focused on searching for, documenting, and mapping nesting sites for three raptor species (i.e., peregrine falcons, rough-legged hawks, and gyrfalcons). The study design included two surveys: one to assess the location of occupied territories during the pre-incubation and incubation periods, and one to assess site productivity during the late brood rearing period.

Throughout the Rankin Inlet region surveyed by Arctic Raptors, nesting raptors have been detected at 250 nesting sites between 1980 to 2024. Arctic Raptors reported that from 2022 to 2024, 81 nesting sites have been occupied by only peregrine falcon while 71 sites have been occupied by only rough-legged hawk (Appendix F). An additional 13 nesting sites have been occupied by either peregrine falcons or rough-legged hawks, resulting in a total of 94 known peregrine falcon nesting sites and 84 known rough-legged hawk nesting sites. Gyrfalcons have been recorded at two nesting sites typically held by peregrine falcon. Common raven has been documented at six nesting sites. Historically, nesting sites occupied by snowy owl (*Bubo scandiacus*) and short-eared owl (*Asio flammeus*) have also been recorded; however, nesting has not been observed for these species recently (i.e., 2022 to 2024).

Within the RSA and inclusive of all existing data, nesting raptors have been detected at 205 nesting sites. Recent data (i.e., 2022 to 2024) show occupancy by nesting raptors at 116 of these 205 sites. Of these 116 nesting sites, 52 have been occupied by only rough-legged hawks and 50 by only peregrine falcons. An additional ten nesting sites have been occupied by either peregrine falcons or rough-legged hawks, resulting in a total of 62 known rough-legged hawk nesting sites and 60 known peregrine falcon nesting sites. Four nesting sites have been occupied by common ravens. Historically, gyrfalcon have been recorded at two nesting sites; however, no gyrfalcon nesting has been detected during surveys in recent years.

From 2022 to 2024, ten peregrine falcon nesting sites within the RSA were deemed as alternates (i.e., nest within a nesting territory that is not used in the current year), resulting in a total of 50 peregrine falcon nesting territories. Of the 50 nesting territories surveyed, evidence of breeding was detected at 30 nesting territories (observed proportion = 0.60). Eight rough-legged hawk nesting sites were deemed as alternates, resulting in a total of 54 rough-legged hawk nesting territories. Of the 54 nesting territories surveyed, evidence of breeding was detected at 3 nesting territories (observed proportion = 0.06).

The null occupancy model (i.e., model that did not test the influence of distance to anthropogenic disturbance on occupancy or detection) best explained probability of occupancy among peregrine falcons (ψ = 0.77 ± 0.07 [predicted occupancy ± standard error]) and rough-legged hawks (ψ = 0.08 ± 0.10).

8.5 Pre-Clearance Surveys

The following is a summary of the 2024 pre-clearance surveys, completed by Agnico Eagle Environmental staff and consultants (Appendix E; Agnico Eagle 2024a). Pre-clearance surveys are conducted during the active bird breeding window to determine if any active nests will be disturbed by proposed activities. Observers survey the entire proposed clearance area and document all bird activity, including nesting activity.

8.5.1 Methods

Surveys were conducted during the breeding season, between 15 May and 15 August 2023. Proposed construction areas were surveyed at least four days before any disturbance (e.g., construction or borrow pit activity). Surveys were conducted during fair weather (i.e., not raining, low winds, and temperatures below 5°C). A minimum of two people walked straight-line transects through each proposed construction area, spaced by a maximum of 10 m. An additional 30 m on all sides of the proposed construction area was also surveyed to account for potential indirect disturbance to nesting birds resulting from construction activities. In areas with ponds and lakes, circular transects spaced by a maximum of 25 m were completed. Locations and photos were taken when a nest was found.

8.5.2 Results

A total of 54 pre-clearance bird nest surveys were completed in 2024. One nest requiring mitigation was recorded during surveys. A sandhill crane nest was identified in the Channel 4 Construction area. One adult was observed incubating one egg, while another adult was observed attending to a nestling. Mitigation implemented for this nest included delineating a setback distance, reducing traffic speed, application of dust suppressants and/or limiting dust-generating activities, continued monitoring to document nesting outcomes, and suspension of operations until the nest was deemed inactive.

An additional three nests were identified in 2024 that did not require mitigation. Two potential nests were also noted where persistent alarm calls from unidentified sandpipers were observed. No nests were detected and no mitigation implemented (Table 21).

Table 21: Bird Nesting Activity and Nests Identified during Pre-Clearance Surveys in 2024

Date	Bird Species	Details and Mitigation Actions Taken
26 May 2024	Unidentified species	Nest being built but no bird activity observed. No mitigation required.
27 May 2024	Unidentified species	Two nests being built but no bird activity observed. No mitigation required.
29 May 2024	Lapland longspur	Two nests being built. No mitigation required.
22 June 2024	Sandhill crane	One sandhill crane adult incubating one egg and one adult attending to one chick. Buffer established around nest, work suspended, dust suppressant applied and/or dust-generating activities limited in area, and continued monitoring.
3 August 2024	Unidentified sandpiper	Persistent alarm calls from an unidentified sandpiper. No nests found; flagged for future monitoring.
3 August 2024	Unidentified sandpiper	Persistent alarm calls from an unidentified sandpiper. No nests found; flagged for future monitoring.

8.6 Recommendations

In 2025, PRISM plots surveys, waterbird shoreline surveys, and pre-clearance bird nest surveys will continue during the summer, subject to environmental constraints including severe weather and caribou movements. Bird point counts are completed every three years, with the next survey scheduled for 2027.

The analyses completed for the Arctic Raptors Research Program indicated no effect of distance to disturbance on occupancy, which is consistent with studies elsewhere in the Arctic (Coulton et al. 2013). The potential of detecting mine-related anthropogenic disturbance will be challenging in light of the presence of roads, trails, cabins, travel routes and activities on the sea/sea-ice and lake ice associated with the community of Rankin Inlet. Multi-year surveys conducted at the scale of the RSA were recommended in 2022, and the 2023 and 2024 program satisfies this recommendation. As was done in 2023, further survey effort was also undertaken in the northern portion of the RSA to fill a previous gap (Appendix F).

Population trends between 2022 and 2024 for both focal raptor species suggest a decline in occupancy; however, this finding should be interpreted with caution until additional years can be considered. Given that no evidence of an effect of distance to disturbance on occupancy was found, and assuming that the apparent decline is real, other causes for raptor decline should be considered. A potential mechanism is Highly Pathogenic Avian Influenza, which spiked in 2022; therefore, it is recommended that any found-dead raptors be submitted for disease testing.

9.0 WILDLIFE OBSERVATIONS

Agnico Eagle's Environment Technicians conduct site surveillance monitoring and road surveillance monitoring regularly on the AWAR and within the Project footprint. In addition to planned surveys, all employees and contractors are asked to report wildlife sightings. In November 2021, a new way to report wildlife sightings on site via text message was introduced to all employees. The text messaging was replaced by a QR Code in April 2023.

In previous TEMMP annual reports, observations from wildlife surveys and wildlife incidental observations were pooled and compared with previous years. Combined survey observations and incidentals from 2024 were lower than in 2023 and more comparable to other years (2018: 7,198 individuals; 2019: 880 individuals; 2020: 2,650 individuals; 2021: 4,182 individuals; 2022: 5,255 individuals; and 2023: 9,458 individuals; and 2024: 3,781; WSP 2024a). Table 22 summarizes wildlife observations between 2018 and 2024 from both incidental observations and wildlife surveys. Results are presented separately in the sections following to distinguish between results from formal wildlife surveys and results from incidental observations.

Table 22: Wildlife Observations from Wildlife Surveys and Incidental Observations, 2018 to 2024

Common Name	Scientific Names	Number of Individuals Observed							
		2018	2019	2020	2021	2022	2023	2024	Total
American crow	*Corvus brachyrhynchos*	-	-	-	-	-	-	2	2
American pine marten	*Martes americana*	0	0	20	2	0	0	0	22
Arctic fox	*Vulpes lagopus*	105	67	62	160	256	115	104	869
Arctic ground squirrel	*Urocitellus parryii*	1	10	14	14	45	67	60	211
Arctic hare	*Lepus arcticus*	31	34	50	84	146	130	78	553
Baird's sandpiper	*Calidris bairdii*	0	0	0	2	70	0	0	72
Bald eagle	*Haliaeetus leucocephalus*	1	0	0	1	4	2	4	12
Bird sp.[(a)]	N/A	0	0	0	99	0	363	195	657
Brant	*Branta bernicla*	0	0	181	25	0	1	0	207

Table 22: Wildlife Observations from Wildlife Surveys and Incidental Observations, 2018 to 2024

Common Name	Scientific Names	Number of Individuals Observed							
		2018	2019	2020	2021	2022	2023	2024	Total
Canada goose	*Branta canadensis*	67	145	470	1,027	889	981	497	4,076
Canada/Cackling goose	*Branta canadensis/hutchinsii*	-	-	-	-	-	-	69	69
Caribou[(b)]	*Rangifer tarandus groenlandicus*	6,839	86	106	30	1,066	5,197	39	13,363
Common/King eider	*Somateria mollissima/spectabilis*	-	-	-	-	-	-	30	30
Common raven	*Corvus corax*	2	5	43	29	93	115	79	366
Duck sp.	N/A	20	17	95	164	105	179	106	686
Grey wolf	*Canis lupus*	0	2	2	2	2	10	0	18
Greater white-fronted goose	*Anser albifrons*	0	44	0	6	0	0	89	139
Gull sp.	N/A	0	18	76	74	232	173	59	632
Gyrfalcon	*Falco rusticolus*	-	-	-	-	-	1	0	1
Hawk sp.	N/A	0	0	0	2	0	0	1	3
Long-tailed duck	*Clangula hyemalis*	0	0	3	5	0	2	0	10
Loon sp.	N/A	-	-	-	-	-	14	7	21
Mammal sp.	N/A	0	0	0	3	0	0	0	3
Muskox	*Ovibos moschatus*	0	0	22	0	8	0	1	31
Northern pintail	*Anas acuta*	-	-	-	-	-	13	58	71
Owl sp.	N/A	-	-	-	-	-	-	2	2
Peregrine falcon	*Falco peregrinus*	0	4	5	2	0	3	0	14
Polar bear	*Ursus maritimus*	2	2	4	0	1	5	8	22
Ptarmigan sp.	*Lagopus* sp.	19	8	59	142	87	50	57	422
Rough-legged hawk	*Buteo lagopus*	0	9	74	5	10	2	1	101
Sandhill crane	*Antigone canadensis*	4	68	152	202	175	213	100	914
Scaup sp.	N/A	-	-	-	-	-	73	2	75
Snow goose	*Anser caerulescens*	100	340	1,190	2,083	1,968	1,610	2,037	9,328
Snowy owl	*Bubo scandiacus*	2	0	1	1	1	1	0	6
Tundra swan	*Cygnus columbianus*	4	21	21	18	97	138	96	395
Wolverine	*Gulo gulo*	1	0	0	0	0	0	0	1
	Total	**7,198**	**880**	**2,650**	**4,182**	**5,255**	**9,458**	**3,831**	**33,404**

(a) Includes small passerines and individuals that could not be identified to species level (e.g., American robin, snow bunting, sparrow species); - indicates that this species or species group was not recorded in this annual reporting table before 2023 or 2024; sp. = species.

(b) Number of individuals observed do not include those observed during caribou behaviour monitoring, remote camera surveys, or the Caribou Advisory Monitoring program. These results are presented separately in Section 12.0.

9.1 Wildlife Surveys

Agnico Eagle conducted a combined total of 135 wildlife surveys along the AWAR and at Mine infrastructure in 2024. Wildlife surveys were completed along the AWAR an average of every 3.1 days from 3 January to 28 December 2024. Wildlife surveys were completed at Mine infrastructure (e.g., land farms, tank farms, camps, construction areas, exploration areas, the incinerator, water collection ponds) an average of every 7.1 days from 1 January to 31 December 2024 (Table 23).

Table 23: Frequency of Wildlife Surveys in 2024

Month	Number of All-Weather Access Road Surveys	Number of Mine Site Surveys
January	6	4
February	9	6
March	10	4
April	6	5
May	6	3
June[(a)]	8	3
July[(a)]	8	4
August	7	3
September	5	1
October	9	4
November	8	4
December	7	5
Total	**89**	**46**

(a) Additional caribou surveys completed regularly throughout June and July, described in Section 12.0.

A total of 3,296 individuals from 15 identified wildlife species and 8 unidentified wildlife species groups (e.g., duck sp., gull sp., loon sp. [*Gavia* sp.], ptarmigan sp. [*Lagopus* sp.]) were recorded during surveys along the AWAR in 2024. Snow goose (*Chen caerulescens*) was the most commonly recorded species with a total of 1,978 individuals observed along the AWAR. Observations of snow geese flocks may include Ross's goose (*Anser rossii*), which are difficult to distinguish from snow goose from a distance. Canada goose, tundra swan (*Cygnus columbianus*) and sandhill crane were also frequently observed along the AWAR with a total of 445, 89, and 85 individuals recorded in 2024, respectively. There were also 88 individuals grouped under bird spp., which include small passerines and individuals that could not be identified to the species level. Mammal species recorded along the AWAR included Arctic fox (*Vulpes lagopus*; 17 individuals), red fox (*Vulpes vulpes*; 1 individual), Arctic ground squirrel (*Urocitellus parryii*; 54 individuals), Arctic hare (*Lepus arcticus*; 27 individuals), caribou (8 individuals), and polar bear *(*3 individuals).

A total of 357 individuals from 12 identified wildlife species and 7 unidentified wildlife species groups (e.g., duck sp., gull sp., loon sp.) were recorded during surveys at Mine infrastructure other than the AWAR in 2024. Snow goose, northern pintail (*Anas acuta*), and Canada goose were the most frequently observed species with 59, 58, and 52 individuals recorded, respectively. Mammal species recorded at Mine infrastructure included Arctic fox (19 individuals), red fox (1 individual), Arctic ground squirrel (6 individuals), Arctic hare (33 individuals), and caribou (1 individual).

These totals do not include caribou documented as part of the caribou behaviour monitoring (Section 12.1), caribou remote camera study (Section 12.2), or caribou advisory programs (Section 12.4). Barren-ground caribou are listed as 'Threatened' by COSEWIC but are not currently listed under the *Species at Risk Act* (SARA; Government of Canada 2024). No species listed under Schedule 1 of *SARA* were observed during wildlife surveys.

9.2 Wildlife Incidentals

There were 100 incidental wildlife observations recorded, representing 190 individuals of 11 species and two species groups (i.e., bird sp., ptarmigan sp.), around the Mine site (including the camp area) and the AWAR in 2024 (Table 24). Incidental wildlife observations were recorded between 10 January and 31 December 2024 through Wildlife Logs and Reports (e.g., via radio call, e-mail, or QR code), and do not include mortalities or observations of large herds of migrating caribou. Information on caribou migration through the Mine site and AWAR is presented in Section 12.0.

The most frequently observed species were Arctic fox (68 individuals), ptarmigan sp. (40 individuals), and caribou (30 individuals; Table 24). Species observed only incidentally and not during wildlife surveys were grey wolf and muskox.

Table 24: Incidental Wildlife Observations (2024)

Common Name	Scientific Name	2024	
		Number of Observations	Number of Individuals
American crow	*Corvus brachyrhynchos*	1	1
Arctic fox	*Vulpes lagopus*	60	68
Arctic hare	*Lepus arcticus*	8	18
Bald eagle	*Haliaeetus leucocephalus*	1	2
Bird sp.	n/a	3	3
Canada/Cackling goose	*Branta canadensis/hutchinsii*	1	2
Caribou	*Rangifer tarandus*	16	30
Grey wolf	*Canis lupus*	3	6
Muskox	*Ovibos moschatus*	1	1
Polar bear	*Ursus maritimus*	1	1
Ptarmigan sp.	*Lagopus* sp.	3	53
Total		**100**	**190**

Note: Specific GPS locations were not recorded for incidental wildlife observations in 2024. Wildlife mortalities and counts of large herds of migrating caribou are not included. N/A = not applicable; sp. = species.

9.3 Den Sites

Prior to construction of Project infrastructure, surveys are required to locate dens of carnivores in accordance with NIRB Project Certificate No. 006 (Amendment No. 002) T&C 53. Surveys were completed between May and August 2024 to locate dens of Arctic fox, grey wolf, polar bear, grizzly bear (*Ursus arctos*), and wolverine (*Gulo gulo*). The focus was on Arctic fox as surveys were conducted during their denning period. Most surveys occurred opportunistically while conducting other tasks in the vicinity or prior to the construction of Project infrastructure. Den surveys consisted of visual observations of den openings and signs of wildlife. An unmanned aircraft system (UAS), or drone, and trail cameras were used to survey for dens in order to limit disturbance, when required. Surveys were performed by qualified Environment Department personnel.

During the 2024 den survey, 11 historical dens were revisited, with 7 dens recorded as active. Of these seven dens, two were active Arctic fox dens, while the remaining five were being used by Arctic squirrels. The two active fox dens were both originally recorded in 2023, one along Discovery Road and one along the Apache Bypass. No new dens were recorded in 2024. Additional details on den surveys completed in 2024 can be found in Appendix G (Agnico Eagle 2025b).

The recommended construction setback and mitigation measures as described in Appendix G were implemented at active fox dens where construction activities were happening in the area. Fox den habitat was protected even when inactive.

9.4 Bird Nests

In 2024, 17 incidental bird nests were observed on the Mine site or along the AWAR (Table 25).

Table 25: Incidental Bird Nests and Approximate Location, 2024

Date Nest First Observed	Common Name	Location	Approximate Coordinates (NAD 83; Zone 15)		Notes	Mitigation Measure(s) Applied[(a)]
			Easting	Northing		
22 April 2024	Common raven	Cement Plant	539586	6989047	Nest structure mostly built; no eggs observed.	6
28 April 2024	Common raven	3M Tank Farm	540150	6989115	Twigs observed at the 3M tank farm on the stairway (no nest structure)	Twigs removed and bird deterrent installed.
25 May 2024	Common raven	Tiri-02	540602.91	6988459	Twigs observed in Tiri-02 East Wall; Raven seen flying overhead. No nest confirmed.	N/A
26 May 2024	Rough-legged hawk	CP2	541462	6988879	Twigs observed on CP2 West Wall; Rough-legged hawked seen flying overhead. No nest confirmed.	N/A
28 May 2024	Rough-legged hawk	Dyno road/construction pad	538244	6990565	Partial nest structure observed at the construction pad. No eggs present.	6
6 June 2024	Canada goose	TSF	538315	6990230	Nest located on a turf hummock north of cell 2 (TSF)	1,2,3,4
7 June 2024	Canada goose	CP1/ OP2	539851	6989574	Nest located on a turf hummock west side of Lake H8	1,2,3,4
8 June 2024	Canada Goose	Pump Road	539316	6987786	Nest on the north side of lake B34 by Pump road on top of a turf hummock by the west shore	1,2,3,4,5
8 June 2024	Canada Goose	Pump Road	539390	6987720	Nest on the south side of lake B34 by Pump road on top of a turf hummock by the west shore	1,2,3,4,5

Table 25: Incidental Bird Nests and Approximate Location, 2024

Date Nest First Observed	Common Name	Location	Approximate Coordinates (NAD 83; Zone 15)		Notes	Mitigation Measure(s) Applied[(a)]
			Easting	Northing		
17 June 2024	Canada Goose	Pump Road	539735	6986737	Nest on the SE side of lake B37 close to pump road on a turf hummock by the shore.	1,2,3,4,5
17 June 2024	Canada Goose	Pump Road	539923	6986658	Nest in the middle of Lake B38 on a turf hummock at the end of pump road	1,2,3,4,5
17 June 2024	Canada Goose	Pump Road	539919	6986753	Nest in a pond on the east side of pump road close to lake B38, nesting on a small turf hummock.	1,2,3,4,5
17 June 2024	Pacific Loon	Pump Road	539928	6986658	Nest in the middle of Lake B38 on a turf hummock at the end of pump road	1,2,3,4,5
21 June 2024	Pacific Loon	Pump Road	539121	6987894	Nest on the E side of lake B34 on a turf hummock at the beginning of pump road	1,2,3,4,5
26 June 2024	Semi-palmed plover	Snow Pad	539699	6990189	Nest located on a turf hummock north of CP1 on the snow pad; four eggs observed	1,4
26 June 2024	Sandhill crane	WRSF3	541578	6988985	Nest located east of CP6/WRSF 3	N/A
10 July 2024	White-crowned sparrow	Duquette Laydown	539320	6990297	Nest located on a metal piece of material east side of Duquette Laydown; 4 chicks were present	1,4,5

(a) Mitigation Measures:
1. Delineated setback distance with stakes and maintained protection buffer.
2. Reduce traffic speed.
3. Applied dust suppressants and/or limited dust-generative activities in sensitive areas.
4. Conducte3d low-impact monitoring to document nesting outcomes.
5. Suspended operations or use of material/equipment.
6. Removal Permit requested and issued.

MBCA = *Migratory Bird Convention Act*; - = exact location was not recorded; m = metres.

9.5 Incidents and Mortalities

Mortalities can occur as wildlife interact with the Project site or become habituated to mining activities resulting from efforts to locate food or shelter (DDMI 1998). Diligent waste management, employee and environmental awareness and immediate reporting of wildlife sightings in and around Project infrastructure can limit the mortality of wildlife.

9.5.1 Methods

Project-related incidents and mortalities are reported to the Mine's Environment Department for documentation in a detailed incident investigation for immediate follow-up. All wildlife mortalities are reported immediately to the GN DoE, and the GN DoE is consulted for follow-up mitigation and disposal procedures. In addition, the KivIA is also immediately notified of wildlife mortalities and the events and circumstances around that mortality. If wildlife had to be deterred to reduce the risk of a wildlife-human incident, then all efforts are made by the environmental technicians to start with the least intrusive method available. All deterrent actions are recorded.

9.5.2 Results

A total of ten mortalities across five different species were reported at the Project from 20 January to 9 December 2024; all mortalities were suspected or confirmed to be caused as a direct result of Project activities, with the exception of two unknown cases (Table 26). There were no other reports of incidental mortalities (i.e., mortalities unrelated to Project activities) in 2024.

Table 26: Wildlife Mortalities and Incidents Reported in 2024

Date	Species	Number	Location	Project Related	Comments
20 January 2024	Arctic fox	1	Dyno Road, behind the Toromont shop	Yes	A deceased fox was found along the Dyno access road behind the Toromont shop. The fox appeared to have been struck by a vehicle. The Environment Department was notified, and the animal was recovered. The carcass was disposed of according to the GN Conservation Officer's instructions.
6 March 2024	Arctic fox	1	Haul Road near Tiri 2	Yes	A haul truck struck an Arctic fox when driving from Tiri-01 to WRSF3. The fox ran in front of the haul truck and the operator could not stop the truck in time before striking the animal. The Environment Department was notified, and the animal was recovered. The carcass was disposed of according to the GN Conservation Officer's instructions.
26 May 2024	Arctic ground squirrel	1	Itivia	Unknown	n/a
10 August 2024	Arctic fox	1	AWAR, KM 20	Yes	A deceased Arctic fox was discovered around kilometre 20 of the AWAR. The fox appeared to have been struck by a piece of heavy equipment. The Environment Department was notified, and the animal was recovered. The carcass was disposed of according to the GN Conservation Officer's instructions.

Table 26: Wildlife Mortalities and Incidents Reported in 2024

Date	Species	Number	Location	Project Related	Comments
25 August 2024	Sandhill crane	1	AWAR, KM 10	Yes	A fuel tanker struck a sandhill crane at approximately kilometre 10 of the AWAR. An individual crane flew directly in front of the tanker, not allowing the operator sufficient time to stop to avoid a collision. Environment Department was notified, and the animal was recovered. By the time recovery occurred, gulls had already started to feed on the carcass. The carcass was disposed of according to the GN Conservation Officer's instructions.
31 August 2024	Arctic hare	1	Haul road, intersection between service road and haul road	Yes	A haul truck struck an Arctic hare when driving along the Haul Road at the Mine, towards the WRSF3. The hare ran in front of the haul truck and the operator could not stop in time before striking the animal. The Environment Department was notified. The carcass was disposed of according to the GN Conservation Officer's instructions.
21 September 2024	Arctic fox	1	AWAR, KM 29	Yes	A deceased Arctic fox was discovered around kilometre 29 of the AWAR, likely struck by a vehicle. Environment Department was notified. By the time recovery occurred, gulls had already started to feed on the carcass. The carcass was disposed of according to the GN Conservation Officer's instructions.
25 September 2024	Arctic hare	1	AWAR, KM 17	Likely	A deceased Arctic hare was discovered around kilometre 17 of the AWAR. Although the cause of the mortality is unknown, given the location of the carcass, it is presumed the hare was struck by a vehicle. Environment Department was notified; however, by the time the Environment Department got to the location for recovery, the carcass was gone, likely consumed or taken by scavengers. The incident was reported to a GN Conservation Officer.
29 October 2024	Common raven	1	Dome 3 by Portal 1	Unknown	A deceased raven was discovered outside Dome 3 at the Mine. The cause of mortality is unknown as the carcass had been partially scavenged. Environment Department was notified. By the time recovery occurred, gulls had already started to feed on the carcass. The carcass was disposed of according to the GN Conservation Officer's instructions.

Table 26: Wildlife Mortalities and Incidents Reported in 2024

Date	Species	Number	Location	Project Related	Comments
9 December 2024	Arctic fox	1	Haul Road	Yes	A deceased Arctic fox was discovered on the Haul Road, near the entrance of Portal 2. Environment Department was notified. Upon arrival for recovery, it was observed that the fox was likely struck by a vehicle. The carcass was disposed of according to the GN Conservation Officer's instructions.

AWAR = All-Weather Access Road, ECCC = Environment and Climate Change Canada; GN = Government of Nunavut; spp. = species.

The Environment Department employs many mitigation measures to minimize the presence of foxes on site. Toolbox talks for every crew of the department emphasize the importance of waste segregation to avoid attracting wildlife. Inspections are completed regularly in every location outside to prevent food waste availability to wildlife. These mitigation measures were reinforced in 2023 by BEARWISE in a wildlife audit report at the Mine Site (BearWise 2023). Following the site audit, several measures were taken to reduce wildlife attractants and ensure the safety of site personnel and local wildlife. The implementation of these measures was overseen by the Environment department and realistic deadlines for their completion were set. Agnico Eagle continued to implement measures in 2024, including ongoing waste management training for all mine departments.

9.6 Accuracy of Impact Predictions

A summary of the impact predictions proposed in the TEMMP (Agnico Eagle 2022a) is provided in Table 27. Through systematically recording the presence of all wildlife within and around the Project footprint, Environmental staff will remain appraised of current and emerging issues and will be able to manage issues as they arise. To use a common example, surveillance monitoring may detect that wildlife has gained access and is taking shelter beneath a building. Once the animal has been removed, fencing can be used to prevent further access from wildlife.

The thresholds presented in Table 27 have been employed for the Mine to date for consideration of any adaptive management for the TEMMP (Agnico Eagle 2022a). Refinement of these thresholds may be considered, in collaboration with the GN, as appropriate, as more data is collected and analyzed over time.

Table 27: Accuracy of Impact Predictions – Wildlife Incidents 2024

Monitoring Indicator	Preliminary Threshold	Exceeded in 2024?	Adaptive Management	Monitoring Method	TEMMP Section
Vehicle Collisions	No more than 1 ungulate/year	No	No action required	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	9.5.2
Project Related Mortality[(a)]	No more than 1 ungulate/year	No	No action required	Wildlife Sightings Log, Site Surveillance Monitoring	9.5.2
Project Related Mortality[(a)]	No more than 20 Arctic fox/year	No	On-going waste management and, regular toolbox meetings reiterating that any disrespect of wildlife or of Meliadine's wildlife policy is unacceptable and against company rules	Wildlife Sightings Log, Site Surveillance Monitoring, with particular emphasis around waste management areas	9.5.2
Project Related Mortality[(a)]	No more than 1 raptor/year	No	Not currently identified	Wildlife Sightings Log, Site Surveillance Monitoring	9.5.2
Project Related Mortality[(a)]	No more than 1 waterbird/year	No	On-going and regular toolbox meetings on awareness of blind spots, particularly for large vehicles and equipment	Wildlife Sightings Log, Site Surveillance Monitoring	9.5.2

(a) Project Related Mortality = A death that can be directly linked to the Mine or mining activity.

TEMMP = Terrestrial Environment Management and Monitoring Plan.

9.7 Recommendations

Mortalities recorded in 2024 are within predicted thresholds. Agnico Eagle was proactive in managing wildlife conflict. Diligent waste management practices, employee and environmental awareness (e.g., toolbox meetings), and immediate reporting of wildlife sightings in and around Project infrastructure to limit mortality of wildlife should be continued. Specific recommendations from GN and wildlife audits in 2023 and implemented in 2024 were to avoid mixing food waste with other types of waste, to educate personnel to not feed wildlife, to ensure that all waste containers are sealed, and to ensure that doors of buildings that contain waste remain closed (BearWise 2023). Agnico Eagle will continue to implement these recommendations, including ongoing waste management training for all Mine departments.

10.0 WILDLIFE DETERRENTS

Wildlife deterrents were implemented at ten locations in 2024 to deter birds from nesting. Propane cannons were used at Tiri-1, H14, CP5, Channel 5, and the northwestern corner of CP1. Cannons were deactivated and/or removed during caribou migration. Bird deterrent balloons were used at CP1 and TSF Cell 1 Northeast, while a decoy coyote was also placed at CP1. Finally, chicken wire with aluminum cans attached were installed at both the 3M Fuel Farm and the Batch Plant to deter ravens from nesting. Environmental technicians also actively deterred wildlife (e.g., Arctic fox, Canada goose) around Mine infrastructure. All activities were successful, with the exception of two instances, both involving Arctic fox, one at the Landfill and one at the OP1 Waste Bin.

11.0 MUSKOXEN

Agnico Eagle has provided the GN DoE with in-kind contributions and support for previous muskoxen surveys and may continue to do so when requested. No surveys were completed by the GN DoE in 2024, and in-kind contributions were not requested.

12.0 BARREN-GROUND CARIBOU

Barren-ground caribou (including the Lorillard and Qamanirjuaq herds) are listed as 'Threatened' under COSEWIC but are not currently listed under the *Species at Risk Act* (Government of Canada 2024). Barren--ground caribou are ranked S3S4 and are considered 'Vulnerable' in Nunavut (CESCC 2022). Annual home ranges mapped by GN DoE show that the Project is within the annual home range of the Qamanirjuaq (pronounced "Kaminuriak") caribou herd (Campbell et al. 2012, 2014). The Lorillard caribou are migratory, exhibiting an east-west migration movement solely within Nunavut (Campbell et al. 2014) and generally distributed north of Chesterfield Inlet, based on telemetry data collected by the GN DoE and the location of their historical calving grounds (Campbell et al. 2012). The likelihood of animals from the Lorillard herd occurring in the RSA for the Mine, as defined in the FEIS (Golder 2014), is very low. Based on GPS telemetry data, now available from the GN DoE through a data sharing agreement with Agnico Eagle, Lorillard caribou most recently came within 90 km of the northern edge of the Project RSA in 2022.

Baseline survey data documenting the distribution of barren-ground caribou during early winter, spring migration and calving, and post-calving through fall migration and rut periods suggest that the RSA is within the seasonal range of the Qamanirjuaq barren-ground caribou herd (Jalkotzy 1999, 2000, 2001). The annual range of the Qamanirjuaq herd occupies an area from northern Manitoba and Saskatchewan in the south, to southwestern Nunavut and southeastern Northwest Territories (BQCMB 1999; Campbell et al. 2012). The most recent population estimate of the Qamanirjuaq caribou herd was reported to be 252,892 adults in 2022, with a stable population status since the last survey completed in 2017 (Campbell et al. 2023). Barren-ground caribou are migratory, and movements and range use vary annually (Wakelyn 1999). The annual distribution and life-history of this population has been previously documented (Banfield 1954; Kelsall 1968; Thomas 1969; Parker 1972; Heard 1986). The Qamanirjuaq herd historically calves approximately 57 km to the west-northwest of the Mine and after calving the herd aggregates into a post-calving movement, generally moving east towards the coast and then back to the west and southwest of the Mine where their summer movement and distribution patterns commence. During the post-calving movements to the coast, thousands of caribou can come through the Mine site and reside within and around the Project area from early June to late July (Golder 2020). For additional discussion on the Qamanirjuaq herd please refer to the FEIS (Golder 2014).

12.1 Caribou Behaviour Monitoring

The TEMMP indicates that once 50 caribou are observed within 5 km of the Project footprint boundary (visual detection or based on collar data provided by the GN DoE), a work suspension protocol commences at the Mine. Monitoring caribou behaviour in proximity to the mine is integral to understanding how caribou interact with the Project infrastructure including roads (i.e., crossing, deflection, walking parallel) and other Project infrastructure. Documenting behaviour through activity budgets may better inform appropriate adaptive management and distance triggers and thresholds in the future. Over time, a long-term dataset will be used to evaluate obvious response or lack of obvious response of caribou to mining based on behaviour.

The overall objectives of the caribou behaviour monitoring program are to determine if caribou activity budgets change with distance from the mine, and to document caribou response to stressors. Activity budgets (i.e., time spent feeding, resting, walking, running) of caribou exposed to disturbances from the Mine and AWAR will be used to provide inputs for assessing the impact to the energy balance of caribou (see Section 4.5.2 of the TEMMP, Agnico Eagle 2022a, for additional discussion). The immediate effect of specific stressors (e.g., aircraft, vehicles, other wildlife) on caribou behaviour will also provide general insight into the relative effect of natural, Project-related, and community-related (i.e., ATV traffic and harvesting) road stressors on caribou behaviour. Consequently, opportunistic surveys should be completed when appropriate to do so during the caribou post-calving migration, without causing additional stress to caribou.

An external caribou behaviour expert (from ERM Consultants Canada Ltd. [ERM]) was brought on site in 2020, 2021, 2022, 2023, to conduct the behaviour monitoring program, and to provide training for the Meliadine Mine Environmental Technicians. ERM also conducted the behaviour monitoring program in 2024; The overall objective of the caribou behaviour monitoring program as stated in the TEMMP is:

- To determine if caribou activity budgets change with distance from the Mine, and to document caribou response to stressors.
- To determine if caribou distribution changes with proximity to the Mine (i.e., do caribou avoid the mine).

Per the Project Certificate (T&C 57), a detailed analysis of caribou responses to operations of the AWAR is required at Meliadine. The detailed objectives of the 2024 study were:

1) To conduct a study using behaviour survey methodology at the Project site to estimate how the AWAR and site infrastructure may contribute to the effects of the Project on caribou.
2) To use information from the surveys (combined across four years of data collection) to determine factors that predict caribou behaviour near the Mine site, specifically looking at distance; group size; and vehicle disturbances.

The primary hypothesis of this study was that caribou closer to the road would demonstrate a stronger response to vehicle disturbances.

12.1.1 Methods

Ground-based behavioural observations, or scan sampling, are conducted to provide data on changes in caribou behaviour as a function of distance from the Project. Two different, but complementary approaches have been used to record the activity budget of caribou around the Project and AWAR. See the TEMMP (Agnico Eagle 2022a) for additional details on the behaviour scan method. In 2024, wildlife biologists from ERM completed behaviour observations during the caribou migration.

The objective of the data analysis was to quantify trends in the survey data and determine whether factors such as distance to infrastructure, group size or disturbances could be used to explain caribou behaviour. The primary hypothesis was that caribou closer to the road would demonstrate a stronger response to disturbances. An initial exploratory analysis was conducted to visualize the data and determine the appropriate method for analyzing the data. Behaviour categories were grouped for analysis into “response” behaviours (alert and running) and non-response (feeding, lying down and standing) to increase statistical power.

Following the 2021 analysis there was a suggestion from the TAG to explore whether the proportion of walking caribou changed as a response to disturbance. This was done to see if walking would be better categorized as a response behaviour or non-response behaviour. To test this, a model that included walking, running, and alert behaviours was developed in addition to the original model with just running and alert behaviours.

Generalized linear mixed-effects models (GLMMs) were developed to statistically test for differences in the proportion of response behaviours in surveyed animals as a function of various controlling variables, including the occurrence of disturbances. Proportions were modelled using a binomial distribution. Because small groups naturally have greater variability in values (i.e., more likely that “all” or “none” of caribou were alarmed when there are only two caribou) an offset was included for the total number of caribou with tallied behaviour. This regression framework provides a means to control for environmental variables, repeated measures, and spatial correlation. Random effects were included for survey ID and year to control for spatial and temporal autocorrelation.

Statistical analyses were conducted using R Statistical Software version 4.4.2 (R Core Development Team 2024). Two dependent variables were tested:

- Proportion of response behaviours (alert and running) in each 3-minute interval in each survey.
- Proportion of walking plus response behaviours in each 3-minute interval in each survey.

The two dependent variables were each modelled against a suite of potentially important variables to determine if there was any statistical relationship with response behaviour. Based on an initial assessment of which variables were most statistically relevant, the variables included in this analysis were group size, distance to road, wind speed, and a binary variable identifying whether a disturbance occurred during each 3-minute interval. Based on comments from the GN on the 2022 and 2023 analyses, distance from caribou to infrastructure was considered as a continuous variable. For each dependent variable, GLMMs were constructed and tested for model fit, as evidenced by the Akaike Information Criterion (AIC; Appendix H).

12.1.2 Results

The following provides a summary of caribou behaviour monitoring completed in 2020 to 2024. Further explanation of statistical analyses and results are contained in Appendix H.

From 19 June to 3 July 2024, groups of caribou were surveyed passing through or near the study area. An earlier peak in caribou observations near the Mine occurred in May in 2024, though no behaviours surveys were able to be completed. This was an earlier peak in caribou numbers compared to those seen from 2020 to 2023. Caribou mostly exhibited non-response behaviours: standing, laying, and foraging. Across all survey years, groups tended to show greater response behaviours (running, alert) when in smaller groups (less than 25 caribou) or within 300 m of a road (ERM 2025a).

A total of 230 surveys were completed between 2020 and 2024 (Table 28). In 2024, 65% of surveys recorded a disturbance. Caribou mostly exhibited the non-response behaviours of standing, laying, and feeding. Small groups (i.e., <25 caribou) tended to have higher proportion of response behaviours (i.e., running, alert) than larger groups, irrespective of disturbances. Groups within 300 m of the road tended to have higher proportions of response behaviours than those further away. Distance to the road was also linked to walking behaviour when grouped with alert and trotting behaviours, suggesting potential for walking as a response to disturbance. Walking behaviour has previously been considered a non-response behaviour, and as such models presented in this report include versions with walking designated as a potential response behaviour, as well as models with walking designated as a non-response behaviour for comparison. These results support that within 300 m of the road, caribou are more alert and active. Groups of caribou were observed near the road in equal proportions on the

upstream and downstream sides of the road. Increased response behaviours were observed on the downstream (east) side of the road in 2022 and 2023

Following a disturbance event, the proportion of response behaviours in a group of caribou increased but typically returned to baseline behaviours within nine minutes). Caribou were statistically more likely to be walking, alert, or running in sampling periods where a disturbance occurred (i.e., a passing vehicle). Therefore, the use of convoys as a method to consolidate multiple essential vehicles into a single disturbance event may be an effective mitigation to reduce the period caribou exhibit response behaviours following disturbance.

Environmental variables (e.g., temperature, wind speed, and insect harassment) were not related to proportion of response behaviours in caribou groups. However, observations have been largely collected in June, with a smaller proportion in early July, generally before most mosquitos emerge, and therefore, there is less likely to be an effect of wind relief from insects at this time of year. Further, insect response behaviour was added to the survey protocol in 2024, with only one survey resulting in observation of insect responses, precluding further assessment of this variable.

Table 28: Meliadine Caribou Behaviour Surveys Data Summary

Caribou Group Size	2020			2021			2022			2023			2024		
	Number of Surveys	Surveys with Disturbance	Surveys with Road Crossing	Number of Surveys	Surveys with Disturbance	Surveys with Road Crossing	Number of Surveys	Surveys with Disturbance	Surveys with Road Crossing	Number of Surveys	Surveys with Disturbance	Surveys with Road Crossing	Number of Surveys	Surveys with Disturbance	Surveys with Road Crossing
1-2	5	4	2	8	5	0	11	9	3	3	2	0	8	6	1
3-25	11	2	2	11	7	3	9	7	4	11	1	1	8	4	2
26-50	9	3	0	2	0	0	3	1	0	4	1	4	0	0	0
51-500	14	11	1	16	8	6	18	15	6	8	3	1	0	0	0
501-1,000	6	3	1	0	0	0	8	4	0	2	0	0	0	0	0
>1,000	11	6	0	9	7	3	20	17	2	14	5	6	1	1	0
Total	**56**	**29**	**6**	**46**	**27**	**12**	**69**	**53**	**15**	**42**	**12**	**12**	**17**	**11**	**3**

Source: ERM 2025a (Appendix H).

12.2 Caribou Remote Camera Study

The following section is a summary of the Caribou Trail Camera Study Compilation Report, 2020 to 2024, completed by ERM (Appendix I; ERM 2024c).

From 2020 to 2024, a study was conducted using motion-triggered cameras to study caribou interactions with the Project infrastructure during their annual migration, focusing on the AWAR. The initial study was designed to identify features of the AWAR (i.e., slope, substrate, height, and surrounding habitat) that may facilitate higher rates of caribou passage during annual migratory movements. Cameras were also placed at locations identified by community members and Inuit Elders from IQ where caribou more frequently crossed the road. The survey protocol in 2023 followed that used in the previous two years, with some modifications to improve data quality, and with some cameras moved to the Mine site and proposed Discovery Road. Survey protocol, along with these modifications, remained consistent during the 2024 survey. Additionally, cameras were placed along the primary haul road to generate an index of onsite traffic, as per a TAG suggestion.

The objectives of the 2024 study were:

- To conduct a study using motion-trigger cameras at the Project site to estimate how the Mine infrastructure including the AWAR may affect caribou movement during seasonal migration.
- To evaluate if there were specific locations with high numbers of caribou observations along the AWAR in 2024 and compare these locations with camera data from 2020 to 2023, and with those identified by IQ and GPS collar data.
- To collect information to determine road characteristics that might preferentially be used by caribou for crossing, specifically:
  - Material of road construction (esker versus quarry)
  - Side slope
  - Road height
  - Surrounding vegetation type
- To evaluate what relationship (if any) there is between vehicles recorded on the road and location/timing of caribou observations.
- To provide data on caribou occurrence in the Discovery area and in proximity to the Mine site.
- To generate an index of traffic volumes at the Mine site during different levels of the Caribou Management System.

Full details on the study are provided in Appendix I.

12.2.1 Methods

Camera locations were selected to maximize coverage and representation of habitat and road types, and to best detect caribou and vehicles along the AWAR. The same approximate locations were used in 2020, 2021, and 2022, with five additional locations added in 2022 to extend camera coverage south along the AWAR. In 2023, fewer cameras were deployed along the AWAR, with cameras distributed around the Mine site and along the proposed Discovery Road. In 2024, a combination of Bushnell and Wild Game Innovations camera models were used.

In 2024, fewer cameras were deployed along the AWAR, with cameras distributed around the Mine site, and along the proposed Discovery Access Road. There were 14 cameras deployed along the AWAR, 13 cameras deployed around the Mine site, and 15 cameras deployed along the proposed Discovery Road. All AWAR cameras were installed on the west side of the road facing north and were placed no more than 5 m from the side of the road to better capture vehicle traffic. All cameras took five pictures whenever motion was detected within approximately 40 m of the motion detector, including wildlife, vehicles, and occasionally objects moving in the wind. In addition, all Bushnell cameras were programmed to take one photo every 30 minutes, day or night, to help capture activity happening beyond the range of the motion detector and to ensure the cameras were operational to measure effort. This was not done on Wild Game Innovations cameras as these models lack this feature.

Road survey data from 2020 was used in the 2020 to 2024 analyses and included: width, height above tundra, side-slope, surfacing material (esker versus quarry rock, and size), and surrounding vegetation type. All photos from 2022 and 2024 were pre-processed by an artificial intelligence (AI) algorithm to automatically sort photos into four categories: animals, vehicles, humans, and blank images (Beery et al. 2019; Fennell et al. 2022). ERM personnel then reviewed all photos as classified by the AI algorithm and confirmed all detections of wildlife or vehicles. In 2020 and 2021, ERM personnel reviewed all photos from the cameras and recorded every detection of wildlife and vehicles. In 2024, three cameras spaced along the AWAR at KM 8, 21, and 29 and three cameras located on the Mine site were analyzed for detailed vehicle traffic in addition to wildlife.

Analyses were designed to quantify trends both among and within years, and to determine whether factors such as road structure, vehicle traffic on the road, or placement of the cameras could be used to explain caribou occurrence and identify “hotspots” where caribou may be likely to cross the AWAR. Additionally, cameras around the Mine site and along the proposed Discovery Road provided information on caribou movement through the Meliadine area during the study period.

An initial exploratory analysis was conducted to visualize the data and determine the appropriate method for analyzing the data. Where data were complete, generalized linear models (GLMs) were used to assess the differences in the number of caribou detection events as a function of various controlling variables, including road structure. This regression framework provides a means to control for habitat, environmental variables, repeated measurements, and spatial correlation. For some comparisons in which statistical models were not useful due to a small sample size, summary statistics and correlations were calculated. All analyses were carried out using R (R Core Team 2023).

12.2.2 Results

Overall, the key findings in 2024 and across the five years (2020 to 2024) of the camera study included:

- Small groups of caribou were reported in May 2024 prior to camera deployment, with the first caribou recorded on June 4, which was earlier than previous survey years.
- Detections of caribou were reduced compared to data from 2020 to 2023. Cameras did not detect caribou along the AWAR, while cameras along the proposed Discovery Road and throughout the Mine site had a detection rate (i.e., detections of caribou per 100 camera days) of 1.32 and 0.95, respectively. The detection rate at cameras at these locations in 2023 was 42.58 for Discovery Road and 10.34 at the Mine site. While caribou have historically travelled through the Mine area post-calving, in 2024 most caribou stayed west of Meliadine Lake post-calving, then returned directly south based on GPS collard data and reports form community members.

- In 2024, caribou were predominantly detected northwest of the Mine site, closer to the west arm of Meliadine Lake, with detections occurring from June 4 to July 7. In 2023, detections from cameras deployed throughout the Mine site occurred from June 11 to July 27
- Peak detection of caribou among the cameras deployed along the proposed Discovery Road in late June and early July, consistent with 2023. As was the case in 2023, caribou detection density was relatively consistent across all cameras, with no clear spatial pattern in detections.
- Based on data recorded from 2022 to 2023, road height and road-side slope at each camera location was not related to the number of caribou observed at each camera location, suggesting that differences in the structure of the AWAR do not significantly influence the locations where caribou cross. The AWAR was constructed with strict design criteria including having a side slope and material that promoted caribou crossing the road – and thus there may not be enough variability in the road construction to influence caribou crossing.
- More caribou were observed on cameras on the northern half of the road in most years. Esker material is more common as a substrate on the northern half of the road which may suggest caribou prefer crossing on esker material. However, it is more likely that this is due to broad scale caribou movement patterns.
- Analysis of caribou avoidance due to vehicle traffic could not be completed in 2024 due to a lack of observations of caribou along the AWAR. In 2023, median time lag from a vehicle passing to a caribou crossing when the AWAR was open was 1.7 hours, when the AWAR was open with restriction was 3.7 hours, and when the AWAR was closed was 4.3 hours. The increasing time lag between vehicle detection and caribou crossing may reflect the largely reduced volume of traffic due to pre-emptive restriction on the AWAR when caribou are in the area. Vehicle results should be treated with caution, as caribou may pass behind a camera or out of range of the camera motion detector, and therefore not all caribou crossings will be captured by all cameras, despite best efforts to do so.

Overall, the results suggest that caribou are not affected by the structure of the Meliadine AWAR, but spatial differences in road crossing locations may be explained by traffic, migration timing, migratory route fidelity, or some combination of these factors. Convoys are currently used to mitigate effects of essential Mine traffic when caribou are in the Mine area. These results highlight the power of using motion-trigger cameras to draw connections between the many interacting variables that may explain caribou passage through the Mine area, which may be integrated with additional sources of data such as collar analysis and behaviour monitoring to inform potential cumulative effects of the Meliadine Mine. Additional camera data will help confirm any potential effects, as well as provide further insight on areas of high caribou passage across the AWAR. Further, pooling data collected across multiple study years will allow for minimum sample sizes necessary to incorporate further quantitative analyses of patterns of caribou movement across the Project.

Further explanation of analyses and results of the caribou trail camera study are contained in Appendix I.

12.3 Collared Caribou Inventory

The following section provides a summary of collared caribou presence in the RSA and LSA from 1993 to 2024. The goal of the collared caribou inventory is to understand the potential for indirect effects from the Project on caribou, both immediately adjacent to the Project (i.e., in the LSA) and in the surrounding region (i.e., in the RSA). A data sharing agreement between Agnico Eagle and the GN DoE was reached in 2023; GPS telemetry data (i.e., collar data) for Kivalliq caribou were received from the GN DoE and were used in this collared caribou inventory. Findings from previous analyses using these collar data (i.e., Commitment 38 analyses; WSP 2023b, WSP 2023c), are also integrated into the collared caribou inventory presented.

12.3.1 Methods

For each caribou and year, the collar data were intersected with the LSA and RSA boundaries to determine when collared caribou entered and exited the LSA and RSA. Caribou interactions with the LSA and RSA boundaries were separated into “bursts”, or unique interaction events that ended when the caribou stepped outside either the LSA or RSA. Thus, a single caribou could have multiple RSA interactions or LSA interactions (bursts) in one year. The mean number of times that each caribou interacted with the LSA and RSA per year (i.e., mean number of bursts) was calculated. Further, the entry date and exit date for each burst was determined, then averaged across all bursts to determine a mean entry and exit date, per RSA and LSA, per year. The duration of time spent in the RSA and LSA was also calculated per burst; if a caribou entered and exited on the same day, the duration was automatically rounded up to 1 day. Then, the mean duration of time spent in the RSA and LSA was averaged per year.

12.3.2 Results

Individuals from the Qamanirjuaq herd have been present in the RSA for 17 of the 32 years where collar data are available (Table 29). Caribou began entering the RSA in 2006 and have continued to enter the RSA since then (except in 2009 and 2010). Alternating periods of presence and absence of caribou in the RSA has been noted by IQ (Golder 2014). The number of collared individuals that annually enter the RSA has increased since 2006, with the most Qamanirjuaq caribou entering the RSA between 2017 and 2019. Since 2011, collared Qamanirjuaq caribou have typically entered the RSA in late June to mid-July and have remained in the RSA for 1 to 5 days.

Individuals from the Qamanirjuaq herd have been present in the LSA for 16 of the 32 years where collar data are available (Table 29). In almost all years when caribou have entered the RSA, some individuals have also entered the LSA (except in 2008). Qamanirjuaq caribou began entering the LSA in 2006 and 2007, did not enter the LSA between 2008 and 2010, then have consistently been present in the LSA since 2011. Collared caribou typically enter the LSA in early to mid-July and leave the LSA on the same day; some individuals enter the LSA several times over the course of one summer but remain in the LSA for a day or less during each interaction, which suggests that caribou are not avoiding the Project. The length of time Qamanirjuaq caribou are spending in the LSA has not varied since collared caribou began interacting with the LSA in 2006.

These results align with WSP’s (2023a) previous findings that fewer than 30% of Qamanirjuaq caribou come within 5 km of the Project and that 99% of caribou that came within 5 km of the AWAR or Mine for a specific year remained for less than 24 hours. The collar data also support that caribou are spending very little time in the areas immediately adjacent to the Project. In consideration of these results, impacts to the Qamanirjuaq herd due to the Project have the potential for limited transboundary effects. Past analysis of collar data interactions with the Mine infrastructure and AWAR indicates no strong local scale deflection effects (Appendix D in Golder 2021, WSP 2023b,c [Section 12.3.3]).

Table 29: Annual Timing of Qamanirjuaq Collared Caribou Presence and Duration in the Regional Study Area and Local Study Area, 1993–2024

Year	Total Caribou Collared	RSA					LSA				
		Caribou in RSA	Mean Entries per Caribou	Mean Entry Date	Mean Exit Date	Mean Duration (days)	Caribou in LSA	Mean Entries per Caribou	Mean Entry Date	Mean Exit Date	Mean Duration (days)
1993	5	-	-	-	-	-	-	-	-	-	-
1994	8	-	-	-	-	-	-	-	-	-	-
1995	8	-	-	-	-	-	-	-	-	-	-
1996	13	-	-	-	-	-	-	-	-	-	-
1997	14	-	-	-	-	-	-	-	-	-	-
1998	15	-	-	-	-	-	-	-	-	-	-
1999	18	-	-	-	-	-	-	-	-	-	-
2000	15	-	-	-	-	-	-	-	-	-	-
2001	13	-	-	-	-	-	-	-	-	-	-
2002	16	-	-	-	-	-	-	-	-	-	-
2003	14	-	-	-	-	-	-	-	-	-	-
2004	23	-	-	-	-	-	-	-	-	-	-
2005	22	-	-	-	-	-	-	-	-	-	-
2006	44	2	1.00	17-Sep	06-Oct	19.00	2	1.00	05-Oct	06-Oct	1.00
2007	42	1	1.00	04-Jan	14-Feb	41.00	1	1.00	14-Feb	14-Feb	1.00
2008	48	1	1.00	13-Jul	14-Jul	1.00	-	-	-	-	-
2009	52	-	-	-	-	-	-	-	-	-	-
2010	21	-	-	-	-	-	-	-	-	-	-
2011	40	2	1.00	01-Aug	02-Aug	1.00	2	1.00	01-Aug	01-Aug	1.00
2012	35	5	1.20	15-Jul	18-Jul	3.50	3	1.67	17-Jul	17-Jul	1.00
2013	53	12	1.42	10-Jul	13-Jul	2.47	5	1.20	14-Jul	14-Jul	1.00
2014	55	7	1.86	21-Jul	23-Jul	2.62	3	1.33	09-Jul	09-Jul	1.25
2015	57	36	2.06	28-Jul	01-Aug	3.43	27	1.59	15-Jul	15-Jul	1.12
2016	75	39	2.26	08-Jul	11-Jul	3.11	28	1.54	11-Jul	11-Jul	1.00
2017	121	69	1.36	07-Jul	09-Jul	2.49	48	1.52	09-Jul	09-Jul	1.00
2018	108	50	2.34	08-Jul	11-Jul	3.38	40	1.75	13-Jul	13-Jul	1.01
2019	128	69	1.35	23-Jun	28-Jun	4.82	24	1.54	29-Jun	29-Jun	1.03
2020	112	29	2.07	05-Jul	08-Jul	2.70	14	2.14	10-Jul	10-Jul	1.03
2021	69	21	2.76	14-Jun	17-Jun	2.93	10	1.60	06-Jul	06-Jul	1.00
2022	62	28	2.39	28-Jun	02-Jul	3.90	20	1.75	08-Jul	08-Jul	1.00
2023	66	28	5.18	09-Jun	13-Jun	4.16	24	2.88	27-Jun	28-Jun	1.03
2024	53	41	1.58	24-May	26-May	3.12	1	2	3-Jul	3-Jul	1.00

LSA = Local Study Area; RSA = Regional Study Area.

12.4 Caribou Advisory

The objective of the Caribou Advisory Monitoring program is ensuring workers are aware of the approximate numbers of caribou on and proximal to the Project, which is related to the potential for interactions between caribou and mining activities. The Caribou Advisory raises general awareness so that employees are alert to the likelihood that mitigation could be triggered and what mitigation entails. The number of animals near the Project and in specific areas dictates the type of mitigation practices that will be undertaken (e.g., road closure, closing specific areas at the Mine site, speed reduction).

12.4.1 Methods

Mine staff, in collaboration with the GN and KivIA and including participation of the KHTO, undertake the implementation of a caribou monitoring and work suspension protocol during caribou migration to minimize sensory disturbance at the Project site and along the AWAR. The KHTO and KivIA members typically assist Mine staff conducting surveys during caribou migration. In 2024, a KivIA representative was present during the migration period, allowing for instant communication with the Environment Department. The KHTO led the convoys when travel was required on the AWAR, such as equipment transportation or employee buses, during the caribou migration. Communication protocols built into the work suspensions are designed to be broadcast swiftly and broadly among all departments in real time. The Environmental Department monitored caribou presence as per the caribou migration protocol (TEMMP Appendix III; Agnico Eagle 2022a) including the use of collar data and regular surveys and issuing caribou advisories. Regular surveys for caribou, were completed by on site Environmental Technicians, and consisted of ground surveys at multiple locations, at regular intervals throughout the day (i.e., 06:00, 12:00, 18:00) during caribou migration. The results of the surveys were communicated to all Project Departments, and to the TAG members, indicating if any work stoppages or restrictions are required and the affected work areas.

A decision tree is used to guide adaptive monitoring and mitigation based on results of surveys. Three action levels are outlined in the decision tree:

- Level 1: triggered when 50 or more caribou are observed within 10 km of the Mine based on ground surveys or review of satellite collar data. Ground surveys are completed every two days, and satellite collar data is reviewed twice per week. Site-wide warnings are issued daily. Level 1 is ongoing for 5 days, or until Level 2 is triggered.
- Level 2: triggered when less than 50 caribou are observed within 5 km of the Mine. Ground surveys are completed every two days, and satellite collar data is reviewed twice per week. Additional mitigation (e.g., work suspension), may be implemented by the Environmental supervisor. Site-wide warnings are issued daily. Level 2 is ongoing for 10 days; or until caribou exit the 5 km mark or Level 3 is triggered.
- Level 3: triggered when 50 or more caribou are observed within 5 km of the Mine. Ground surveys are completed three times per day, and satellite collar data is reviewed at least twice per week. A work suspension protocol is implemented. Site-wide warnings are issued three times per day. Closure occurs on the AWAR when 50 or more caribou are within 100 m of the road. Level 3 is ongoing until caribou exit the 5 km mark.

12.4.2 Results

Surveys to monitor migration of the Qamanirjuaq herd through the Project were performed from 12 May to 9 July 2024. Mine site and AWAR surveys were completed two to three times daily throughout this period by Mine personnel. An additional fourth survey was occasionally done to provide an update on caribou presence. A record of caribou surveys, including date, time, estimated number of caribou and approximate location are presented in Appendix J. Additional fourth surveys are included in Appendix J, but were purposefully omitted in Figure 15 to avoid inflating caribou counts and to allow direct comparison across days (assuming a maximum of three surveys per day).

Caribou were detected during surveys from 12 May to 9 July 2024, and closure of the Mine site was triggered between 12 May to 23 May 2024. Additional closures of the TSF occurred on 5 and 9 July 2024 (Table 30). The highest caribou numbers were observed on 26 June 2024 (Figure 15).

Shutdowns affecting different components of the Mine were implemented to facilitate the safe migration of caribou through the Project. Shutdowns are summarized in Table 30. The AWAR was not closed in 2024, nor was waterline construction impacted. Vehicle traffic on site and open pit operations were restricted for 254 hours over 12 days (i.e., 88% of the time over the 12-day period). Similarly, activities at the Exploration Camp were restricted for 254 hours over 12 days (i.e., 88% of the time over the 12-day period). Activities at the Main Camp were restricted or shutdown for 260 hours over 14 days (i.e., 77% of the time over the 14-day period). No flight cancellations due to the caribou migration occurred in 2024.

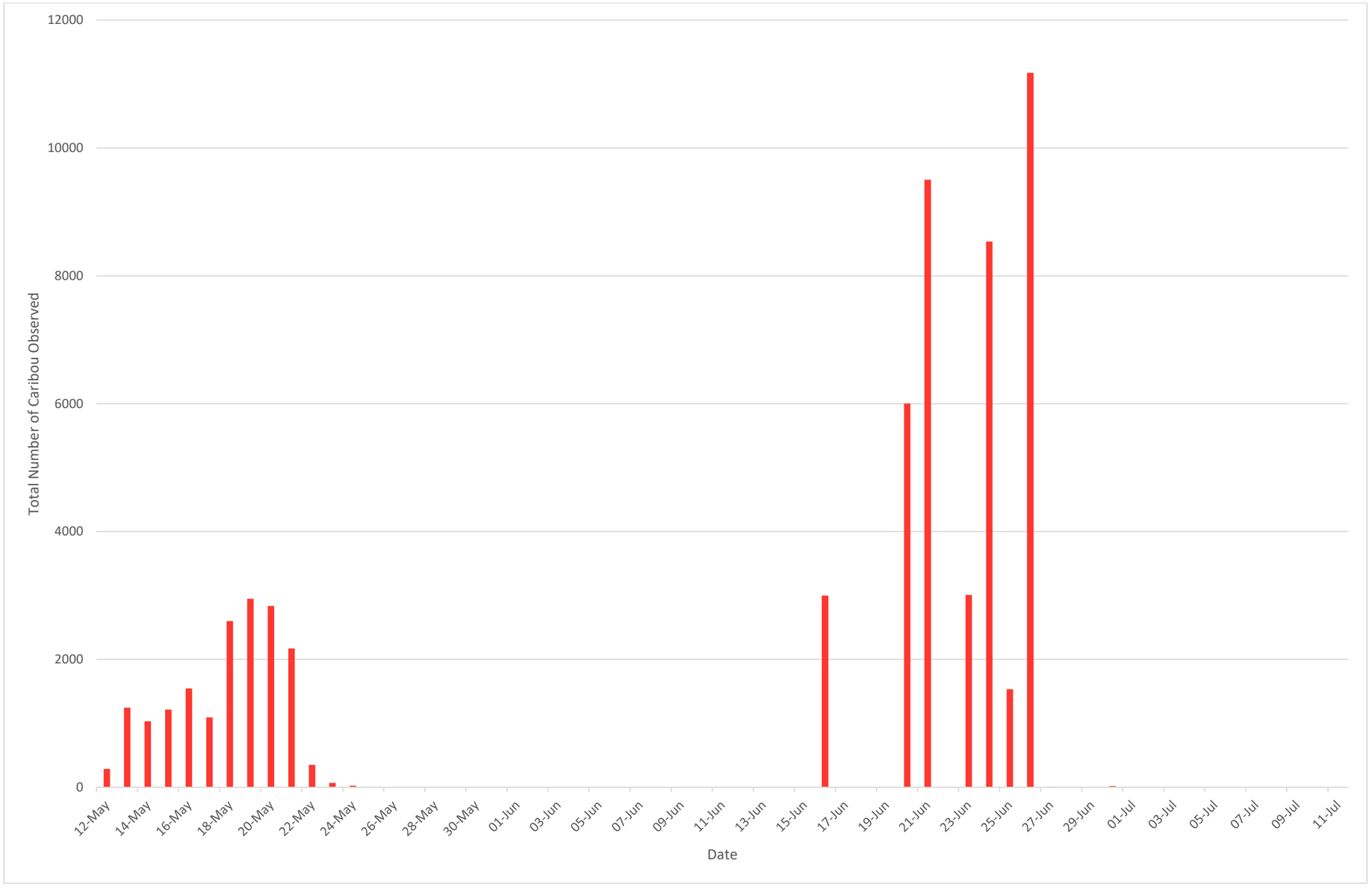


Figure 15: Total Caribou Observed by Date in 2024.

Table 30: Recorded Down Time in 2024

Date	Hours Closed					Operation Comments	AWAR Comments	Waterline Comments
	AWAR	OP Operations	Exploration Camp Area	Main Camp	Waterline Construction			
2024-05-12	0.0	13.5	13.5	13.5	0.0	Level 3 - entire site shutdown at 10:30	AWAR Open with restrictions	N/A
2024-05-13	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	N/A
2024-05-14	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	N/A
2024-05-15	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	N/A
2024-05-16	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	No waterline Construction activities
2024-05-17	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	No waterline Construction activities
2024-05-18	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	No waterline Construction activities
2024-05-19	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	No waterline Construction activities
2024-05-20	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	No waterline Construction activities
2024-05-21	0.0	24.0	24.0	24.0	0.0	Level 3 - entire site remained shutdown	AWAR Open with restrictions	No waterline Construction activities
2024-05-22	0.0	18.0	18.0	18.0	0.0	Level 3 and Level 2 - entire site shutdown until 18:00	AWAR Open with restrictions	No waterline Construction activities
2024-05-23	0.0	6.5	6.5	6.5	0.0	Level 3 and Level 2 - entire site shutdown between 10:00 and 14:30	AWAR Open with restrictions	No waterline Construction activities
2024-05-24	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-25	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-26	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-27	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-28	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-29	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-30	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-05-31	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-01	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-02	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-03	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-04	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-05	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-16	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-17	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-18	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	No waterline Construction activities
2024-06-19	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	N/A
2024-06-20	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	N/A
2024-06-21	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	N/A
2024-06-22	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-23	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-24	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-25	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-26	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-27	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-28	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-06-29	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A

Table 30: Recorded Down Time in 2024

Date	Hours Closed					Operation Comments	AWAR Comments	Waterline Comments
	AWAR	OP Operations	Exploration Camp Area	Main Camp	Waterline Construction			
2024-06-30	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-07-01	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-07-02	0.0	0.0	0.0	0.0	0.0	Level 2 - Currently (12:00pm) -Entire site is open, less than 50 caribou within 5km radius	AWAR Open	N/A
2024-07-03	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	N/A
2024-07-04	0.0	0.0	0.0	0.0	0.0	Level 1 - Entire site open all day	AWAR Open	N/A
2024-07-05	0.0	0.0	0.0	1.0	0.0	Level 1 - TSF closed for 1 hour during day shift (Caribou on TSF)	AWAR Open	N/A
2024-07-06	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	N/A
2024-07-07	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	N/A
2024-07-08	0.0	0.0	0.0	0.0	0.0	Level 2 - Entire site open all day	AWAR Open	N/A
2024-07-09	0.0	0.0	0.0	5.0	0.0	Level 2 - TSF closed for 3 hours during day shift and 2 hours during night shift (Caribou on TSF)	AWAR Open	N/A
Total Hours Lost (rounded to nearest hour)	**0.0**	**254.0**	**254.00**	**260.0**	**0.0**			

N/A = not applicable.

12.4.3 Traffic Data

A total of 13,409 one-way trips along the AWAR were recorded in 2024, with an average of 1,117 trips per month (Table 31). Traffic rates were lowest in January and highest in July. Pickup trucks and tractor-trailers were large contributors to traffic rates, followed by buses and fuel tankers. The number of one-way trips in 2024 was lower than the 24,254 trips in 2023 and 18,381 trips in 2022 (WSP 2024a). In addition to one-way trips, there were 25 records of convoy trips in May 2024 to reduce extent of vehicles on the AWAR during caribou migration. Convoy trips were for crew changes and food or fuel transport.

Table 31: AWAR Traffic by Month (2024).

Vehicle Type	Number of One-way Trips by Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Ambulance	0	2	4	1	1	2	0	12	0	4	2	2	30
ATV	0	1	0	2	41	93	149	95	156	67	16	0	620
Backhoe	3	1	4	0	14	2	2	0	1	1	0	0	29
B-Train	0	0	0	0	0	0	0	0	4	0	1	0	5
Boom Truck	0	0	2	0	3	2	7	20	17	5	8	2	67
Bus	198	244	204	245	221	237	271	307	297	255	207	190	2,875
Crane	0	0	0	0	0	3	0	2	3	0	0	1	9
Dump truck	0	0	0	85	57	127	116	31	44	34	10	4	508
Flatbed Tractor	1	0	39	8	5	13	16	39	21	37	17	43	239
Fuel Tanker (40 000 L)	227	290	257	256	119	59	192	168	287	219	200	234	2,508
Fuel Truck (15 000 L)	8	8	8	49	32	24	77	190	125	46	16	50	631
Grader	27	39	39	17	23	34	46	20	30	29	42	40	385
Haul Truck	0	4	31	217	149	243	260	73	77	35	47	22	1,157
Hino-luggage	16	12	10	6	14	10	35	25	5	6	3	6	148
Hyster (Reach Stacker)	0	0	2	1	2	5	0	0	1	0	1	2	14
Loader	7	5	20	20	12	8	18	16	14	13	12	24	169
Lube Truck	0	0	0	2	0	4	14	21	9	5	0	0	55
Oversized load	0	0	0	0	0	0	1	4	0	2	1	0	8
Pickup	377	463	609	787	819	916	1,440	1,489	1,579	944	589	620	10,632
Roll Off truck	0	0	2	7	21	36	51	2	15	31	0	0	165
Service truck	6	0	22	51	28	51	43	46	55	45	24	15	386
Sewage Truck	13	12	8	16	17	19	48	60	54	49	28	13	336
Snowblower	24	34	46	15	10	0	0	0	0	0	18	26	173
Telehandler	0	1	1	0	0	0	0	1	4	2	0	0	9
Tractor-trailer	252	402	350	369	326	528	685	726	628	634	17	118	5,036
Van	0	2	2	18	4	9	15	18	6	10	7	0	92
Water tanker (40,000 L)	8	4	3	4	11	6	13	6	20	5	0	0	80
Water Truck (15,000 L)	3	3	8	16	14	28	54	61	61	48	25	12	334
Zoom Boom	0	0	2	0	0	2	6	27	11	8	0	0	56
Other	4	0	12	0	3	2	12	5	4	3	6	12	61
Total	**1,173**	**1,528**	**1,685**	**2,193**	**1,944**	**2,464**	**3,572**	**3,466**	**3,526**	**2,536**	**1,295**	**1,436**	**26,818**

Note: Trips less than the entire length of the road were rounded up to whole numbers (e.g., 0.5 rounded to 1), therefore total trip numbers provided in table will be larger actual trips performed.

12.5 Calving Range

During 2024, the TAG requested that Agnico Eagle present Qamanirjuaq caribou calving range maps based on caribou telemetry as part of annual TEMMP reporting. A technical memorandum was produced by WSP (2025) to fulfil this request and can be found in Appendix K. The following section summarizes the development of the 2024 calving range maps.

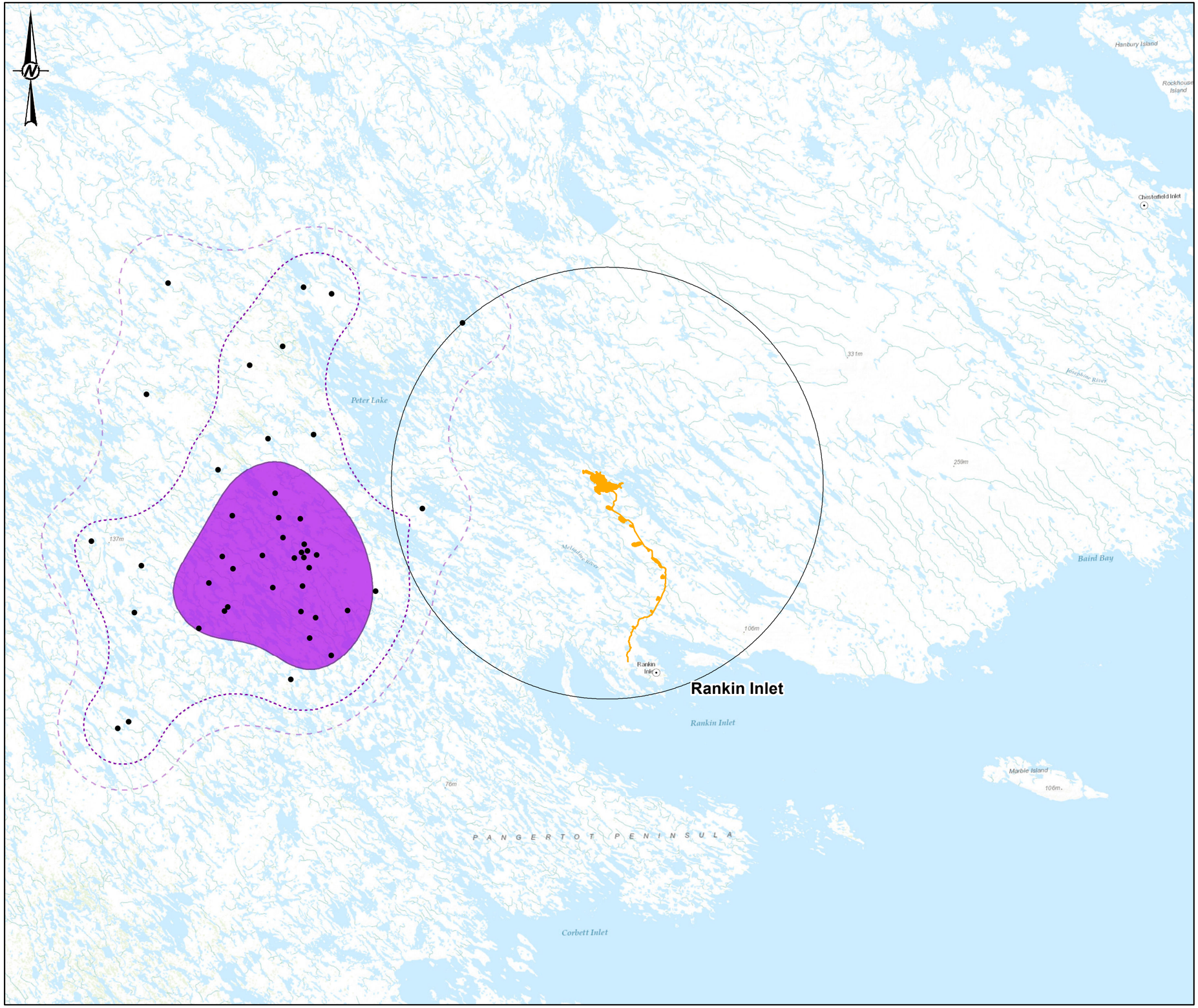
12.5.1 Methods

Qamanirjuaq caribou telemetry data were provided by the Government of Nunavut. Data were cleaned to remove duplicates and visualized to assess for mortality events. The 'Individual-Based Method', or IBM was applied to predict calving dates for Qamanirjuaq females in 2024 (DeMars et al. 2013; Cameron et al. 2018). Consistent with Cameron et al. (2018), caribou movements from 19 May 2024 to 15 July 2024 were used for estimating an IBM model.

Calving ranges for 2024 were developed using 'Calving Site Method', consistent with the production of the 2023 calving range (WSP 2024b). A Kernal Density Estimation (KDE) was developed per spatial dataset, with three utilization distributions (i.e., 50%, 80%, and 95%, as recommended by the TAG) were calculated and mapped.

12.5.2 Results

A total of 53 caribou from the Qamanirjuaq herd were available in 2024 to test for calving events. Of these caribou, 3 had data of insufficient quality to fit an IBM model (e.g., too many missing fixes or inconclusive results). Of the remaining 50 caribou with IBM models, 44 females (86%) had calves, and 6 females (13%) did not have calves. All 44 calving events were used to inform the 95%, 80%, and 50% Utilization Distribution calving ranges for 2024 (Figure 16). Most predicted calving events occurred west of Peter Lake and were clustered, resulting in a smaller 95% utilization distribution than observed in 2023 (WSP 2024b). The distance of calving range centroid to the nearest Mine feature is 41.5 km. The percent of area overlap of the calving range with the RSA was 8%, with only one predicted calving event occurring within the Mine RSA approximately 21.4 km from the nearest Mine feature.



LEGEND

- 2024 CALVING LOCATION
- COMMUNITY
- MELIADINE DEVELOPED PROJECT FOOTPRINT
- MELIADINE REGIONAL STUDY AREA
- 2024 CALVING RANGE - 95% KDE
- 2024 CALVING RANGE - 80% KDE
- 2024 CALVING RANGE - 50% KDE



0 10 20

1:500,000 KILOMETRES

REFERENCE(S)

1. TOPOGRAPHIC MAP © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
2. DATUM: NAD83 PROJECTION UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

QAMANIRJUAQ CARIBOU CALVING RANGES FOR 2024

CONSULTANT

wsp

YYYY-MM-DD	2025-03-21
DESIGNED	DC
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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12.6 Accuracy of Impact Predictions

A summary of the impact predictions proposed in the TEMMP (Agnico Eagle 2022a) is provided in Table 32. Though not fully developed, the following thresholds are suggested as a starting point for adaptive management and TEMMP (Agnico Eagle 2022a) refinement and is tested against the results of the 2024 observational data (Table 32).

Table 32: Accuracy of Impact Predictions – Caribou

Monitoring Indicator	Preliminary Threshold	Exceeded in 2024?	Adaptive Management	Monitoring Method	TEMMP Section
Habitat Loss and Degradation	No greater than 2,950 ha of terrestrial habitat loss	No	Not Currently Identified	Aerial photographs, satellite imagery, ground surveys, GIS analysis	5.0
Sensory Disturbance	<10% caribou deflections from AWAR	No	Not Currently Identified	Caribou satellite collar data, special studies and caribou behaviour monitoring	N/A
Vehicle Collisions	No more than 1 ungulate/year	No	No action required	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	9.5
Hunting by Rankin Inlet Residents	After 3 years of data collection in collaboration with the GN[(a)], establish a threshold level	Not assessed in 2024	Not Currently Identified	Hunter Harvest Survey, data collected throughout the year and reported annually	13.0
Other Project Related Mortality	No more than 1 ungulate/year	No	No action required	Wildlife Sightings Log, Site Surveillance Monitoring	9.5
Exposure to Contaminated Water or Vegetation	SLRA – TBD	N/A	Not Currently Identified	Vegetation and soil samples	N/A

(a) Proposed thresholds will be established in collaboration with the GN and other relevant parties, such as TAG members.

AWAR = All-Weather Access Road; GN = Government of Nunavut; SLRA = Screening Level Risk Assessment; TEMMP = Terrestrial Environment Management and Monitoring Plan; N/A = not applicable; <= less than; TBD = to be determined.

13.0 HUNTER HARVEST STUDY

Agnico Eagle signed a Memorandum of Understanding (MOU), in principle, with the KHTO in March 2019 for the development and execution of a Hunter Harvest Study (HHS). The HHS supports Project Certificate No.006 Term and Condition 46 and 48. The HHS was implemented in 2020 and continued through 2024. In 2021, an external consultant, Nunavut Environmental Consulting, was contracted to work alongside the KHTO to conduct the study (Agnico Eagle 2024c). Nunavut Environmental Consulting has continued to complete this study through 2024, along with preparation of the associated report. The full 2024 HHS report is provided in Appendix L.

13.1 Methods

The wildlife species that are the focus of the HHS are caribou, muskox, grizzly bear, polar bear, wolf, wolverine, Arctic fox, goose, ptarmigan, and seal. However, harvest data on other species, such as beluga (*Delphinapterus leucas*), common eider (*Somateria mollissima*), and sandhill crane are also collected. The species in the study were deliberately chosen to make data entry and collection as simple as possible. To support creel surveys, data on fish harvest (Priority species = Arctic char [*Salvelinus alpinus*], lake trout [*Salvelinus namaycush*], lake

whitefish [*Coregonus clupeaformis*], and Arctic grayling [*Thymallus arcticus*]) were also collected.

Inuit and non-Inuit residents, at least 16 years of age, are eligible to participate in the harvest survey. Harvest calendars are provided on a household basis, rather than an individual basis, to simplify data entry and collection, and reflect household hunting patterns. The harvest calendar is attractive and consists of local photographs of wildlife and Nunavut residents. Space is provided for each calendar day where harvest details can be documented.

A map is provided at the end of the calendar that delineates a 5 km^2 UTM grid around the Rankin Inlet and Meliadine mine areas, and regions indicated as important for hunting during discussions with HTO members. Each grid has a unique code to facilitate recording of information. When calendars are issued, participants or participating households are encouraged to write harvest details (e.g., number of animals, sex, age, and location (i.e., grid code) for the appropriate date on the calendar.

Participants were interviewed in person twice in 2024 and once in early 2025 (i.e., June 2024, October 2024, and January 2025) by the harvest study coordinator. During the January 2025 interviews, remaining data from 2024 were collected, a new 2025 HHS calendar was provided, and prizes were distributed. The purpose of the interviews is to ensure all harvest data are recorded on the calendars and to collect incidental information to compliment calendar data, including notable Caribou movements, aggregations, and unique observations. Between interview periods, participants were often contacted by phone or social media to encourage recording of harvest data.

Features of the 2024 HHS included:

1) Adding new participants, including most (i.e., five) outfitters and guides operation out of the Hamlet of Rankin Inlet
2) Building long-term relationships between participants and study facilitators
3) Increasing engagement with participants on social media platforms such as Facebook and Instagram
4) Increasing incentives for participating in the study (e.g., gas vouchers and prizes)

13.2 Results

The 2024 HHS included 61 participants, which was an increase from the 56, 44, and 40 participants in the 2023, 2022, and 2021 studies, respectively. Of the 61 participants in 2024, caribou harvest data were collected from 41 participants, which was higher than the 37 and 31 participants reporting caribou harvest in 2023 and 2022, respectively. An estimated 300 to 350 active hunters live within the Rankin Inlet community. Based on these numbers, the 41 hunters reporting caribou harvest in 2024 conservatively represents 12% to 14% of total hunters in the community.

In 2024, a total of 709 caribou were harvested by 41 participants in the Rankin Inlet HHS. Given that the 41 hunters may represent an estimated 12% to 14% of the Rankin Inlet hunting community, the total estimated number of caribou harvested in 2024 was between 5,064 to 5,908 animals, which is higher than estimates in 2023 (i.e., 4,025 to 4,390 animals), comparable to 2022 (i.e., 5,470 to 6,077 animals), and lower than 2021 (i.e., 6,700 to 7,444). This estimate appears to be conservative since participants likely represented a higher proportion of successful hunters in the community.

The 2024 HHS data indicated that 6.1% of reported harvest occurred within 5 km of the AWAR (5.0% and 4.8% in 2023 and 2022, respectively), and 25.2% occurred within the RSA (26.9% and 29.4% in 2023 and 2022, respectively; see Table 33). During the NWMB study from 1996 to 2001, 24.8% of reported harvest was within the RSA. The pooled HHS data (i.e., from 2021 to 2024) suggest that the presence of the AWAR and the Mine has not greatly changed the relative amount of hunting within the RSA (i.e., percent of total harvest).

Table 33: Caribou Harvest Distribution Along the AWAR and within the Rankin Inlet LSA and RSA (1996 to 2001 [NWMB], and 2021 to 2023 [Rankin Inlet HHS])

Study	Participation Rate within 5 km of AWAR (% of total hunters)	Average Caribou Harvest within 5 km of AWAR per Participant	% of Annual Harvest within 5 km of AWAR	% of Annual Harvest within Meliadine LSA	% of Annual Harvest within Meliadine RSA
NWMB 1996 to 2001 (Rankin Inlet)	NA	4.1	4.5	0.3	24.8
Rankin Inlet HHS 2021	16.7	5.0	3.7	3.3	19.7
Rankin Inlet HHS 2022	25.8	3.3	4.8	4.0	29.4
Rankin Inlet HHS 2023	16.2	4.0	5.0	2.9	26.9
Rankin Inlet HHS 2024	29.3	3.6	6.1	2.8	25.2
Average (2021 to 2024)	22.0	4.0	4.9	3.3	25.3

AWAR = All-weather Access Road; HHS = Hunter Harvest Study; LSA = Local Study Area; NWMB = Nunavut Wildlife Management Board; RSA = Regional Study Area.

A total of 24 muskox, 5 wolverine, and 5 wolves were harvested in 2024. Other reported harvested terrestrial mammals included five Arctic hare, one ermine (*Mustela richardsonii*), one moose (*Alces alces*), one muskrat (*Onadatra zibethicus*), one red fox, and three polar bears. In the marine environment, ringed seal (*Pusa hispida*; 47 individuals) was the most common species harvested followed by beluga (*Delphinapterus leucas*; 29 individuals), harp seal (*Pagophilus groenlandicus*; 5 individuals), walrus (*Odobenus rosmarus*; 4 individuals), bearded seal (*Erignathus barbatus*; 3 individuals), narwal (*Monodon monoceros*; 2 individuals), and harbour seal (*Phoca vitulina*; 2 individuals).

More birds were harvested by Rankin Inlet participants in 2024 (441 birds) than in 2023 (202 birds), 2022 (136 birds), and 2021 (394 birds). In 2024, Canada goose and snow goose were harvested at the highest levels and made up 67% of all harvest bird species. Black guillemot (*Cepphus grille*), Common eider, greater white-fronted goose (*Answer albifrons*), gull sp., loon sp., northern pintail, owl sp., ptarmigan sp., rock ptarmigan (*Lagopus muta*), sandhill crane, snowy owl *(Bubo scandiacus*), and tundra swan were also harvested.

Arctic char (2,661 fish), lake trout (193 fish), and Arctic cod (*Arctogadus glacialis*; 19 fish) were the most common species caught by anglers. Relatively small numbers of Arctic grayling (six fish) and lake whitefish (1 fish) were caught in 2024.

13.3 Recommendations

The Rankin Inlet Hunter Harvest Study and Creel Survey should be continued on an annual basis to monitor the hunting and fishing patterns of Rankin Inlet residents, and the potential effects of the mine and AWAR. Meetings with participants at certain intervals throughout the year will be particularly important in maintaining contact, building relationships, expanding the study, collecting good harvest data, and determining a more accurate estimate of total active hunters in the community.

Furthermore, ongoing collaboration with the KHTO will ensure that the HHS program runs smoothly, incorporates local IQ and TK and community concerns, and increases participant rates.

Participation rates can be maintained by continuing to use social media platforms, expanding connections on these platforms, ensuring that all participants are visited during the three scheduled field visits, and continuing with distribution of the well-received year-end prizes while in the community. In 2024, recruitment efforts resulted in new participants joining the study. Recruitment efforts should be ongoing to bring on other participants in 2025.

The TEMMP indicates that project effects determinations and threshold levels for caribou harvest will be set after three full years of data from the Rankin Inlet HHS and following discussions with the Government of Nunavut. A caribou harvest threshold will be discussed within the TAG prior to including this information in the TEMMP.

14.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Your Truly,

WSP Canada Inc.

ORIGINAL SIGNED BY

Neil Moss, RPBio
Senior Wildlife Biologist

ORIGINAL SIGNED BY

Daniel Coulton, PhD, RPBio
Principal Wildlife Biologist

NM/DC/jlb/tt

https://wsponlinecan.sharepoint.com/sites/ca-ca00376007607/shared documents/05. technical/04_reporting/2024 temmp report/final/ca0037600.7607-mel2024_068-r-agnicoeagle_2024_temmp_final_aem_clean_aem.docx

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APPENDIX A

Allowable Work Activities per Operational Level

Table A-1: Allowable Work Activities per Operational Level

Operational Level	Allowable Work Activities	Work Activities to be Suspended
Full Operations	▪ All work activities	n/a
Level 1 Operations	▪ All work activities	n/a
Level 2 Operations	▪ Underground hauling permitted to transfer pad, limited hauling to waste rock pile ▪ Light vehicle traffic permitted with a speed restriction of 30 km/h if no caribou are present within 100 m of the road. If caribou present, vehicles must pull aside and wait for caribou to pass ▪ Surface activities using the following equipment: manlift, scissor lift, sucker truck, fuel truck, boat ▪ Manual power tools can be used outside building ▪ Concrete pouring can occur only after receiving permission from the Environment Department ▪ Moving one piece of heavy equipment to a garage for maintenance purposes only ▪ All work inside building can be performed with closed doors (including maintenance, Anfo plant, warehouse, etc.).	▪ All heavy equipment must cease during Level 2
Level 3 Operations	▪ Indoor activities with garage door closed ▪ Emergencies services ▪ Underground operations ▪ Refueling of essential generator and power supplies ▪ Operation/maintenance of water treatment systems ▪ Critical inspections required in case of a malfunction ▪ Intervention in case of a reportable spill ▪ Mill operations	▪ Initiate full work suspension at the mine site ▪ No heavy equipment including non-essential light vehicle traffic

APPENDIX B

Invasive Plant Species Monitoring Report, 2024

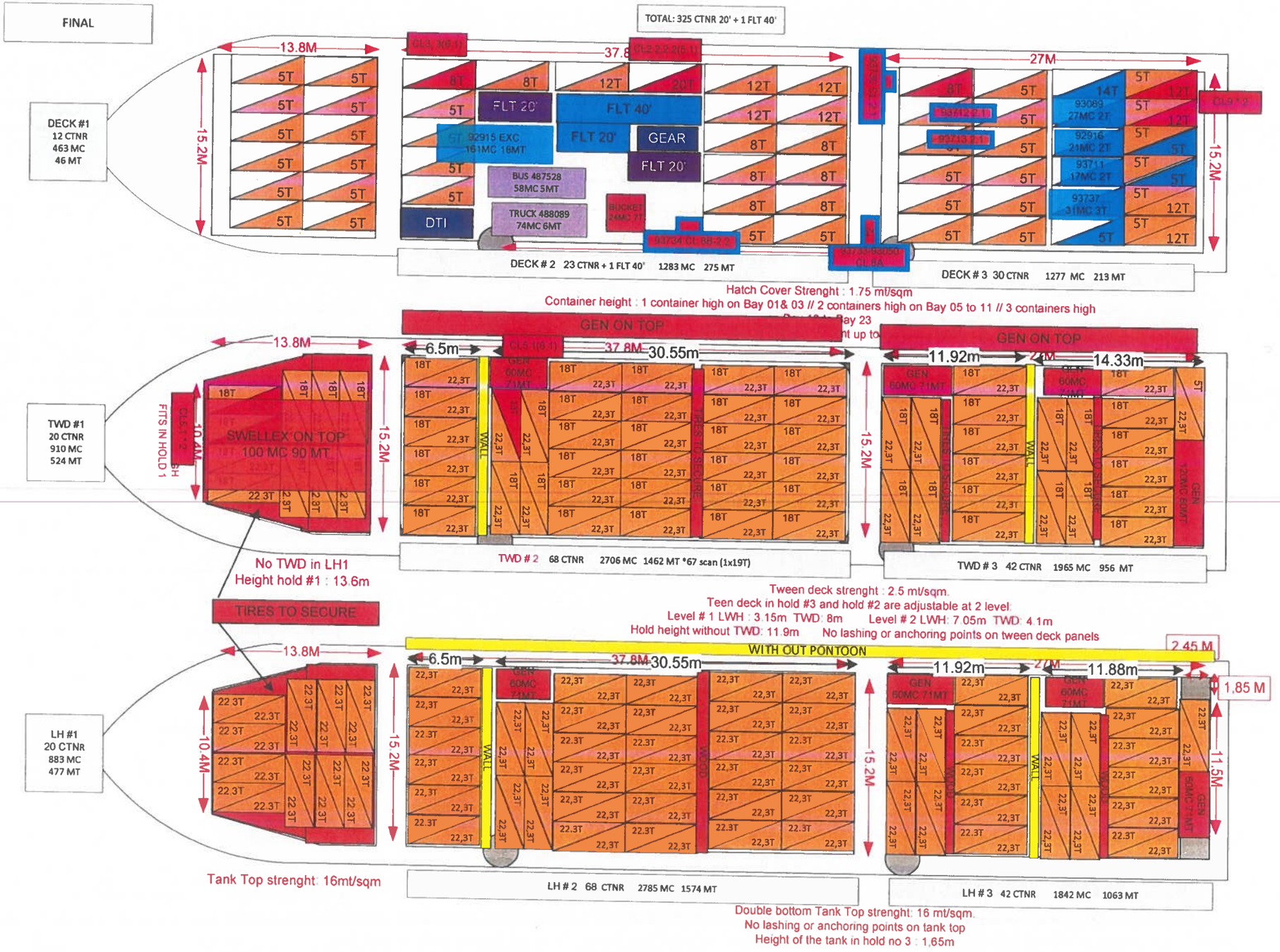
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Voyage number : 05725701
ETD : 2024-08-09
Departure: 2024-08-09

FINAL

TOTAL: 325 CTNR 20' + 1 FLT 40'

1 CTNR 20'
2 CTNR 40'
3 MODULE
4 MACHINERIES/VÉHICULES
5 GÉNÉRAL CARGO
6 DANGEREUX
7 GEAR DTI
8 FLT 20'
9
10 NSSI (801 MC)
11
12
13
14
15



VOLUME TOTAL: 14 101 MC

TONNAGE TOTAL: 6 570 MT

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date :

QSL

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2024-08-03 00:00 - N/A
V241334

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

ACADIA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
RANKIN INLET, NUNAVUT	DESGAGNÉS TRANSARCTIK INC. N/A	N/A	DESGAGNÉS TRANSARCTIK INC. N/A	N/A

DESGAGNES RANKIN INLET

Location in vessel	Qty	Weight	Volume
Deck 3	17	76.076 MT (167718.8706 lb)	428.6231 m³ (15136.6819 cu.ft.)
HatchTwinDeck 3	13	11.542 MT (25445.7543 lb)	33.195 m³ (1172.2704 cu.ft.)
LowerHold 3	14	14.94 MT (32937.062 lb)	41.7971 m³ (1476.0507 cu.ft.)
Deck 2	4	52.105 MT (114871.8617 lb)	279.1935 m³ (9859.6254 cu.ft.)
LowerHold 2	3	2.66 MT (5864.2962 lb)	18.1229 m³ (640.0042 cu.ft.)
SUBTOTAL QTY: 51		SUBTOTAL VOLUME: 800.9316 m³ (28284.6325 cu.ft.)	157.323 MT (346837.8447 lb)
TOTAL QTY: 51		TOTAL VOLUME: 800.9316 m³ (28284.6325 cu.ft.)	157.323 MT (346837.8447 lb)

Quantity: 683 | Volume: 14100.8547 m³ (497966.9849 cu.ft.) | 6569.517 MT (14483305.7928 lb)

Captain, First Officer / Mate or vessel authorized personnel:

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

Dangereux

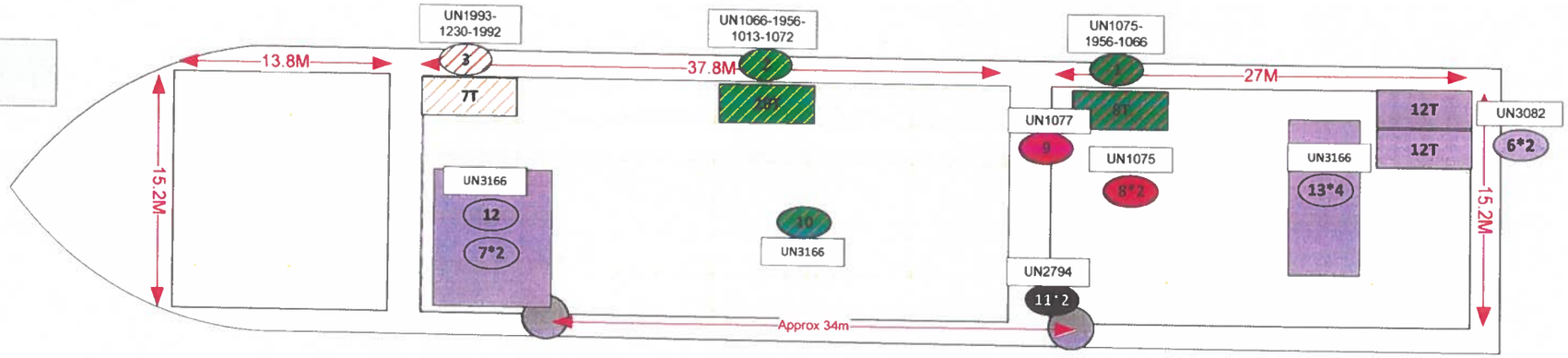
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ETD : 2024-08-09
Departure: 2024-08-09

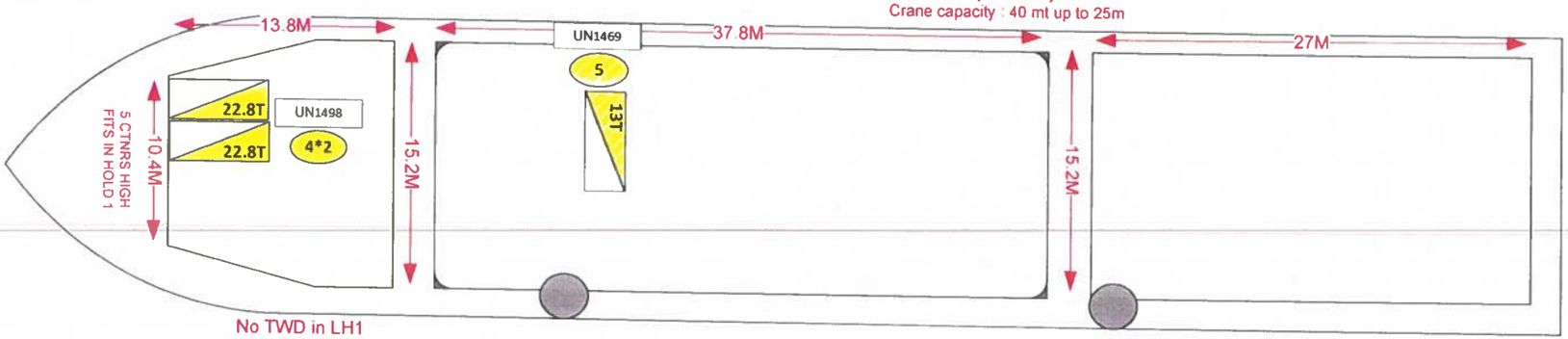
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2	CLASSE 2.1
3	CLASSE 2.2
4	CLASSE 3
5	CLASSE 4
6	CLASSE 5
7	CLASSE 6
8	CLASSE 8 ACIDE
9	CLASSE 8 AUTRES
10	
11	CLASSE 9
12	
13	
14	
15	

Tonnage total : 142 663 KG
*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette
Approuvé par:
Capitaine :
Date :

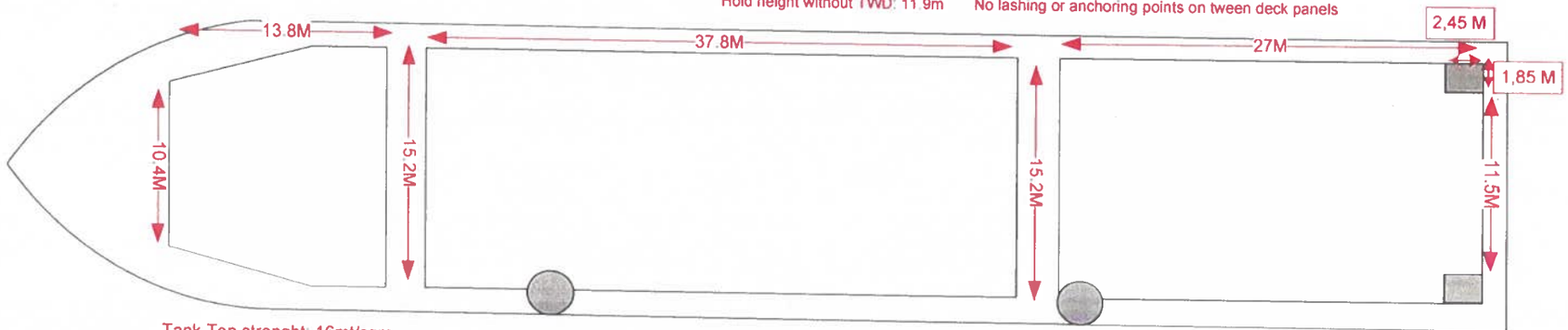


Hatch Cover Strenght : 1.75 mt/sqm
Container height : 1 container high on Bay 01& 03 // 2 containers high on Bay 05 to 11 // 3 containers high on Bay 13 to Bay 23
Crane capacity : 40 mt up to 25m



No TWD in LH1
Height hold #1 : 13.6m

Tween deck strenght : 2.5 mt/sqm.
Teen deck in hold #3 and hold #2 are adjustable at 2 level:
Level # 1 LWH : 3.15m TWD: 8m Level # 2 LWH: 7.05m TWD: 4.1m
Hold height without TWD: 11.9m No lashing or anchoring points on tween deck panels



Tank Top strenght: 16mt/sqm

Double bottom Tank Top strenght: 16 mt/sqm.
No lashing or anchoring points on tank top
Height of the tank in hold no 3 : 1,65m

QSL

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2024-08-03 00:00 - N/A
V241334

DESGAGNES RANKIN INLET - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
Vehicles - Self-Propelled (Passenger) VUS-NO ASSISTANCE	Bc: 93711, Desc: SUBARU, PO: 24-00306-2-RAN	490 cm x 205 cm x 170 cm	1	17.0765 m³	1.705 MT	Deck3	Class 9/3166/P.G. III

13

SUBTOTAL QTY: 5 | SUBTOTAL VOLUME: 256.5767 m³ (9060.9206 cu.ft.) | 27.306 MT (60199.4253 lb)

TOTAL QTY: 11 | TOTAL VOLUME: 283.7711 m³ (10021.2818 cu.ft.) | 34.096 MT (75168.8129 lb)

Quantity: 21 | Volume: 724.0785 m³ (25570.5902 cu.ft.) | 159.196 MT (350967.1029 lb)

Captain, First Officer / Mate or vessel authorized personnel:

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-08-08 18:35

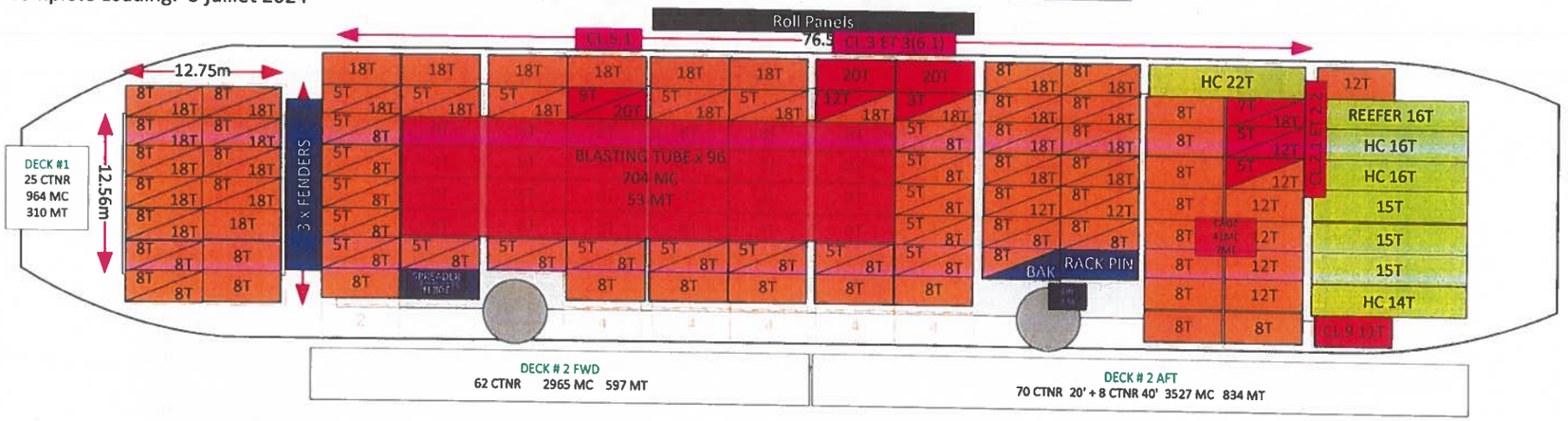
Berthe A. Desgagnés

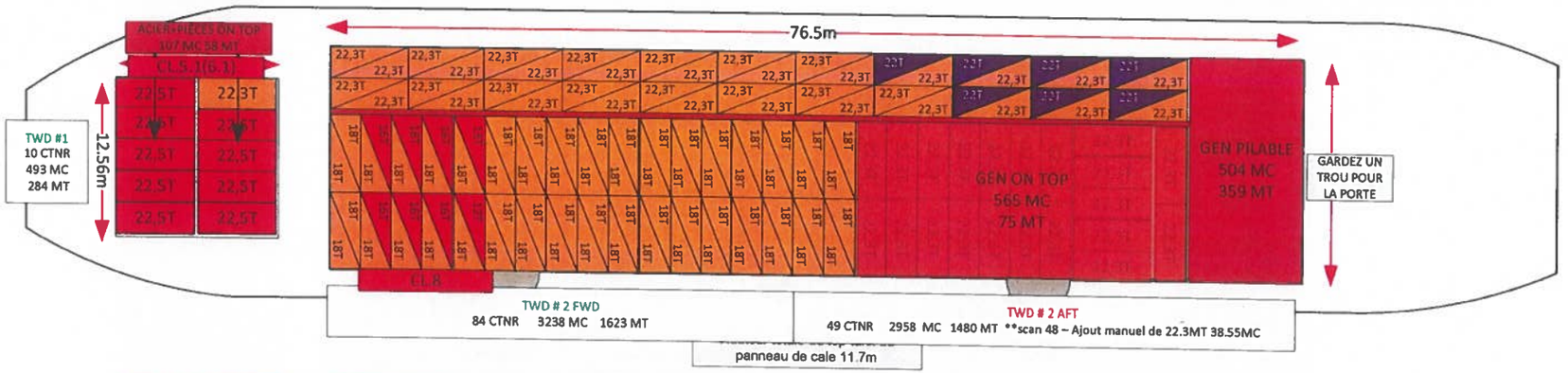
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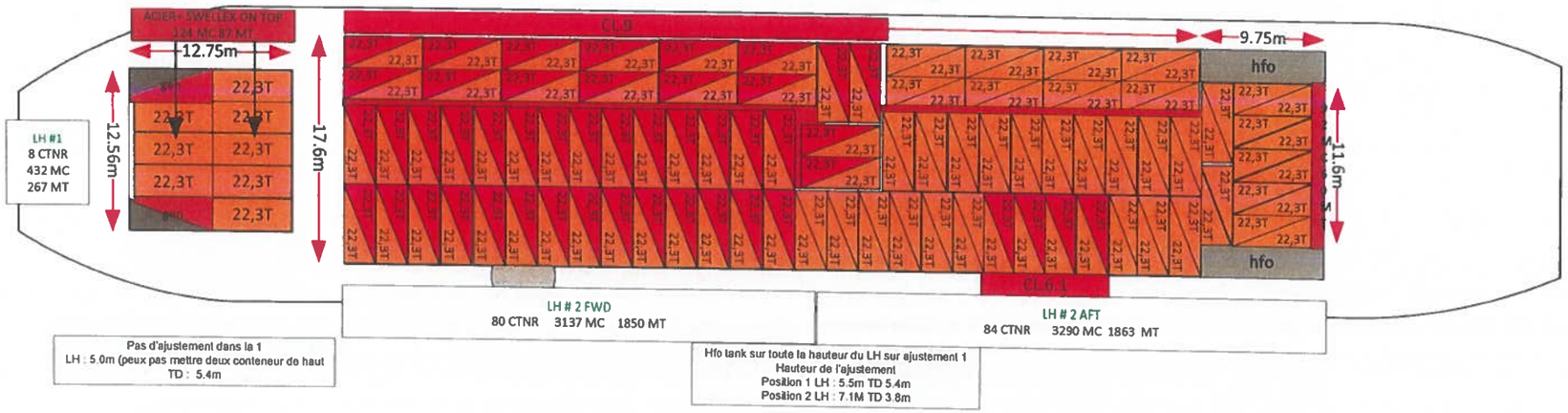
No de Voyage : 06225701
ETD : 3 juillet 2024 AM
Départ: 3 juillet 2024

FINAL

Total
472 CTNR 20'
8 CTNR 40'







1. CTNR 20'
2. CTNR 40'
3. MODULE/ROULOTTE
4. MACHINERIES/VÉHICULES
5. GÉNÉRAL CARGO
6. DANGEREUX
7. GEAR DTI
8. FLT 20'
9.
10.
11.
12.
13.
14.
15.

VOLUME TOTAL: 21 004 MC

TONNAGE TOTAL: 9 109 MT

Préparé par : Charlotte Fafard-Morrissette

Approuvé par : BERTHE A. DESGAGNÉS IMO # 9700392 MASTER 03/07/24

Capitaine :

Date : 03-07-2024

QSL

269453
2024-06-27 00:00 - 2024-07-03 09:30
V241127

TOTAL QTY: 1015	TOTAL VOLUME: 20965.3596 m³ (740384.687 cu.ft.)	9087.264 MT (20033987.7851 lb)

Quantity: 1015 Volume: 20965.3596 m³ (740384.687 cu.ft.) 9087.264 MT (20033987.7851 lb)

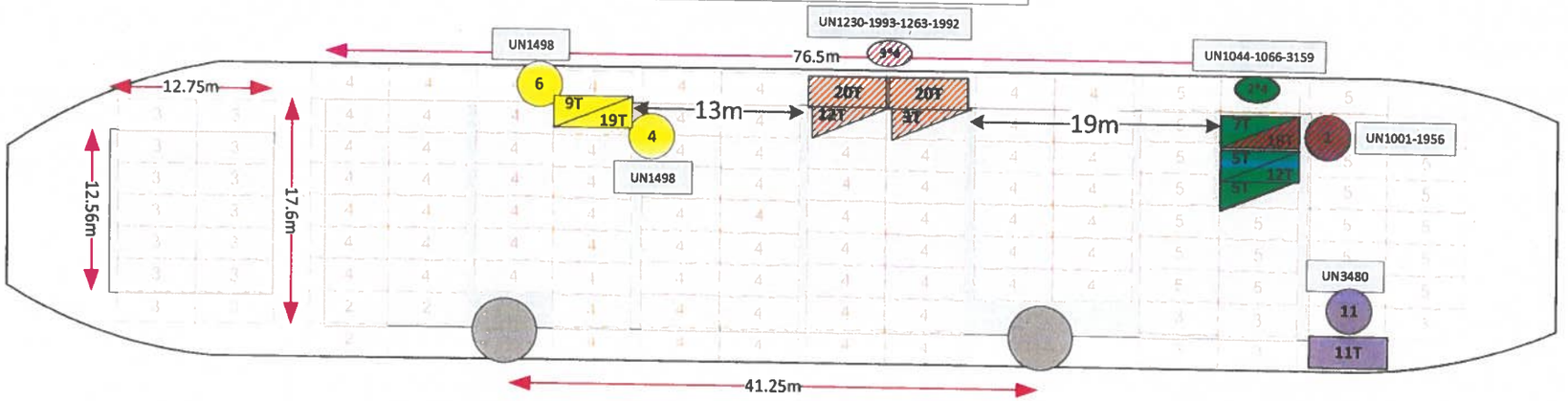
Captain, First Officer / Mate or vessel authorized personnel:

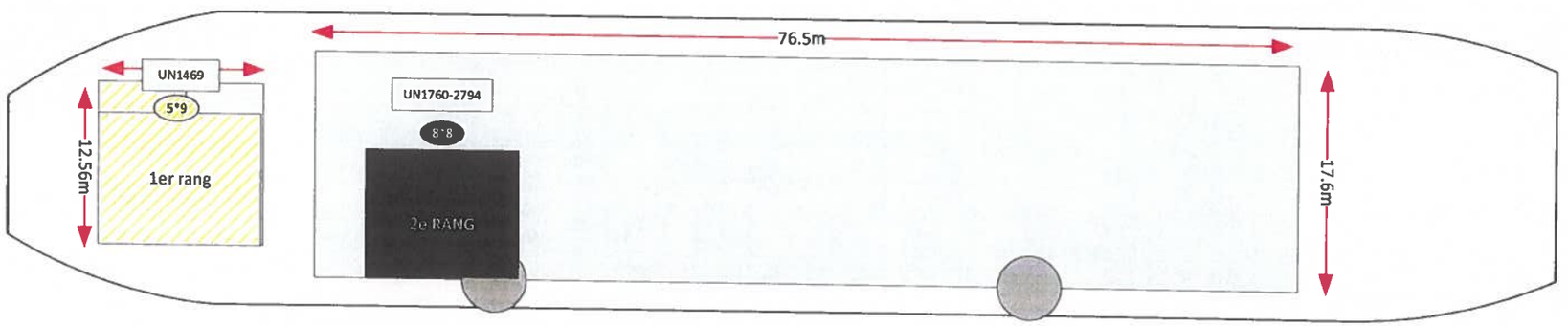
IMO # 9700392
MASTER

QSL Canada inc. without prejudice:

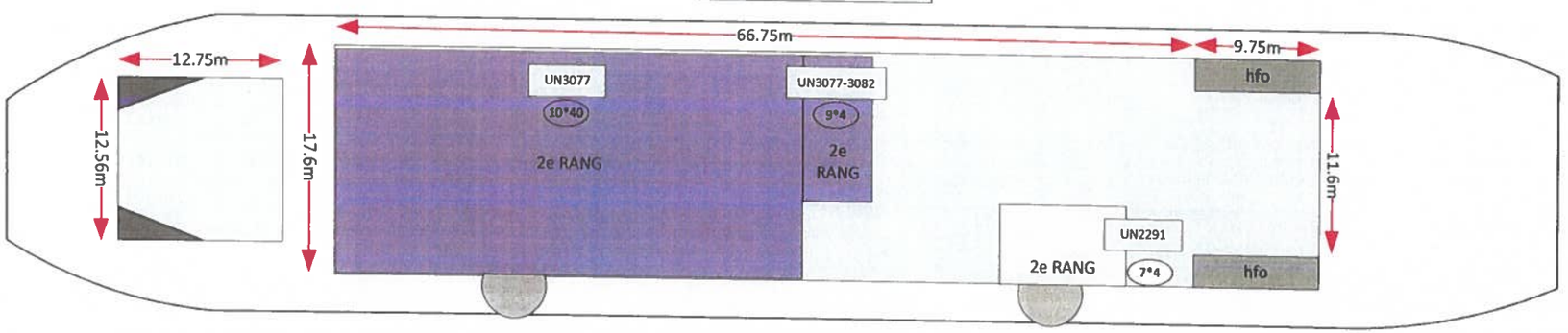
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

Dangereux





Hauteur totale du top tank au panneau de cale 11.7m



Pas d'ajustement dans la 1
LH : 5.0m (peux pas mettre deux conteneur de haut
TD : 5.4m

Hfo tank sur toute la hauteur du LH sur ajustement 1
Hauteur de l'ajustement
Position 1 LH : 5.5m TD 5.4m
Position 2 LH : 7.1M TD 3.8m

Berthe A. Desgagnés

Début du chargement : 27 juin 2024

Fin du Chargement : 03 juillet 2024

No de Voyage : 06225701

ETD : 03 juillet 2024

Départ: 03 juillet 2024

1	CLASSE 1
2	CLASSE 2.1
3	CLASSE 2.2
4	CLASSE 3
5	CLASSE 4
6	CLASSE 5
7	CLASSE 6
8	CLASSE 8 ACIDE
9	CLASSE 8 AUTRES
10	
11	CLASSE 9
12	
13	
14	
15	

Tonnage total : 1 270 013 KG

*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date : 03/07/24

DESGAGNÉS
9700392
MASTER

QSL

269453
2024-06-27 00:00 - 2024-07-03 09:30
V241127

MEADOWBANK-AEM-STOCK - LTD QTY 2.1

SUBTOTAL QTY: 5 | SUBTOTAL VOLUME: 192.748 m³ (6806.8314 cu.ft.) | 41.246 MT (90931.8647 lb)

MEADOWBANK-AEM-STOCK - LTD QTY 3

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
20' Containers FULL	Bc: APMU 274873-0, Desc: CTB 500 AGNICO, Seal # 003052	610 cm x 244 cm x 259 cm	1	38.5496 m³	4.544 MT	Deck2	LTD Qty Class 3/1993/ P.G. III
20' Containers FULL	Bc: GATU 027882-9, Desc: CTB 500 AGNICO, Seal # 1242784	610 cm x 244 cm x 259 cm	1	38.5496 m³	9.1 MT	Deck2	LTD Qty Class 3/1993/ P.G. III

SUBTOTAL QTY: 2 | SUBTOTAL VOLUME: 77.0992 m³ (2722.7326 cu.ft.) | 13.644 MT (30079.8711 lb)

MEADOWBANK-AEM-STOCK - LTD QTY 8

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
20' Containers FULL	Bc: GATU 067723-8, Desc: CTB 500 AGNICO, Seal # 1242863	610 cm x 244 cm x 259 cm	1	38.5496 m³	9.456 MT	Deck2	LTD Qty Class 8/1759/ P.G. III

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 38.5496 m³ (1361.3663 cu.ft.) | 9.456 MT (20846.9115 lb)

TOTAL QTY: 85 | TOTAL VOLUME: 3276.715 m³ (115716.0996 cu.ft.) | 1558.518 MT (3435944.0394 lb)

Quantity: 85 Volume: 3276.715 m³ (115716.0996 cu.ft.) 1558.518 MT (3435944.0394 lb)

Captain, First Officer / Mate or vessel authorized personnel:

IMO # 9700392
MASTER

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

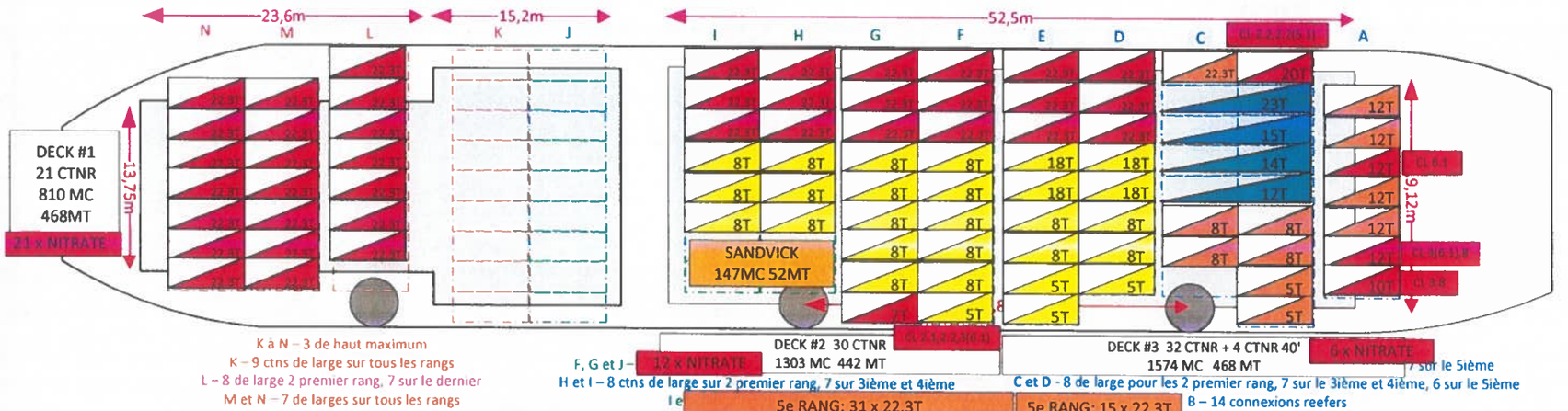
Marcellin A. Desgagnés

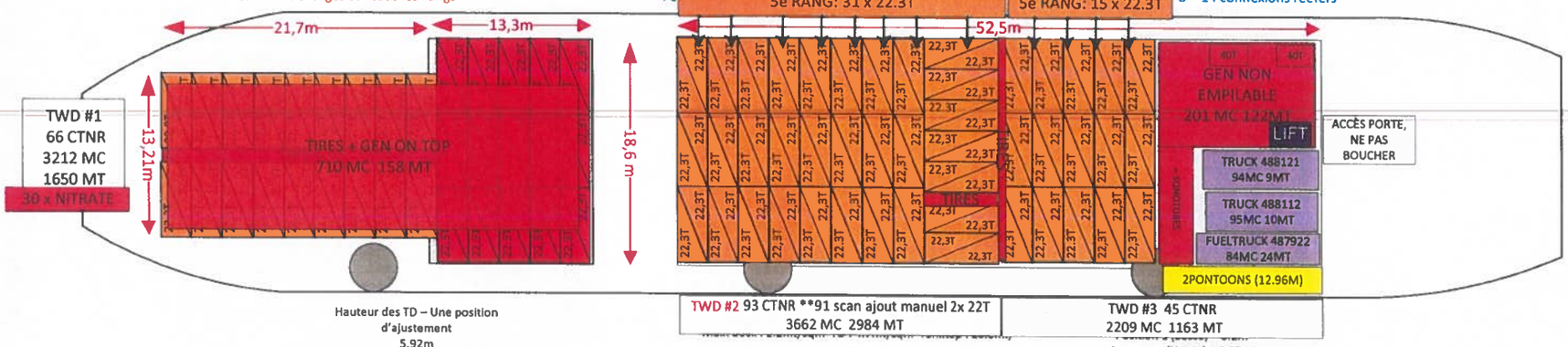
Début du chargement : 4 août 2024
Fin du Chargement : 7 août 2024

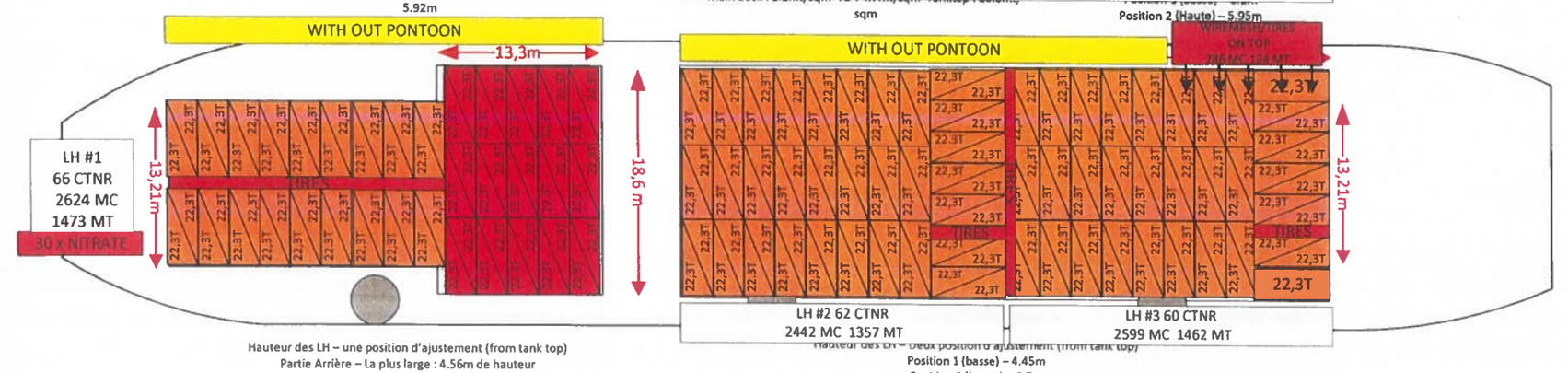
No de Voyage : 06125702
ETD : 9 août 2024
Départ: 7 août 2024

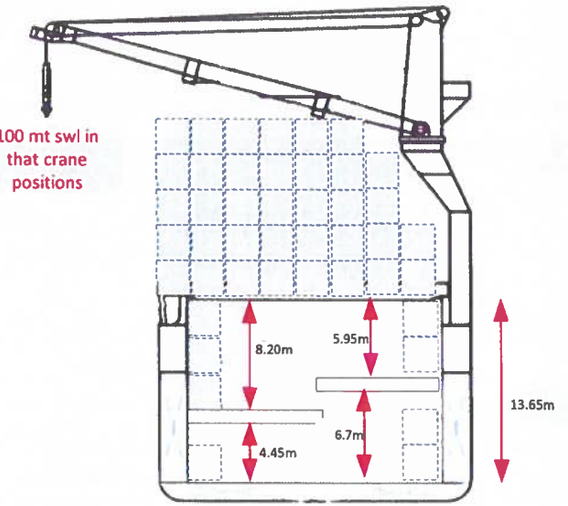
FINAL

Total : 475 CTNR 20' + 4 CTNR 40'









1 CTNR 20'
2 CTNR 40'
3 REEFER 40'
4 MACHINERIES/VÉHICULES
5 GÉNÉRAL CARGO
6 DANGEREUX
7 GEAR DTI
8 FLT 20'
9
10
11
12
13 CTNR 20' RANKIN
14 MACHINE RANKIN
15

VOLUME TOTAL: 20 436 MC
TONNAGE TOTAL: 10 581 MT

Préparé par : Charlotte Fafard.M

Approuvé par:

Capitaine :

Date :

CAPT. JEREMY REGNER

07/08/24

MASTER CFA 4098 MARCELLIN A.DESGAGNÉS

275533
2024-07-31 00:00 - N/A
V240732

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

MARCELLIN ADESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
RANKIN INLET, NUNAVUT	AGNICO EAGLE MINES LIMITED 355 Alphonse-Deshaies Blvd BÉCANCOUR QC G9H 2Y7 CANADA	N/A	AGNICO EAGLE MINES LIMITED (DIVISION MELIADINE) PO Box 879 RANKIN INLET NU X0C 0G0 CANADA	N/A

MELIADINE-AEM-STOCK

Location in vessel	Qty	Weight	Volume
Deck 2	18	166.843 MT (367825.8521 lb)	802.0097 m³ (28322.7039
Deck 3	11	111.877 MT (246646.5651 lb)	424.0456 m³ (14975.0276

SUBTOTAL QTY: 29 | SUBTOTAL VOLUME: 1226.0552 m³ (43297.7315 cu.ft.) | 278.72 MT (614472.4172 lb)

TOTAL QTY: 29 | TOTAL VOLUME: 1226.0552 m³ (43297.7315 cu.ft.) | 278.72 MT (614472.4172 lb)

Quantity: 722 | Volume: 20358.9035 m³ (718967.8933 cu.ft.) | 10536.883 MT (23229850.6256 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

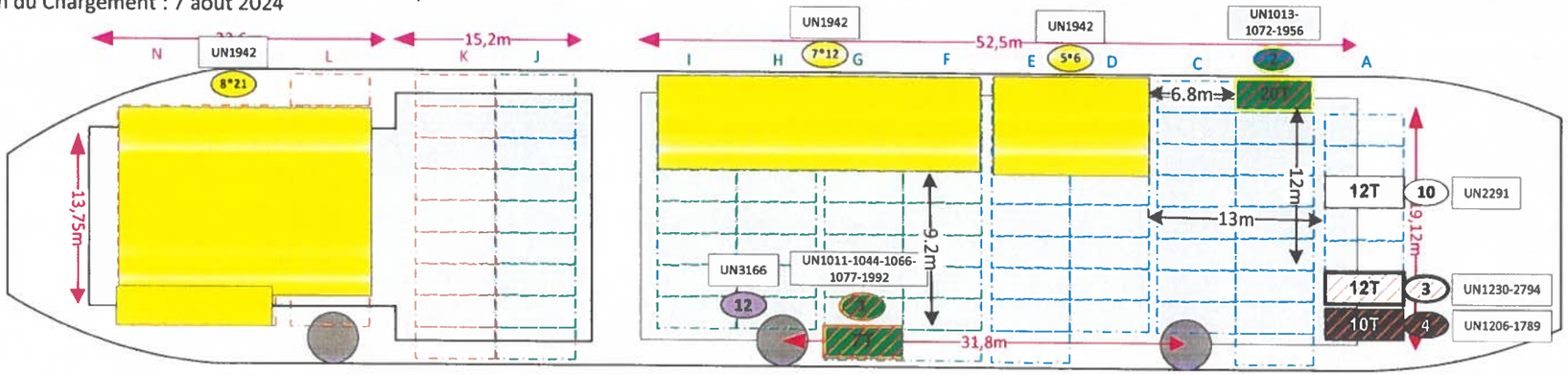
MASTER
CFA 4098
MARCELLIN A.DESGAGNÉS

Marcellin A. Desgagnés

Début du chargement : 4 août 2024
Fin du Chargement : 7 août 2024

No de Voyage : 06125702
ETD : 9 août 2024
Départ: 7 août 2024

Dangereux

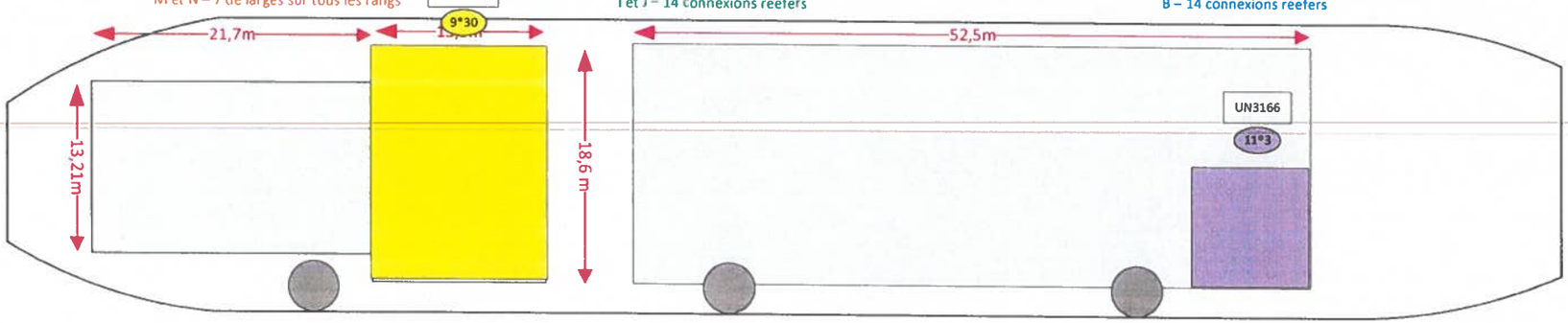


K à N – 3 de haut maximum
K – 9 ctns de large sur tous les rangs
L – 8 de large 2 premier rang, 7 sur le dernier
M et N – 7 de larges sur tous les rangs

F à J – 4 ctns de haut max
F, G et J – 9 ctns de large sur 3 premier rang, 8 sur le 4ième
H et I – 8 ctns de large sur 2 premier rang, 7 sur 3ième et 4ième
I et J – 14 connexions reefers

A à E – 5 ctns de haut max
B et E- 9 de large pour les 3 premier rang, 8 sur le 4ième et 7 sur le 5ième
C et D - 8 de large pour les 2 premier rang, 7 sur le 3ième et 4ième, 6 sur le 5ième
B – 14 connexions reefers

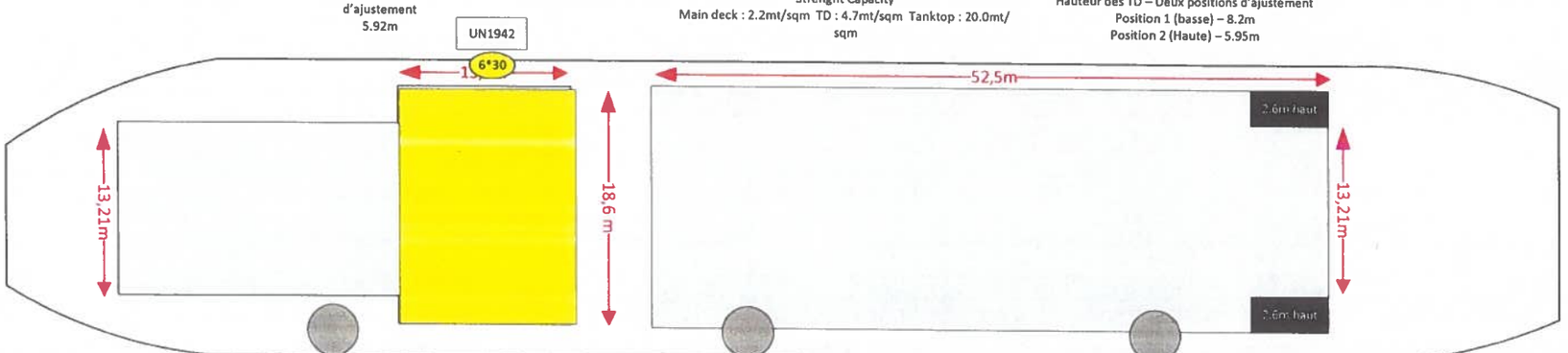
A - 7 de large



Hauteur des TD – Une position d'ajustement
5.92m

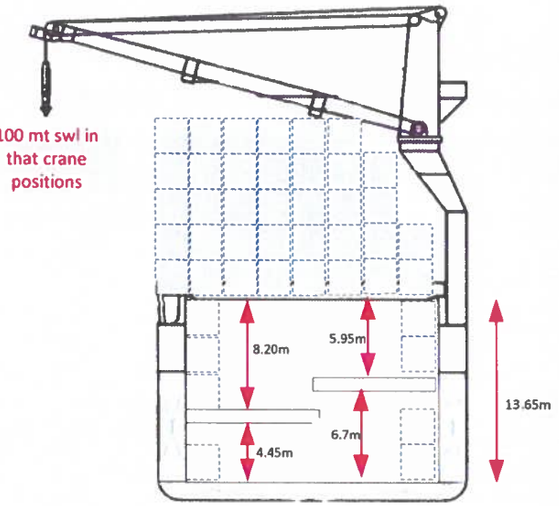
Strenght Capacity
Main deck : 2.2mt/sqm TD : 4.7mt/sqm Tanktop : 20.0mt/sqm

Hauteur des TD – Deux positions d'ajustement
Position 1 (basse) – 8.2m
Position 2 (Haute) – 5.95m



Hauteur des LH – une position d'ajustement (from tank top)
Partie Arrière – La plus large : 4.56m de hauteur
La plus étroite : 4.88 m de hauteur

Hauteur des LH – Deux position d'ajustement (from tank top)
Position 1 (basse) – 4.45m
Position 2 (haute) – 6.7m
Sans pontoons : 5 ctn de haut et reste 19" de loose



1	CLASSE 1
2	CLASSE 2.1
3	CLASSE 2.2
4	CLASSE 3
5	CLASSE 4
6	CLASSE 5
7	CLASSE 6
8	CLASSE 8 ACIDE
9	CLASSE 8 AUTRES
10	
11	CLASSE 9
12	
13	
14	
15	

*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par: 7/08/24

Capitaine :

Date :

CAPT. JEREMY

MASTER CFA 4098

QSL

275533
2024-07-31 00:00 - N/A
V240732

Port	Section
Bécancour	Becancour

Pro Forma DANGEROUS GOODS MANIFEST

MARCELLIN ADESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
RANKIN INLET, NUNAVUT	AGNICO EAGLE MINES LIMITED 355 Alphonse-Deshaies Blvd BÉCANCOUR QC G9H 2Y7 CANADA	N/A	AGNICO EAGLE MINES LIMITED (DIVISION MELIADINE) PO Box 879 RANKIN INLET NU X0C 0G0 CANADA	N/A

MELIADINE-AEM-STOCK - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
Vehicles - Self-Propelled (Machinery) HEAVY VEHICULES-WITH ASSISTANCE	Bc: 487948, Desc: SANDVIK TH551I TRUCK	1158 cm x 365 cm x 347 cm	1	146.6665 m³	51.54 MT	Deck2	Class 9/3166/P.G. III

(12) Deck #2 FWD PS

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 146.6665 m³ (5179.4786 cu.ft.) | 51.54 MT (113626.2499 lb)

MELIADINE-AEM-STOCK - LTD QTY 2.1

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
20' Containers FULL	Bc: GATU 095169-4, Desc: CTB 500 AGNICO, Seal # 1242496	610 cm x 244 cm x 259 cm	1	38.5496 m³	6.388 MT	Deck3	LTD Qty Class 2.1/1950

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 38.5496 m³ (1361.3663 cu.ft.) | 6.388 MT (14083.1293 lb)

TOTAL QTY: 2 | TOTAL VOLUME: 185.2161 m³ (6540.8448 cu.ft.) | 57.928 MT (127709.3792 lb)

Quantity: 109 | Volume: 4467.8904 m³ (157782.059 cu.ft.) | 2371.71 MT (5228725.5185 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

MASTER
CFA 4098
MARCELLIN A.DESGAGNES

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-08-07 15:54

QSL

268599
2024-06-21 00:00 - N/A
V240725

[redacted] MELIADINE-AEM-STOCK [redacted]

Product	Packaging	Identifier	Dimensions	Qty	Volume	Weight	HAZ MAT
PICK UP-NO ASSISTANCE							
	SUBTOTAL QTY: 1148		SUBTOTAL VOLUME: 24093.8842 m³ (850867.4898 cu.ft.)			9846.706 MT (21708270.7983 lb)	
TOTAL QTY: 1148			TOTAL VOLUME: 24093.8842 m³ (850867.4898 cu.ft.)			9846.706 MT (21708270.7983 lb)	

Quantity: 1148 Volume: 24093.8842 m³ (850867.4898 cu.ft.) 9846.706 MT (21708270.7983 lb)

Captain, First Officer / Mate or vessel authorized personnel:_____

QSL Canada inc. without prejudice:_____

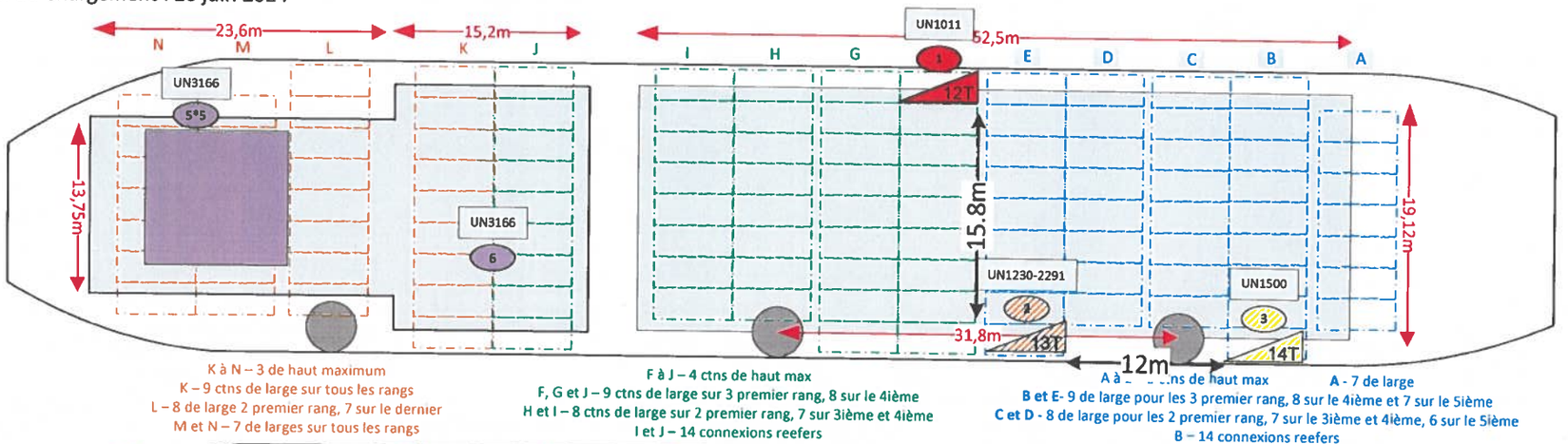
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds

Marcellin A. Desgagnés

Début du chargement : 21 juin 2024
Fin du Chargement : 26 juin 2024

No de Voyage : 06125701
ETD : 26 juin 2024
Départ: 26 juin 2024

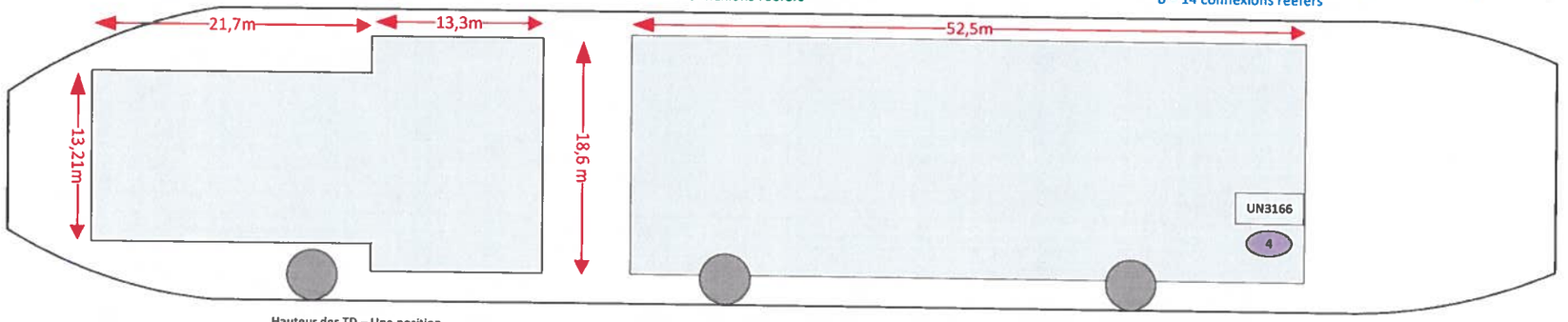
Dangereux



K à N – 3 de haut maximum
K – 9 ctns de large sur tous les rangs
L – 8 de large 2 premier rang, 7 sur le dernier
M et N – 7 de larges sur tous les rangs

F à J – 4 ctns de haut max
F, G et J – 9 ctns de large sur 3 premier rang, 8 sur le 4ième
H et I – 8 ctns de large sur 2 premier rang, 7 sur 3ième et 4ième
I et J – 14 connexions reefers

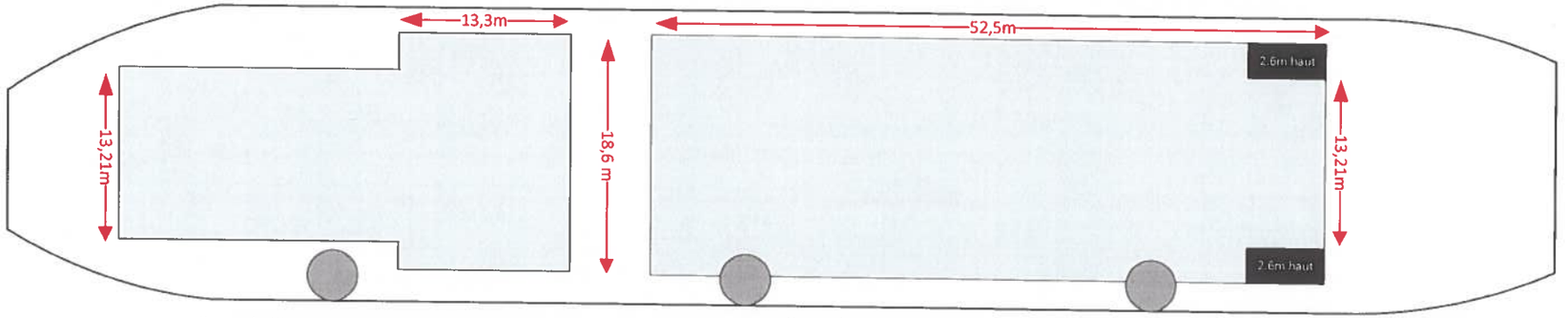
A à [illegible]ns de haut max
A - 7 de large
B et E- 9 de large pour les 3 premier rang, 8 sur le 4ième et 7 sur le 5ième
C et D - 8 de large pour les 2 premier rang, 7 sur le 3ième et 4ième, 6 sur le 5ième
B – 14 connexions reefers



Hauteur des TD – Une position d'ajustement
5.92m

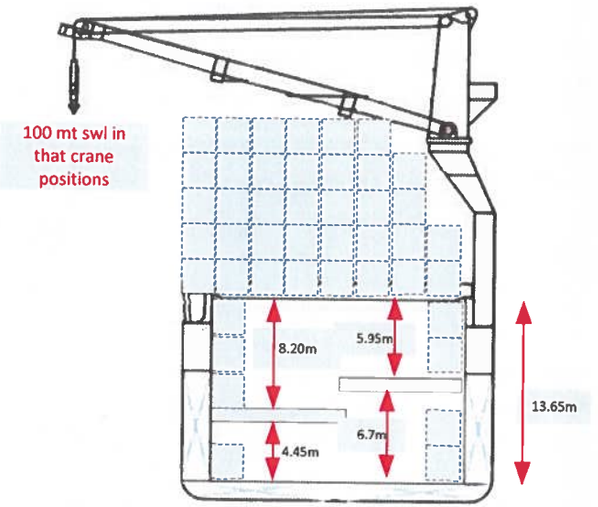
Strenght Capacity
Main deck : 2.2mt/sqm TD : 4.7mt/sqm Tanktop : 20.0mt/sqm

Hauteur des TD – Deux positions d'ajustement
Position 1 (basse) – 8.2m
Position 2 (Haute) – 5.95m



Hauteur des LH – une position d'ajustement (from tank top)
Partie Arrière – La plus large : 4.56m de hauteur
La plus étroite : 4.88 m de hauteur

Hauteur des LH – Deux position d'ajustement (from tank top)
Position 1 (basse) – 4.45m
Position 2 (haute) – 6.7m
Sans pontoons : 5 ctn de haut et reste 19" de loose



1		CLASSE 1
2		CLASSE 2.1
3		CLASSE 2.2
4		CLASSE 3
5		CLASSE 4
6		CLASSE 5
7		CLASSE 6
8		CLASSE 8 ACIDE
9		CLASSE 8 AUTRES
10		
11		CLASSE 9
12		
13		
14		
15		Tonnage total DG : 75 061KG

*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par :

Capitaine :

Date :

MASTER
CEA 4098
MARCELLIN A.DESGAGNÉS

QSL

268599
2024-06-21 00:00 - N/A
V240725

MELIADINE-AEM-STOCK - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
PICK UP-NO ASSISTANCE							
Vehicles - Self-Propelled (Passenger) PICK UP-NO ASSISTANCE	Bc: 486262, Desc: F GILBERT DODGE RAM 2500 UNIT 24-0013	661 cm x 210 cm x 230 cm	1	31.9263 m³	3.81 MT	Deck1	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Passenger) PICK UP-NO ASSISTANCE	Bc: 486214, Desc: FORD F150 BLANC 2023	680 cm x 229 cm x 208 cm	1	32.3898 m³	3.243 MT	Deck1	Class 9/3166/P.G. III

(5)

(6) DECK #1 AFT

SUBTOTAL QTY: 7 | SUBTOTAL VOLUME: 320.0881 m³ (11303.8046 cu.ft.) | 65.403 MT (144188.9333 lb)

TOTAL QTY: 10 | TOTAL VOLUME: 435.7369 m³ (15387.902 cu.ft.) | 103.686 MT (228588.5012 lb)

Quantity: 10 | Volume: 435.7369 m³ (15387.902 cu.ft.) | 103.686 MT (228588.5012 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-06-26 09:40

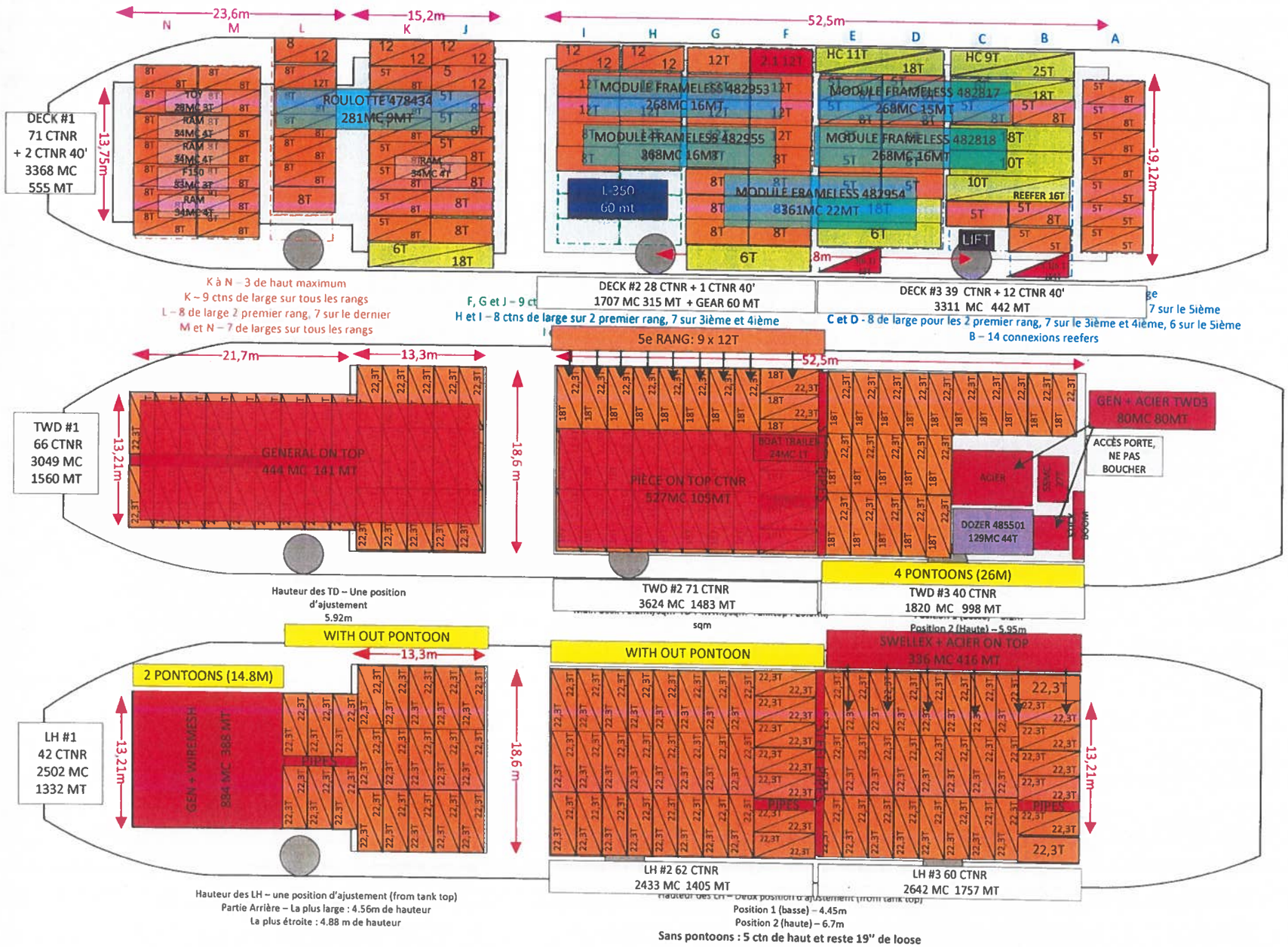
Marcellin A. Desgagnés

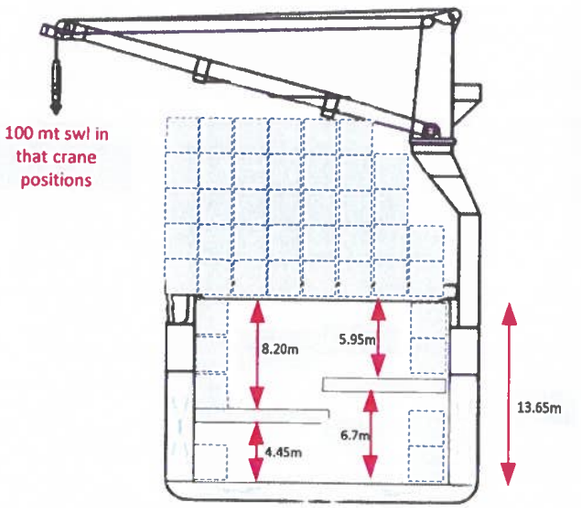
Début du chargement : 20 juin 2024
Fin du Chargement :

No de Voyage : 06125701
ETD :
Départ:

FINAL

Total : 479 CTNR 20' + 15 CTNR 40'





1 CTNR 20'
2 CTNR 40'
3 MODULE/ROULOTTE
4 MACHINERIES/VÉHICULES
5 GÉNÉRAL CARGO
6 DANGEREUX
7 GEAR DTI
8 FLT 20'
9
10
11
12
13
14
15

VOLUME TOTAL: 24 094 MC
TONNAGE TOTAL: 9 847 MT
TONNAGE + GEAR: 9 907 MT

Préparé par : Charlotte Fafard.M

Approuvé par:

Capitaine :

Date :

MASTER
CTA 4000
MARCELLIN A.DESGAGNÉS

QSL

268599
2024-06-21 00:00 - N/A
V240725

TOTAL QTY: 1148	TOTAL VOLUME: 24093.8842 m³ (850867.4898 cu.ft.)	9846.706 MT (21708270.7983 lb)

Quantity: 1148	Volume: 24093.8842 m³ (850867.4898 cu.ft.)	9846.706 MT (21708270.7983 lb)

Captain, First Officer / Mate or vessel authorized personnel:

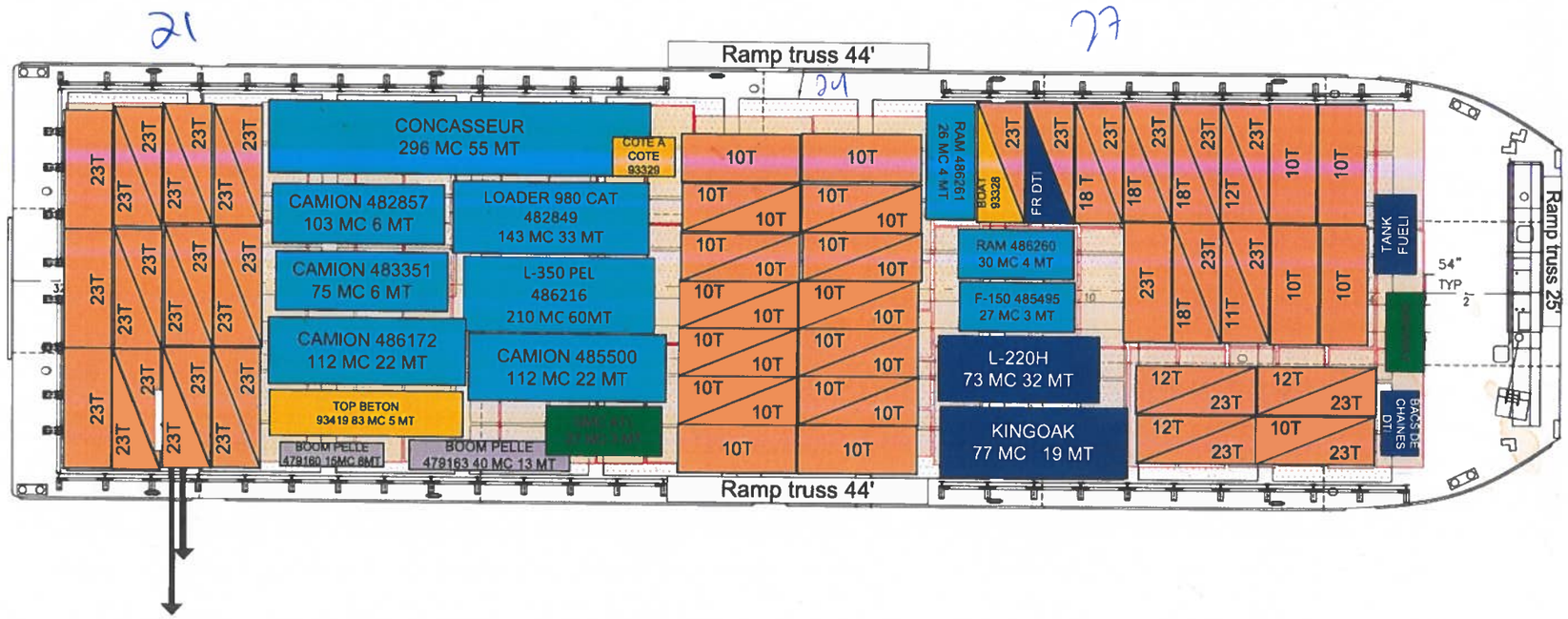
QSL Canada inc. without prejudice:

Barge Atlantic Marlin
PLAN DE CHARGEMENT
Becancour 19 juin 2024

Début du chargement :
19 juin 2024
Fin du chargement :
21 juin 2024
Numéro de voyage : 01

ETD : 22 juin 2024
Départ :

1	CTN	0000MC
2	MACHINERIE	0000MC
3	PIÈCES DIVERS	0000MC
4		0000MC
5	DANGEREUX	0000MC
6	ÉQUIPEMENT DTI	0000MC
7	ÉQUIPEMENT ATL	000MC
8	DESERTE BAKER	0000MC
9		
10		
11		
12		
13		
14		
15		



Volume total : 4 188 MC
Tonnage total : 1 456 MT

Préparé par : François Desgagnés

Approuvé par : _____

Capitaine : _____

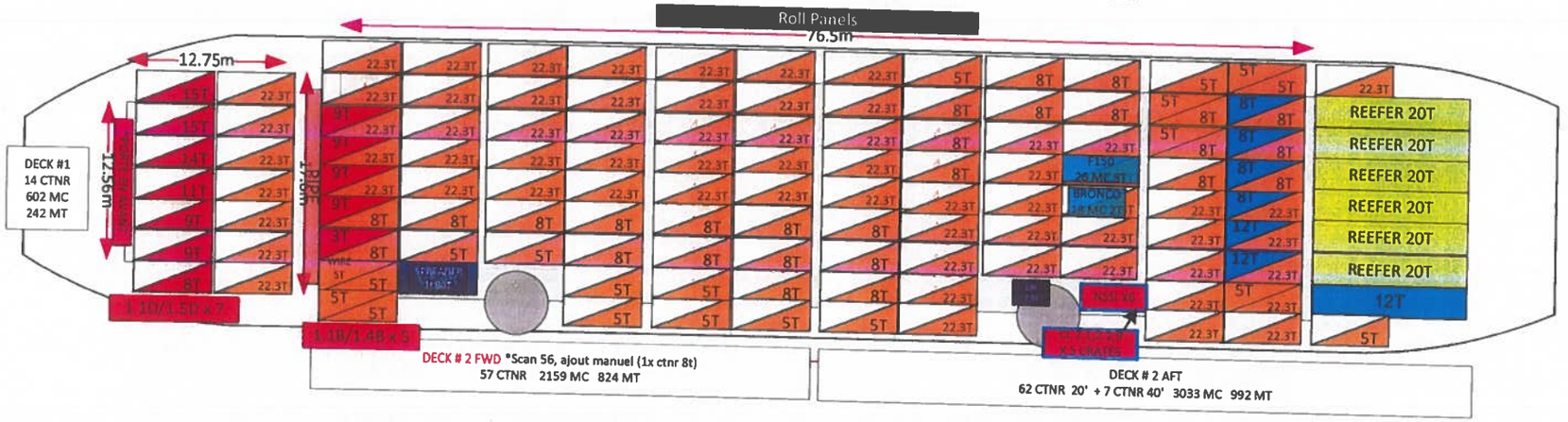
Miena Desgagnés

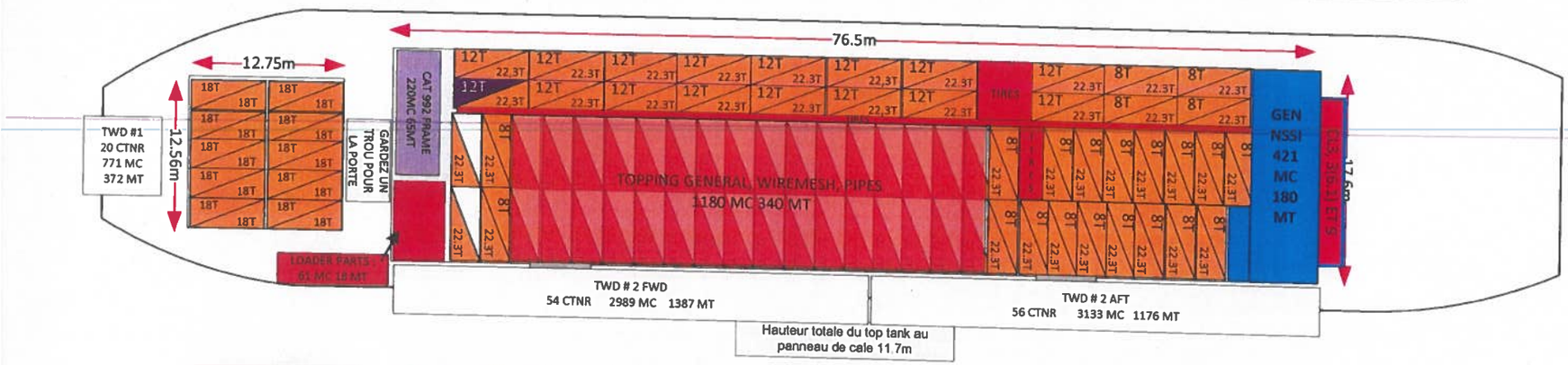
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Complete Loading: 14 Août 2024

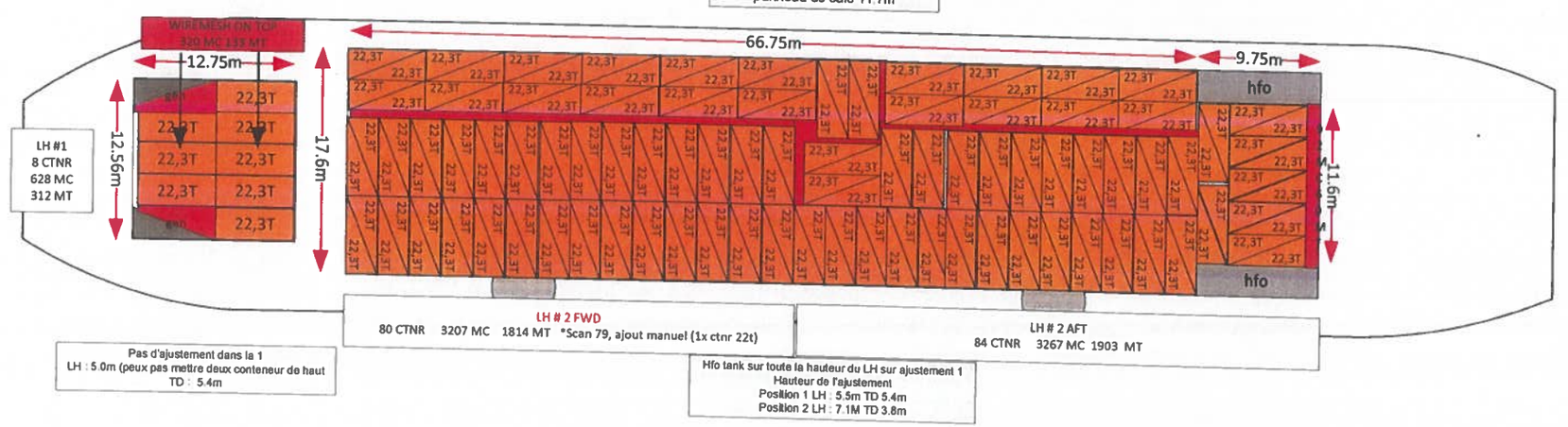
No de Voyage : 05925702
ETD : 14 Août 2024
Départ: 14 Août 2024

FINAL

Total
435 CTNR 20'
7 CTNR 40'







1. CTNR 20'
2. CTNR 40'
3. MODULE/ROULOTTE
4. MACHINERIES/VÉHICULES
5. GÉNÉRAL CARGO
6. DANGEREUX
7. GEAR DTI
8. FLT 20'
9.
10. NSSI BAKER
11.
12.
13.
14.
15.

VOLUME MEADOW 19 005 MC
VOLUME NSSI BAKER: 784 MC

VOLUME TOTAL: 19 789 MC
TONNAGE TOTAL: 9 022 MT

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date :

MIENA DESGAGNES
IMO # 9700380
MASTER

277686
2024-08-06 00:00 - N/A
V240729

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

MIENA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
BAKER LAKE, NUNAVUT	DESGAGNÉS TRANSARCTIK INC. N/A	N/A	DESGAGNÉS TRANSARCTIK INC. N/A	N/A

DESGAGNES BAKER LAKE

Location in vessel	Qty	Weight	Volume
HatchTwinDeck 3	230	180.137 MT (397134.1052 lb)	420.8486 m³ (14862.128 c
Deck 3	15	73.143 MT (161252.7124 lb)	363.3804 m³ (12832.6577
SUBTOTAL QTY: 245	SUBTOTAL VOLUME: 784.229 m³ (27694.7858 cu.ft.)		253.28 MT (558386.8177 lb)
TOTAL QTY: 245	TOTAL VOLUME: 784.229 m³ (27694.7858 cu.ft.)		253.28 MT (558386.8177 lb)

Quantity: 1066	Volume: 19709.9619 m³ (696050.7349 cu.ft.)	8991.7518 MT (19823419.4283 lb)

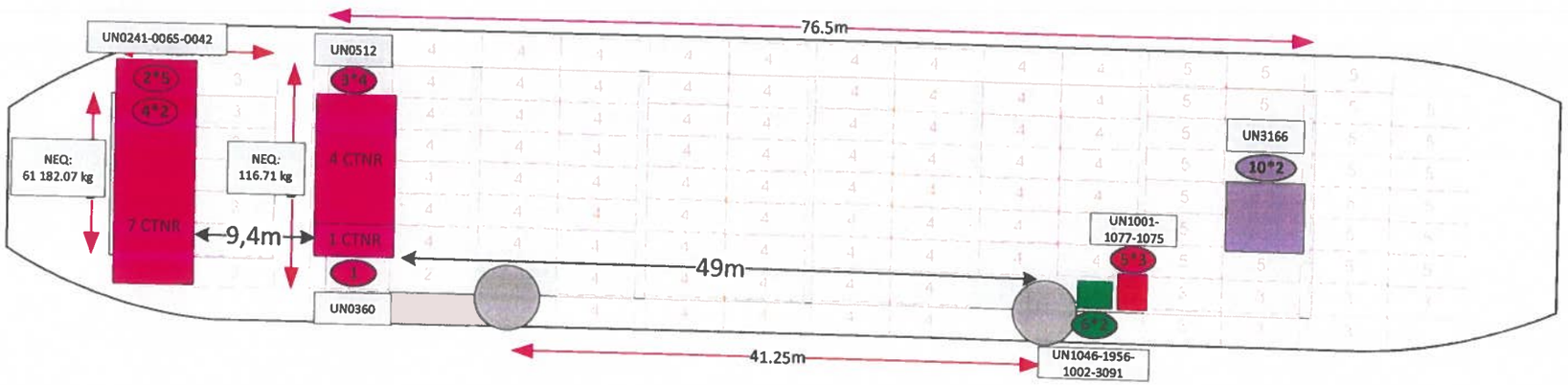
Captain, First Officer / Mate or vessel authorized personnel: _____

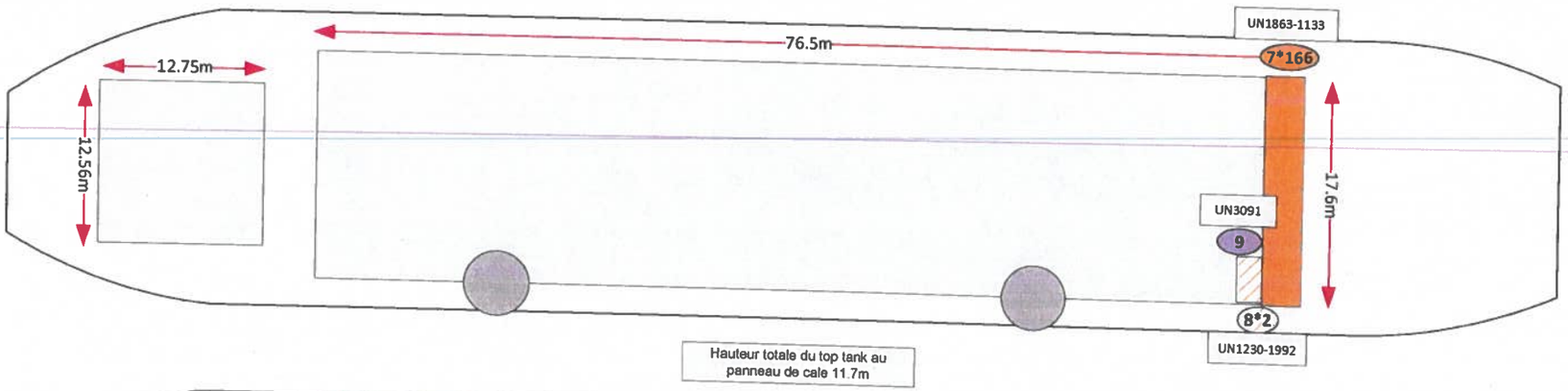
QSL Canada inc. without prejudice: _____

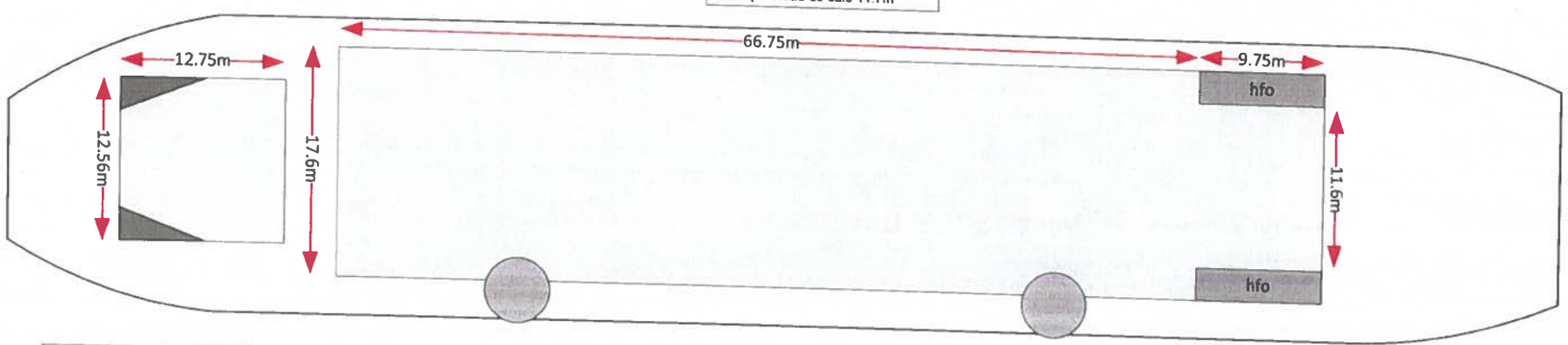
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

MIENA DESGAGNES
IMO # 9700380
MASTER

Dangereux final







Miena Desgagnés

Début du chargement : 10 août 2024

Fin du Chargement : 14 août 2024

No de Voyage : 05925702

ETD : 14 août 2024

Départ: 14 août 2024

1	CLASSE 1	61 180 KG NEQ
2	CLASSE 2.1	
3	CLASSE 2.2	
4	CLASSE 3	
5	CLASSE 4	
6	CLASSE 5	
7	CLASSE 6	
8	CLASSE 8 ACIDE	
9	CLASSE 8 AUTRES	
10		
11	CLASSE 9	
12		
13		
14		
15		

TOTAL: 228 816 KG

*VOIR ANNEXE POUR TOTAUX
PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date :

MIENA DESGAGNES
IMO # 9700380
MASTER

QSL

277686
2024-08-06 00:00 - N/A
V240729

DESGAGNES BAKER LAKE - LTD QTY 2.2

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
Northern Cargo GENERAL	Bc: 93605, Desc: AEROSOL UN1950 A1148-BAK-01 CRATE 265338, PO: 24-00817-2-BAK	92 cm x 62 cm x 74 cm	1	0.4221 m³	0.03 MT	Deck3	LTD Qty Class 2.2/1950

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 0.4221 m³ (14.9063 cu.ft.) | 0.03 MT (66.1387 lb)

TOTAL QTY: 177 | TOTAL VOLUME: 315.2516 m³ (11133.0052 cu.ft.) | 137.75 MT (303686.7662 lb)

Quantity: 190 | Volume: 816.3964 m³ (28830.7668 cu.ft.) | 266.4888 MT (587507.2369 lb)

Captain, First Officer / Mate or vessel authorized personnel:_____

QSL Canada inc. without prejudice:_____

MIENA DESGAGNES
IMO # 9700380
MASTER

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-08-14 14:21

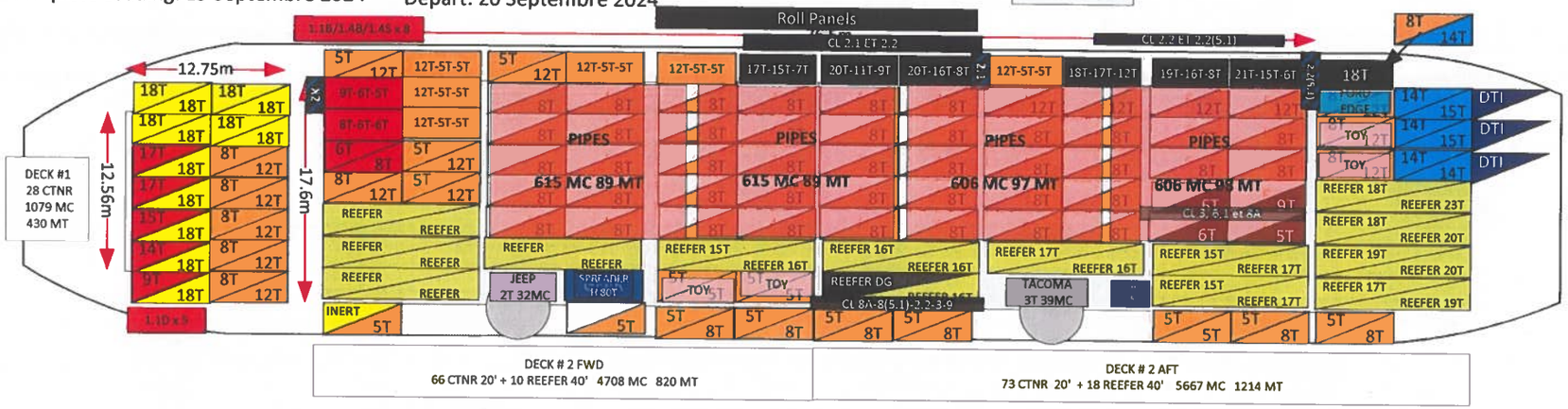
Miena Desgagnés

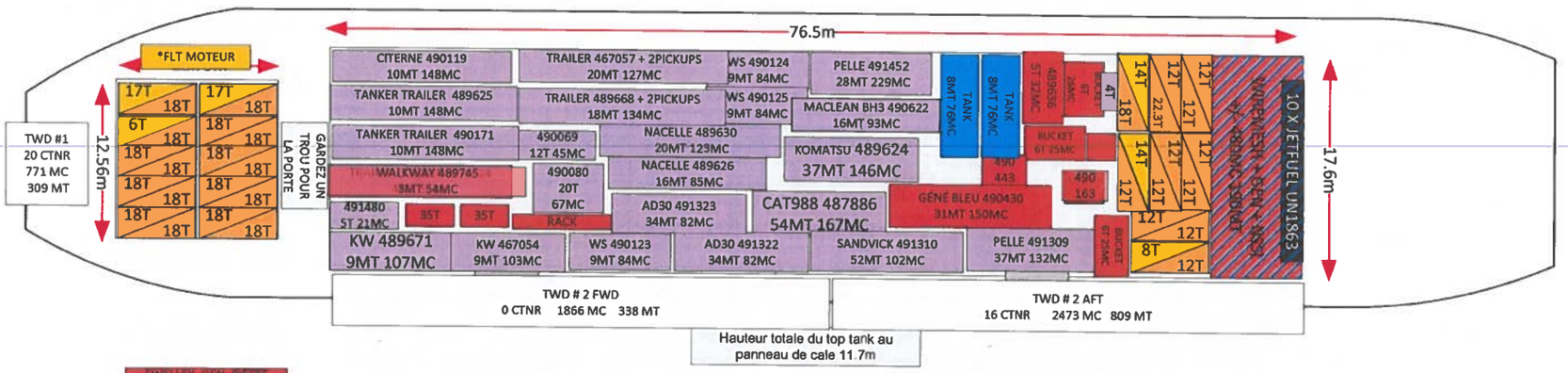
Commence Loading: 14 Septembre 2024
Complete Loading: 19 Septembre 2024

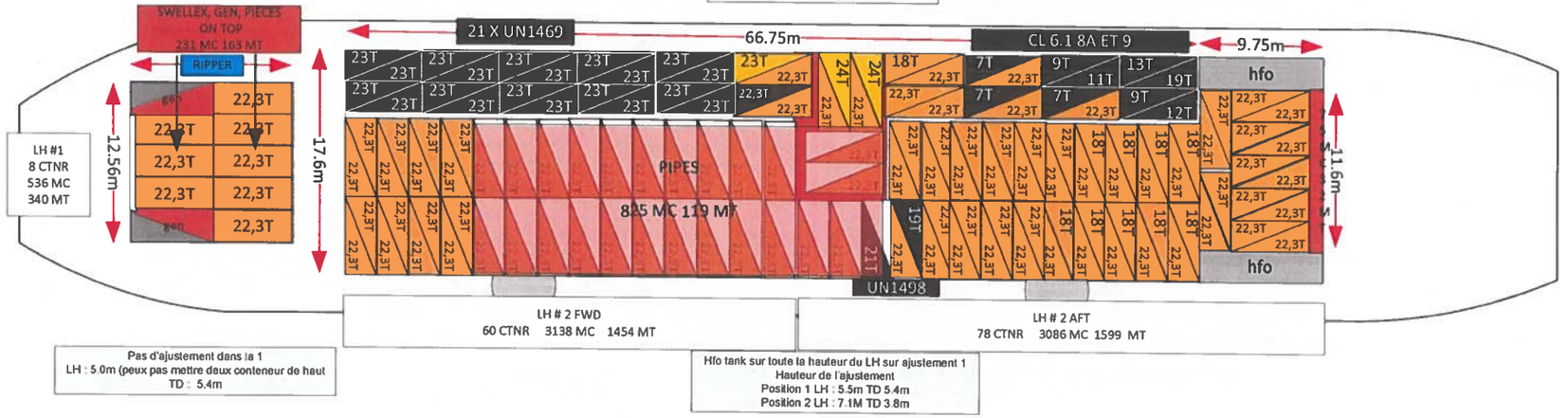
No de Voyage : 05925703
ETD : 19 Septembre 2024
Départ: 20 Septembre 2024

FINAL

Total
349 CTNR 20'
28 REEFER 40'







1. CTNR 20' BAKER
2. FLT 20' BAKER
3. CTNR 40' BAKER
4. ROULANT BAKER
5. GÉNÉRAL/PIÈCES BAKER
6. DANGEREUX BAKER
7. CTNR 20' RANKIN (500 MC)
8. CTNR 40' RANKIN
9. ROULANT RANKIN
10. GÉNÉRAL RANKIN
11. DANGEREUX RANKIN (540 MC)
12. NSSI BAKER (544 MC)
13. GEAR DTI
14.
15.

VOLUME TOTAL: 23 324 MC
TONNAGE TOTAL: 7 313 MT

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date : 2024-09-20

MIENA DESGAGNES
IMO # 9700380
MASTER

QSL

284216
2024-09-12 00:00 - N/A
V241494

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

MIENA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
RANKIN INLET, NUNAVUT	AGNICO EAGLE MINES LIMITED 355 Alphonse-Deshaies Blvd BÉCANCOUR QC G9H 2Y7 CANADA	N/A	AGNICO EAGLE MINES LIMITED (DIVISION MELIADINE) N/A	N/A

MELIADINE-AEM-STOCK

Location in vessel	Qty	Weight	Volume
Deck 2	9	59.545 MT (131274.254 lb)	346.9464 m³ (12252.2965
Deck 1	18	332.948 MT (734024.6927 lb)	693.8928 m³ (24504.5916
SUBTOTAL QTY: 27		SUBTOTAL VOLUME: 1040.8392 m³ (36756.888 cu.ft.)	392.493 MT (865298.9467 lb)
TOTAL QTY: 27		TOTAL VOLUME: 1040.8392 m³ (36756.888 cu.ft.)	392.493 MT (865298.9467 lb)

MIENA DESGAGNES
IMO # 9700380
MASTER

Quantity: 972 Volume: 23323.605 m³ (823665.3387 cu.ft.) 7312.731 MT (16121812.1901 lb)

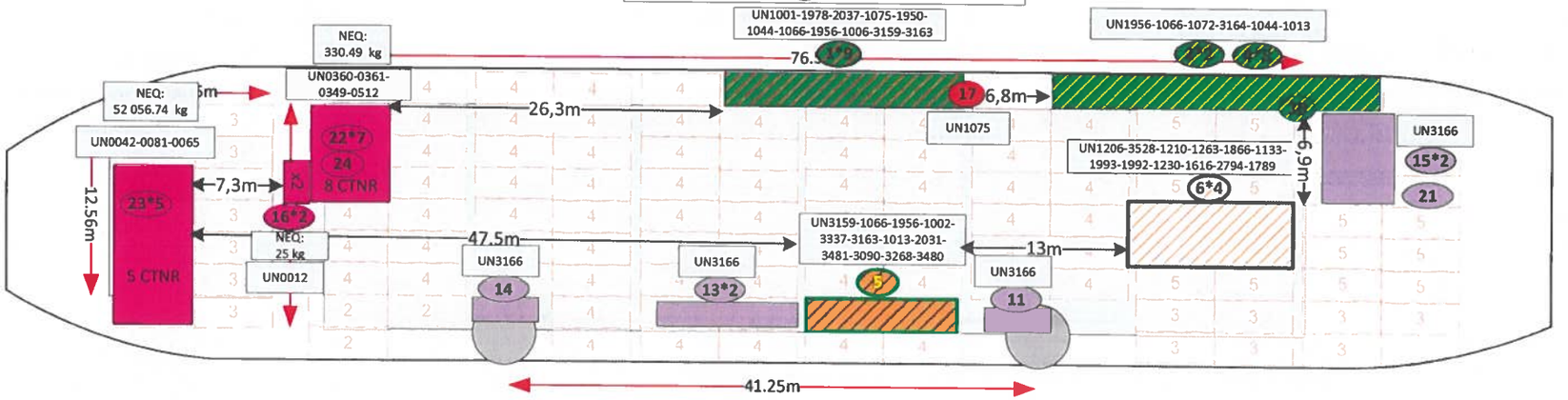
Captain, First Officer / Mate or vessel authorized personnel: _____

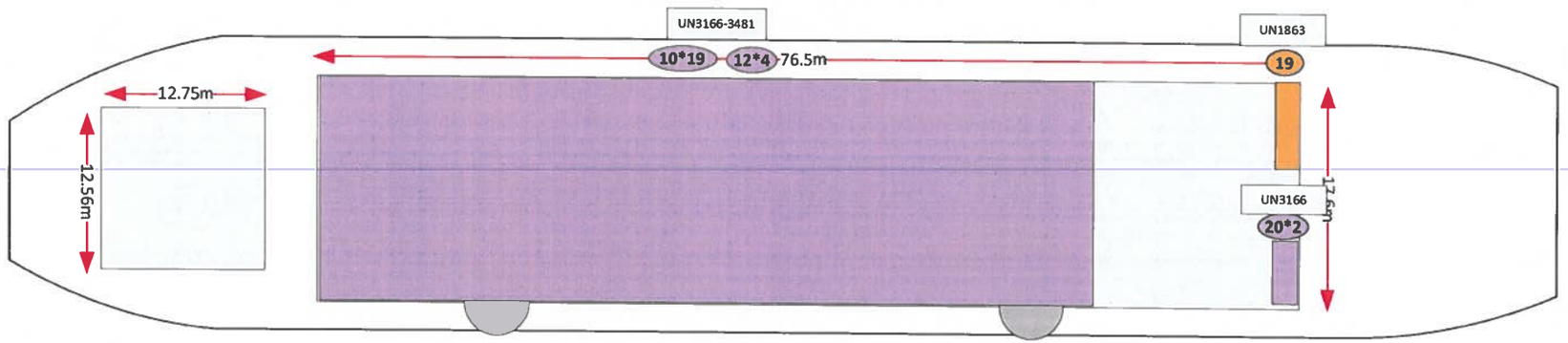
QSL Canada inc. without prejudice: _____

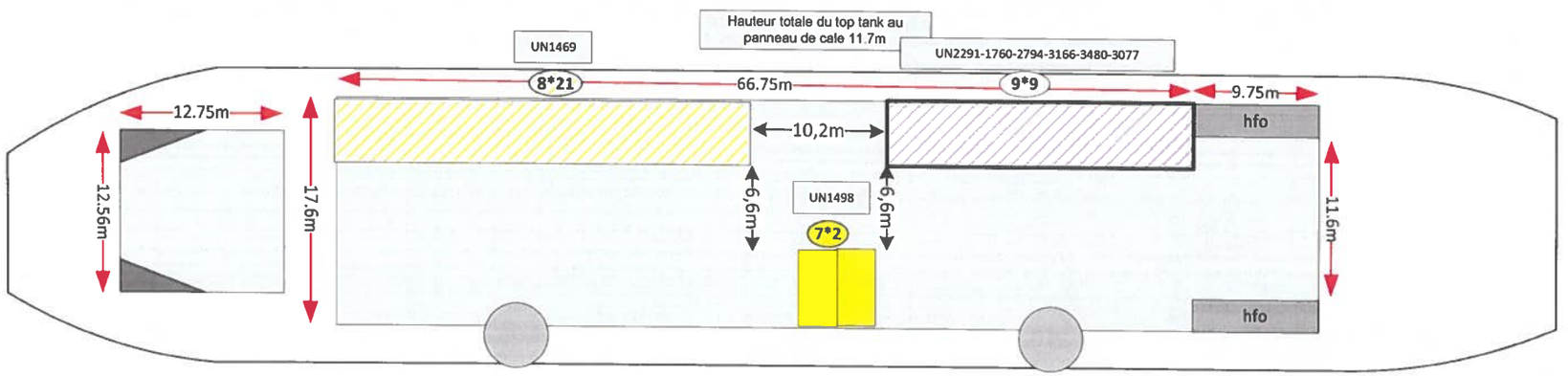
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-09-19 16:29

Dangereux







Pas d'ajustement dans la 1
LH : 5.0m (peux pas mettre deux conteneur de haut
TD : 5.4m

Hfo tank sur toute la hauteur du LH sur ajustement 1
Hauteur de l'ajustement
Position 1 LH : 5.5m TD 5.4m
Position 2 LH : 7.1M TD 3.8m

Miena Desgagnés

Début du chargement : 14 Septembre 2024

Fin du Chargement : 19 Septembre 2024

No de Voyage : 05925703

ETD : 19 Septembre 2024

Départ: 20 Septembre 2024

1	CLASSE 1	52 412,23 kg NEQ
2	CLASSE 2.1	
3	CLASSE 2.2	
4	CLASSE 3	
5	CLASSE 4	
6	CLASSE 5	
7	CLASSE 6	
8	CLASSE 8 ACIDE	
9	CLASSE 8 AUTRES	
10		
11	CLASSE 9	
12		
13		
14		
15		

TOTAL: 1 267 480,00 KG
VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date : 2024-09-20

MIENA DESGAGNES
IMO # 9700380
MASTER

QSL

284216
2024-09-12 00:00 - N/A
V241494

MELIADINE-AEM-STOCK - CLASS 1.1D

SUBTOTAL QTY: 5 | SUBTOTAL VOLUME: 192.748 m³ (6806.8314 cu.ft.) | 72.058 MT (158860.6969 lb)

MELIADINE-AEM-STOCK - CLASS 1.4B

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
20' Containers FULL	Bc: WSCU 259341-0, Desc: Detonator, Seal # UL-6405420	610 cm x 244 cm x 259 cm	1	38.5496 m³	8.802 MT	Deck2	Class 1.4B/0512

(24) Deck #2 FWD

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 38.5496 m³ (1361.3663 cu.ft.) | 8.802 MT (19405.0883 lb)

TOTAL QTY: 13 | TOTAL VOLUME: 501.1448 m³ (17697.7616 cu.ft.) | 125.686 MT (277090.1988 lb)

Quantity: 119 | Volume: 5048.7781 m³ (178295.916 cu.ft.) | 1542.896 MT (3401503.4248 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: Melissa Gagnon

MIENA DESGAGNES
IMO # 9700380
MASTER

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

QSL

284216
2024-09-12 00:00 - N/A
V241494

MELIADINE-AEM-STOCK

Product	Packaging	Identifier	Dimensions	Qty	Volume	Weight	HAZ MAT
STANDARD		008530					
20' Containers STANDARD	Unit	Bc: 150191-5, Desc: , Scope: loose, Seal # 0008192	610 cm x 244 cm x 259 cm	1	38.5496 m³	19.83 MT	-
20' Containers STANDARD	Unit	Bc: PHLU 202440-6, Desc: , Scope: loose, Seal # 0008140	610 cm x 244 cm x 259 cm	1	38.5496 m³	19.83 MT	-
20' Containers STANDARD	Unit	Bc: GLDU 321647-9, Desc: , Scope: loose, Seal # 008454	610 cm x 244 cm x 259 cm	1	38.5496 m³	19.83 MT	-
20' Containers STANDARD	Unit	Bc: TRLU 882041-0, Desc: , Scope: loose, Seal # 008414	610 cm x 244 cm x 259 cm	1	38.5496 m³	19.83 MT	-
20' Containers STANDARD	Unit	Bc: TGHU 042809-0, Desc: , Scope: loose, Seal # 008136	610 cm x 244 cm x 259 cm	1	38.5496 m³	19.83 MT	-

SUBTOTAL QTY: 27 SUBTOTAL VOLUME: 1040.8392 m³ (36756.888 cu.ft.) 392.493 MT (865298.9467 lb)

TOTAL QTY: 27 TOTAL VOLUME: 1040.8392 m³ (36756.888 cu.ft.) 392.493 MT (865298.9467 lb)

Quantity: 972 Volume: 23323.605 m³ (823665.3387 cu.ft.) 7312.731 MT (16121812.1901 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

QSL

270782
2024-07-04 00:00 - N/A
V240707

MEADOWBANK-AEM-STOCK

Product	Packaging	Identifier	Dimensions	Qty	Volume	Weight	HAZ MAT
(Machinery) OTHER-WITH ASSISTANCE							
Vehicles - Self-Propelled (Passenger) PICK UP-NO ASSISTANCE	Unit	Bc: 485956, Desc: F GILBERT DODGE RAM 2500 UNIT 21-0015	589 cm x 208 cm x 221 cm	1	27.0752 m³	3.63 MT	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Passenger) PICK UP-NO ASSISTANCE	Unit	Bc: 485761, Desc: F GILBERT DODGE RAM 2500 UNIT 21-0021	650 cm x 212 cm x 217 cm	1	29.9026 m³	3.8 MT	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Passenger) PICK UP-WITH ASSISTANCE	Unit	Bc: 487496, Desc: F GILBERT DODGE RAM 2500 UNIT 22-0010	640 cm x 213 cm x 330 cm	1	44.9856 m³	3.93 MT	Class 9/3166/P.G. III

SUBTOTAL QTY: 758 SUBTOTAL VOLUME: 19173.6625 m³ (677111.4996 cu.ft.) 9516.322 MT (20979898.758 lb)

TOTAL QTY: 758 TOTAL VOLUME: 19173.6625 m³ (677111.4996 cu.ft.) 9516.322 MT (20979898.758 lb)

Quantity: 758 Volume: 19173.6625 m³ (677111.4996 cu.ft.) 9516.322 MT (20979898.758 lb)

Captain, First Officer / Mate or vessel authorized personnel:

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

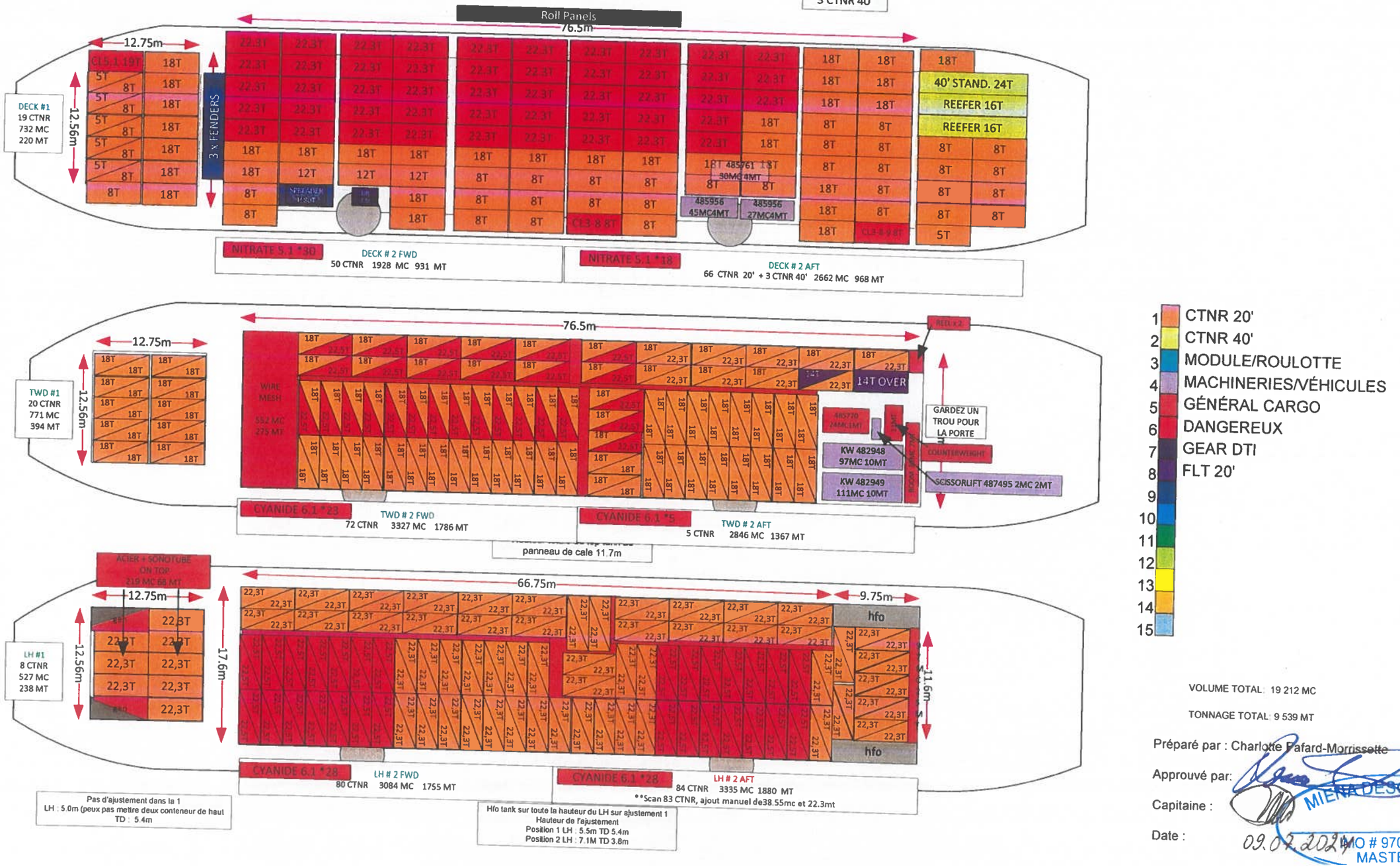
Miena Desgagnés

Commence Loading: 4 juillet 2024
Complete Loading: 9 juillet 2024

No de Voyage : 05925701
ETD : 10 juillet 2024
Départ: 10 juillet 2024

FINAL

Total
458 CTNR 20'
3 CTNR 40'



1 CTNR 20'
2 CTNR 40'
3 MODULE/ROULOTTE
4 MACHINERIES/VÉHICULES
5 GÉNÉRAL CARGO
6 DANGEREUX
7 GEAR DTI
8 FLT 20'
9
10
11
12
13
14
15

VOLUME TOTAL: 19 212 MC

TONNAGE TOTAL: 9 539 MT

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date : 09.07.2024

MIENA DESGAGNÉS
IMO # 9700380
MASTER

QSL

270782
2024-07-04 00:00 - N/A
V240707

TOTAL QTY: 758	TOTAL VOLUME: 19173.6625 m³ (677111.4996 cu.ft.)	9516.322 MT (20979898.758 lb)

Quantity: 758	Volume: 19173.6625 m³ (677111.4996 cu.ft.)	9516.322 MT (20979898.758 lb)

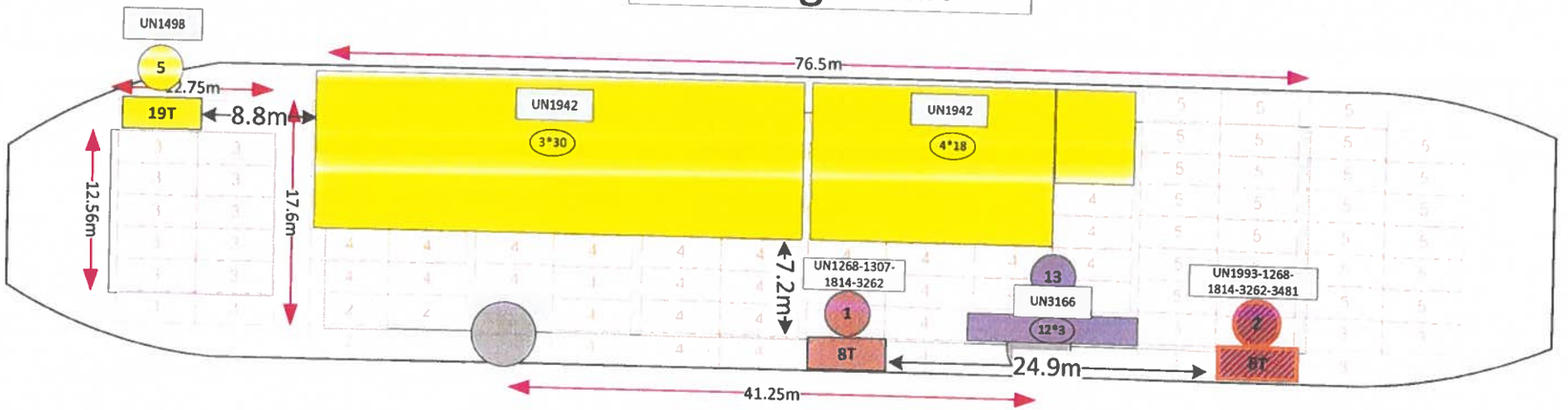
Captain, First Officer / Mate or vessel authorized personnel:

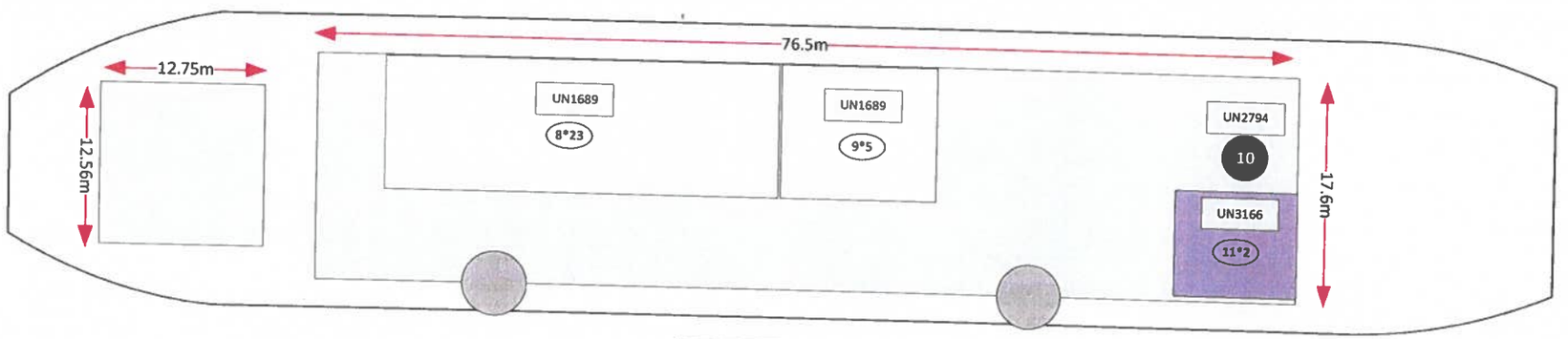
QSL Canada inc. without prejudice:

MIENA DESGAGNÉS
IMO # 9700380
MASTER

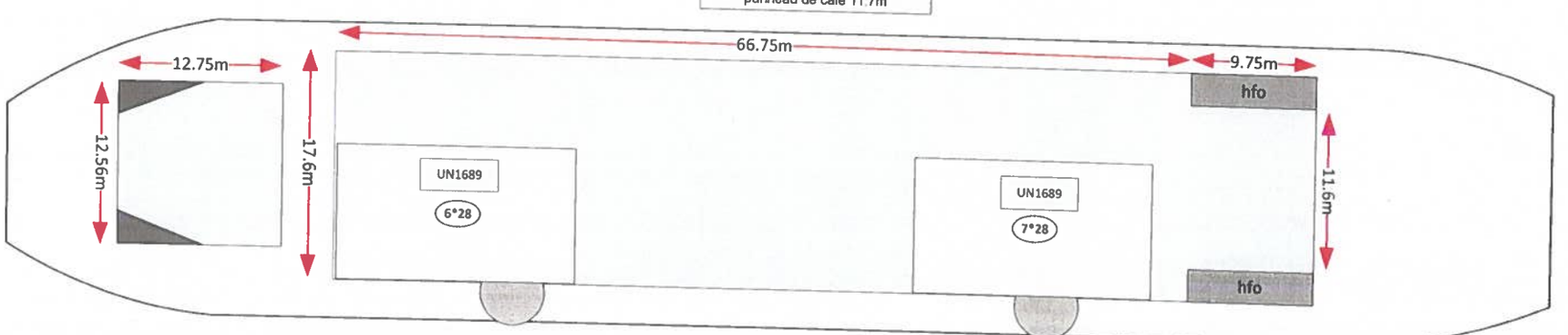
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

Dangereux





Hauteur totale du top tank au panneau de cale 11.7m



Pas d'ajustement dans la 1
LH : 5.0m (peux pas mettre deux conteneur de haut
TD : 5.4m

Hfo tank sur toute la hauteur du LH sur ajustement 1
Hauteur de l'ajustement
Position 1 LH : 5.5m TD 5.4m
Position 2 LH : 7.1M TD 3.8m

Miena Desgagnés

Début du chargement : 04 juillet 2024

Fin du Chargement : 09 juillet 2024

No de Voyage : 05925701

ETD : 10 juillet 2024

Départ: 10 juillet 2024

1	CLASSE 1
2	CLASSE 2.1
3	CLASSE 2.2
4	CLASSE 3
5	CLASSE 4
6	CLASSE 5
7	CLASSE 6
8	CLASSE 8 ACIDE
9	CLASSE 8 AUTRES
10	
11	CLASSE 9
12	
13	
14	
15	

Tonnage total : 2 696 212 KG

*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine :

Date : 09/07/2024

MIENA DESGAGNES
IMO 9700380
MASTER

QSL

270782
2024-07-04 00:00 - N/A
V240707

MEADOWBANK-AEM-STOCK - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
ASSISTANCE							
Vehicles - Self-Propelled (Passenger) PICK UP-WITH ASSISTANCE	Bc: 487496, Desc: F GILBERT DODGE RAM 2500 UNIT 22-0010	640 cm x 213 cm x 330 cm	1	44.9856 m³	3.93 MT	Deck3	Class 9/3166/P.G. III

(13) Deck #2 AFT

SUBTOTAL QTY: 5 | SUBTOTAL VOLUME: 310.4574 m³ (10963.6996 cu.ft.) | 32.226 MT (71046.1686 lb)

MEADOWBANK-AEM-STOCK - LTD QTY 2.1

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
20' Containers FULL	Bc: GLDU 222969-8, Desc: CTB 500 AGNICO, Seal # 1242490	610 cm x 244 cm x 259 cm	1	38.5496 m³	5.663 MT	Deck1	LTD Qty Class 2.1/1950

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 38.5496 m³ (1361.3663 cu.ft.) | 5.663 MT (12484.7779 lb)

TOTAL QTY: 142 | TOTAL VOLUME: 5558.2696 m³ (196288.4385 cu.ft.) | 3117.676 MT (6873299.0372 lb)

Quantity: 142 | Volume: 5558.2696 m³ (196288.4385 cu.ft.) | 3117.676 MT (6873299.0372 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

MIENA DESGAGNES
IMO # 9700380
MASTER

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-07-09 13:46

Nordika Desgagnés

BEC / GRANDE-ANSE

Début du chargement :30/08/2024 06/09/2024

Fin du Chargement : 03/09/ 2024 06/09/2024

No de Voyage : 05625703

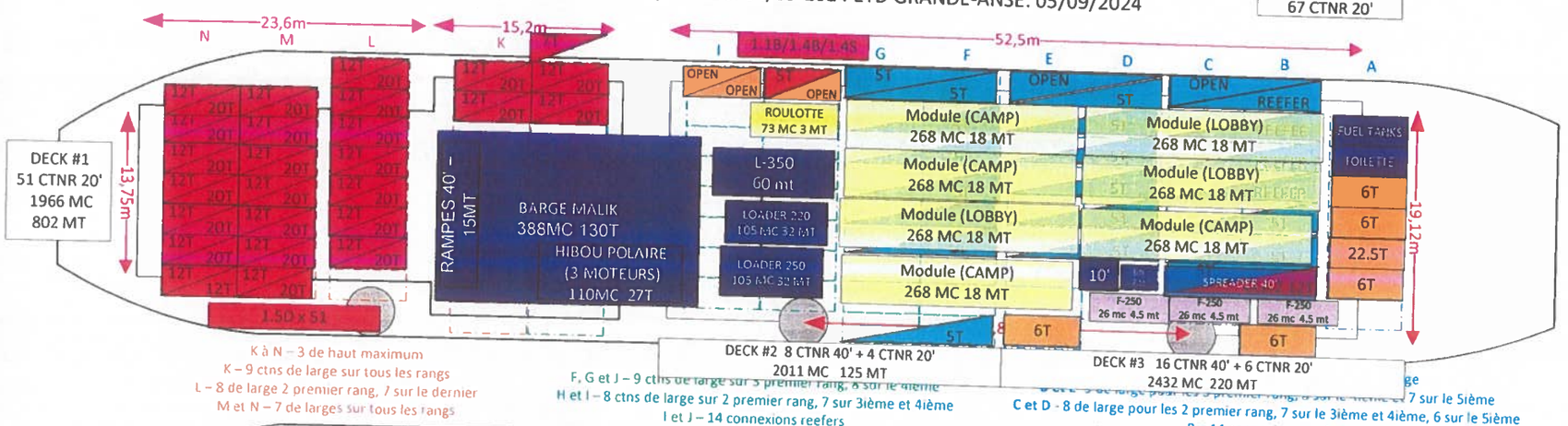
ETD BEC: 05/09/2024 ETD GRANDE-ANSE: 06/09/2024

Départ BEC: 04/09-2024 ETD GRANDE-ANSE: 05/09/2024

FINAL

85 CTNR 40'

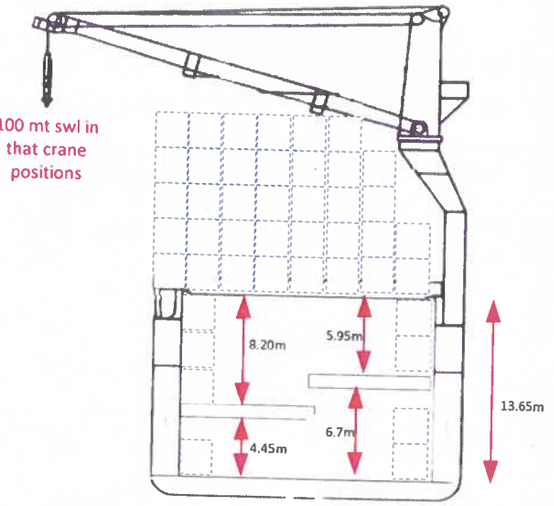
67 CTNR 20'

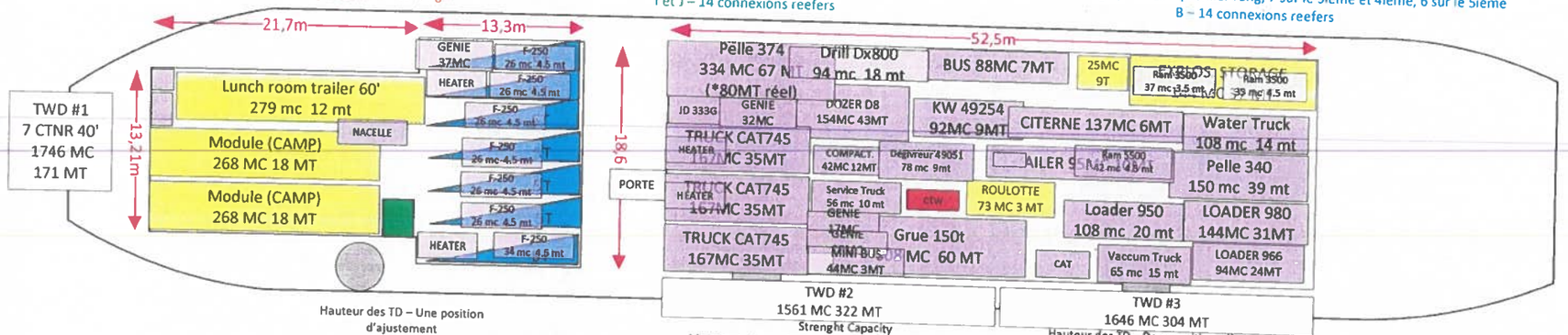


K à N – 3 de haut maximum
K – 9 ctns de large sur tous les rangs
L – 8 de large 2 premier rang, 7 sur le dernier
M et N – 7 de larges sur tous les rangs

F, G et J – 9 ctns de large sur 3 premier rang, 8 sur le dernier
H et I – 8 ctns de large sur 2 premier rang, 7 sur 3ième et 4ième
I et J – 14 connexions reefers

C et D - 8 de large pour les 2 premier rang, 7 sur le 3ième et 4ième, 6 sur le 5ième
B – 14 connexions reefers

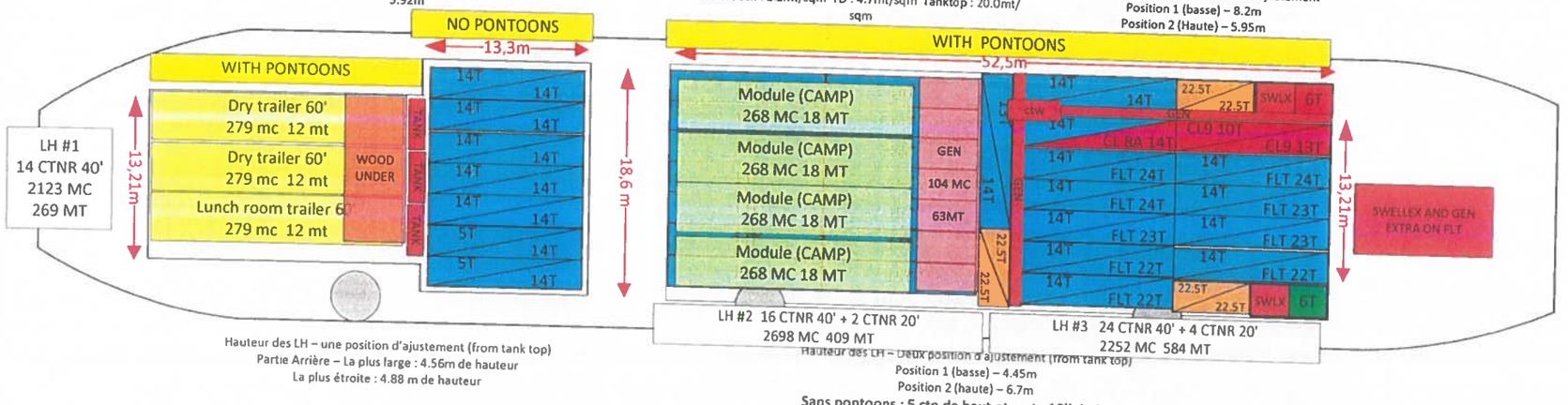




Hauteur des TD – Une position d'ajustement 5.92m

Strenght Capacity
Main deck : 2.2mt/sqm TD : 4.7mt/sqm Tanktop : 20.0mt/sqm

Hauteur des TD – Deux positions d'ajustement
Position 1 (basse) – 8.2m
Position 2 (Haute) – 5.95m



Hauteur des LH – une position d'ajustement (from tank top)
Partie Arrière – La plus large : 4.56m de hauteur
La plus étroite : 4.88 m de hauteur

Hauteur des LH – Deux position d'ajustement (from tank top)
Position 1 (basse) – 4.45m
Position 2 (haute) – 6.7m

Sans pontoons : 5 ctn de haut et reste 19'' de loose

1	CTNR 20'
2	CTNR 40'
3	MODULES
4	MACHINERIES/VÉHICULES
5	PIÈCES DIVERSES
6	GÉNÉRAL CARGO
7	DANGEREUX
8	GEAR DTI 324 MT
9	
10	
11	CTNR 10'
12	
13	
14	
15	

VOLUME BEC : 16 471 MC
VOLUME GRANDE-ANSE : 2 005 MC
VOLUME TOTAL : 18 476 MC
TONNAGE BEC : 2 398 MT
TONNAGE GRANDE-ANSE : 804 MT
TONNAGE TOTAL : 3 202 MT
TONNAGE + GEAR : 3 526 MT

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine : 03/09/24

Date : 03-09-24

282452
2024-08-29 00:00 - N/A
V241492

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

NORDIKA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
ROBERTS BAY, NUNAVUT	AGNICO EAGLE MINES LIMITED 355 Alphonse-Deshaies Blvd BÉCANCOUR QC G9H 2Y7 CANADA	N/A	AGNICO EAGLE MINES LIMITED (HOPEBAY) N/A	N/A

HOPEBAY-AEM-STOCK

Location in vessel	Qty	Weight	Volume
Deck 3	27	219.532 MT (483985.2134 lb)	2432.096 m³ (85888.6597 cu.ft.)
LowerHold 3	48	583.989 MT (1287475.3603 lb)	2291.6192 m³ (80927.769 cu.ft.)
HatchTwinDeck 3	22	304.033 MT (670278.0296 lb)	1646.1837 m³ (58134.4287 cu.ft.)
HatchTwinDeck 1	34	170.831 MT (376617.8871 lb)	1746.3248 m³ (61670.8783 cu.ft.)
LowerHold 1	49	269.374 MT (593868.0141 lb)	2123.1199 m³ (74977.2717 cu.ft.)
LowerHold 2	69	409.096 MT (901902.2961 lb)	2698.1923 m³ (95285.7604 cu.ft.)
Deck 2	17	119.526 MT (263509.7235 lb)	1971.9857 m³ (69640.0178 cu.ft.)
HatchTwinDeck 2	17	321.562 MT (708922.8595 lb)	1561.1515 m³ (55131.5449 cu.ft.)

SUBTOTAL QTY: 283 SUBTOTAL VOLUME: 16470.6731 m³ (581656.3305 cu.ft.) 2397.943 MT (5286559.3837 lb)

TOTAL QTY: 283 TOTAL VOLUME: 16470.6731 m³ (581656.3305 cu.ft.) 2397.943 MT (5286559.3837 lb)

Quantity: 283 Volume: 16470.6731 m³ (581656.3305 cu.ft.) 2397.943 MT (5286559.3837 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

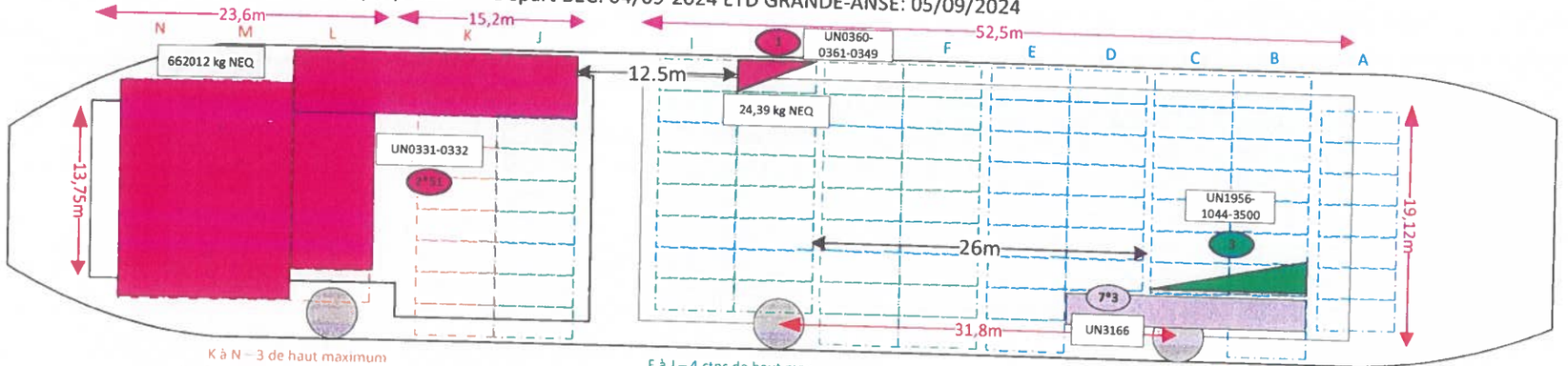
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive species

Nordika Desgagnés

BEC / GRANDE-ANSE
Début du chargement :30/08/2024 06/09/2024
Fin du Chargement : 03/09/ 2024 06/09/2024

No de Voyage : 05625703
ETD BEC: 05/09/2024 ETD GRANDE-ANSE: 06/09/2024
Départ BEC: 04/09-2024 ETD GRANDE-ANSE: 05/09/2024

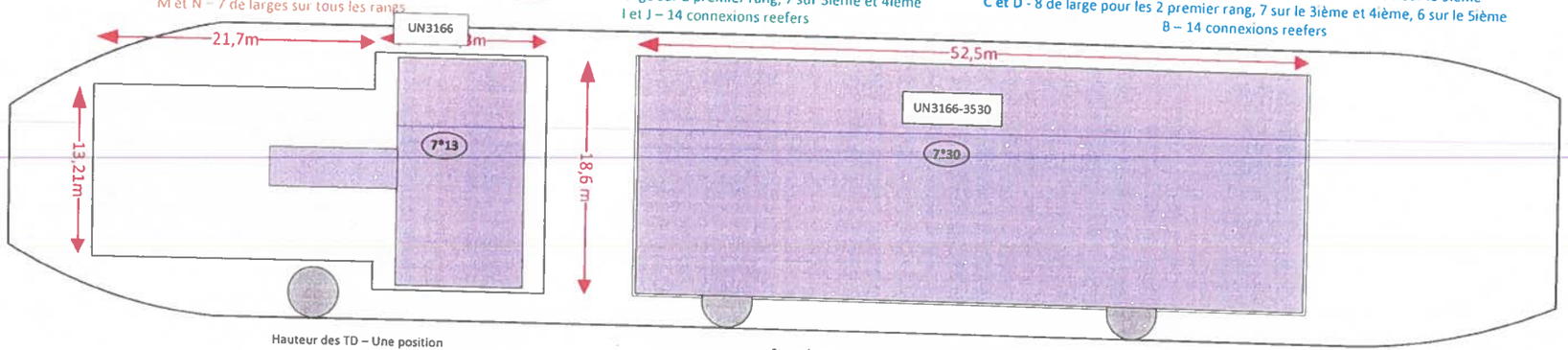
Dangereux



K à N – 3 de haut maximum
K – 9 ctns de large sur tous les rangs
L – 8 de large 2 premier rang, 7 sur le dernier
M et N – 7 de larges sur tous les rangs

F à J – 4 ctns de haut max
F, G et J – 9 ctns de large sur 3 premier rang, 8 sur le 4ième
H et I – 8 ctns de large sur 2 premier rang, 7 sur 3ième et 4ième
I et J – 14 connexions reefers

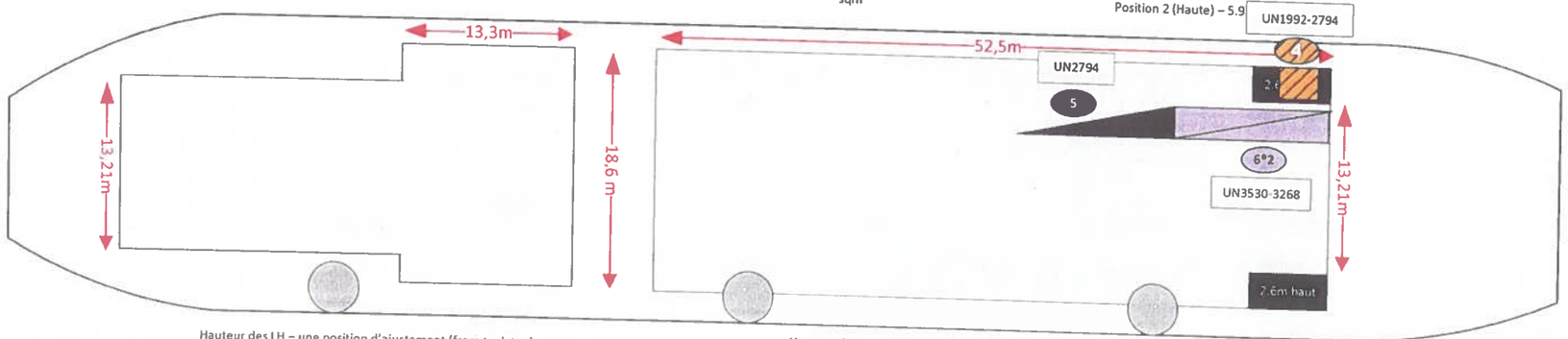
A à E – 5 ctns de haut max
B et E- 9 de large pour les 3 premier rang, 8 sur le 4ième et 7 sur le 5ième
C et D - 8 de large pour les 2 premier rang, 7 sur le 3ième et 4ième, 6 sur le 5ième
B – 14 connexions reefers
A - 7 de large



Hauteur des TD – Une position d'ajustement
5.92m

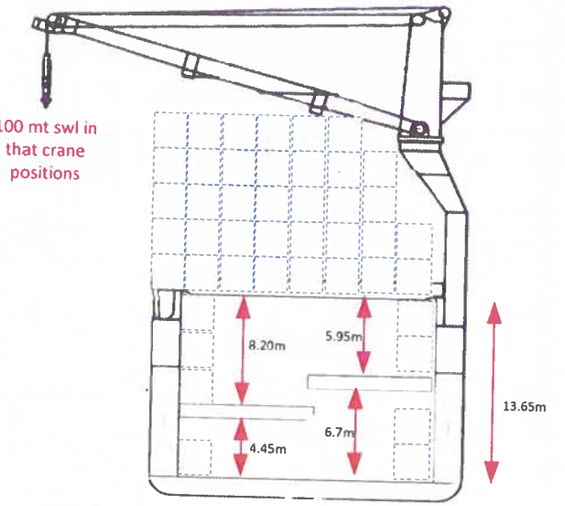
Strenght Capacity
Main deck : 2.2mt/sqm TD : 4.7mt/sqm Tanktop : 20.0mt/sqm

Hauteur des TD – Deux positions d'ajustement
Position 1 (basse) – 8.2m
Position 2 (Haute) – 5.9



Hauteur des LH – une position d'ajustement (from tank top)
Partie Arrière – La plus large : 4.56m de hauteur
La plus étroite : 4.88 m de hauteur

Hauteur des LH – Deux position d'ajustement (from tank top)
Position 1 (basse) – 4.45m
Position 2 (haute) – 6.7m
Sans pontoons : 5 ctn de haut et reste 19'' de loose



1	CLASSE 1	662 036 kg NEQ
2	CLASSE 2.1	
3	CLASSE 2.2	
4	CLASSE 3	
5	CLASSE 4	
6	CLASSE 5	
7	CLASSE 6	
8	CLASSE 8 ACIDE	
9	CLASSE 8 AUTRES	
10		
11	CLASSE 9	
12		
13		
14		
15		

Tonnage Bécancour : 618 kg
Tonnage Grande-Anse : 662 036 kg
Tonnage Total : 662 654 kg
*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morrissette

Approuvé par:

Capitaine : 03/09/24

Date : 03-09-24

QSL

282452
2024-08-29 00:00 - N/A
V241492

HOPEBAY-AEM-STOCK - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
SMALL TRAILER-WITH ASSISTANCE							
Vehicles - Self-Propelled (Passenger) SMALL TRAILER-WITH ASSISTANCE	Bc: 487932, Desc: ALLMAND HEATER	480 cm x 210 cm x 220 cm	1	22.176 m³	2.132 MT	HatchTwinDeck2	Class 9/3530
Vehicles - Self-Propelled (Passenger) SMALL TRAILER-WITH ASSISTANCE	Bc: 487931, Desc: ALLMAND HEATER	480 cm x 210 cm x 220 cm	1	22.176 m³	2.132 MT	HatchTwinDeck1	Class 9/3530

SUBTOTAL QTY: 48 | SUBTOTAL VOLUME: 3290.6384 m³ (116207.7984 cu.ft.) | 621.232 MT (1369582.1206 lb)

HOPEBAY-AEM-STOCK - LTD QTY 2.1-3

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
40' Containers REEFER	Bc: 511633-3, Desc: CTB, Seal # 1242202	1220 cm x 244 cm x 286 cm	1	85.1365 m³	6.258 MT	Deck3	LTD Qty Class 2.1/1950 LTD Qty Class 3/1133/ P.G. II LTD Qty Class 3/1993/ P.G. II

SUBTOTAL QTY: 1 | SUBTOTAL VOLUME: 85.1365 m³ (3006.5671 cu.ft.) | 6.258 MT (13796.5284 lb)

TOTAL QTY: 52 | TOTAL VOLUME: 3557.2853 m³ (125624.3448 cu.ft.) | 653.099 MT (1439836.8297 lb)

Quantity: 52 **Volume: 3557.2853 m³ (125624.3448 cu.ft.)** **653.099 MT (1439836.8297 lb)**

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

QSL

266867
2024-06-15 00:00 - N/A
V240706

MELIADINE-AEM-STOCK

Product	Packaging	Identifier	Dimensions	Qty	Volume	Weight	HAZ MAT
ASSISTANCE							
Vehicles - self-propelled (passenger) VUS-NO ASSISTANCE	Unit	Bc: 480566, Desc: LAND CRUISER 65VSE71 UNIT LC5423, Scope: loose	560 cm x 206 cm x 250 cm	1	28.84 m³	3.15 MT	Class 9/3166/P.G. III
Vehicles - self-propelled (passenger) VUS-NO ASSISTANCE	Unit	Bc: 480920, Desc: LAND CRUISER 65VSE65 UNIT LC5369, Scope: loose	560 cm x 220 cm x 250 cm	1	30.8 m³	3.15 MT	Class 9/3166/P.G. III
Vehicles - self-propelled (passenger) VUS-NO ASSISTANCE	Unit	Bc: 480919, Desc: LAND CRUISER 65VSE64 UNIT LC5367, Scope: loose	560 cm x 220 cm x 250 cm	1	30.8 m³	3.15 MT	Class 9/3166/P.G. III

SUBTOTAL QTY: 1217 SUBTOTAL VOLUME: 21006.6536 m³ (741842.9722 cu.ft.) 9489.032 MT (20919734.6066 lb)

TOTAL QTY: 1217 TOTAL VOLUME: 21006.6536 m³ (741842.9722 cu.ft.) 9489.032 MT (20919734.6066 lb)

Quantity: 1217 Volume: 21006.6536 m³ (741842.9722 cu.ft.) 9489.032 MT (20919734.6066 lb)

Captain, First Officer / Mate or vessel authorized personnel: C/O

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

Nordika Desgagnés

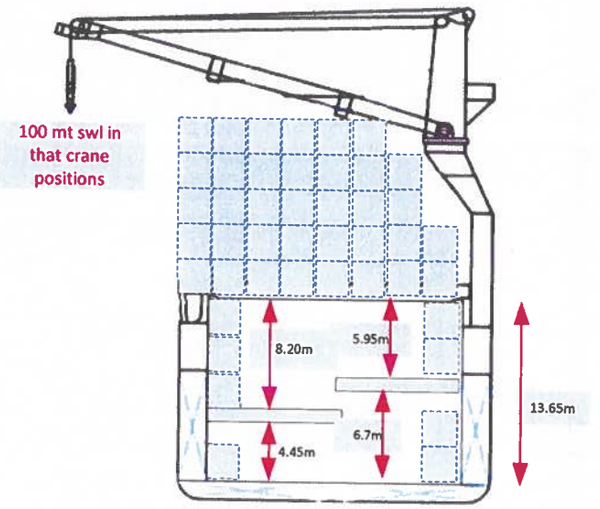
- Début du chargement : 13 Octobre 2024
  Fin du Chargement : 19 Octobre 2024

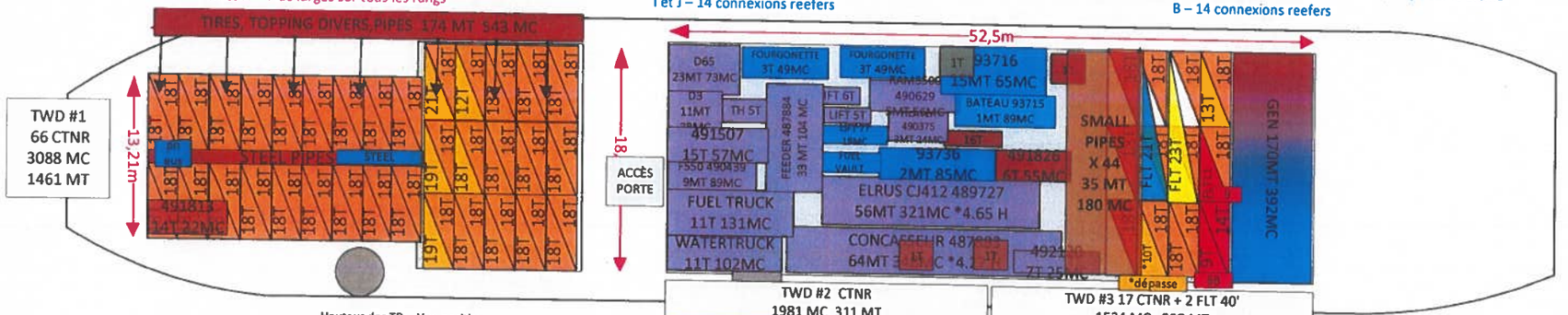
No de Voyage : 05625704
ETD : 19 Octobre 2024
Départ: 19 Octobre 2024

FINAL

Total : 487 CTNR 20' + 12 CTNR 40'







1. CTNR 20'
2. FLT 20'
3. 40' ALL
4. ROULANT/ÉQUIPEMENT
5. GÉNÉRAL/PIÈCES
6. DANGEREUX
7. GEAR DTI
8.
9.
10. NSSI (1035 MC)
11.
12.
13.
14.
15.

VOLUME TOTAL: 25 904 MC
TONNAGE TOTAL: 9 881 MT

Préparé par : Charlotte Fafard.M

Approuvé par:

Capitaine :

Date :

288720
2024-10-12 00:00 - N/A
V241762

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

NORDIKA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
RANKIN INLET, NUNAVUT	DESGAGNÉS TRANSARCTIK INC. N/A	N/A	DESGAGNÉS TRANSARCTIK INC. N/A	N/A

DESGAGNES RANKIN INLET

Location in vessel	Qty	Weight	Volume
HatchTwinDeck 1	2	2.44 MT (5379.2792 lb)	7.0359 m³ (248.4705 cu
HatchTwinDeck 3	108	113.18 MT (249519.1883 lb)	318.3904 m³ (11243.85
Deck 2	9	40.81 MT (89970.6492 lb)	222.441 m³ (7855.4298
Deck 3	3	16.01 MT (35296.0082 lb)	78.3215 m³ (2765.8977
LowerHold 2	10	35.251 MT (77715.152 lb)	74.8768 m³ (2644.2492
HatchTwinDeck 2	7	31.912 MT (70353.9171 lb)	333.7775 m³ (11787.24

SUBTOTAL QTY: 139 | SUBTOTAL VOLUME: 1034.8431 m³ (36545.1392 cu.ft.) | 239.603 MT (528234.1941 lb)

TOTAL QTY: 139 | TOTAL VOLUME: 1034.8431 m³ (36545.1392 cu.ft.) | 239.603 MT (528234.1941 lb)

Quantity: 1364 | Volume: 25904.447 m³ (914806.9117 cu.ft.) | 9880.792 MT (21783417.565 lb)

Captain, First Officer / Mate or vessel authorized personnel:

QSL Canada inc. without prejudice:

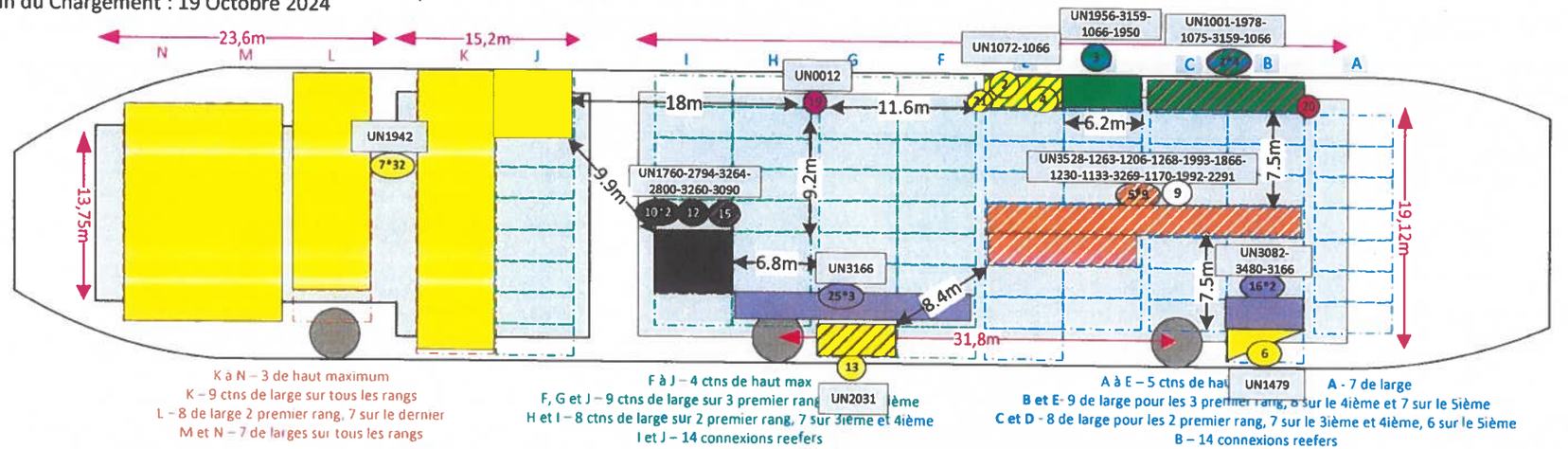
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

Nordika Desgagnés

Début du chargement : 13 Octobre 2024
Fin du Chargement : 19 Octobre 2024

No de Voyage : 05625704
ETD : 19 Octobre 2024
Départ: 19 Octobre 2024

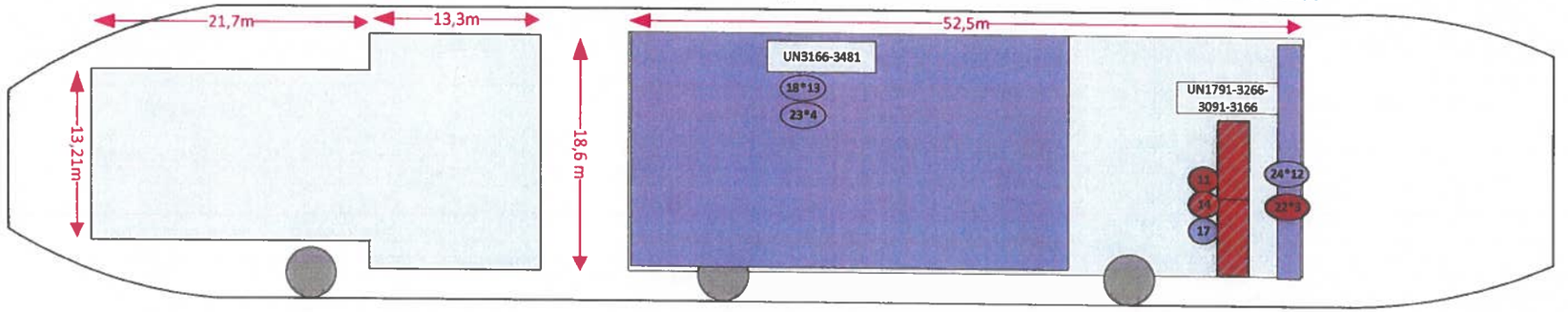
Dangereux



K à N – 3 de haut maximum
K – 9 ctns de large sur tous les rangs
L – 8 de large 2 premier rang, 7 sur le dernier
M et N – 7 de larges sur tous les rangs

F à J – 4 ctns de haut max
F, G et J – 9 ctns de large sur 3 premier rang, 8 sur le 4ième
H et I – 8 ctns de large sur 2 premier rang, 7 sur 3ième et 4ième
I et J – 14 connexions reefers

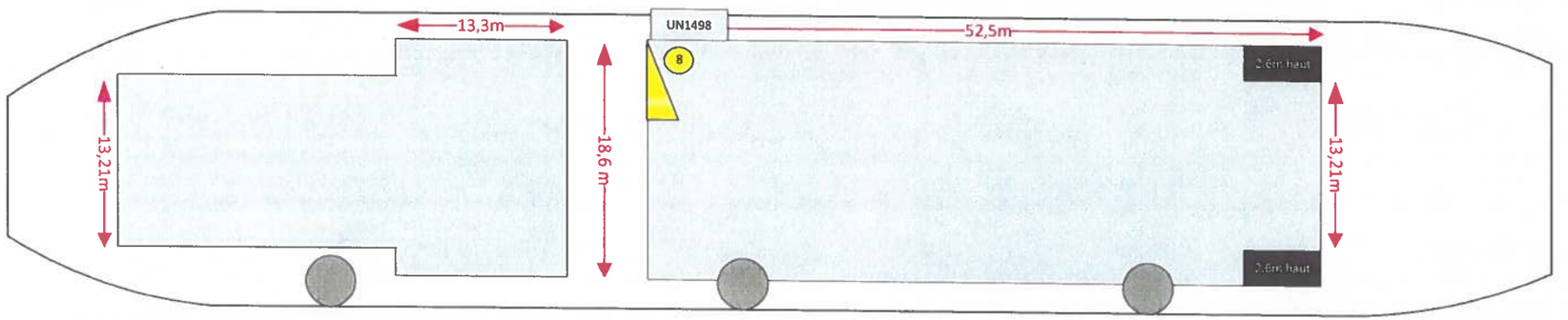
A à E – 5 ctns de haut
B et E- 9 de large pour les 3 premier rang, 8 sur le 4ième et 7 sur le 5ième
C et D - 8 de large pour les 2 premier rang, 7 sur le 3ième et 4ième, 6 sur le 5ième
B – 14 connexions reefers
A - 7 de large



Hauteur des TD – Une position d'ajustement
5.92m

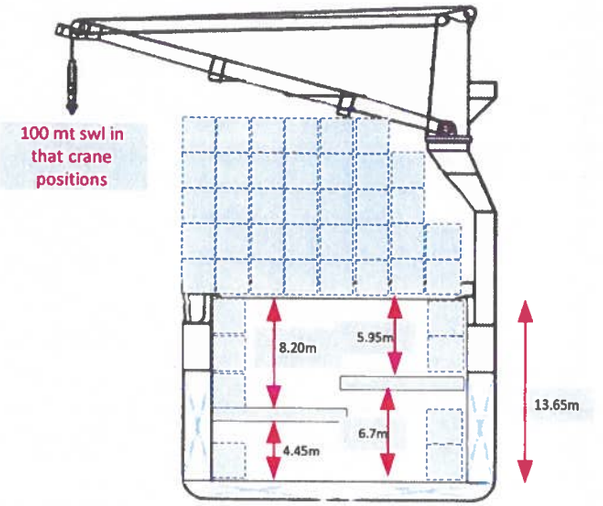
Strenght Capacity
Main deck : 2.2mt/sqm TD : 4.7mt/sqm Tanktop : 20.0mt/sqm

Hauteur des TD – Deux positions d'ajustement
Position 1 (basse) – 8.2m
Position 2 (Haute) – 5.95m



Hauteur des LH – une position d'ajustement (from tank top)
Partie Arrière – La plus large : 4.56m de hauteur
La plus étroite : 4.88 m de hauteur

Hauteur des LH – Deux position d'ajustement (from tank top)
Position 1 (basse) – 4.45m
Position 2 (haute) – 6.7m
Sans pontoons : 5 ctn de haut et reste 19" de loose



1		CLASSE 1
2		CLASSE 2.1
3		CLASSE 2.2
4		CLASSE 3
5		CLASSE 4
6		CLASSE 5
7		CLASSE 6
8		CLASSE 8 ACIDE
9		CLASSE 8 AUTRES
10		
11		CLASSE 9
12		
13		
14		
15		

Tonnage total : 963 856 KG
*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard.M
Approuvé par:
Capitaine :
Date :

QSL

288720
2024-10-12 00:00 - N/A
V241762

DESGAGNES RANKIN INLET - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
OTHER-WITH ASSISTANCE							
Vehicles - Self-Propelled (Passenger) PICK UP-NO ASSISTANCE	Bc: 93714, Desc: FORD F150 2023 XLT SILVER, PO: 24-00851-3-RAN	590 cm x 220 cm x 210 cm	1	27.258 m³	3.198 MT	Deck2	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Passenger) PICK UP-NO ASSISTANCE	Bc: 93067, Desc: CHEVROLET COLORADO ZR2 BLACK 2021, PO: 24-02747-3-RAN	548 cm x 192 cm x 202 cm	1	21.2536 m³	2.722 MT	Deck2	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Passenger) VUS-NO ASSISTANCE	Bc: 93178, Desc: TOYOTA 4RUNNER 2023 NOIR, PO: 24-01419-3-RAN	485 cm x 195 cm x 182 cm	1	17.2127 m³	2.855 MT	Deck2	Class 9/3166/P.G. III

25
Deck #2
FWD
PS
x3

SUBTOTAL QTY: 19 | SUBTOTAL VOLUME: 299.1426 m³ (10564.1212 cu.ft.) | 39.978 MT (88136.4032 lb)

TOTAL QTY: 25 | TOTAL VOLUME: 309.1432 m³ (10917.2891 cu.ft.) | 43.528 MT (95962.8135 lb)

Quantity: 104 | Volume: 3852.2536 m³ (136041.0527 cu.ft.) | 1265.618 MT (2790210.0734 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

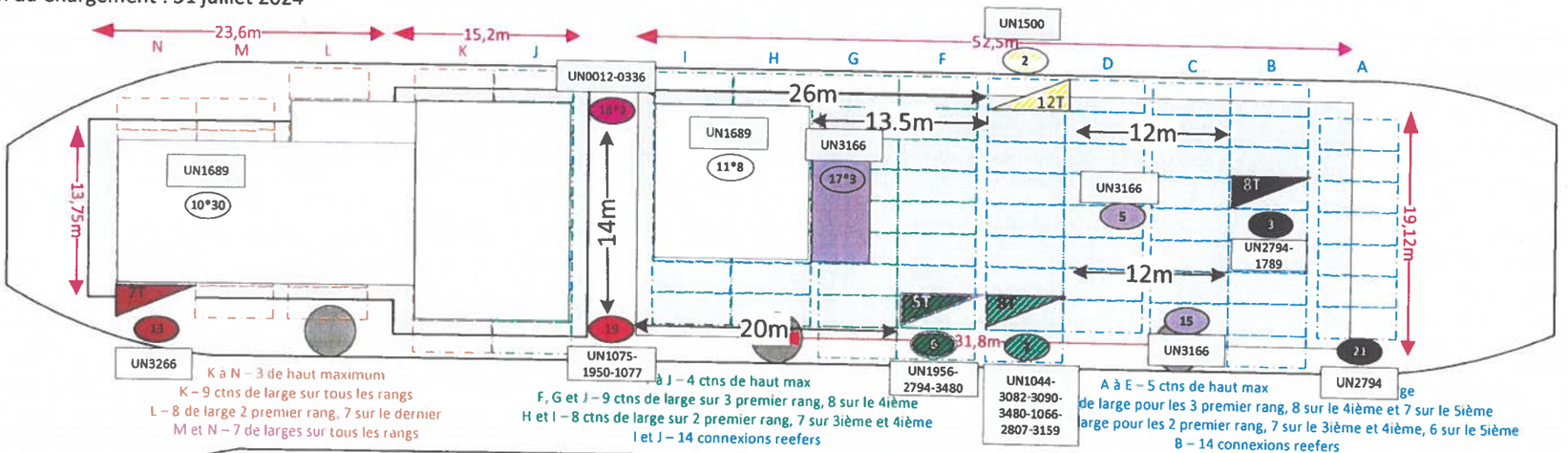
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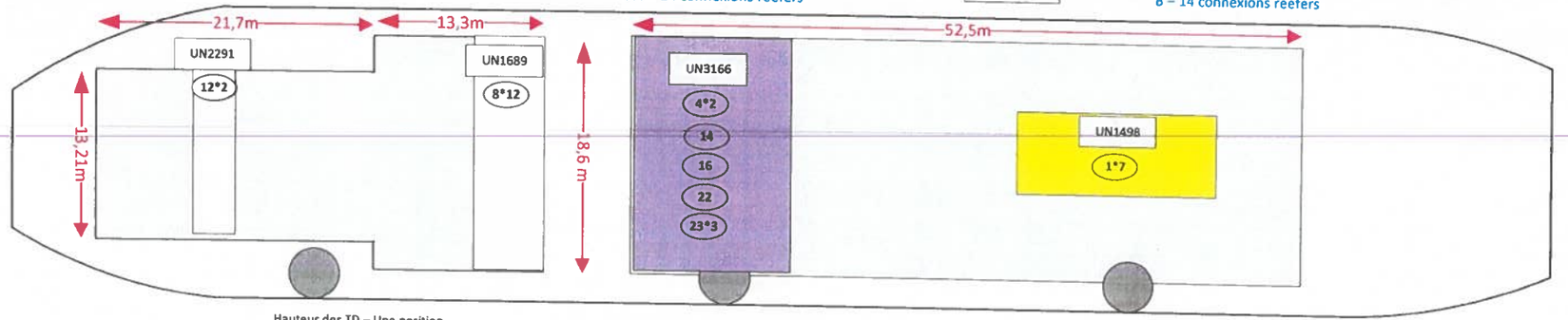
Nordika Desgagnés

Début du chargement : 27 juillet 2024
Fin du Chargement : 31 juillet 2024

No de Voyage : 05625702
ETD : 31 juillet 2024
Départ: 1er août 2024

Dangereux

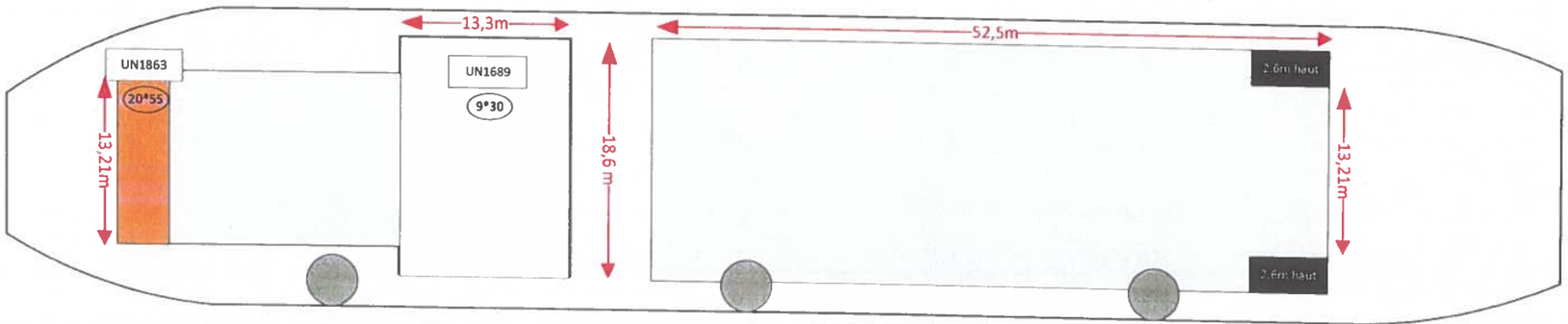




Hauteur des TD – Une position d'ajustement
5.92m

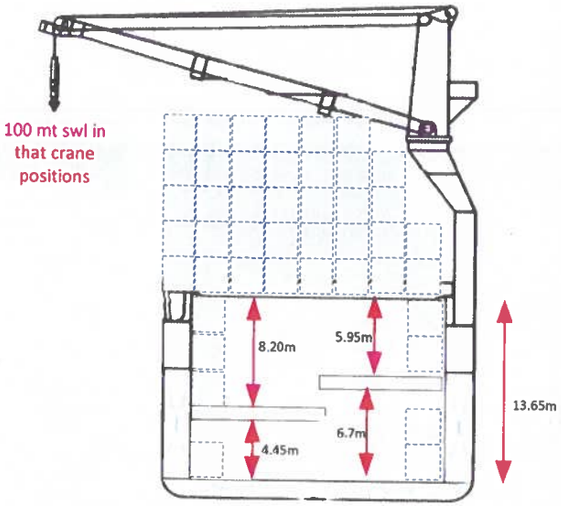
Strenght Capacity
Main deck : 2.2mt/sqm TD : 4.7mt/sqm Tanktop : 20.0mt/sqm

Hauteur des TD – Deux positions d'ajustement
Position 1 (basse) – 8.2m
Position 2 (Haute) – 5.95m



Hauteur des LH – une position d'ajustement (from tank top)
Partie Arrière – La plus large : 4.56m de hauteur
La plus étroite : 4.88 m de hauteur

Hauteur des LH – Deux position d'ajustement (from tank top)
Position 1 (basse) – 4.45m
Position 2 (haute) – 6.7m
Sans pontoons : 5 ctn de haut et reste 19" de loose



1	CLASSE 1
2	CLASSE 2.1
3	CLASSE 2.2
4	CLASSE 3
5	CLASSE 4
6	CLASSE 5
7	CLASSE 6
8	CLASSE 8 ACIDE
9	CLASSE 8 AUTRES
10	
11	CLASSE 9
12	
13	
14	
15	

Tonnage total : MT
*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard.M

Approuvé par: 31/07/24

Capitaine :

Date : 31-07-24

273754
2024-07-27 00:00 - N/A
V240727

Port	Section
Bécancour	Becancour

Pro Forma DANGEROUS GOODS MANIFEST

NORDIKA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
BAKER LAKE, NUNAVUT	DESGAGNÉS TRANSARCTIK INC. N/A	N/A	DESGAGNÉS TRANSARCTIK INC. N/A	N/A

DESGAGNES RANKIN INLET - CLASS 9

Product	Identifier	Dimensions	Qty	Volume	Weight	Location	HAZ MAT
Vehicles - Self-Propelled (Machinery) HEAVY VEHICULES-NO ASSISTANCE	Bc: 93702, Desc: CAT 420E BACKHOE PO376, PO: 24-02483-2-RAN	850 cm x 285 cm x 370 cm	1	89.6325 m³	10.7 MT	HatchTwinDeck2	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Machinery) LOADER-NO ASSISTANCE	Bc: 93698, Desc: CATERPILLAR 926M 2022, PO: 24-01508-2-RAN	747 cm x 283 cm x 360 cm	1	76.1044 m³	12.788 MT	HatchTwinDeck2	Class 9/3166/P.G. III
Vehicles - Self-Propelled (Passenger) OTHER-WITH ASSISTANCE	Bc: 92917, Desc: SXS POLARIS RANGER, PO: 24-02058-2-RAN	305 cm x 165 cm x 198 cm	1	9.9644 m³	1.083 MT	HatchTwinDeck2	Class 9/3166/P.G. III

(23)
TWD#2
FWD
x3

SUBTOTAL QTY: 3 | SUBTOTAL VOLUME: 175.7013 m³ (6204.8329 cu.ft.) | 24.571 MT (54169.7824 lb)

TOTAL QTY: 3 | TOTAL VOLUME: 175.7013 m³ (6204.8329 cu.ft.) | 24.571 MT (54169.7824 lb)

Quantity: 169 | Volume: 4681.3413 m³ (165320.0085 cu.ft.) | 2306.583 MT (5085145.061 lb)

Captain, First Officer / Mate or vessel authorized personnel:

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

2024-07-31 15:08

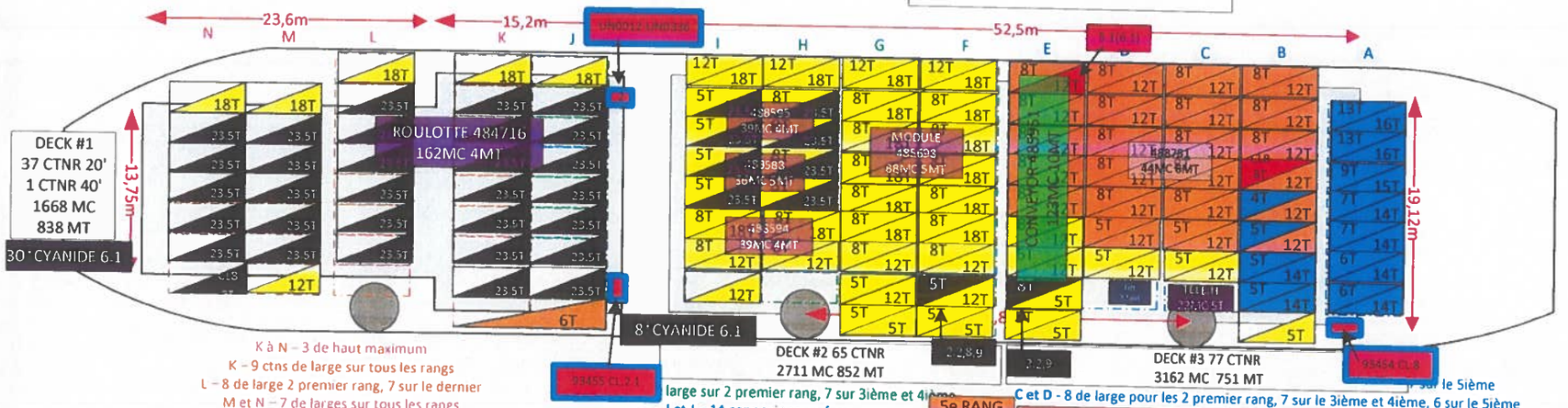
Nordika Desgagnés

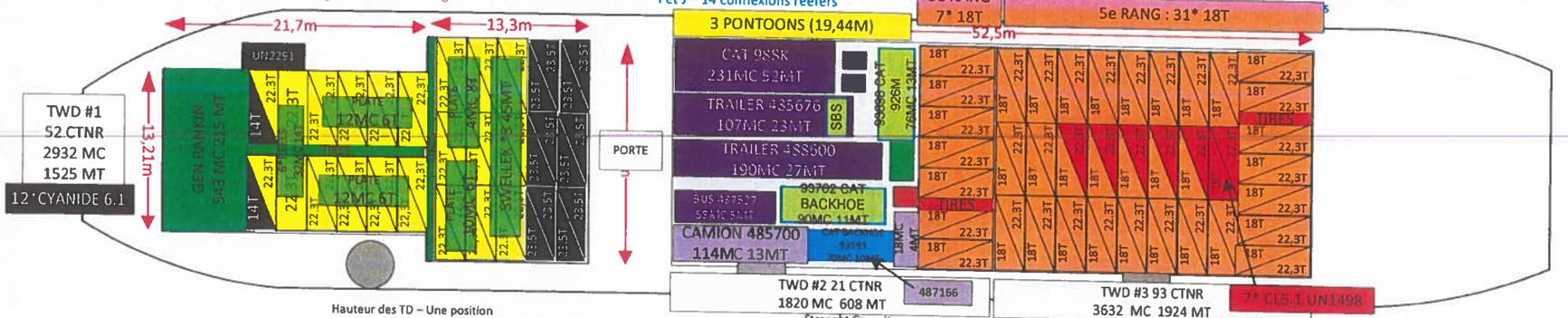
Début du chargement : 27 juillet 2024
Fin du Chargement : 31 juillet 2024

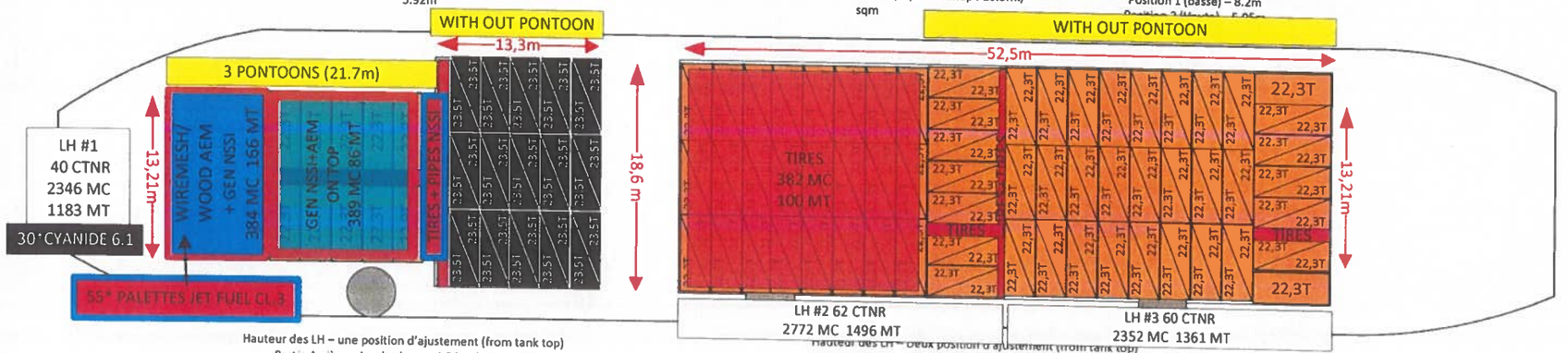
No de Voyage : 05625702
ETD : 31 juillet 2024
Départ: 1er août 2024

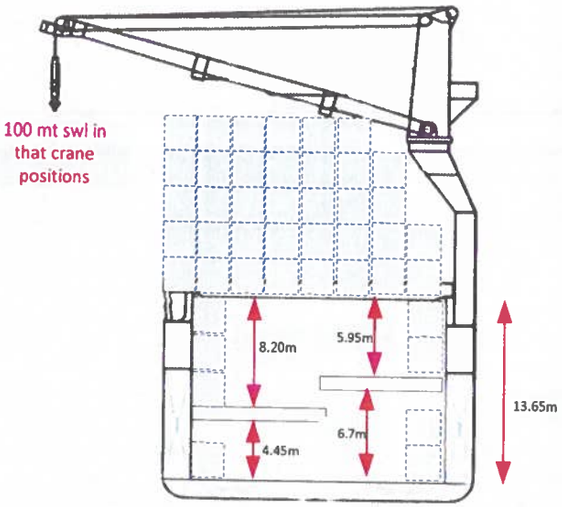
FINAL

Total : 507 CTNR 20' + 1 CTNR 40'









1 CTNR 20' BAKER
2 CTNR 40' BAKER
3 MACHINERIES/VÉHICULES BAKER
4 GÉNÉRAL CARGO BAKER
5 DANGEREUX BAKER
6 GEAR DTI
7 CTNR 20' RANKIN
8 CTNR 40' RANKIN
9 MACHINERIES/VÉHICULES RANKIN
10 GÉNÉRAL CARGO RANKIN
11 DANGEREUX RANKIN
12 MACHINES RANKIN
13 NSSI BAKER LAKE
14 VOLUME BAKER: 12 335 MC
15 VOLUME RANKIN: 9 776 MC
VOLUME NSSI: 1 099 MC BAK
176 MC RAN
VOLUME TOTAL: 23 385 MC
TONNAGE TOTAL: 10 533 MT

Préparé par : Charlotte Tafard-M

Approuvé par: 31/07/24

Capitaine :

Date : 31-07-24

273754
2024-07-27 00:00 - N/A
V240727

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

NORDIKA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
BAKER LAKE, NUNAVUT	DESGAGNÉS TRANSARCTIK INC. N/A	N/A	DESGAGNÉS TRANSARCTIK INC. N/A	N/A

DESGAGNES RANKIN INLET

Location in vessel	Qty	Weight	Volume
HatchTwinDeck 2	3	24.571 MT (54169.7824 lb)	175.7013 m³ (6204.8329 cu.ft.)

SUBTOTAL QTY: 3 SUBTOTAL VOLUME: 175.7013 m³ (6204.8329 cu.ft.) 24.571 MT (54169.7824 lb)

TOTAL QTY: 3 TOTAL VOLUME: 175.7013 m³ (6204.8329 cu.ft.) 24.571 MT (54169.7824 lb)

Quantity: 1085 Volume: 23385.3538 m³ (825845.9763 cu.ft.) 10533.225 MT (23221786.116 lb)

Captain, First Officer / Mate or vessel authorized personnel:

QSL Canada inc. without prejudice:

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

QSL

267945
2024-06-21 08:00 - N/A
V240722

MEADOWBANK-AEM-STOCK

Product	Packaging	Identifier	Dimensions	Qty	Volume	Weight	HAZ MAT
Northern cargo TIRES	Loose	Bc: 485282, Desc: 3300R51, Scope: loose	320 cm x 320 cm x 95 cm	1	9.728 m³	2.438 MT	-
Northern cargo TIRES	Loose	Bc: 485281, Desc: 3300R51, Scope: loose	320 cm x 320 cm x 95 cm	1	9.728 m³	2.438 MT	-
Northern cargo TIRES	Loose	Bc: 485280, Desc: 3300R51, Scope: loose	320 cm x 320 cm x 95 cm	1	9.728 m³	2.438 MT	-
Northern cargo TIRES	Loose	Bc: 485306, Desc: 3300R51, Scope: loose	320 cm x 320 cm x 95 cm	1	9.728 m³	2.438 MT	-
Northern cargo TIRES	Loose	Bc: 485279, Desc: 3300R51, Scope: loose	320 cm x 320 cm x 95 cm	1	9.728 m³	2.438 MT	-

SUBTOTAL QTY: 134 SUBTOTAL VOLUME: 5021.5384 m³ (177333.9536 cu.ft.) 2553.846 MT (5630266.6643 lb)

TOTAL QTY: 134 TOTAL VOLUME: 5021.5384 m³ (177333.9536 cu.ft.) 2553.846 MT (5630266.6643 lb)

Quantity: 134 Volume: 5021.5384 m³ (177333.9536 cu.ft.) 2553.846 MT (5630266.6643 lb)

Captain, First Officer / Mate or vessel authorized personnel:_____

QSL Canada inc. without prejudice:_____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

Sea Lion

PLAN DE CHARGEMENT

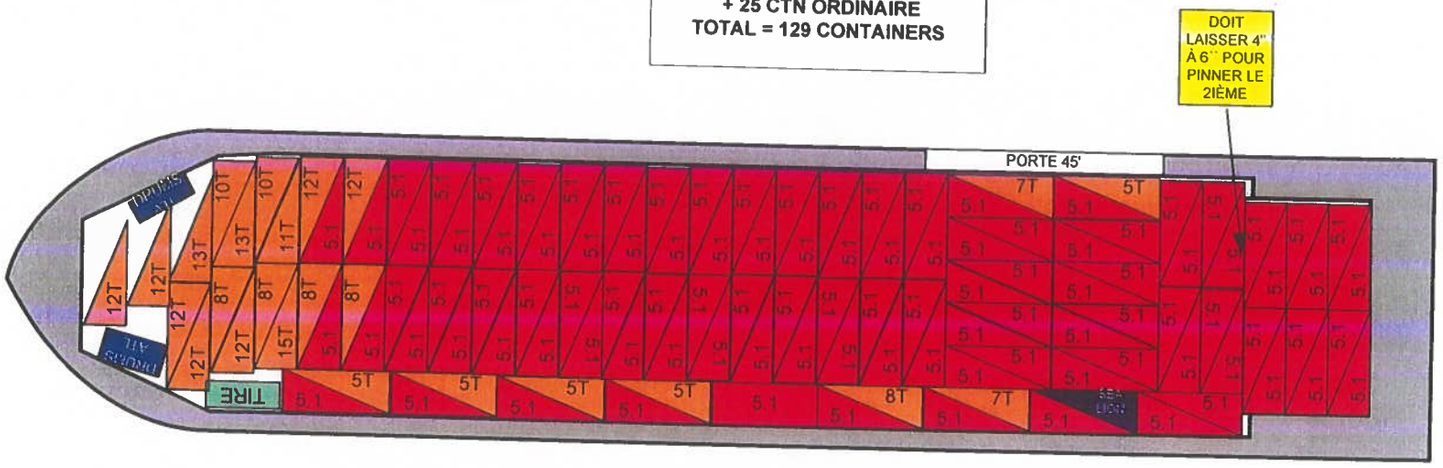
Final

Début du chargement : 18 juin 2024
Fin du chargement : 19 juin 2024
Numéro de voyage : 01
ETD : 20 juin 2024
Départ : 20 juin 2024

1	CTN NITRATE	4009 MC
2	CTN BAKER	1012 MC
3	DESSERTTE	MC
4		
5	TIRE,	
6	CTN ATL	39 MC
7		
8		
9		
10		
11		
12		
13		
14		
15		

Volume total : 5022 MC
Tonnage total : 2554 MT
129 CONTAINERS TOTAL

TOTAL= 104 CTN NITRATE 22.3T
+ 25 CTN ORDINAIRE
TOTAL = 129 CONTAINERS



Préparé par : François Desgagnes

Approuvé par : _____

Capitaine : _____ c/o

Lashing in Bécancour

approuved by: _____

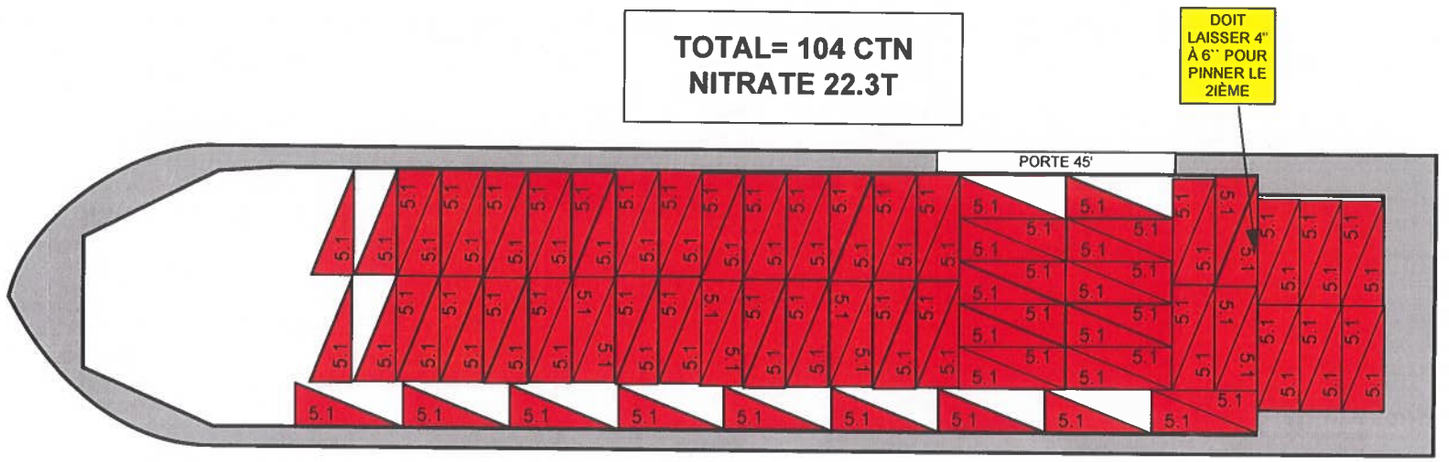
Sea Lion

PLAN DAngereux

Final

Début du chargement : 18 juin 2024
Fin du chargement : 19 juin 2024
Numéro de voyage : 01
ETD : 20 juin 2024
Départ : 20 juin 2024

1	CTN NITRATE CL 5.1 / UN1942
2	4009 MC 2319 MT
3	104 CONTAINERS TOTAL
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	



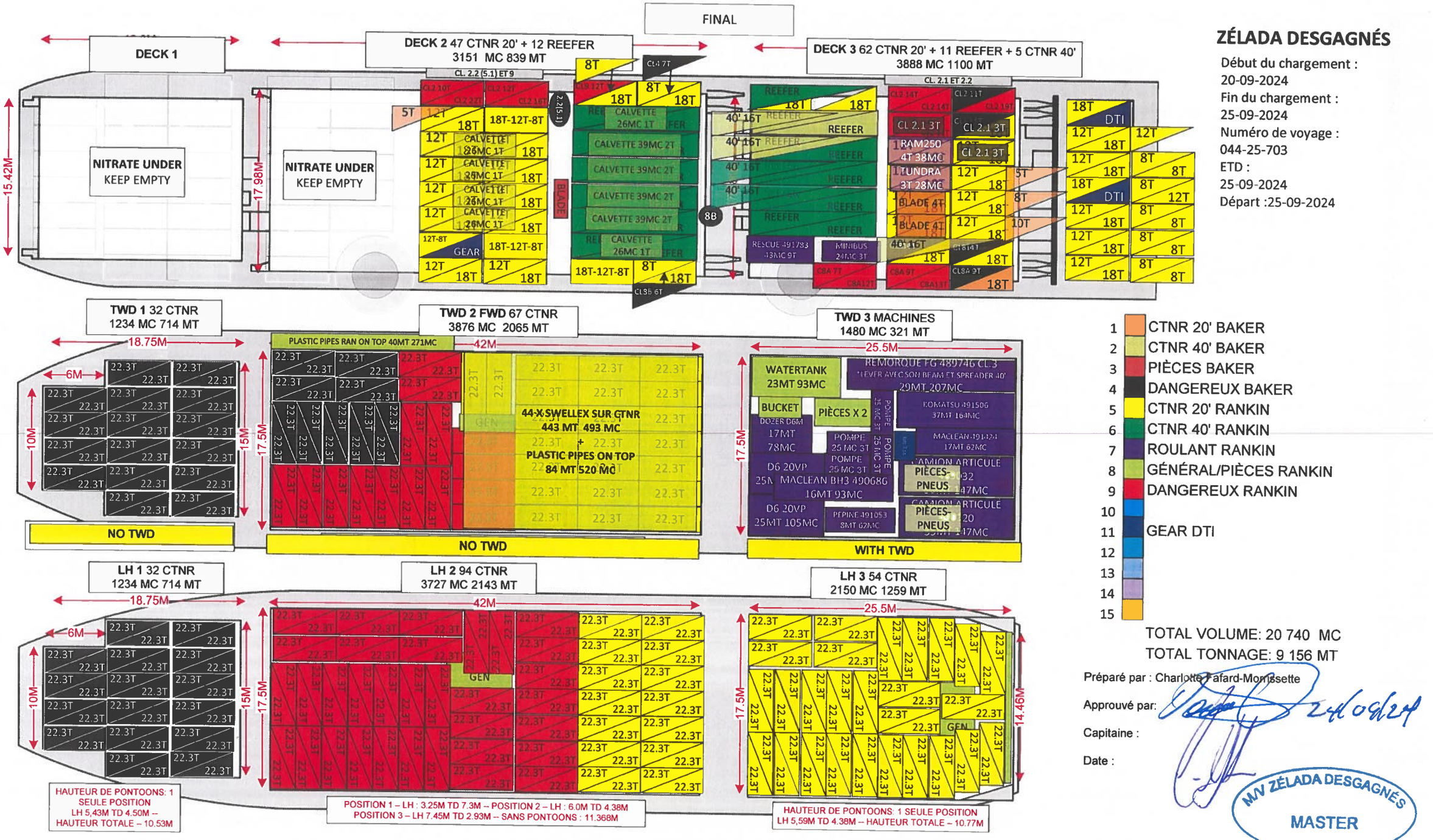
Préparé par : François Desgagnés

Approuvé par : _____

Capitaine : _____ c/o

Lashing in Bécancour

approuved by: _____



ZÉLADA DESGAGNÉS

Début du chargement :
20-09-2024
Fin du chargement :
25-09-2024
Numéro de voyage :
044-25-703
ETD :
25-09-2024
Départ :25-09-2024

1	CTNR 20' BAKER
2	CTNR 40' BAKER
3	PIÈCES BAKER
4	DANGEREUX BAKER
5	CTNR 20' RANKIN
6	CTNR 40' RANKIN
7	ROULANT RANKIN
8	GÉNÉRAL/PIÈCES RANKIN
9	DANGEREUX RANKIN
10	
11	GEAR DTI
12	
13	
14	
15	

TOTAL VOLUME: 20 740 MC
TOTAL TONNAGE: 9 156 MT

Préparé par : Charlotte Tafard-Morissette

Approuvé par:

Capitaine :

Date : 24/09/24

MV ZÉLADA DESGAGNÉS
MASTER

QSL

285436
2024-09-19 00:00 - N/A
V241500

Port	Section
Bécancour	Becancour

Pro Forma HATCH LIST SUMMARY

ZELADA DESGAGNES

Port of Discharge	Shipper	C/O	Consignee	Notify
BAKER LAKE, NUNAVUT	AGNICO EAGLE MINES LIMITED 355 Alphonse-Deshaies Blvd BÉCANCOUR QC G9H 2Y7 CANADA	N/A	AGNICO EAGLE MINES LIMITED (DIVISION MEADOWBANK) N/A	N/A

MEADOWBANK-AEM-STOCK

Location in vessel	Qty	Weight	Volume
Deck 2	6	20.525 MT (45249.8793 lb)	119.7872 m³ (4230.245 cu.ft.)
Deck 3	20	209.245 MT (461306.2605 lb)	875.9467 m³ (30933.7654 cu.ft.)
LowerHold 1	32	713.6 MT (1573218.703 lb)	1233.5872 m³ (43563.7208 cu.ft.)
HatchTwinDeck 2	18	401.4 MT (884935.5204 lb)	693.8928 m³ (24504.593 cu.ft.)
HatchTwinDeck 1	32	713.6 MT (1573218.703 lb)	1233.5872 m³ (43563.7208 cu.ft.)

SUBTOTAL QTY: 108 SUBTOTAL VOLUME: 4156.8011 m³ (146796.0451 cu.ft.) 2058.37 MT (4537929.0661 lb)

TOTAL QTY: 108 TOTAL VOLUME: 4156.8011 m³ (146796.0451 cu.ft.) 2058.37 MT (4537929.0661 lb)

Quantity: 663 Volume: 20740.097 m³ (732429.6136 cu.ft.) 9155.634 MT (20184717.8338 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

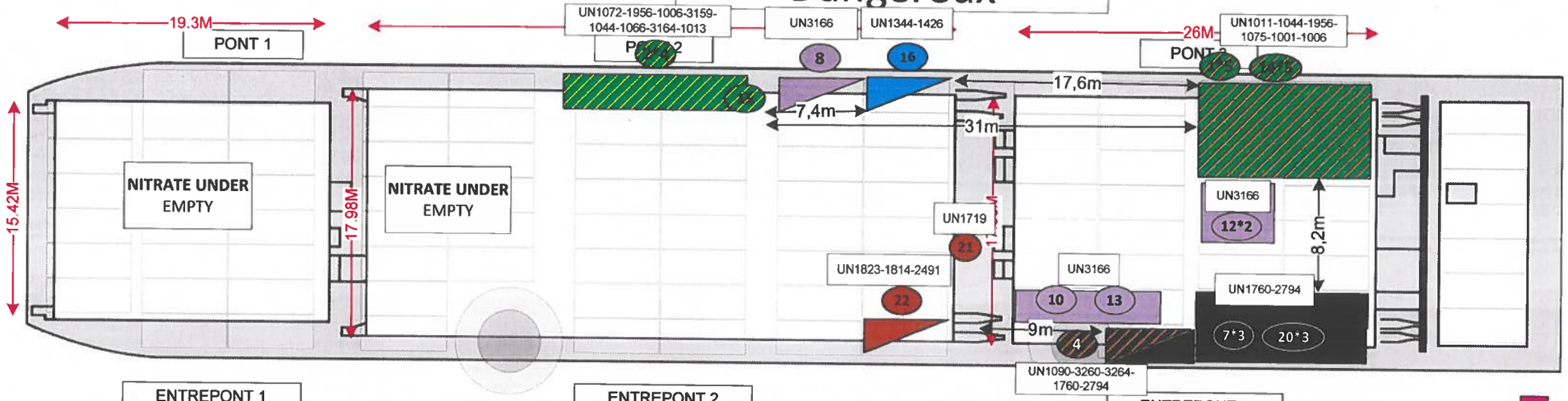
QSL Canada inc. without prejudice: _____

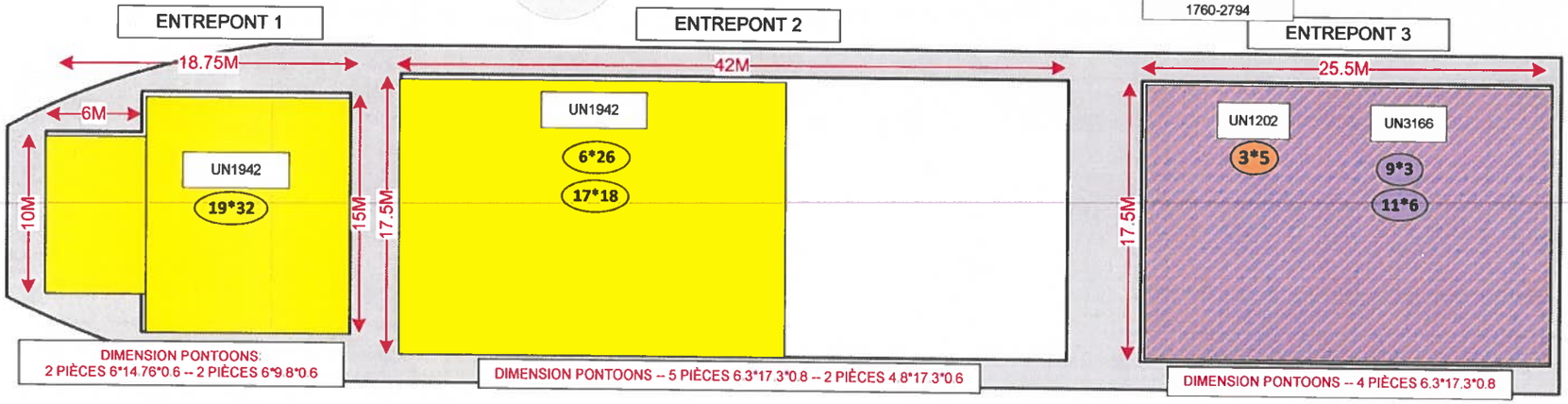
QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

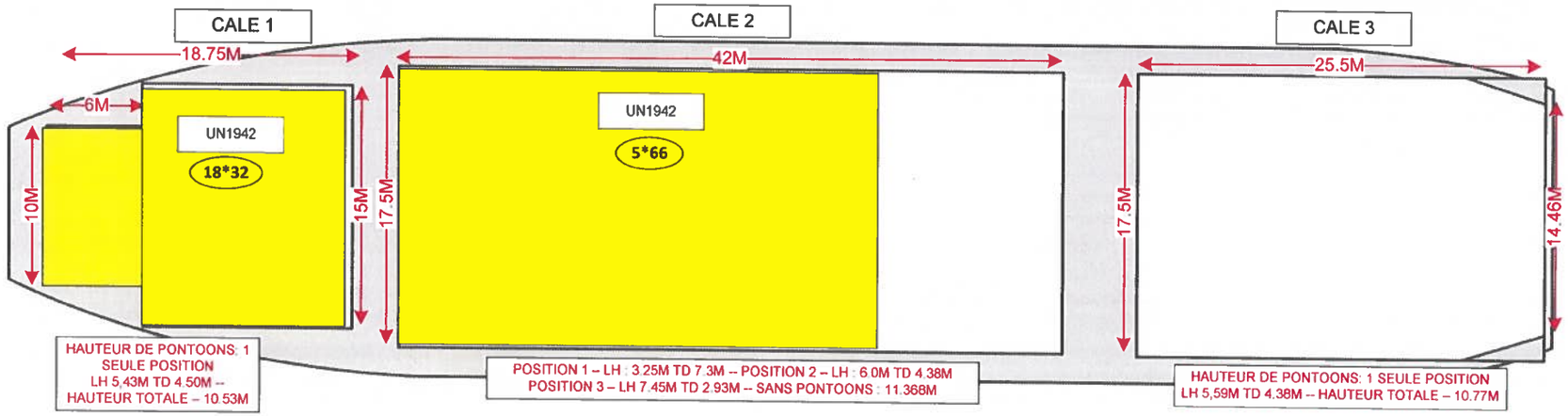
Dangereux

ZÉLADA DESGAGNÉS

Début du chargement :
20-09-2024
Fin du chargement :
25-09-2024
Numéro de voyage :
044-25-703
ETD :
25-09-2024
Départ :25-09-2024







1		CLASSE 1
2		CLASSE 2.1
3		CLASSE 2.2
4		CLASSE 3
5		CLASSE 4
6		CLASSE 5
7		CLASSE 6
8		CLASSE 8 ACIDE
9		CLASSE 8 AUTRES
10		CLASSE 9
11		
12		
13		
14		
15		Total : 3 862 274 KG

*VOIR ANNEXE POUR TOTAUX PAR CLASSE

Préparé par : Charlotte Fafard-Morissette

Approuvé par:

Capitaine :

Date :

NAV ZÉLADA DESGAGNÉS
MASTER

QSL

285436
2024-09-19 00:00 - N/A
V241500

MEADOWBANK-AEM-STOCK - CLASS 8 / LTD QTY 8

SUBTOTAL QTY: 1	SUBTOTAL VOLUME: 38.5496 m³ (1361.3663 cu.ft.)	5.731 MT (12634.6922 lb)
TOTAL QTY: 94	TOTAL VOLUME: 3455.3362 m³ (122024.0459 cu.ft.)	1910.069 MT (4210981.3267 lb)

Quantity: 218	Volume: 8948.5646 m³ (316015.5768 cu.ft.)	4415.103 MT (9733635.9516 lb)

Captain, First Officer / Mate or vessel authorized personnel: _____

QSL Canada inc. without prejudice: _____

QSL Canada visually inspected the parcels before loading them on board to prevent them from holding soils that could contain plant seeds of invasive breeds.

APPENDIX C

Shipping Inspection Forms, 2024

#2700-685 Centre Street S
Calgary, AB
Canada T2G 1S5

T +1 403 705 1926
F +1 604 687 4277

erm.com

MEMO

TO	Kyle Conway (Agnico Eagle Mines Ltd. [Agnico Eagle]); John Baechler (Agnico Eagle); Sara Savoie (Agnico Eagle)
FROM	Shan Seahra (ERM Consultants Canada Ltd. [ERM]); Jessica Lowey (ERM); Craig Neufeld (ERM)
DATE	March 5, 2025
REFERENCE	0743006-02
SUBJECT	Meliadine Mine: Invasive Plant Species Monitoring Report

1. INTRODUCTION

ERM Consultants Canada Ltd. (ERM) completed an annual invasive plant species survey in August and September 2024 at the Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Mine (Mine Site) and associated infrastructure, as required by the Nunavut Impact Review Board (NIRB) Term and Condition No. 37 of the Project Certificate (No: 006). The following memorandum provides an overview and results of the surveys.

2. OBJECTIVES

The objectives of the 2024 invasive plant species survey were to identify invasive plant species, including their abundance, distribution, density, and life stage/phenology, to inform invasive plant species management and support regulatory compliance.

Specifically, NIRB Term and Condition No. 37 of the Project Certificate requires that the Proponent shall:

- "Incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g., surveys of plant populations in previously disturbed areas) into its Terrestrial Environment and Monitoring Plan. Any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment."
- "Provide a summary discussion of its implementation of this term and condition, including any updates to the Plan, to the NIRB through the Proponent's annual monitoring report."

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3. METHODS

The invasive plant survey was completed from August 31 to September 4, 2024. The Mine Site, All Weather Access Road (AWAR), active and inactive borrow pits, Itivia shipping area, and Pump Road (the survey area) were surveyed for invasive plant species, targeting infrastructure, and disturbed and surrounding areas.

A grid-based method was used for comprehensive coverage across the survey area, which consisted of infrastructure survey cells and road survey cells. The survey area contained all historically sampled sites in accordance with the Terrestrial Effects Monitoring and Mitigation Program (TEMMP). Infrastructure and disturbed areas were surveyed using 50 m by 50 m grid cell sampling units, while elongated 250 m by 30 m grid cell sampling units were used along roads for rapid roadside surveys (Figure 3-1 and Figure 3-2). Within the 50 m by 50 m grid cell sampling units, ERM field staff walked an 'S' shaped search pattern to allow for good survey coverage, with the search pattern adjusted based on site features or visibility (e.g., buildings or areas of compacted gravel free of vegetation). Rapid roadside surveys were completed within 10 m from either side of the road edge by 250 m sampling units and were conducted from a vehicle travelling at approximately 5 km/h, with one crew member driving while the other surveyor was in the passenger seat scanning the roadside for invasive plant species.

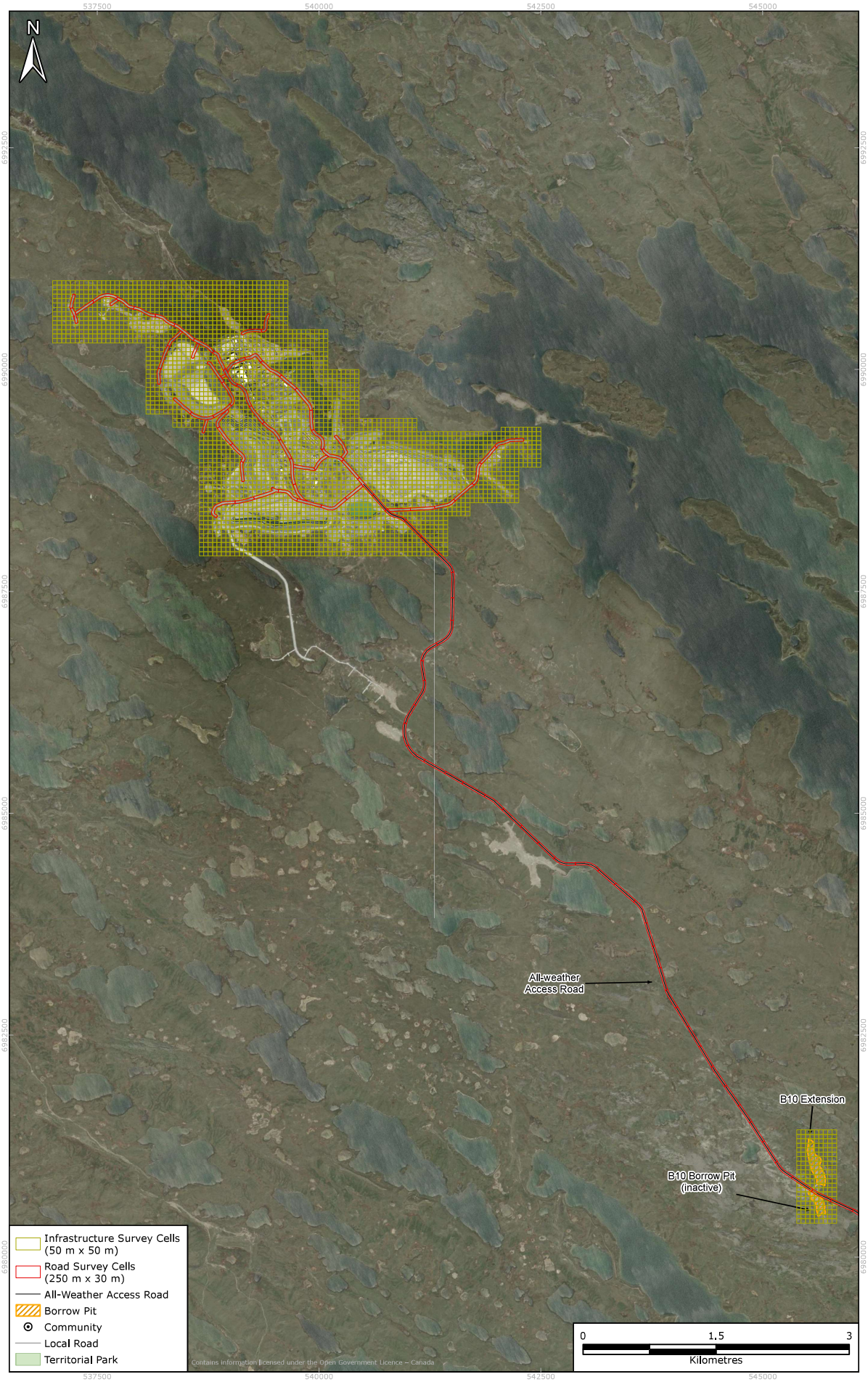
The surveys targeted plant species with potential to be invasive in the Territory, as per the Non-Native & Invasive Species in Nunavut list (Government of Nunavut 2022). Since Nunavut does not currently maintain a Conservation Data Centre, nor does it have an invasive plant council to track exotic or invasive plant species, supplemental information was obtained from the neighbouring Northwest Territories (e.g., NWT Species Infobase) and invasive plant databases to identify potentially invasive plant species. Incidental observations of potential non-native plants were also recorded.

The field data was collected using ArcGIS Field Maps for navigation and tracking survey progress, in combination with Survey123 for efficient and standardized data collection. Since Nunavut has no invasive plant survey standards, the survey was completed per the InvasivesBC Reference Guide (BC Ministry of Forests 2023).

Survey123 invasive plant survey forms were designed to collect information on:

- Species and location;
- Abundance (percent cover) in grid cell;
- Distribution in grid cell;
- Density (plants per m^2) within patches;
- Life stage/phenology; and
- Additional details, such as date, notable features, opportunistic management applied, etc.

FIGURE 3-1 INVASIVE PLANT SPECIES SURVEY LOCATIONS



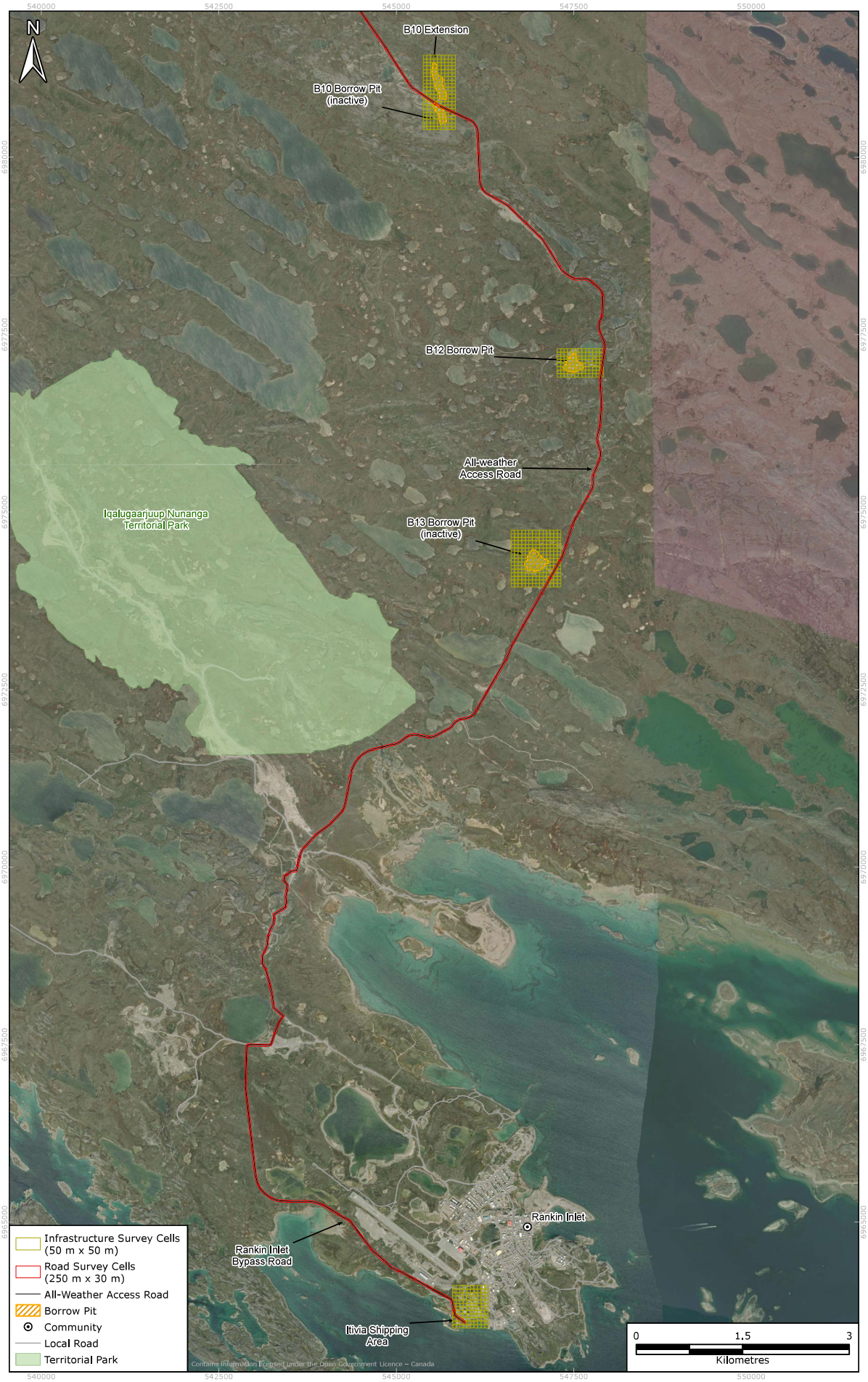
ERM

CLIENT: Agnico Eagle Mines Limited
GIS NUMBER: MEL-20-008a

DATE: 12/17/2024

PROJECTION: NAD 1983 UTM Zone 15N
SCALE: 1:40,000 when printed at 11x17

FIGURE 3-2 INVASIVE PLANT SPECIES SURVEY LOCATIONS



ERM

CLIENT: Agnico Eagle Mines Limited
GIS NUMBER: MEL-20-008b

DATE: 12/17/2024

PROJECTION: NAD 1983 UTM Zone 15N
SCALE: 1:50,000 when printed at 11x17

4. RESULTS

A total of 2,915 infrastructure and road cells were surveyed, and 10 cells were inaccessible due to active construction, wires, or physical barriers. No confirmed invasive or non-native plant species were identified during the 2024 survey.

One unidentified species of grass was observed throughout the Mine Site, AWAR, borrow pits, and Itivia shipping area. The unidentified grass species was observed in 172 grid cells out of the entire survey area, including five inaccessible cells (observed via binoculars). Distribution of the species was primarily in disturbed areas, wet ditches, and along roadsides, in mostly localized patches near infrastructure and roads.

The unidentified grass species resembles spreading alkali grass (*Puccinellia distans*), a species on the Non-Native & Invasive Species in Nunavut list (Government of Nunavut 2022). However, the grass had already lost its spikelets at the time of the survey and could not be accurately identified. *Puccinellia distans* was not detected in previous surveys; if this species is confirmed, it may have established recently. Furthermore, since the 2023 survey was also completed late in the year, many grass species had already lost their spikelets at the time of the survey. At this stage, confidence on the species identification is low, as *Puccinellia* species (including the *distans* group) are nearly impossible to identify without spikelets (L.J. Gillespie, Canadian Museum of Nature, pers. comm., October 22, 2024). At least ten *Puccinellia* species and one hybrid have been observed in Nunavut, six of which have been observed on continental Nunavut (Aiken et al. 2007). A single collection of *P. distans* has been recorded in Nunavut (B. Bennett, Bruce Bennett Herbarium [BABY], pers. comm., October 21, 2024).

ERM recommends that invasive plant surveys are completed earlier in the year during late July to early August. This timing period is ideal for identifying most, if not all, species present in the survey area, and is ideal timing for collecting samples of grass with spikelets. ERM also recommends that dried and pressed samples containing spikelets are collected during the appropriate floristic period. The samples can be sent to the Canadian Museum of Nature herbarium for species identification.

Similar to 2023, since no confirmed invasive species were detected, ERM did not submit any data to the Government of Nunavut Department of Environment.



Shan Seahra, PhD
Managing Technical Consultant



Jessica Lowey, Ms, PAg
Principal Consultant



Craig Neufeld
Partner

5. REFERENCES

Aiken, S.G., M.J. Dallwitz, L.L. Consaul, C.L. McJannet, R.L. Boles, G.W. Argus, J.M. Gillett, P.J. Scott, R. Elven, M.C. LeBlanc, L.J. Gillespie, A.K. Brysting, H. Solstad, J.G. and Harris. 2007. *Flora of the Canadian Arctic Archipelago: Descriptions, Illustrations, Identification, and Information Retrieval.* NRC Research Press, National Research Council of Canada, Ottawa. http://nature.ca/aaflora/data.

BC Ministry of Forests. 2023. *InvasivesBC Reference Guide.* Invasive Plant Program, Ministry of Forests, Province of BC. https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/invasive-species/invasivesbc-resources/invasivesbc_guidance_document.pdf.

Government of Nunavut. 2022. *Non-Native & Invasive Species in Nunavut.* Government of Nunavut and Environment Canada. https://www.gov.nu.ca/sites/default/files/publications/2022-01/invasive_poster_english_jan31-4.pdf.

APPENDIX D

CESS Non-Native and Invasive Species in Nunavut

Non-Native & Invasive species *In Nunavut*

In 2010 the Canadian Endangered Species Conservation Council (CESCC) identified 17 species not normally found in Nunavut.

These are called "non-native species". Some of these plants and animals can become an "invasive species", which represents a potential major concern for the future health of the Arctic.

What is a non-native species?

A non-native species is defined as an organism that is not normally found in a region. They are introduced by human activities, which can be intentional (e.g. species introduced to control a pest species), accidental (e.g. shipping and ballast water exchange), or environmental (e.g. changes in climate leading to wildlife movements). An example of a non-native species in Nunavut is the European Starling *(Sturnus vulgaris)*, which was introduced to North America from Europe intentionally by humans.

What is an invasive species?

Not all non-native species are considered invasive. This term is reserved for species that do so well in their new habitat that they end up causing harm to the environment, other species, human health, or economic activity (ISAC, 2006). An example of an invasive species in southern Canada is the Zebra Mussel *(Dreissena polymorpha)*, which was introduced to North America by ships releasing their ballast water. The Zebra mussel reproduces quickly and establishes large colonies on any hard surface. In this way they take over habitat occupied by native species, reducing the availability of food for other species, and also attaching themselves in great numbers to boats and other infrastructure in the water. (Benson and Raikow, 2010).

Why should you be concerned about invasive species?

When invasive species are introduced and survive, their populations can increase rapidly because there are no natural predators. Invasive species may feed on native species, compete for food and space, as well as expose native species to new parasites and disease. Invasive species are now widely recognized as a leading cause of endangerment and/or extinction of native species (Lassuy and Lewis, 2010).

* *There are currently no known species in Nunavut that can be classified as aquatic or terrestrial invasive species.*


Schill, 2005

Species: Field Sow Thistle *(Sonchus arvensis)*

Impact: The Field Sow Thistle grows quickly, easily and when there are many of them they can reduce the water resources available to other plants. They have the potential to decrease native plant diversity by competing for space and water.

Introduction pathway: Accidently introduced from Europe into North America in a containment of agricultural crop seed. This plant has been able to spread long distances across Canada because the seeds can travel far in the wind.


Schill, 2005

Species: The European Starling *(Sturnus vulgaris)*

Impact: The European Starling can displace native bird species by taking over nesting sites and competing for food.

Introduction pathway: Introduced intentionally to North America from Europe. These birds then dispersed naturally into Canada through migration.

Non-Native Species in Nunavut

As of 2011, there are 17 species known to be non-native in Nunavut, these are listed below and are all terrestrial species. Please note that it is not currently known what the potential is for any of these species to become invasive and to what extent. Two species, the starling and the sow thistle are described in more detail below.

SCIENTIFIC NAME	COMMON NAME		ORGANISM TYPE
Carum carvi	**Wild Caraway**	Cliffe, 2003	Flowering Plant
Taraxacum officinale	**Common Dandelion**	Walker, Lyndon	Flowering Plant
Sonchus arvensis	**Field Sow Thistle**	Schill, 2005	Flowering Plant
Leucanthemum vulgare	**Oxeye Daisy**	Brouwer, Sjon	Flowering Plant
Thlaspi arvense	**Field Pennycress**	Brouwer, Sjon	Flowering Plant
Capsella bursa-pastoris	**Shepherd's Purse**	Gray-Wilson, Anne	Flowering Plant
Barbarea vulgaris	**Yellow Rocket**	Mitchell, Gregg	Flowering Plant
Amaranthus retroflexus	**Green Amaranth**	Pilney, 2003	Flowering Plant
Hordeum vulgare	**Common Barley**	Mitchell, Gregg	Flowering Plant
Puccinellia distans	**Spreading Alkali Grass**	Pilney, 2003	Flowering Plant
Vicia cracca	**Tufted Vetch**	Cliffe, 2003	Flowering Plant
Papaver somniferum	**Opium Poppy**	Anonymous, 2003	Flowering Plant
Plantago major	**Common Plantain**	Pilney, 2003	Flowering Plant
Polygonum aviculare	**Prostrate Knotweed**	Pilney, 2003	Flowering Plant
Pieris rapae	**Cabbage White**	Hall & Jason	Butterfly
Sturnus vulgaris	**European Starling**	Schill, 2005	Passerine Bird
Passer domesticus	**House Sparrow**	Mahaffey, 2003	Passerine Bird

*Species photo references available upon request. Images are not to scale.

How might invasive species get into Nunavut?

Species are transported throughout the world by human activities, like shipping, which allows species to move further distances and over barriers that they could not do on their own. Nunavut remains very remote compared to the rest of Canada and so the lack of major road systems, infrequent shipping and cold climate has limited their introduction and survival.

However, as climate change alters Arctic ecosystems, it creates conditions that are more favorable to the survival and reproduction of non-native species. It also enables greater human activity and development, which gives potential invasive species more opportunities to establish themselves. (Lassuy and Lewis, 2010).

Pathways of introduction for invasive species into Nunavut


MacGregor, 2003

Hull fouling occurs when organisms attach themselves to the outside of a ship's hull where they can then be transported around the world.

* Ballast water exchange and hull fouling have the greatest potential for introducing invasive species into the aquatic ecosystems of Nunavut. Ballast water is used to stabilize ships. It is pumped aboard ships from different ports around the world and often exchanged far from the region it was obtained. This water can contain species that are not native, and may establish themselves locally.

* Seeds, insects and even small mammals can be transported around the world through the shipping of grocery produce, lumber, construction supplies, and packing materials, even dirt from someone's footwear can contain plant seeds (IASC, 2010).


Dorchet, 2003

The Migratory Grasshopper *(Melanoplus sanguinipes)* is a winged insect that is widely distributed across Canada and is one example of a species that may expand its range into Nunavut.

* As climate continues to change in the Arctic, many terrestrial and aquatic plants and animals will move further north looking for the food and habitat they desire. These wildlife movements are not a threat when it comes to invasive species, but it is important to note that some species, (especially rare or threatened ones) may not survive the transition. Others may do well, like flying insects, which are already increasing in number in some areas of Nunavut. (IASC, 2010).

Wildlife movements are often referred to as "range extensions" where a species expands the area they can live in when the habitat and climate is favorable for them.

Potential Invasive Species in Nunavut

As trade and shipping continues to increase, some aquatic invasive species known to commonly foul ship hulls and ballast waters, like the Chinese Mitten Crab, are more likely to arrive at ports around Nunavut.

A recent report commissioned by Fisheries and Oceans Canada identified a number of potential aquatic invasive species, mainly for the Hudson Bay region. The table below lists only those species considered as "High Risk" to Nunavut and they are found in freshwater & marine environments.

SCIENTIFIC NAME	COMMON NAME		ORGANISM TYPE
Osmerus mordax	**Rainbow Smelt**	NOAA.GOV	Fish
Gymnocephalus cernuus	**Ruffe**	Elton, 2003	Fish
Caprella mutica	**Skeleton Shrimp**	Pinkerneil et al. 2010	Crustacean
Chelicorophium curvispinum	Data unavailable	Invasive Species of	Crustacean
Dikerogammarus villosus	**Killer Shrimp**	Hillenbrand, 2003	Crustacean
Gmelinoides fasciatus	Data unavailable	ghostshrimp.ru	Crustacean
Pontogammarus robustoides	Data unavailable	biodiversity.ie.org	Crustacean
Eriocheir sinensis	**Chinese Mitten Crab**	Elton, 2003	Crustacean
Hemimysis anomala	Data unavailable	Pinkerneil, 2010	Crustacean
Balanus improvisus	**Acorn Barnacle**	Elton, 2003	Crustacean
Corbicula fluminea	**Asian Clam**	Mansfield, 2003	Mollusc
Dreissena bugensi	**Quagga Mussel**	CWS.org	Mollusc
Bythotrephes longimanus	**Spiny Water Flea**	Mills, 2003	Zooplankton
Cercopagis pengo	**Fishhook Water Flea**	Hebert & Mill	Zooplankton
Eubosmina maritima	Data unavailable	invasivemussels.be	Zooplankton
Marenzelleria cf. viridis	Data unavailable	ICES.dk/ref	Worm
Marenzelleria cf. wireni	Data unavailable	greatlakeswatch.org	Worm
Cordylophora caspia	**Freshwater Hydroid**	Cohen, 2003	Hydrozoa
Coscinodiscus wailesii	Data unavailable	A.M.V., 2006	Phytoplankton
Odontella sinensi	Data unavailable	Unspec, 2003	Phytoplankton
Prorocentrum minimum	Data unavailable	Matthys, 2003	Phytoplankton
Codium fragile ssp. tomentosoides	**Oyster Thief**	Erickson, M.D.	Algae
Glugea hertwigi	Data unavailable	Kilgallen, K.	Protozoa
Amphilina foliacea	Data unavailable	Mackiewicz, Jerzy	Parasite

*Species photo references available upon request. Images are not to scale.

How can you help?

Report

Have you seen a different plant, animal or insect in Nunavut?

You help identifying these species is important. Report the **location** where you observed the species (GPS Coordinates are very helpful) and provide a **detailed description** of the plant, animal, or insect. If possible **take a photo**.

Remember that not all non-native species are considered invasive. If you see an unknown plant or animal, it is very important to report it.

Do not take any extreme actions; the first step is reporting the species so that territorial and federal agencies can respond appropriately. We will report our findings back to you and information about the species you have observed.

Share

Keep yourself informed and educate others about non-native and invasive species. Let them know what to do if they see an unknown or uncommon species.

Report a species to your local Conservation Officer.

For More Information or if your CO is not available please contact:

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Environment Canada / Environnement Canada

APPENDIX E

Bird Surveys and PRISM Plots Summary, 2024



MELIADINE GOLD MINE PROJECT

FINAL REPORT

2024 Bird Surveys and PRISM Plots Summary Report

15 January 2025 v2

Table of Contents

SECTION 1 • OVERVIEW 1

SECTION 2 • OBJECTIVES 2

SECTION 3 • METHODOLOGY 3

3.1 PRISM Plots 3
3.2 Waterbird Shoreline Surveys 6
3.3 Bird Transects and Point Counts 8
3.4 Pre-Clearance Bird Nest Surveys 10

SECTION 4 • 2024 BIRD SURVEY RESULTS 11

4.1 PRISM Plots 11
4.2 Waterbird Shoreline Surveys 20
4.3 Bird Transects and Point Counts 21
4.4 Pre-Clearance Bird Nest Surveys 25

SECTION 5 • RECOMMENDATIONS 26

SECTION 6 • LITERATURE CITED 27

List of Tables

Table 3.1	UTM Coordinates of Non-Standard (established by Golder) and Standard PRISM Plots (Nunavut Environmental) Surveyed at the Meliadine Mine in June 2024.	5
Table 4.1:	Wildlife Species Observed on Meliadine Non-Standard PRISM Plots in 2024. Additional Species Observed outside Plots are Listed as Incidental. Species only Observed Incidentally are indicated with a '*'.	12
Table 4.2:	Wildlife Species Observed on Meliadine Standard PRISM Plots in 2024. Additional Species Observed outside Plots are Listed as Incidental. Species only Observed Incidentally are indicated with a '*'.	14
Table 4.3:	Details and Representative Photos of Nests Found during 2024 PRISM Plots at the Meliadine Site.	16
Table 4.4:	Confirmed or Potential Nest Sites for the Meliadine Gold Mine Project Waterbird Shoreline Survey in 2024.	20
Table 4.5:	Bird Survey Results for the Meliadine Gold Mine Point Counts in 2024.	22

List of Figures

Figure 3.1:	PRISM Plot Locations at the Meliadine Gold Mine Site.	4
Figure 3.2:	Waterbird Shoreline Survey Locations at the Meliadine Gold Mine Site.	7
Figure 3.3:	Bird Transect and Plot Locations at the Meliadine Gold Mine Site.	9

List of Appendices

Appendix I:	PRISM Plot Survey Protocols for the Meliadine Gold Project.	28
Appendix II:	Bird Transect and Plot Locations for the Meliadine Gold Project.	38
Appendix III:	Fieldwork Details for the Meliadine Gold Mine PRISM Plots (Non-Standard and Standard) in 2024	41
Appendix IV:	Summary of Bird Nests Observed on and adjacent to Non-Standard and Standard PRISM Plots at the Meliadine Site in 2024	43
Appendix V:	Fieldwork Dates and Times, Weather, and Observers for the Meliadine Gold Mine Project Waterbird Shoreline Surveys in 2024.	47
Appendix VI:	Detailed Results by Survey Location for the Meliadine Gold Mine Project Waterbird Shoreline Surveys in 2024.	53
Appendix VII:	Summary of Results by Species for the Meliadine Gold Mine Project Waterbird Shoreline Surveys in 2024.	60
Appendix VIII:	Fieldwork Details for the Meliadine Gold Mine Point Counts in 2024	63
Appendix IX:	Survey Methods and Results for the Meliadine Gold Mine Project Pre-Clearance Bird Survey Monitoring in 2024	67

SECTION 1 • OVERVIEW

The Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Mine (the Mine) received a Project Certificate (No. 006) from the Nunavut Impact Review Board (NIRB) in February 2015, which was amended in February 2019 (Amendment No. 001) and March 2022 (Amendment No. 002). A Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Mine was prepared for submission with the Project Final Environmental Impact Statement (FEIS) and forms a component of the documentation series produced in accordance with the Project Terms and Conditions. The TEMMP was updated and submitted to the NIRB in April 2022 (TEMMP Version 4; Agnico Eagle 2022).

This report addresses the requirements of Terms and Conditions 59, 61, 62, 71, 72, and 74 from the NIRB Project Certificate (No. 006). It summarizes results of bird studies, including the Program for Regional and International Shorebird Monitoring (PRISM) plots surveys, waterbird shoreline surveys, and bird plots, as per the TEMMP, Version 4.

Non-Standard PRISM plots (i.e., irregular-shaped plots initially established by Golder [now WSP] in 2018 and 2019) and Standard PRISM plots (i.e., 300 x 400m plots established in 2024 to meet plot size guidelines provided by Environment and Climate Change Canada [ECCC]) were completed in 2024, as were shoreline surveys, and point count surveys. Pre-clearance bird nest monitoring was conducted along the All-Weather Access Road (AWAR) between May and August 2024 in support of ongoing construction activities.

In 2025, PRISM plot, waterbird shoreline, and pre-clearance bird nest surveys will continue during the summer, subject to environmental constraints including severe weather and caribou movements.

SECTION 2 • OBJECTIVES

The primary objectives of this report are to:

1) Provide a brief overview of the Meliadine Gold Mine and the rationale for breeding bird surveys;
2) Describe the methods used to conduct the PRISM plots, waterbird shoreline surveys, bird plots, and pre-clearance bird nest monitoring;
3) Summarize results of the 2024 bird surveys; and
4) Make recommendations for surveys in subsequent years.

SECTION 3 • METHODOLOGY

3.1 PRISM PLOTS

The PRISM, which has been implemented in Canada and the United States (Bart et al. 2005), has well defined survey protocols (Rausch and Clyde 2022; Rausch, unknown date; see **Appendix I**). All PRISM plot data are a contribution to ECCC's long-term monitoring program and dataset. Non-Standard plots, which were initially established by Golder Associates Inc. (now WSP Inc.), were generally of irregular shape and size (i.e., haphazard quadrilaterals). Standard PRISM plot surveys, which followed ECCC standard size protocols (i.e., 300 x 400 m), were established in 2024 using the southwest corner of the Non-Standard plot and extending north and east (**Figure 3.1**). Ten plots were surveyed by Golder Associates Inc. in June 2018 and 16 plots were surveyed in June 2019. These were reported on in the 2019 Terrestrial Effects Monitoring and Mitigation Program Annual Report, in Appendix H-7 of the 2019 Meliadine Annual Report.

For 2024, 12 plots (i.e., original plots [Non-Standard] established by Golder Associates Inc.) were chosen by ECCC at the Meliadine Mine (**Figure 3.1**, **Table 3.1**). All 12 Non-Standard plots were surveyed as were the 12 Standard plots established by Nunavut Environmental Consulting Ltd. (Nunavut Environmental) in 2024. In subsequent years, plots established by Golder Associates will be resurveyed.

The plots were surveyed by a team of two field qualified personnel that transected the plot. Team members were spaced 25 m apart and used geolocation to orient along transect lines. The purpose of the surveys was to document all birds (i.e., absolute abundance) occurring on the plots, determine breeding status, and record habitat conditions.

PRISM survey results are provided to ECCC Canadian Wildlife Service (CWS) technical experts and the CWS Environmental Assessment Officer. Raw data includes bird and plot habitat data, and digital scans of all field data sheets.





Meliadine PRISM Location (SW Corner)

Production Lease

Meliadine Site

All Weather Access Road

C:\Users\jade.robitaille\OneDrive - agnicoeagle.com\ArcGIS\CaribouNoiseMonitoring\NoiseMonitoringCaribouStation.aprx Date Saved: 2/26/2024 12:56 PM

Figure 3.1: PRISM Plot Locations at the Meliadine Gold Mine Site

System: NAD 1983 UTM Zone 15N
Datum: North American 1983

Scale: 1:25,000
Map Units: Meter

AGNICO EAGLE
MELIADINE

Drawing by : Jade Robitaille	Date : 2024-02-14
Revised by : Helene Boulanger	Date : 2024-02-14
Approved by : Helene Boulanger	Date : 2024-02-14

Table 3.1: UTM Coordinates of Non-Standard (established by Golder) and Standard PRISM Plots (Nunavut Environmental) Surveyed at the Meliadine Mine in June 2024.

Site Name	Arctic PRISM Plot Name	Original Plot Name	Original Survey Date	UTM Zone	SW corner Easting	SW corner Northing	NW corner Easting	NW corner Northing	NE corner Easting	NE corner Northing	SE corner Easting	SE corner Northing	Original Surveyed Plot Area (km2)
Meliadine	MEL-IND1 NS	PR001	June 14, 2018	15	543543	6985728	543536	6986128	543836	6986132	543843	6985732	0.12
Meliadine	MEL-IND1 S	NA	June 23, 2024	15	543543	6985728	543543	6986128	543843	6986128	543843	6985728	0.12
Meliadine	MEL-IND2 NS	PR002	June 15, 2018	15	543361	6986175	543355	6986575	543655	6986579	543661	6986179	0.12
Meliadine	MEL-IND2 S	NA	June 23, 2024	15	543361	6986175	543361	6986575	543661	6986575	543661	6986175	0.12
Meliadine	MEL-IND3 NS	PR003	June 15, 2018	15	543022	6987099	542735	6987377	542944	6987593	543231	6987315	0.12
Meliadine	MEL-IND4 NS	PR004	June 15, 2018	15	537894	6991283	537632	6991585	537859	6991782	538121	6991479	0.12
Meliadine	MEL-IND4 S	NA	June 25, 2024	15	537894	6991283	537894	6991683	538194	6991683	538194	6991283	0.12
Meliadine	MEL-IND5 NS	PR005	June 15, 2018	15	538221	6990731	537886	6991072	538180	6991129	538467	6990851	0.11
Meliadine	MEL-IND5 S	NA	June 24, 2024	15	538221	6990731	538221	6991131	538521	6991131	538521	6990731	0.12
Meliadine	MEL-IND6 NS	PR006	June 15, 2018	15	540151	6989892	539904	6990176	540199	6990233	540401	6989992	0.09
Meliadine	MEL-IND6 S	NA	June 25, 2024	15	540151	6989892	540151	6990292	540451	6990292	540451	6989892	0.12
Meliadine	MEL-IND7 NS	PR007	June 15, 2018	15	540351	6989242	540301	6989642	540539	6989643	540601	6989242	0.1
Meliadine	MEL-IND8 NS	PR9001	June 14, 2019	15	541105	6988807	540701	6989242	541101	6989392	541451	6988992	0.21
Meliadine	MEL-IND8 S	NA	June 25, 2024	15	541105	6988807	541105	6989207	541405	6989207	541405	6988807	0.12
Meliadine	MEL-IND9 NS	PR9002	June 14, 2019	15	540201	6989192	539801	6989542	540151	6989742	540431	6989435	0.17
Meliadine	MEL-IND10 NS	PR9003	June 14, 2019	15	539551	6988992	539351	6989342	539601	6989442	539901	6989092	0.13
Meliadine	MEL-IND11 NS	PR9004	June 15, 2019	15	542451	6984292	542251	6984642	542379	6984756	542648	6984402	0.08
Meliadine	MEL-IND11 S	NA	June 23, 2024	15	542451	6984292	542451	6984692	542751	6984692	542751	6984292	0.12
Meliadine	MEL-IND12 NS	PR9005	June 15, 2019	15	542051	6983942	541901	6984292	542118	6984405	542261	6984030	0.09
Meliadine	MEL-IND12 S	NA	June 23, 2024	15	542052	6983942	542052	6984342	542352	6984342	542352	6993942	0.12
Meliadine	MEL-IND13 NS	PR9006	June 15, 2019	15	542101	6988342	541751	6988592	541976	6988809	542258	6988525	0.11
Meliadine	MEL-IND13 S	NA	June 24, 2024	15	542101	6988342	542101	6988742	542401	6988742	542401	6988342	0.12
Meliadine	MEL-IND14 NS	PR9007	June 17, 2019	15	538564	6987525	538524	6987620	538881	6987804	538921	6987712	0.04
Meliadine	MEL-IND14 S	NA	June 26, 2024	15	538564	6987525	538564	6987925	538864	6987925	538864	6987525	0.12
Meliadine	MEL-IND15 NS	PR9008	June 17, 2019	15	539490	6987439	539189	6987709	539383	6987925	539684	6987655	0.11
Meliadine	MEL-IND15 S	NA	June 25, 2024	15	539490	6987439	539490	6987839	539790	6987839	539790	6987439	0.12
Meliadine	MEL-IND16 NS	PR9009	June 17, 2019	15	539981	6987795	540013	6988072	540429	6988024	540397	6987747	0.11
Meliadine	MEL-IND16 S	NA	June 25, 2024	15	539981	6987795	539981	6988195	540281	6988195	540281	6987795	0.12

3.2 WATERBIRD SHORELINE SURVEYS

Shoreline surveys document the nesting distribution of waterbirds on or along waterbody shorelines within 200 m of mine-related infrastructure (e.g., mine buildings, AWAR, etc.). Shoreline surveys are completed following the methods outlined in the TEMMP (Agnico Eagle 2022).

All shorelines within 200 m of the Mine are to be surveyed on an annual basis (see **Figure 3.2**). Surveys involve two observers walking along the edge of a waterbody. One observer walks 5 m from the water's edge, while the second observer walks approximately 15 m from the water's edge. If a nest is found, the surveyor approaches the nest to determine nest stage (e.g., egg laying, incubating, nestlings etc.) and nest productivity (i.e., the number of offspring). If a nesting bird show signs of distress, the nest is not approached to avoid nest abandonment.

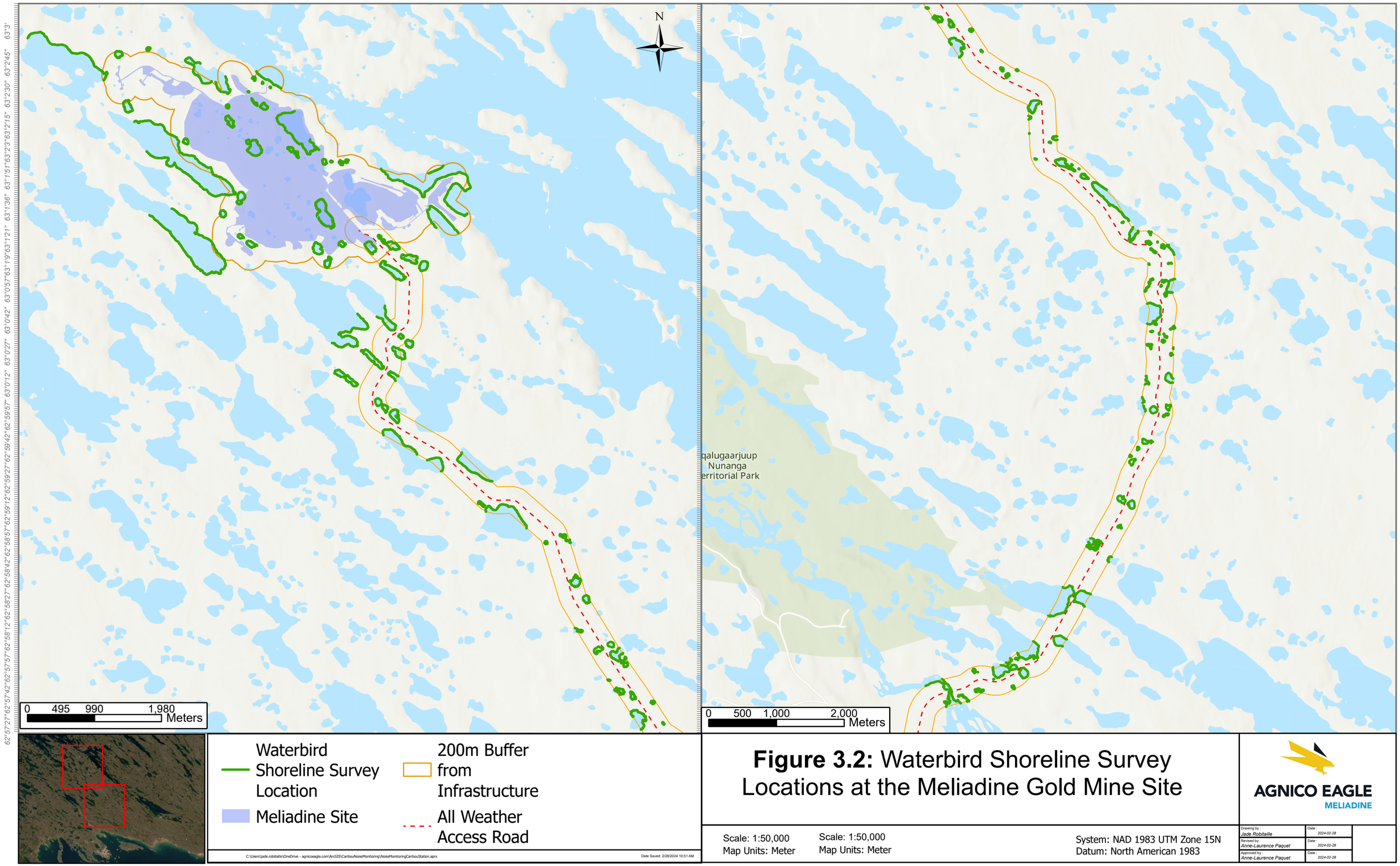


Figure 3.2: Waterbird Shoreline Survey Locations at the Meliadine Gold Mine Site

AGNICO EAGLE
MELIADINE

Scale: 1:50,000
Map Units: Meter

Scale: 1:50,000
Map Units: Meter

System: NAD 1983 UTM Zone 15N
Datum: North American 1983

Drawing by : Jade Robitaille	Date : 2024-02-28	
Revised by : Anne-Laurence Paquet	Date : 2024-02-28	
Approved by : Anne-Laurence Paquet	Date : 2024-02-28	

3.3 BIRD TRANSECTS AND POINT COUNTS

The objective of the point count surveys is to collect data to allow statistical analysis to estimate the effects of increased traffic along the AWAR on upland breeding birds and how these effects change with increasing distance from the AWAR. In the future, various statistical approaches, including trend analysis, may be used to determine potential road-related effects on breeding birds. A full set of surveys was conducted by Golder (now WSP) in 2018, 2019, and 2021, and by Nunavut Environmental in 2024. Point counts are intended to be conducted every three years; therefore, the next survey is planned for 2027.

Point count plots are located within 1 km on either side of the AWAR with the first point count occurring 50 m from the road edge and each subsequent plot spaced 100 m from the centre of the preceding plot (see **Figure 3.3**). Six transects with 12 plots per transect result in a total of 72 point counts. Surveys at point counts are five (5) minutes in duration and all species detected by sight or sound within 50 m and 50-100 m of the observer(s) are recorded. Observations beyond 100 m are recorded at the observer's discretion as incidentals.

-92°14′ -92°13′ -92°12′ -92°11′ -92°10′ -92°9′ -92°8′ -92°7′ -92°6′ -92°5′

63°2′15″ 63°2′ 63°1′45″ 63°1′30″ 63°1′15″ 63°1′ 63°0′45″ 63°0′30″ 63°0′15″ 63° 62°59′45″ 62°59′30″ 62°59′15″ 62°59′ 62°58′45″ 62°58′30″ 62°58′15″ 62°58′ 62°57′45″ 62°57′30″ 62°57′15″ 62°57′ 62°56′45″

N

Transect 1

Transect 2

Transect 3

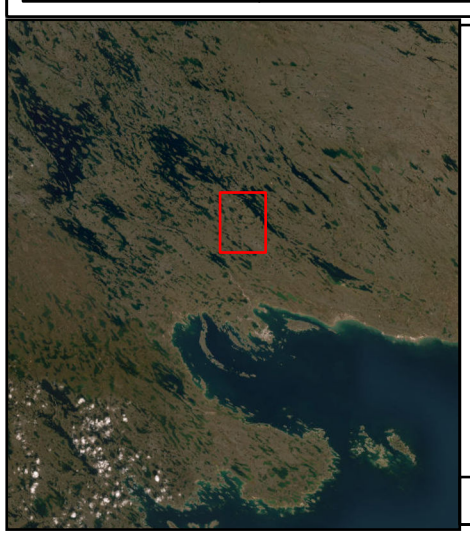
Transect 4

Transect 5

Transect 6

Meliadi
Lake

0 0.5 1 2 Kilometers



Production Lease

Meliadine Site

Breeding Bird Survey Locations

All Weather Access Road

Breeding Bird Transect

C:\Users\jade.robitaille\OneDrive - agnicoeagle.com\ArcGIS\CaribouNoiseMonitoring\NoiseMonitoringCaribouStation.aprx Date Saved: 2/26/2024 12:56 PM

Figure 3.3: Bird Transect and Plot Survey Locations at the Meliadine Gold Mine Site

System: NAD 1983 UTM Zone 15N
Datum: North American 1983

Scale: 1:32,000
Map Units: Meter

AGNICO EAGLE
MELIADINE

Drawing by : Jade Robitaille	Date : 2024-02-14
Revised by : Helene Boulanger	Date : 2024-02-14
Approved by : Helene Boulanger	Date : 2024-02-14

3.4 PRE-CLEARANCE BIRD NEST SURVEYS

Pre-clearance surveys are conducted during the active bird breeding window for Nesting Zone N (Arctic Plains and Mountains, ECCC 2024) to determine if any active nests will be disturbed by proposed activities. Observers survey the entire proposed clearance area and document all bird activity but especially nesting activity.

Surveys were conducted between May 15 and August 15, which corresponds to the reproductive period of birds breeding in the Arctic. The proposed construction areas were surveyed at least four days before any disturbance (e.g., construction, borrow pit activity). Surveys were conducted during fair weather (i.e., not raining, low winds, temperature above 5 degrees Celsius). A minimum of two people walked straight-line transects through the proposed construction area, spaced by a maximum of 10 m. An additional 30 m area on all sides of the proposed disturbance area was also surveyed. For areas with ponds and lakes, circular transects spaced by a maximum of 25 m were surveyed. Bird species, nesting activity, GPS points, and photos were collected when a nest was found (if possible).

SECTION 4 • 2024 BIRD SURVEY RESULTS

4.1 PRISM PLOTS

Only one (1) PRISM plot (MEL-IND11) was completed in 2023 due to road closures related to caribou post-calving movements in June 2023. This survey was discarded given the limited amount of plot data collected. In 2024, 12 Non-Standard plots and 12 Standard plots (includes MEL-IND11) were conducted (**Figure 3.1**). Field work details (e.g., timing, weather, and observers) for each PRISM plot are provided in **Appendix III**.

Non-Standard Plots

Twenty-six (26) bird species were observed on the 2024 Non-Standard PRISM plot surveys (**Table 4.1**) with only Horned Lark (*Eremophila alpestris*) observed on all 12 plots. The most encountered species were Horned Lark, Lapland Longspur (*Calcarius lapponicus*), Savannah Sparrow (*Passerculus sandwichensis*), American Pipit (*Anthus rubescens*), and Canada Goose (*Branta canadensis*). Eight (8) species were only observed incidentally outside plots, while the other species were observed while surveying the PRISM plot. Species numbers, behaviours, nests, and other details have been recorded in the PRISM plot data spreadsheets as per the templates provided by CWS that will be provided to ECCC by March 31, 2025. Arctic Groundsquirrel (*Urocitellus parryii*) and lemming were observed incidentally.

Standard Plots

Twenty-two (22) bird species were observed on the 2024 Standard PRISM plot surveys (**Table 4.2**) with only Horned Lark (*Eremophila alpestris*) observed on all 12 plots. The most encountered species were Horned Lark, Lapland Longspur, Savannah Sparrow, American Pipit, and Redpoll sp. (*Acanthus* sp.). Five (5) species were only observed incidentally outside plots, while the other species were observed while surveying the PRISM plot. Species numbers, behaviours, nests, and other details have been recorded in the PRISM plot data spreadsheets as per the templates provided by CWS that will be provided to ECCC by March 31, 2025. Arctic Groundsquirrel (*Urocitellus parryii*), Arctic Fox (*Vulpes lagopus*), and Arctic Hare *(Lepus arcticus*) were observed incidentally.

Bird Nests

Nests of Canada Goose (4 nests), Horned Lark (2), Least Sandpiper (*Calidris minutilla*; 1), Sandhill Crane (*Grus canadensis*; 1), and Semipalmated Plover (*Charadrius semipalmatus*; 2) were documented on Non-Standard PRISM plots in 2024. Nests of Canada Goose (1) and Sandhill Crane (1) were documented on Standard PRISM plots (**Table 4.3**). A summary of all bird nest data collected on the standard ECCC form is provided in **Appendix IV**.

Table 4.1: Wildlife Species Observed on Meliadine Non-Standard PRISM Plots in 2024. Additional Species Observed outside Plots are Listed as Incidental. Species only Observed Incidentally are indicated with a '*'.

Common Name	Scientific Name	MEL-IND Non-Standard												Incidental (Plot #s) Non-Standard
		01	02	04	05	06	08	11	12	13	14	15	16	
BIRDS														
American Pipit	*Anthus rubescens*			1		2	2	3			1	1		05, 06, 13, 16
American Robin	*Turdus migratorius*									2				05, 14
* Bald Eagle	*Halieetus leucocephalus*													04
* Cackling Goose	*Branta hutchinsii*													01, 08
Canada Goose	*Branta canadensis*								2	4		4		01, 02, 06, 08, 11, 12, 14, 15, 16
* Common Loon	*Gavia immer*													14
Common Raven	*Corvus corax*													04, 12, 15, 16
Common Redpoll	*Acanthis flammea*	1					1	1			1			
* Greater Scaup	*Aythya marila*													06
Greater White-fronted Goose	*Answer albifrons*												1	11, 13
Herring Gull	*Larus argentatus*		3											01, 04, 06, 11, 12, 13, 14, 15
Horned Lark	*Eremophila alpestris*	3	3	1	2	1	5	5	6	4	1	3	5	01, 05, 08, 13, 14, 15
Lapland Longspur	*Calcarius lapponicus*	1			5			1	5	2	3	2	3	01, 13, 14, 15
Least Sandpiper	*Calidris minutilla*										2			05, 14
Long-tailed Duck	*Clangula hyemalis*	2												14
* Northern Pintail	*Anas acuta*													02, 14
Pacific Loon	*Gavia pacifica*									2				08, 12, 14, 15
Redpoll sp.	*Acanthis* sp.		1							1		2		
Sandhill Crane	*Grus canadensis*					4			4		1			01, 02, 05, 12, 15, 16
Savannah Sparrow	*Passerculus sandwichensis*	2	5	1							1	1	2	01, 02, 13, 14
Semipalmated Plover	*Charadrius semipalmatus*			2				2					2	04
Semipalmated Sandpiper	*Calidris pusilla*												1	

Table 4.1: Continued.

Common Name	Scientific Name	MEL-IND Non-Standard												Incidental (Plot #s) Non-Standard
		01	02	04	05	06	08	11	12	13	14	15	16	
BIRDS														
Snow Bunting	*Plectrophenax nivalis*						1			1				
* Snow Goose	*Anser caerulescens*													12
* Tundra Swan	*Cygnus columbianus*													01, 02, 12, 14
White-crowned Sparrow	*Zonotrichia leacophrys*		1			1				2		1		01, 05, 11, 13, 15
* Willow Ptarmigan	*Lagopus lagopus*													02
Total # of Species		**5**	**5**	**4**	**2**	**4**	**4**	**5**	**4**	**8**	**7**	**7**	**6**	
MAMMALS (recorded incidentally)														
Arctic Groundsquirrel	*Urocitellus parryii*	8	3								1	1	1	01
Lemming sp.			1											

Table 4.2: Wildlife Species Observed on Meliadine Standard PRISM Plots in 2024. Additional Species Observed outside Plots are Listed as Incidental. Species only Observed Incidentally are indicated with a '*'.

Common Name	Scientific Name	MEL-IND Standard												Incidental (Plot #s) Standard
		01	02	04	05	06	08	11	12	13	14	15	16	
BIRDS														
American Pipit	*Anthus rubescens*			1	5	1	2			1	1	1		16
American Robin	*Turdus migratorius*			1	1					1				14
Cackling Goose	*Branta hutchinsii*											2		14
Canada Goose	*Branta canadensis*					4			3					01, 02, 04, 05, 06, 11, 13, 14, 16
* Common Loon	*Gavia immer*													04, 06
* Common Raven	*Corvus corax*													02, 14, 16
Greater White-fronted Goose	*Answer albifrons*												2	02, 05, 13, 15
Herring Gull	*Larus argentatus*					2							1	04, 05, 06, 08, 11, 13, 15
Horned Lark	*Eremophila alpestris*	4	4	6	4	3	2	4	3	2	7	5	3	02, 05, 06, 08, 11, 15
Lapland Longspur	*Calcarius lapponicus*	1		1	3			1	1	3	5	2	2	02, 08, 16
Least Sandpiper	*Calidris minutilla*	1		1		4				1	1		1	05
* Long-tailed Duck	*Clangula hyemalis*													01, 02, 06, 14
Northern Pintail	*Anas acuta*	3									2	1	2	15
* Pacific Loon	*Gavia pacifica*													04, 05, 13, 14
Redpoll sp.	*Acanthis* sp.	1	1	2	1	4				3				05
* Red-throated Loon	*Gavia stellata*													01
Sandhill Crane	*Grus canadensis*			1		2								01, 02, 04, 05, 06, 08, 11, 14
Savannah Sparrow	*Passerculus sandwichensis*	6	4	3	1	3		1			4			01, 04, 05, 14, 16
Semipalmated Plover	*Charadrius semipalmatus*											1	1	04
Semipalmated Sandpiper	*Calidris pusilla*	1	1		2					1				
Tundra Swan	*Cygnus columbianus*	1												01, 02, 13, 14, 16

Table 4.2: Continued.

Common Name	Scientific Name	MEL-IND Standard												Incidental (Plot #s) Standard
		01	02	04	05	06	08	11	12	13	14	15	16	
BIRDS														
White-crowned Sparrow	*Zonotrichia leacophrys*			1			1			2		1		02, 04, 05, 06, 08
Total # of Species		**8**	**4**	**9**	**7**	**8**	**3**	**3**	**3**	**8**	**6**	**7**	**7**	
MAMMALS (recorded incidentally)														
Arctic Fox	*Vulpes lagopus*					1								14
Arctic Groundsquirrel	*Urocitellus parryii*			1						1			1	
Arctic Hare	*Lepus arcticus*							1						

Table 4.3: Details and Representative Photos of Nests Found during 2024 PRISM Plots at the Meliadine Site.

Date (2024)	Plot (MEL-IND)	Nest Name	Species[1]	# of Eggs	UTM Coordinates (15V)	Details	Representative Photo
Non-Standard (NS)							
June 28	04 NS	MEL-IND 04 Non-Standard_SEPL	SEPL	4	537794 6991662	Exposed on Gravel	
June 28	05 NS	MEL-IND 05 Non-Standard_LESA	LESA	4	538257 6990863 (outside plot)	Partially concealed in Sedge meadow	
June 29	08 NS	MEL-IND 08 Non-Standard_HOLA	HOLA	4	540981 6989233	Partially concealed on Lichen Tundra	

Table 4.3: Continued.

Date (2024)	Plot (MEL-IND)	Nest Name	Species[1]	# of Eggs	UTM Coordinates (15V)	Details	Representative Photo
Non-Standard (NS)							
June 28	11 NS	MEL-IND 11 Non-Standard_HOLA	HOLA	4 yng	542485 6984368	4 chicks in exposed nest on Lichen Tundra	
June 28	12 NS	MEL-IND 12 Non-Standard_CANG	CANG	ND	542090 6984237	Adult incubating on nest on island	Not taken
June 28	14 NS	MEL-IND 14 Non-Standard_CANG	CANG	2	538868 6987667 (outside plot)	Nest on small island; 1 egg hatched but no chick present	
June 28	15 NS	MEL-IND 15 Non-Standard_CANG Nest1	CANG	ND	539303 6987763	Nest on small island	

Table 4.3: Continued.

Date (2024)	Plot (MEL-IND)	Nest Name	Species[1]	# of Eggs	UTM Coordinates (15V)	Details	Representative Photo
Non-Standard (NS)							
June 28	15 NS	MEL-IND 15 Non-Standard_CANG Nest2	CANG	4	539379 6987703	Adult on nest on small island	
June 28	16 NS	MEL-IND 16 Non-Standard_SEPL	SEPL	4	540300 6987779	Pair by nest with distraction display; nest on disturbed substrate	
June 28	16 NS	MEL-IND 16 Non-Standard_SACR	SACR	3	540326 6987517 (outside plot)	Defensive adults with distraction display	

Table 4.3: Continued.

Date (2024)	Plot (MEL-IND)	Nest Name	Species[1]	# of Eggs	UTM Coordinates (15V)	Details	Representative Photo
Non-Standard (NS)							
June 25	06 S	MEL-IND 06 Standard_CANG	CANG	~4	540264 6990103	Nest on island; adult chasing Herring Gull away from nest	
June 25	08 S	MEL-IND 08 Standard_SACR	SACR	2	541578 6988985 (outside plot)	Nest on Heath Tundra	

[1] CANG = Canada Goose; HOLA = Horned Lark; LESA = Least Sandpiper; SACR = Sandhill Crane; SEPL = Semipalmated Plover

4.2 WATERBIRD SHORELINE SURVEYS

Shoreline surveys were completed in all areas within 200 m of the Mine in 2024. See **Appendix VI** for survey timing and weather conditions and **Figure 3.2** for general shoreline survey locations.

A total of 33 bird species, of which 20 species were waterbirds, were recorded on waterbird shoreline surveys in 2024 (**Appendix VI**). The 10 most encountered species included Canada Goose (recorded at 46 wetlands), Least Sandpiper (24), Herring Gull (*Larus argentatus*; 23), Sandhill Crane (23), Horned Lark (21), Long-tailed Duck (*Clangula hyemalis*; 20), Savannah Sparrow (19), Tundra Swan (*Cygnus columbianus*; 18), Pacific Loon (*Gavia pacifica*; 17), and Semipalmated Plover (15).

The 10 most encountered waterbird species were Canada Goose (recorded at 46 wetlands), Least Sandpiper (24), Herring Gull (23), Long-tailed Duck (20), Tundra Swan (18), Pacific Loon (17), Semipalmated Plover (15), Northern Pintail (*Anas acuta*; 12), Common Eider (*Somateria mollissima*; 4), and Green-winged Teal (*Anas crecca*; 3).

A total of 33 documented or potential nests were recorded on waterbird shoreline surveys in 2024 (see **Table 4.4**). The 33 nests were from seven (7) species of which six (6) species were waterbirds.

Table 4.4: Confirmed or Potential Nest Sites for the Meliadine Gold Mine Waterbird Shoreline Survey in 2024.

Common Name	Wetland #	Details
Canada Goose	17	1 adult flushed from nest with 4 eggs (15W 538430 6987825)
Canada Goose	23	1 adult on nest on small island (15W 540667 6986987)
Canada Goose	75	1 adult flushed from nest with 5 eggs (15W 538205 6989692)
Canada Goose	76	1 adult flushed from nest with 2 eggs (15W 538977 6988866)
Canada Goose	102	1 adult on nest on small island (15W 539311 6990963)
Canada Goose	108	1 female on nest with unknown # of eggs (15W 541134 6988277)
Canada Goose	110	Nest with no eggs; 1 female adult nearby (15W 541008 6988072)
Canada Goose	118	1 adult flushed from nest (15W 541385 6986834)
Canada Goose	123	1 adult on nest on small island (15W 541535 6986761)
Canada Goose	123	1 adult on nest on small island (15W 541490 6986709)
Canada Goose	124	1 adult on nest on small island (15W 541320 6985758)
Canada Goose	129	2 eggs intact in island nest, some predated; no adults nearby (15W 541359 6985365)
Canada Goose	129	1 adult flushed from nest with 3 eggs (15W 541452 6985236)
Canada Goose	134	1 adult flushed from nest (15W 543240 6983976)
Canada Goose	142 (& 158)	1 adult flushed from nest (15W 544603 6982138)
Canada Goose	149 (& 160)	Incidental Nest (15W 544604 6981615)

Table 4.4: Continued.

Common Name	Wetland #	Details
Canada Goose	153	1 adult on nest (15W 545120 6981485)
Canada Goose	228	1 adult on nest on small island (15W 547935 6978288)
Greater Scaup	138	1 adult flushed from nest with 7 eggs (15W 544006 6983186)
Herring Gull	16	1 adult on nest on small island (15W 538418 6989245)
Herring Gull	23	1 adult on nest on small island (15W 540485 6987098)
Herring Gull	130	1 adult agitated; nest likely on island (15W 542277 6985125)
Horned Lark	254	1 male flushed & agitated from nest with 5 eggs (15W 547743 6975151)
Least Sandpiper	17	1 adult flushed 2 m from water edge (possible nest); adult flew back to nest area once we passed (15W 537901 6988434)
Least Sandpiper	17	1 adult flushed & stayed nearby; possible nest in small area (15W 538743 6987815)
Least Sandpiper	75	Possible nest in area (15W 538193 6989691)
Least Sandpiper	250	1 adult flushed then agitated & displaying; nest with 4 eggs (15W 547700 6976809)
Sandhill Crane	16	2 adults & 2 juveniles (15W 538390 6989092)
Sandhill Crane	114	1 adult flushed & distraction display; nest with 2 eggs (15W 541578 6988984)
Semipalmated Plover	104	1 adult distraction display; nest right on road at north end of CP1 (snow dump); section closed with flagging tape (15W 540058 6989762)
Semipalmated Plover	111	1 adult distraction display; unknown # of eggs (15W 541394 6988059)
Semipalmated Plover	171	1 adult flushed & distraction display; nest with 4 eggs (15W 545223 6971720)
Semipalmated Plover	263	1 adult flushed from nest then distraction display (15W 541018 6985857)

4.3 BIRD TRANSECTS AND POINT COUNTS

All 72 point counts on the six (6) transects were conducted in 2024. Because of high winds on the initial surveys of Transect #2 and #3 plots (June 21, 2024), these plots were resurveyed on June 27, 2024. Horned Lark and Lapland Longspur were the most encountered species. A summary of field data is provided in **Appendix VIII** while results are in **Table 4.5**.

Table 4.5: Bird Survey Results for the Meliadine Gold Mine Point Counts in 2024.

Transect & Count #	Distance from Count (m)		
	0-50	50-100	>100 (Incidentals)
Transect #1			
1-1		HOLA (2; 1 female on nest)	
1-2	HOLA (1; nest with 4 eggs)		
1-3	HOLA (1)		
1-4			
1-5	SAVS (1)	CANG (1), HOLA (1)	
1-6	HOLA (1)		CANG (2), RTLO (1)
1-7 (1-13)	CORE (1), LALO (1)		GWFG (2), HERG (1)
1-8		HOLA (1), LALO (1), WCSP (1)	CANG (2)
1-9	CANG (2), GRSC (2), SEPL (1)		
1-10	LALO (1)		HERG (1)
1-11	SAVS (1)	LALO (1)	HERG (1)
1-12	LALO (1)		CANG (1)
Transect #2			
2-1a		SACR (1)	SACR (2)
2-1b		HOLA (2), LALO (1), SAVS (1), SESA (1)	CANG (20, LALO (1)
2-2a			SACR (1; female incubating)
2-2b	LALO (1)	CANG (18), HOLA (1), LALO (1), LESA (1), SAVS (1)	CANG (19), CORA (1), HERG (1), LALO (2), SACR (1), TUSW (1)
2-3a	LALO (3)		TUSW (1)
2-3b		HOLA (1), LALO (1)	CANG (1), HERG (1), HOLA (1), LESA (1)
2-4a	LALO (1)		
2-4b		HOLA (3), LALO (1), SAVS (1)	CANG (3), LALO (1)
2-5a			
2-5b	HOLA (3)	HOLA (1), LALO (1), SAVS (1)	CANG (1), HERG (3), HOLA (1), REDP (1)
2-6a	HOLA (1), LALO (1)		
2-6b	HOLA (1)	HOLA (1), LALO (1)	CANG (1), LALO (3)
2-7 (2-13)a	HOLA (1), GWFG (3), SAVS (1)	CANG (1), SACR (1)	
2-7 (2-13)b	HOLA (1)	COLO (1), HOLA (3), REDP (1), SAVS (1)	CANG (3), LALO (2)
2-8a			
2-8b	HOLA (1)	HERG (1), HOLA (1), LALO (2)	CACG (2), HOLA (1), LALO (2), LTDU (1), SACR (3)
2-9a			SACR (2)
2-9b	HOLA (2), LALO (1), REDP (1)	HOLA (2)	CACG (2), LALO (1), LTDU (1), PALO (1), SACR (1), SAVS (1)

Table 4.5: Continued.

Transect & Count #	Distance from Count (m)		
	0-50	50-100	>100 (Incidentals)
Transect #2			
2-10a			CANG (1), SACR (2)
2-10b	HOLA (2)	HOLA (2), LALO (2)	CACG (2), GWFG (2), HOLA (1), LALO (2), SACR (1)
2-11a		LALO (1)	
2-11b	LALO (1)	CACG (2), HOLA (1), LALO (1), LESA (1)	CACG (1), HOLA (1), LALO (2), LTDU (2), SACR (2), SAVS (1)
2-12a	LALO (1)	GWFG (4)	
2-12b	HOLA (1)	HOLA (1), LALO (1)	CACG (2), HERG (1), HOLA (1), LALO (2), LTDU (2)
Transect #3			
3-1a		CANG (1), HOLA (1)	
3-1b	HOLA (1)	HOLA (1), LALO (1), REDP (1)	CANG (1), HOLA (1), PALO (1), SACR (1)
3-2a	HOLA (1)		HERG (1)
3-2b		AMPI (1)	HERG (2)
3-3a	LALO (1), SAVS (1)	CANG (1), PALO (1 fo)	CANG (1), HOLA (1)
3-3b	HOLA (1), SAVS (1)	LALO (1)	CANG (4), HERG (1), SAVS (1)
3-4a	HOLA (1)		SACR (1)
3-4b	CANG (2)	HOLA (1), LALO (1)	HERG (1), HOLA (1), LALO (1)
3-5a	HERG (1)	HOLA (1)	
3-5b	LALO (1)	CANG (3), HOLA (2), LALO (1), SAVS (1)	HOLA (1), LALO (1), SACR (1)
3-6a	HOLA (1)		
3-6b	HOLA (1), REDP (1)	HOLA (1), LALO (1), SACR (1), SAVS (1)	CANG (5), COLO (1), LALO (1)
3-7 (3-13)a	CANG (1)		SACR (2)
3-7 (3-13)b		HOLA (1), LALO (1)	CANG (4), HERG (2), NOPI (2), SACR (2)
3-8a	HOLA (2)		
3-8b	HOLA (1)	HERG (1), HOLA (2), LALO (1), SAVS (1)	
3-9a		CANG (4), HOLA (1)	
3-9b		HOLA (1), LALO (1), SAVS (1)	CANG (1)
3-10a	HOLA (1)	LALO (1)	CANG (1)
3-10b	HOLA (2), LALO (1), SAVS (1)	CANG (1), HOLA (1), LALO (1)	HERG (2), HOLA (1)
3-11a	HOLA (1)	LALO (1)	
3-11b	SAVS (2)	HOLA (1), LALO (1), SACR (1)	CANG (2), LALO (1)

Table 4.5: Continued.

Transect & Count #	Distance from Count (m)		
	0-50	50-100	>100 (Incidentals)
Transect #3			
3-12a	LALO (1)	CANG (1), HOLA (1)	HERG (2), SACR (1)
3-12b	HOLA (1)		CANG (2), HERG (2), HOLA (1), SACR (1), SAVS (1)
Transect #4			
4-1	HOLA (1), LALO (1)	HOLA (1)	HERG (1), PALO (1)
4-2	HERG (1)	CANG (1)	
4-3	CANG (23)	HOLA (1)	CANG (1)
4-4	CANG (12)	HOLA (1)	CANG (1)
4-5	HOLA (1), WCSP (1)		
4-6a			HERG (1)
4-6b	HOLA (1)		CANG (2)
4-7 (4-13)			
4-8			LTDU (1)
4-9	SAVS (1)		
4-10		HERG (1), LALO (1)	HERG (1 adult incubating)
4-11		CANG (2), SAVS (1)	
4-12		LALO (1)	
Transect #5			
5-1			SACR (1)
5-2	SEPL (1)		
5-3	CORE (1)	HOLA (1), LALO (1)	
5-4	SAVS (1)	CANG (5)	
5-5	CORE (1), SAVS (1)		CANG (4)
5-6	LALO (1)	LALO (1)	
5-7 (5-13)		LALO (1)	
5-8			LTDU (2)
5-9			CANG (1 adult incubating)
5-10	CORE (2)	CANG (1 adult incubating), LTDU (2)	
5-11		LALO (1), SACR (2)	
5-12	LALO (1)	CANG (4; 2 pairs)	LTDU (1)
Transect #6			
6-1	HOLA (1)		
6-2	SEPL (1)		
6-3			CANG (11)
6-4		HOLA (1)	

Table 4.5: Continued.

Transect & Count #	Distance from Count (m)		
	0-50	50-100	>100 (Incidentals)
Transect #6			
6-5		HOLA (1)	CANG (12)
6-6		CANG (10)	
6-7	HOLA (1)	LALO (1)	PALO (2)
6-8	HOLA (1), SEPL (1)	HOLA (1)	
6-9	HOLA (1), SEPL (1)	CORE (1)	
6-10		CORE (1)	
6-11	AMPI (1)	LALO (1)	CANG (35)
6-12	LALO (1)	LTDU (2)	TUSW (1)

[1] **Bird Codes**: AMPI (American Pipit), CACG (Cackling Goose), CANG (Canada Goose), COLO (Common Loon), CORA (Common Raven), CORE (Common Redpoll), GRSC (Greater Scaup), GWFG (Greater White-fronted Goose), HOLA (Horned Lark), LESA (Least Sandpiper), LALO (Lapland Longspur), HERG (Herring Gull), LALO (Lapland Longspur), LTDU (Long-tailed Duck), NOPI (Northern Pintail), PALO (Pacific Loon), REDP (Redpoll sp.), RTLO (Red-throated Loon), SACR (Sandhill Crane), SAVS (Savannah Sparrow), SEPL (Semipalmated Plover), SESA (Semipalmated Sandpiper), TUSW (Tundra Swan), WCSP (White-crowned Sparrow)

4.4 PRE-CLEARANCE BIRD NEST SURVEYS

Pre-clearance surveys were conducted between May 23rd and August 13th, 2024, when mine activities required. A total of 54 pre-clearance bird nest sweeps were completed with one (1) instance of active nests or nesting activities recorded (**Appendix IX**).

All mitigation measures implemented for active nesting were modeled after the TEMMP guidelines, including marking setback distances with stakes, reducing traffic speed, managing dust, performing low-impact monitoring, and suspending operations or use of materials/equipment as necessary (Agnico Eagle 2022).

SECTION 5 • RECOMMENDATIONS

PRISM plots surveys, waterbird shoreline surveys, and pre-clearance bird nest surveys will continue during the summer of 2025, subject to environmental constraints including severe weather and caribou movements. Bird transect and point counts will next be surveyed in 2027.

SECTION 6 • LITERATURE CITED

Agnico Eagle. 2022. Terrestrial Environment Management and Monitoring Plan. Version 4, 2022.

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Environment and Climate Change Canada (ECCC). 2024. URL: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html

Rausch, J. unknown date. Arctic Shorebird Monitoring (Arctic PRISM). Unpublished document prepared by Canadian Wildlife Service.

Rausch, J., and Clyde, N. 2022. Arctic PRISM Survey Details – For Agnico Eagle Crews at Meliadine (part of Arctic PRISM Region 6.4). Unpublished report prepared by the Canadian Wildlife Service for Agnico Eagle Mines, Meliadine Division.

APPENDIX I

PRISM Plot Survey Protocols for the Meliadine Gold Project

ARCTIC PRISM SURVEY DETAILS – FOR AGNICO EAGLE CREWS AT MELIADINE

(part of Arctic PRISM Region 6.4)

Canadian Wildlife Service, J. Rausch/Nik Clyde, April 2022

PLOT SELECTION LOGISTICS

Attached below are the selected plots packages (PDF). Each dot on the overview map represents a PLOT (instead of a ZONE as in previous years). The plots selected for this site are a mix of repeat surveys of previous plots and new plots. We have chosen this method to attempt to gain more accurate information on trends for most of the partner surveys. This information will be paired with results from the larger PRISM surveys to better inform shorebird population and trend estimates.

The plan is to survey 48 plots over the next 10 years.

Rather than survey plots completely at random (as in previous years), we have assigned priorities to the plots provided as part of this package (see table below for priority ranking).

Plots should still be chosen at random within the same priority level. Please do not subdivide the PRISM study area into directional quadrats where 1 quadrat per field season is surveyed, or in numerical order (b/c the numerical order assignment is not random). Just randomly choose from all available plots (within a given priority level) based on which direction the weather is the best in, or in later years, areas or distances from camp that haven't been done yet.

If a plot is not surveyable for some reason (snow cover, bear on plot, etc.) it should be attempted again in future years until all plots have been completed.

In the case where only a section of the plot is un-surveyable you could still survey the portion of the plot that is surveyable, mark how much of the plot was actually surveyed (% of total plot area surveyed) and indicate percent of plot that was surveyed on page 1 on Plot Survey Summary Form

The 'Plot Survey' section of the Plot Survey Summary Form must still be completed for an un-surveyable plot, indicating Site, plot name, Surveyors, date, % area surveyed = 0% and reason the survey was not surveyed. Indicate the reason the plot was not surveyed with details (e.g. percent snow cover, estimate of cliff height or plot steepness/slope, river width/depth, etc.).

Plot Assignments and Priority Rankings

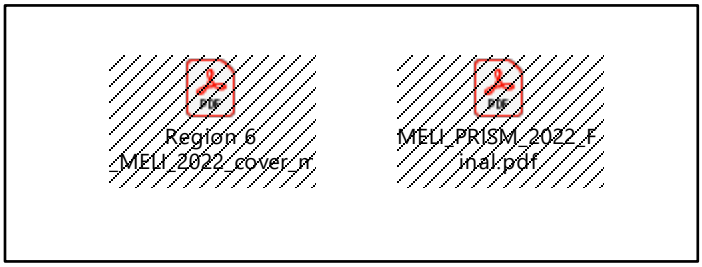
Plot	Priority	Old/New	Included?	Plot	Priority	Old/New	Included?
MELI-IND1	High	Old	Yes	MELI-108	Medium	New	No
MELI-IND10	High	Old	Yes	MELI-111	Medium	New	No
MELI-IND11	High	Old	Yes	MELI-126	Medium	New	No
MELI-IND12	High	Old	Yes	MELI-122	Medium	New	No
MELI-IND13	High	Old	Yes	MELI-127	Medium	New	No
MELI-IND14	High	Old	Yes	MELI-107	Medium	New	No
MELI-IND15	High	Old	Yes	MELI-119	Medium	New	No
MELI-IND16	High	Old	Yes	MELI-131	Medium	New	No
MELI-IND2	High	Old	Yes	MELI-120	Medium	New	No
MELI-IND3	High	Old	Yes	MELI-124	Medium	New	No
MELI-IND4	High	Old	Yes	MELI-112	Medium	New	No
MELI-IND5	High	Old	Yes	MELI-129	Medium	New	No
MELI-IND6	High	Old	Yes	MELI-103	Medium	New	No
MELI-IND7	High	Old	Yes	MELI-115	Medium	New	No
MELI-IND8	High	Old	Yes	MELI-123	Medium	New	No
MELI-IND9	High	Old	Yes	MELI-116	Medium	New	No
MELI-130	Medium	New	No	MELI-101	Medium	New	No
MELI-102	Medium	New	No	MELI-132	Medium	New	No
MELI-109	Medium	New	No	MELI-118	Medium	New	No
MELI-117	Medium	New	No	MELI-121	Medium	New	No
MELI-110	Medium	New	No	MELI-125	Medium	New	No
MELI-113	Medium	New	No	MELI-106	Medium	New	No
MELI-114	Medium	New	No	MELI-104	Medium	New	No
MELI-128	Medium	New	No	MELI-105	Medium	New	No

**note that only the old repeated plots are included in this package. These are the highest priority so should be surveyed first. We will send an updated package with new plots once they are complete.*

PLOT SELECTION PACKAGES (PDF)

In the attached selected plots package, there are two sections:

- Overview map of selected PLOTS
    - Provides an overview of the selected plots.
    - Shows the location of the southwest corner of each plot.
- Plot maps
    - Each plot has a map, which shows the general location of the plot to be surveyed.
    - The coordinates of the southwest corner for each plot is given on the plot maps for convenience.



SURVEY METHODS & DATASHEETS & DATA ENTRY TEMPLATE

The attached Word document has the survey methods as well as the datasheets.

The datasheets should be completed on site (before you leave the plot); this is especially important for the habitat datasheet. The habitat datasheet should be completed at the end of the plot so you have seen the whole plot before completing it (rather than at the beginning of the plot when you have not yet covered it). There is a landform sample guide to help with completing the habitat datasheet.

Survey Methods & Datasheets Package



Arctic PRISM -
General Instructions fo

After the field season, please send me legible scans of all the datasheets and the photograph(s) from each plot. If you don't want to keep the originals, you can mail them to me for archiving. If you would like to keep the originals, the scans will suffice.

DATA ENTRY TEMPLATE – NEW FOR 2022 SEASON

In order to standardize data entry we are asking participants to enter data directly into the new excel data entry template included in your package. This template was designed to help simplify the data entry process and has many automated features we hope will make this process easier to accomplish, including pre-filled fields, dropdown menus, and detailed explanations of each column. There is also a README file on the first tab with detailed information on the functions of the data entry template, including tips for troubleshooting any issues. The spreadsheet and new data entry forms have been designed together, so the terminology should be consistent across each and it should hopefully be clear which section of the data entry template corresponds with specific sections of the new field data sheets.

Any feedback on ways we can improve this new tool are welcomed and appreciated.



PRISM_Rapid_Survey_
Data_Entry_Template_

SURVEY EQUIPMENT LIST

The below equipment are required for the surveys. A description of what it is used for is included; it probably makes more sense after you've read through the methods document. ☺

- Binoculars (n=4, 1 pair per person)
- Field notebook or clipboard with datasheets (n=2, 1 per team lead for each 2-person team)
    - Only the team leader (western most person) needs to record, the partner calls out birds to the team leader
- GPS set in UTM (NAD 83) and True North (n=2-4, 1 per team at least but 1 per person is convenient for when a nest is found)
- Compass with the proper declination set (n=2, 1 per team for the non-lead in each team)
- Tall survey stakes with long flagging tape streamers (n=8, 4 per team with 2 stakes of 2 colours per team – bring a few spares in the heli in case a pole snaps – we use skinny bamboo garden stakes)

USING THE STAKES/COMPASS/GPS #gettingstarted

To get started on the plot, and marking with stakes:

1. The team leader starts in the SW corner, throws a point 400m north and uses GPS to go to it; partner walks due east (using compass) of the leader 25 m and drops a glove.
2. Partner walks a further 25m due east of leader and plants a stake of colour 1. This will be the leader's guidance post on the next southbound pass.
3. The partner continues another 25m and plants a stake of colour 2, this will become the partner's guidance post on the next southbound pass.
4. The partner returns to their glove (back 50m) and the pair heads north using the leader's GPS and the partner maintains a distance of 25m from the leader until they reach the north border of the plot.
5. At the north edge of the plot, the partner uses compass to find due east and walks 25m, this becomes the leader's starting position for the next southbound pass. The partner walks another 25 m and drops a glove or something they can return to. This becomes the partner's starting position for the next southbound pass. The partner then walks over 25 m and plants a stake of colour 1, this will become the leader's guidance post on the next northbound pass. The partner continues another 25m and plants a stake of colour 2, this will become the partner's guidance post on the next northbound pass. The partner returns to their glove (back 50m) and the pair heads south to the first set of deployed stakes which are picked up and subsequently deployed in anticipation of the next southbound pass.
6. Repeat until 3 return passes (3 northbound and 3 southbound) have been completed.

Note: on the first pass north, the leader is only looking 12.5m eastward into the plot. On the last pass south, the partner is looking 25m eastward.

Another option is to not use the stakes and have both people use their GPS and know what easting they should be on; however this often results in people spending too much time looking at their GPS screens, and not enough time scanning the landscape for birds, so the stake method is preferred.

PHOTOGRAPHS (PLOTS & NESTS)

Take a photo of the plot from any of the 4 corners looking in to the plot (1 photo per plot is fine), and record what corner the photo was taken from.

When the photos are downloaded (back at the office or camp), please label the photos using the below (or a similar) convention:

- PLOT PHOTOS:
  - Plot_AAA-XXA_twolettercodeforplotcornerphotowastakenfrom_RegionX_YEAR_PhotographerFirstnameLastname.JPG
    - e.g.:
      - Plot_IGL-154D_SW_Region5_2016_JennieRausch.JPG
      - Plot_KUG-99A_NW_Region5_2016_LisaPirieDominix.JPG
  - If there is more than one photo from a plot, and it was from the same direction/corner, add numbers behind direction in brackets.
    - e.g.
      - Plot_AAA-XXXA_twolettercodeforplotcornerphotowastakenfrom(1)_RegionX_YEAR_FirstnameLastname.JPG
      - Plot_AAA-XXXA_twolettercodeforplotcornerphotowastakenfrom(2)_RegionX_YEAR_FirstnameLastname.JPG
      - Plot_AAA-XXXA_twolettercodeforplotcornerphotowastakenfrom(3)_RegionX_YEAR_FirstnameLastname.JPG
  - If the photos were taken from different corners, then they will have different file names already so no need to number.
    - e.g.
      - Plot_AAA-XXXA_SE_RegionX_YEAR_FirstnameLastname.JPG
      - Plot_AAA-XXXA_SW_RegionX_YEAR_FirstnameLastname.JPG

- NEST PHOTOS:
  - NestID_4letterspeciescode_RegionX_YEAR_PhotographerFirstnameLastname.JPG
    - e.g.
      - JJP-01_LALO_Region5_2016_LisaPirieDominix.JPG

- If there is more than one photo from a nest, add numbers behind the 4 letter species code in brackets.
    - e.g.
        - LPD-08_AMPI(1)_ Region5_2016_LisaPirieDominix.JPG
        - LPD-08_AMPI(2)_ Region5_2016_LisaPirieDominix.JPG
        - LPD-08_AMPI(3)_ Region5_2016_LisaPirieDominix.JPG

QUESTIONS FOR {2022} FIELD SEASON

If you have questions or run into any problems while completing the surveys and want to talk to Nik (acting for Jennie) during:

- Up to {11 June}: email (nik.clyde@ec.gc.ca) or call me on my cell phone at 604-356-8226.

- {12 June – 08 July}:
    - The best method would be to leave a message for me with the PCSP Base Managers (**867-252-3872**) with your number and a time to call. We talk to PCSP every night ~6:30pm Central time.

- {09 July - September}: email (nik.clyde@ec.gc.ca) or call me on my cell phone at 604-356-8226.

Thanks for participating in the Arctic PRISM!

Our partners are an important and valued part of our program! ☺

APPENDIX II

Bird Transect and Plot Coordinates for the Meliadine Gold Project

Transect & Point #	UTM Zone	Point X	Point Y
1-01	15V	539980	6988148
1-03	15V	540528	6988065
1-04	15V	540907	6988008
1-05	15V	541072	6987984
1-06	15V	541237	6987959
1-08	15V	541356	6987982
1-09	15V	541427	6988052
1-10	15V	541498	6988123
1-11	15V	541675	6988299
1-12	15V	541853	6988475
1-14	15V	542201	6988480
1-15	15V	540226	6988032
2-01	15V	540087	6987829
2-02	15V	540460	6987748
2-03	15V	540910	6987650
2-04	15V	541258	6987572
2-05	15V	541358	6987550
2-06	15V	541457	6987528
2-08	15V	541557	6987526
2-09	15V	541658	6987546
2-10	15V	541758	6987565
2-11	15V	542010	6987613
2-12	15V	542261	6987661
2-13	15V	542510	6987709
3-01	15V	540121	6986568
3-02	15V	540414	6986620
3-03	15V	540661	6986663
3-04	15V	540911	6986707
3-05	15V	541012	6986725
3-06	15V	541115	6986743
3-08	15V	541217	6986739
3-09	15V	541313	6986713
3-10	15V	541434	6986681
3-11	15V	541758	6986594
3-12	15V	542033	6986520
3-13	15V	542293	6986451

Transect & Point #	UTM Zone	Point X	Point Y
4-02	15V	542000	6984084
4-03	15V	542200	6984238
4-04	15V	542401	6984393
4-05	15V	542481	6984454
4-06	15V	542562	6984516
4-08	15V	542647	6984573
4-09	15V	542737	6984625
4-10	15V	542834	6984681
4-11	15V	543078	6984930
4-12	15V	543155	6985171
4-13	15V	543231	6985411
4-14	15V	541764	6983982
5-01	15V	543200	6982247
5-02	15V	543414	6982377
5-03	15V	543627	6982507
5-04	15V	543841	6982637
5-05	15V	543926	6982689
5-06	15V	544012	6982741
5-08	15V	544104	6982782
5-09	15V	544202	6982812
5-10	15V	544301	6982843
5-11	15V	544547	6982919
5-12	15V	544793	6982996
5-13	15V	545039	6983072
6-01	15V	544968	6979943
6-02	15V	545107	6980151
6-03	15V	545246	6980359
6-04	15V	545384	6980567
6-05	15V	545440	6980651
6-06	15V	545495	6980734
6-08	15V	545551	6980817
6-09	15V	545606	6980900
6-10	15V	545662	6980984
6-11	15V	545800	6981192
6-12	15V	545939	6981400
6-13	15V	546078	6981608

APPENDIX III

Fieldwork Details for the Meliadine Gold Mine PRISM Plots (Non-Standard and Standard) in 2024

Plot (MEL)	Date	Time	Weather	Observers[1]
Non-Standard (NS)				
MEL-IND01 NS	June 29	06:26 to 08:10	10ºC, mostly cloudy, no precipitation, fresh breeze	DW, NG
MEL-IND02 NS	June 29	08:30 to 10:00	10ºC, mostly cloudy, no precipitation, fresh breeze	DW, NG
MEL-IND04 NS	June 28	13:30 to 14:40	14ºC, mainly clear, no precipitation, gentle breeze	LQ, TP
MEL-IND05 NS	June 28	14:55 to 15:55	14ºC, mainly clear, no precipitation, moderate breeze	LQ, TP
MEL-IND06 NS	June 29	08:45 to 09:40	13ºC, mostly cloudy, no precipitation, fresh breeze	LQ, TP
MEL-IND08 NS	June 29	06:26 to 07:44	9ºC, mostly cloudy, no precipitation, fresh breeze	LQ, TP
MEL-IND11 NS	June 28	06:13 to 07:24	10ºC, mainly clear, no precipitation, gentle breeze	DW, LQ, NG, TP
MEL-IND12 NS	June 28	08:50 to 10:10	14ºC, mainly clear, no precipitation, gentle breeze	LQ, TP
MEL-IND13 NS	June 27	14:03 to 14:55	10ºC, mostly cloudy, no precipitation, light breeze	DW, LQ
MEL-IND14 NS	June 28	09:13 to 10:16	~14ºC, mainly clear, no precipitation, gentle breeze	DW, NG
MEL-IND15 NS	June 28	10:40 to 12:30	12ºC, mainly clear, no precipitation, moderate breeze	DW, NG
MEL-IND16 NS	June 28	14:09 to 15:37	13ºC, mostly cloudy, no precipitation, gentle breeze	DW, NG
Standard (S)				
MEL-IND01 S	June 23	06:50 to 08:10	~9ºC, mainly clear, no precipitation, gentle breeze	DW, LQ
MEL-IND02 S	June 23	08:40 to 09:45	10ºC, mainly clear, no precipitation, gentle breeze	DW, LQ
MEL-IND04 S	June 25	06:25 to 08:00	11ºC, mostly cloudy, no precipitation, light breeze	DW, LQ
MEL-IND05 S	June 24	06:50 to 08:20	7ºC, mainly clear, no precipitation, gentle breeze	DW, LQ
MEL-IND06 S	June 25	08:50 to 10:10	11ºC, mostly cloudy, no precipitation, gentle breeze	DW, LQ
MEL-IND08 S	June 25	12:10 to 12:55	12ºC, mainly clear, no precipitation, gentle breeze	DW, LQ
MEL-IND11 S	June 23	13:10 to 14:25	11ºC, mostly cloudy, no precipitation, moderate breeze	DW, LQ
MEL-IND12 S	June 23	15:00 to 16:05	11ºC, mainly clear, no precipitation, fresh breeze	DW, LQ
MEL-IND13 S	June 24	09:55 to 11:05	10ºC, mainly clear, no precipitation, moderate breeze	DW, LQ
MEL-IND14 S	June 26	08:10 to 09:40	9ºC, cloudy, no precipitation, gentle breeze	DW, LQ
MEL-IND15 S	June 26	10:00 to 11:10	10ºC, cloudy, no precipitation, gentle breeze	DW, LQ
MEL-IND16 S	June 25	14:10 to 15:10	12ºC, mainly clear, no precipitation, gentle breeze	DW, LQ

[1] DW = Dylan White; LQ = Lars Qaqqaq; NG = Nicholas Gebauer; TP = Tom Plath

APPENDIX IV

Summary of Bird Nests Observed on Non-Standard and Standard PRISM Plots at the Meliadine Site in 2024

NEST INFORMATION – All Species **Site** Meliadine **Year** 2024

Plot Association (NS = Non-Standard) (S = Standard)		Nest ID	Date *dd/mm/yyyy*	Time *24hr format*	UTM Coordinates NAD83	Observer(s) *3-letter Initials*	Species *4-letter code*	# of Egg	# of Chick	Flush distance *(m)*		Nest Concealm't *% cover to nearest 5%*
plot ID MEL-IND 04 NS Location X inside ☐outside	☐ no plot	MEL-IND 04 Non-Standard_SEPL_Region6.4_2024_TomPlath	28/06/2024	13:57	Zone 15V 5 3 7 7 9 4 E 6 9 9 1 6 6 2 N	TP	SEPL	4		ND	Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photo 1					Comments						
plot ID MEL-IND 05 NS Location ☐ inside X outside	☐ no plot	MEL-IND 05 Non-Standard_LESA_Region6.4_2024_TomPlath	28/06/2024	15:49	Zone 15V 5 3 8 2 5 7 E 6 9 9 0 8 6 3 N	TP	LESA	4		ND	Or: ☐ nest not disturbed ☐ flush not seen	5
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photo 1					Comments						
plot ID MEL-IND 06 S Location X inside ☐outside	☐ no plot	MEL-IND 06 Standard_CANG_Region6.4_2024_DylanWhite	25/06/2024	09:39	Zone 15V 5 4 0 2 6 4 E 6 9 9 0 1 0 3 N	DW	CANG	~4		ND	Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photos 1 to 5					Comments						
plot ID MEL-IND 08 NS Location X inside ☐ outside	☐ no plot	MEL-IND 08 Non-Standard_HOLA_Region6.4_2024_TomPlath	29/06/2024	07:18	Zone 15V 5 4 0 9 8 1 E 6 9 8 9 2 3 3 N	TP	HOLA	4		ND	Or: ☐ nest not disturbed ☐ flush not seen	5
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photo 1					Comments						
plot ID MEL-IND 08 S Location ☐ inside X outside	☐ no plot	MEL-IND 08 Standard_SACR_Region6.4_2024_DylanWhite	25/06/2024	12:12	Zone 15V 5 4 1 5 7 8 E 6 9 8 8 9 8 5 N	DW	SACR	2		ND	Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photos 1 to 5					Comments						
plot ID MEL-IND 11 NS Location X inside ☐outside	☐ no plot	MEL-IND 11 Non-Standard_HOLA_Region6.4_2024_DylanWhite	28/06/2024	06:45	Zone 15V 5 4 2 4 8 5 E 6 9 8 4 3 6 8 N	DW	HOLA		4	ND	Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photos 1 to 2					Comments						
plot ID MEL-IND 12 NS Location X inside ☐outside	☐ no plot	MEL-IND 12 Non-Standard_CANG_Region6.4_2024_TomPlath	28/06/2024	09:28	Zone 15V 5 4 2 0 9 0 E 6 9 8 4 2 3 7 N	TP	CANG			ND	Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID See Nest ID	Photo # (to track photos until they can be relabeled post-season) See Nest ID – Photo 1					Comments Incubating						

Plot Association (NS = Non-Standard) (S = Standard)	Nest ID	Date *dd/mm/yyyy*	Time *24hr format*	UTM Coordinates NAD83	Observer(s) *3-letter Initials*	Species *4-letter code*	# of Egg	# of Chick	Flush distance *(m)*	Nest Concealm't *% cover to nearest 5%*
plot ID MEL-IND 14 NS ☐ no plot Location ☐ inside X outside	MEL-IND 14 Non-Standard_CANG_Region6.4_2024_DylanWhite	28/06/2024	09:45	Zone 15V 5388688E 6987667N	DW	CANG	2		ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photo 1	Photo # (to track photos until they can be relabeled post-season)				Comments					
plot ID MEL-IND 15 NS ☐ no plot Location X inside ☐ outside	MEL-IND 15 Non-Standard_CANG Nest1_Region6.4_2024_DylanWhite	28/06/2024	11:15	Zone 15V 5393037E 6987763N	DW	CANG			ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photos 1 to 2	Photo # (to track photos until they can be relabeled post-season)				Comments: Incubating					
plot ID MEL-IND 15 NS ☐ no plot Location X inside ☐outside	MEL-IND 15 Non-Standard_CANG Nest2_Region6.4_2024_DylanWhite	28/06/2024	11:45	Zone 15V 5393793E 6987703N	DW	CANG	4		ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photos 1 to 2	Photo # (to track photos until they can be relabeled post-season)				Comments					
plot ID MEL-IND 16 NS ☐ no plot Location X inside ☐ outside	MEL-IND 16 Non-Standard_SEPL_Region6.4_2024_DylanWhite	28/06/2024	15:09	Zone 15V 5403000E 6987779N	DW	SEPL	4		ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photos 1 to 7	Photo # (to track photos until they can be relabeled post-season)				Comments					
plot ID MEL-IND 16 NS ☐ no plot Location ☐ inside X outside	MEL-IND 16 Non-Standard_SACR_Region6.4_2024_DylanWhite	28/06/2024	15:00	Zone 15V 5403266E 6987517N	DW	SACR	3		ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photos 1 to 3	Photo # (to track photos until they can be relabeled post-season)				Comments					
plot ID MEL-IND 12 S ☐ no plot Location X inside ☐ outside	MEL-IND 12 Standard_CANG_Region6.4_2024_DylanWhite	23/06/2024	15:13	Zone 15V 5420520E 6984242N	DW	CANG			ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photo 1	Photo # (to track photos until they can be relabeled post-season)				Comments: **Incubating**					
plot ID MEL-IND 14 S ☐ no plot Location ☐ inside X outside	MEL-IND 14 Standard_CANG_Region6.4_2024_DylanWhite	26/06/2024	09:20	Zone 15V 5388644E 6987252N	DW	CANG			ND Or: ☐ nest not disturbed ☐ flush not seen	0
Camera ID / See Nest ID: See Nest ID – Photos 1 to 2	Photo # (to track photos until they can be relabeled post-season)				Comments: I					

NEST INFORMATION – All Species **Site** Meliadine **Year** 2024

Plot Association (NS = Non-Standard) (S = Standard)	Nest ID	Date *dd/mm/yyyy*	Time *24hr format*	UTM Coordinates NAD83	Observer(s) *3-letter Initials*	Species *4-letter code*	# of Egg	# of Chick	Flush distance *(m)*	Nest Concealm't *% cover to nearest 5%*
plot ID: MEL-IND 14 S; ☐ no plot; Location: X inside ☐ outside	MEL-IND 14 Standard_LALO_Region6.4_2024_DylanWhite	26/06/2024	08:27	Zone 15V: 5 3 8 6 3 4 E / 6 9 8 7 7 0 8 N	DW	LALO		3	ND; Or: ☐ nest not disturbed ☐ flush not seen	10
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season): See Nest ID – Photos 1 to 4										Comments:
plot ID: MEL-IND 14 S; ☐ no plot; Location: X inside ☐ outside	MEL-IND 14 Standard_NOPI_Region6.4_2024_DylanWhite	26/06/2024	08:50	Zone 15V: 5 3 8 7 1 6 E / 6 9 8 7 6 3 2 N	DW	NOPI	2		ND; Or: ☐ nest not disturbed ☐ flush not seen	25
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season): See Nest ID – Photos 1 to 2										Comments: Incubating
plot ID: ; ☐ no plot; Location: ☐ inside ☐outside				Zone 15V: E / N					Or: ☐ nest not disturbed ☐ flush not seen	
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season):										Comments:
plot ID: ; ☐ no plot; Location: ☐ inside ☐ outside				Zone 15V: E / N					Or: ☐ nest not disturbed ☐ flush not seen	
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season):										Comments:
plot ID: ; ☐ no plot; Location: ☐ inside ☐ outside				Zone 15V: E / N					Or: ☐ nest not disturbed ☐ flush not seen	
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season):										Comments:
plot ID: ; ☐ no plot; Location: ☐ inside ☐ outside				Zone 15V: E / N					Or: ☐ nest not disturbed ☐ flush not seen	
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season):										Comments: **Incubating**
plot ID: ; ☐ no plot; Location: ☐ inside ☐ outside				Zone 15V: E / N					Or: ☐ nest not disturbed ☐ flush not seen	
Camera ID: See Nest ID; Photo # (to track photos until they can be relabeled post-season): S										Comments: I

APPENDIX V

Fieldwork Dates and Time, Weather, and Observers for the Meliadine Gold Mine Project Waterbird Shoreline Surveys in 2024

Appendix V

Wetland #	Date (2024)	Time	Weather	Observers[1]
1	24 June	09:33 to 10:12	7ºC, mainly clear, moderate breeze (N)	TP & NG
3	24 June	07:42 to 07:50	6ºC, clear, gentle breeze (N)	TP & NG
4	25 June	06:58 to 07:11	8ºC, mainly clear, light breeze (N)	TP & NG
10	23 June	06:58 to 07:09	5ºC, clear, gentle breeze (SE)	TP & NG
16	25 June	07:26 to 09:23	8ºC, mainly clear, gentle breeze (N)	TP & NG
17	25 June	10:45 to 12:32	6ºC, mosly cloudy, gentle breeze (N)	TP & NG
22	27 June	08:04 to 08:29	5ºC, mainly clear, moderate breeze (NW)	TP & NG
23	27 June	07:03 to 07:47	4ºC, mostly cloudy, moderate breeze (NE)	TP & NG
38 (& 146)	30 June	09:11 to 09:18	14ºC, clear, light breeze (NE)	TP & NG
39 (& 148, 159)	30 June	06:19 to 06:22	9ºC, clear, gentle breeze (NE)	TP & NG
41 (& 264, 265)	30 June	07:40 to 07:42	11ºC, clear, light breeze (NE)	TP & NG
44 (& 163)	30 June	08:51 to 08:52	14ºC, clear, light breeze (NE)	TP & NG
45 (& 162, 164)	01 July	10:43 to 11:00	14ºC, clear, gentle breeze (NW)	TP & NG
46 (& 165)	01 July	10:21 to 10:30	14ºC, clear, gentle breeze (NW)	TP & NG
47 (& 170)	01 July	10:03 to 10:06	12ºC, clear, gentle breeze (NW)	TP & NG
56 (& 193)	01 July	09:06 to 09:08	12ºC, clear, gentle breeze (NW)	TP & NG
59 (& 200)	01 July	07:43 to 7:50	11ºC, clear, light breeze (NW)	LQ & DW
60 (& 201)	01 July	07:27 to 07:34	11ºC, clear, light breeze (NW)	LQ & DW
61 (& 202)	01 July	07:36 to 07:40	11ºC, clear, light breeze (NW)	LQ & DW
63 (& 204)	01 July	07:09 to 07:10	10ºC, clear, light breeze (NW)	LQ & DW
65 (& 222)	30 June	13:05 to 13:08	11ºC, mainly clear, gentle breeze (NE)	TP & NG
68 (& 238)	30 June	13:41 to 13:49	11ºC, mostly cloudy, gentle breeze (NE)	TP & NG
73	24 June	08:08 to 08:18	6ºC, clear, moderate breeze (N)	TP & NG
75	25 June	13:45 to 13:52	8ºC, mainly clear, moderate breeze (N)	TP & NG
76	25 June	13:00 to 13:08	8ºC, mainly clear, gentle breeze (N)	TP & NG
77	25 June	12:35 to 12:35	8ºC, mainly clear, gentle breeze (N)	TP & NG
78	25 June	12:30 to 12:30	8ºC, mainly clear, gentle breeze (N)	TP & NG
79	25 June	12:48 to 12:51	8ºC, mainly clear, gentle breeze (N)	TP & NG
80	27 June	10:22 to 10:22	7ºC, mostly cloudy, moderate breeze (NW)	TP & NG
81	27 June	10:24 to 10:24	7ºC, mostly cloudy, moderate breeze (NW)	TP & NG
84	23 June	14:10 to 14:24	7ºC, mostly cloudy, moderate breeze (N)	TP & NG
85	24 June	06:56 to 07:15	6ºC, clear, moderate breeze (N)	TP & NG
86	26 June	10:08 to 10:12	7ºC, cloudy, moderate breeze (NW)	TP & NG
87	26 June	09:57 to 10:02	7ºC, cloudy, moderate breeze (NW)	TP & NG

Appendix V

Wetland #	Date (2024)	Time	Weather	Observers[1]
88	26 June	09:49 to 09:51	7ºC, cloudy, moderate breeze (NW)	TP & NG
89	26 June	09:40 to 09:45	7ºC, cloudy, moderate breeze (NW)	TP & NG
90	26 June	11:17 to 11:22	6ºC, cloudy, moderate breeze (NW)	TP & NG
91	26 June	11:06 to 11:14	6ºC, cloudy, moderate breeze (NW)	TP & NG
93	24 June	11:30 to 11:30	8ºC, mainly clear, gentle breeze (N)	TP & NG
94	24 June	11:22 to 11:25	8ºC, mainly clear, gentle breeze (N)	TP & NG
95	23 June	14:43 to 14:46	7ºC, mostly cloudy, moderate breeze (N)	TP & NG
96	23 June	14:50 to 14:53	7ºC, mostly cloudy, moderate breeze (N)	TP & NG
97	24 June	11:48 to 11:48	8ºC, mainly clear, gentle breeze (N)	TP & NG
99	24 June	11:56 to 11:56	9ºC, mainly clear, gentle breeze (N)	TP & NG
100	23 June	15:24 to 15:27	7ºC, mostly cloudy, moderate breeze (N)	TP & NG
101	24 June	11:55 to 11:55	9ºC, mainly clear, gentle breeze (N)	TP & NG
102	23 June	14:58 to 15:11	7ºC, mostly cloudy, moderate breeze (N)	TP & NG
104	26 June	08:02 to 09:25	7ºC, cloudy, gentle breeze (NW)	TP & NG
105	26 June	11:38 to 12:00	6ºC, cloudy, moderate breeze (NW)	TP & NG
107	23 June	08:07 to 08:19	6ºC, mainly clear, gentle breeze (SE)	TP & NG
108	23 June	07:52 to 08:02	6ºC, mainly clear, gentle breeze (SE)	TP & NG
109	23 June	07:31 to 07:46	6ºC, clear, gentle breeze (SE)	TP & NG
110	22 June	13:46 to 14:06	12ºC, mainly clear, fresh breeze (NW)	TP & NG
111	23 June	06:27 to 06:47	5ºC, clear, gentle breeze (SE)	TP & NG
112	22 June	14:46 to 15:07	12ºC, mostly cloudy, fresh breeze (NW)	TP & NG
114	23 June	09:23 to 10:39	7ºC, mainly clear, gentle breeze (SE)	TP & NG
115	23 June	11:15 to 11:23	9ºC, mostly cloudy, gentle breeze (N)	TP & NG
118	26 June	14:03 to 14:09	6ºC, cloudy, moderate breeze (NW)	TP & NG
120	27 June	09:47 to 09:56	5ºC, mainly clear, moderate breeze (NE)	TP & NG
121	27 June	09:58 to 10:08	7ºC, mostly cloudy, moderate breeze (NE)	TP & NG
122	26 June	14:37 to 14:47	6ºC, cloudy, moderate breeze (NW)	TP & NG
123	26 June	14:13 to 14:29	6ºC, cloudy, moderate breeze (NW)	TP & NG
124	27 June	11:00 to 11:16	7ºC, mostly cloudy, moderate breeze (NE)	TP & NG
125	27 June	10:48 to 10:55	7ºC, mostly cloudy, moderate breeze (NE)	TP & NG
127	27 June	06:33 to 06:55	3ºC, mostly cloudy, moderate breeze (N)	TP & NG
128	27 June	08:44 to 08:54	5ºC, mainly clear, moderate breeze (NE)	TP & NG
129	27 June	13:48 to 14:24	8ºC, cloudy, moderate breeze (NE)	TP & NG

Appendix V

Wetland #	Date (2024)	Time	Weather	Observers[1]
130	24 June	10:47 to 11:11	10ºC, cloudy, gentle breeze (N)	LQ & DW
131	27 June	16:00 to 16:03	8ºC, mostly cloudy, moderate breeze (NE)	TP & NG
132	27 June	16:11 to 16:14	8ºC, mostly cloudy, moderate breeze (NE)	TP & NG
133	27 June	15:26 to 15:31	8ºC, mostly cloudy, gentle breeze (NE)	TP & NG
134	27 June	15:04 to 15:23	7ºC, cloudy, moderate breeze (NE)	TP & NG
135	27 June	16:21 to 16:23	8ºC, mostly cloudy, moderate breeze (NE)	TP & NG
137 (& 140)	29 June	12:57 to 13:04	18ºC, mainly clear, moderate breeze (N)	TP & NG
138	26 June	14:40 to 14:59	10ºC, cloudy, moderate breeze (NW)	LQ & DW
139	26 June	15:11 to 15:34	10ºC, mostly cloudy, moderate breeze (NW)	LQ & DW
141	29 June	13:48 to 13:51	18ºC, mainly clear, moderate breeze (N)	TP & NG
142 (& 158)	29 June	13:29 to 13:45	18ºC, mainly cloudy, moderate breeze (N)	TP & NG
143	29 June	13:56 to 14:03	18ºC, mainly clear, moderate breeze (N)	TP & NG
145	30 June	08:26 to 08:29	12ºC, clear, light breeze (NE)	TP & NG
147	30 June	09:20 to 09:24	14ºC, clear, light breeze (NE)	TP & NG
149 (& 160)	30 June	06:28 to 06:41	9ºC, clear, light breeze (N)	TP & NG
150 (& 161)	30 June	07:03 to 07:16	10ºC, clear, light breeze (NE)	TP & NG
152	29 June	15:08 to 15:15	20ºC, mostly cloudy, fresh breeze (N)	TP & NG
153	29 June	14:50 to 15:01	20ºC, mostly cloudy, moderate breeze (N)	TP & NG
154	30 June	07:24 to 07:26	10ºC, clear, light breeze (NE)	TP & NG
155 (& 186)	01 July	10:40 to 10:56	21ºC, clear, light breeze (W)	LQ & DW
156	30 June	07:52 to 07:56	12ºC, clear, light breeze (NE)	TP & NG
157	30 June	07:46 to 07:50	11ºC, clear, light breeze (NE)	TP & NG
162 (& 45, 164)	30 June	08:08 to 08:20	12ºC, clear, light breeze (NE)	TP & NG
166	01 July	10:13 to 10:16	14ºC, mainly clear, gentle breeze (NW)	TP & NG
167	01 July	10:17 to 10:19	14ºC, mainly clear, gentle breeze (NW)	TP & NG
168	01 July	10:08 to 10:09	14ºC, mainly clear, gentle breeze (NW)	TP & NG
169	01 July	10:09 to 10:10	14ºC, mainly clear, gentle breeze (NW)	TP & NG
171	01 July	09:47 to 09:53	13ºC, clear, gentle breeze (NW)	TP & NG
172	01 July	11:41 to 11:41	15ºC, clear, gentle breeze (NW)	TP & NG
173	01 July	11:13 to 11:15	14ºC, clear, gentle breeze (NW)	TP & NG
174	01 July	11:12 to 11:13	15ºC, clear, gentle breeze (NW)	TP & NG
175	01 July	09:41 to 09:41	13ºC, clear, gentle breeze (NW)	TP & NG
176	01 July	09:25 to 09:33	14ºC, clear, gentle breeze (NW)	TP & NG
177 (& 179)	01 July	10:40 to 10:56	21ºC, clear, light breeze (W)	LQ & DW

Appendix V

Wetland #	Date (2024)	Time	Weather	Observers[1]
178 (& 180)	01 July	10:57 to 11:25	21ºC, clear, light breeze (W)	LQ & DW
181	01 July	09:58 to 10:09	20ºC, clear, light breeze (W)	LQ & DW
182	19 June	18:16 to 18:27	11ºC, mostly cloudy, moderate breeze (NW)	TP & NG
184	19 June	17:25 to 17:50	11ºC, mostly cloudy, moderate breeze (NW)	TP & NG
185	19 June	17:02 to 17:15	8ºC, mostly cloudy, moderate breeze (N)	TP & NG
188	01 July	08:15 to 08:31	16ºC, clear, light breeze (NW)	LQ & DW
189	01 July	08:34 to 08:39	16ºC, clear, light breeze (NW)	LQ & DW
190	01 July	09:18 to 09:25	19ºC, clear, light breeze (NW)	LQ & DW
191	01 July	08:29 to 08:37	12ºC, clear, gentle breeze (NW)	TP & NG
192	01 July	08:49 to 08:53	11ºC, clear, gentle breeze (NW)	TP & NG
194	01 July	07:37 to 07:48	11ºC, clear, gentle breeze (NW)	TP & NG
195	01 July	08:12 to 08:15	11ºC, clear, gentle breeze (NW)	TP & NG
196	01 July	08:08 to 08:11	11ºC, clear, gentle breeze (NW)	TP & NG
197	01 July	07:54 to 08:06	11ºC, clear, gentle breeze (NW)	TP & NG
198	01 July	06:44 to 06:47	9ºC, clear, light breeze (NW)	TP & NG
199	01 July	07:48 to 07:59	11ºC, clear, gentle breeze (NW)	LQ & DW
205 (& 206)	01 July	07:00 to 07:04	10ºC, clear, light breeze (NW)	TP & NG
207	01 July	06:28 to 06:31	10ºC, clear, light breeze (NW)	LQ & DW
208	01 July	06:54 to 06:55	9ºC, clear, light breeze (NW)	TP & NG
209	01 July	06:23 to 06:25	10ºC, clear, light breeze (NW)	LQ & DW
210	01 July	06:50 to 06:52	9ºC, clear, light breeze (NW)	TP & NG
211	30 June	15:00 to 15:02	16ºC, mainly clear, moderate breeze (E)	TP & NG
212	30 June	14:59 to 14:59	16ºC, mainly clear, moderate breeze (E)	TP & NG
215	30 June	14:55 to 14:58	16ºC, mainly clear, moderate breeze (NE)	TP & NG
216	30 June	14:53 to 14:53	16ºC, mainly clear, moderate breeze (NE)	TP & NG
218	30 June	14:49 to 14:51	16ºC, mainly clear, moderate breeze (NE)	TP & NG
219	30 June	14:46 to 14:48	16ºC, mainly clear, moderate breeze (NE)	TP & NG
220	30 June	11:18 to 11:18	12ºC, mostly cloudy, gentle breeze (NE)	TP & NG
221	30 June	11:29 to 11:31	12ºC, mostly cloudy, gentle breeze (NE)	TP & NG
223	30 June	13:00 to 13:03	11ºC, mainly clear, gentle breeze (NE)	TP & NG
224	30 June	11:05 to 11:27	12ºC, mostly cloudy, gentle breeze (NE)	TP & NG
225 (& 240)	30 June	11:36 to 11:49	11ºC, mostly cloudy, gentle breeze (NE)	TP & NG
226	30 June	13:12 to 13:14	11ºC, mainly clear, gentle breeze (NE)	TP & NG
227	30 June	12:49 to 12:54	11ºC, mainly clear, gentle breeze (NE)	TP & NG

Appendix V

Wetland #	Date (2024)	Time	Weather	Observers[1]
228	30 June	13:18 to 13:24	11ºC, mainly clear, gentle breeze (NE)	TP & NG
229 (& 230)	30 June	12:40 to 12:44	11ºC, mainly clear, gentle breeze (NE)	TP & NG
231 (& 233)	30 June	13:57 to 14:00	11ºC, mainly clear, gentle breeze (NE)	TP & NG
232	30 June	13:54 to 13:55	11ºC, mainly clear, gentle breeze (NE)	TP & NG
234	30 June	14:10 to 14:10	11ºC, mainly clear, gentle breeze (NE)	TP & NG
235 (& 236)	01 July	06:16 to 06:29	9ºC, clear, light breeze (NW)	TP & NG
240 (& 225)	30 June	11:36 to 11:49	11ºC, mostly cloudy, gentle breeze (NE)	TP & NG
241	30 June	09:31 to 09:36	14ºC, clear, light breeze (NE)	TP & NG
242	30 June	10:17 to 10:19	12ºC, mostly cloudy, light breeze (NE)	TP & NG
243	30 June	10:12 to 10:14	15ºC, clear, light breeze (NE)	TP & NG
244	30 June	10:20 to 10:38	12ºC, mostly cloudy, light breeze (NE)	TP & NG
245	30 June	10:01 to 10:02	15ºC, clear, light breeze (NE)	TP & NG
246	30 June	09:47 to 10:07	14ºC, mostly cloudy, light breeze (NE)	TP & NG
247	01 July	05:48 to 06:13	10ºC, clear, calm (NW)	LQ & DW
249	24 June	11:40 to 11:40	8ºC, mainly clear, gentle breeze (N)	TP & NG
250	01 July	06:39 to 06:50	10ºC, clear, light breeze (NW)	LQ & DW
251	01 July	07:14 to 07:17	10ºC, clear, light breeze (NW)	LQ & DW
252	01 July	07:02 to 07:11	10ºC, clear, light breeze (NW)	LQ & DW
253	01 July	07:13 to 07:14	10ºC, clear, gentle breeze (NW)	TP & NG
254	01 July	08:45 to 08:51	16ºC, clear, light breeze (NW)	LQ & DW
255	01 July	08:53 to 09:01	16ºC, clear, light breeze (NW)	LQ & DW
256 (& 257, 258)	01 July	09:46 to 09:56	20ºC, clear, gentle breeze (W)	LQ & DW
259	29 June	14:15 to 14:20	18ºC, mainly clear, moderate breeze (N)	TP & NG
260	29 June	13:16 to 13:23	18ºC, mainly clear, moderate breeze (N)	TP & NG
261	27 June	16:17 to 16:18	8ºC, mostly cloudy, moderate breeze (NE)	TP & NG
262	27 June	16:10 to 16:10	8ºC, mostly cloudy, moderate breeze (NE)	TP & NG
263	27 June	10:36 to 10:44	7ºC, mostly cloudy, moderate breeze (NE)	TP & NG

[1] DW = Dylan White; LQ = Lars Qaqqaq; NG = Nicholas Gebauer; TP = Tom Plath

APPENDIX VI

Detailed Results by Survey Location for Meliadine Gold Mine Waterbird Shoreline Surveys in 2024

Appendix VI

Wetland #	Date (2024)	Observations [1]
1	24 June	NOPI (3), LTDU (5), HERG (1), LESA (1), TUSW (1), NOPI (1)
3	24 June	None Observed
4	25 June	SEPL (1), CANG (4)
10	23 June	CANG (1), HERG (1)
16	25 June	HERG (1), RTLO (1), LTDU (2), CANG (1), HERG (2, 1 adult incubating on island nest), NOPI (pair), CANG (2), PALO (1), LESA (1), SEPL (2), CANG (4), CANG (2 flying), SACR (2 young recently hatched; 2 adults), LESA (1), SEPL (1), LESA (1)
17	25 June	SEPL (1), LTDU (3), LESA (1 flushed from water edge; but no nest found), CANG (pair; 1 adult flushed from nest with 4 eggs), HERG (3 flying), NOPI (1), CANG (2), SACR (2), LESA (1 flushed but no nest found), CANG (6), SACR (2)
22	27 June	PALO (pair), HERG (1), CANG (1)
23	27 June	CANG (5), CANG (1 adult incubating on island nest), HERG (pair incubating on island nest)
38 (& 146)	30 June	LESA (1)
39 (& 148, 159)	30 June	Doesn't exist; no habitat
41 (& 264, 265)	30 June	None Observed
44 (& 163)	30 June	None Observed
45 (& 162, 164)	01 July	TUSW (1), SEPL (pair), CANG (27)
46 (& 165)	01 July	None Observed
47 (& 170)	01 July	TUSW (1)
56 (& 193)	01 July	None Observed
59 (& 200)	01 July	SACR (1 calling)
60 (& 201)	01 July	SAVS (1 singing), COEI (pair on lake), HOLA (1 singing), PALO (1)
61 (& 202)	01 July	PALO (1 flying from lake), SAVS (1 calling)
63 (& 204)	01 July	None Observed
65 (& 222)	30 June	None Observed
68 (& 238)	30 June	GRLG (1), HERG (9), CANG (1), TUSW (2)
73	24 June	None Observed
75	25 June	CANG (pair nesting; adult flushed from nest with 5 eggs), LESA (1; possible nest in area)
76	25 June	CANG (pair nesting; adult flushed from nest with 2 eggs)
77	25 June	Doesn't exist; no habitat
78	25 June	Doesn't exist; no habitat
79	25 June	None observed; construction covering most of pond
80	27 June	Doesn't exist; no habitat
81	27 June	Doesn't exist; no habitat

Appendix VI

Wetland #	Date (2024)	Observations [1]
84	23 June	SEPL (1)
85	24 June	PALO (1), GWFG (3)
86	26 June	HERG (1 flying)
87	26 June	SEPL (2)
88	26 June	LESA (1)
89	26 June	SACR (1)
90	26 June	LESA (1), CANG (1), HERG (1)
91	26 June	CANG (pair with 2 chicks), LESA (1)
93	24 June	Doesn't exist; covered by construction zone
94	24 June	None Observed
95	23 June	None Observed
96	23 June	None Observed
97	24 June	Doesn't exist; no habitat
99	24 June	Doesn't exist; no habitat
100	23 June	None Observed
101	24 June	Doesn't exist; no habitat
102	23 June	HERG (1), CANG (adult incubating on island nest), CANG (5 feeding on hillside)
104	26 June	COGO (5), LTDU (8), SEPL (pair; nest on road at CP1; closed area with flagging tape), SEPL (pair), YHBL (1 vagrent), LTDU (9), TUSW (2), CANG (4), NOPI (12), LESA (4), SEPL (9), SNBU (3), GWTE (1), LESA (4), AMCO (1 vagrant)
105	26 June	None Observed
107	23 June	LESA (1)
108	23 June	GWTE (1 male), CANG (pair; female incubating on nest; unknown # of eggs)
109	23 June	CANG (3)
110	22 June	CANG (1 female flushed from nest with no eggs)
111	23 June	SACR (4), SEPL (pair; adult distraction display), NOPI (2), CANG (1), LTDU (1)
112	22 June	LTDU (1 flying), SACR (1)
114	23 June	CANG (pair), SEPL (1), CANG (1), CANG (5), CANG (9 on road side), HERG (1), SACR (adult flushed from nest with 2 eggs; distraction display)
115	23 June	None Observed
118	26 June	CANG (2), NOPI (2), CANG (pair; adult incubating then flushed from nest)
120	27 June	None Observed
121	27 June	LTDU (1)
122	26 June	None Observed
123	26 June	HERG (1), CANG (pair; adult incubating on island nest), CANG (pair; adult incubating on island nest), SACR (3; 1 adult incubating on nest)

Appendix VI

Wetland #	Date (2024)	Observations [1]
124	27 June	CANG (pair; adult incubating on island nest), HERG (1)
125	27 June	NOPI (3), LTDU (2)
127	27 June	HERG (1)
128	27 June	SACR (pair)
129	27 June	LESA (1), CANG (2), CACG (2 adults; 3 chicks), CANG (pair; adult incubating on nest with 3 eggs; adult flushed from nest), PALO (pair), SACR (3), CANG (2)
130	24 June	HERG (1 adult agitated; nest likely on island), SAVS (1 male singing), CANG (2 adults; calling, flying and swimming), LALO (1 male calling), SNGO (1 walking on foreshore), LTDU (1 male swimming), LALO (1 male calling), SACR (1 calling), HOLA (1 male singing)
131	27 June	CANG (3)
132	27 June	None Observed
133	27 June	LTDU (1)
134	27 June	HERG (1), CANG (1 adult incubating on nest then flushed), NOPI (1), LTDU (1)
135	27 June	None Observed
137 (& 140)	29 June	LTDU (pair)
138	26 June	AMPI (1), HOLA (2; 1 male singing), WCSP (1), SEPL (1 agitated), CANG (35 flying), LALO (2; 1 male singing), GRSC (1 adult; flushed from nest with 7 eggs), RLHA (1 flying)
139	26 June	LALO (3 singing), LTDU (1 male diving), HOLA (1 singing), SANDPIPER (1 singing)
141	29 June	None Observed
142 (& 158)	29 June	LTDU (3), SACR (2), CANG (1 adult incubating on nest; flushed)
143	29 June	None Observed
145	30 June	LESA (pair)
147	30 June	None Observed
149 (& 160)	30 June	CANG (pair nesting)
150 (& 161)	30 June	PALO (1)
152	29 June	None Observed
153	29 June	CANG (pair; 1 adult incubating on nest)
154	30 June	None Observed
155 (& 186)	01 July	SAVS (1 male singing)
156	30 June	None Observed
157	30 June	None Observed
162 (& 45, 164)	30 June	CANG (2 flying)
166	01 July	TUSW (3)
167	01 July	None Observed

Appendix VI

Wetland #	Date (2024)	Observations [1]
168	01 July	None Observed
169	01 July	None Observed; pond joined with #168
171	01 July	SEPL (1 female distraction display; adult flushed from nest with 4 eggs), TUSW (3)
172	01 July	None Observed
173	01 July	None Observed
174	01 July	None Observed
175	01 July	Doesn't exist; no habitat
176	01 July	LTDU (1 female), LESA (2)
177 (& 179)	01 July	Sik Sik, SAVS (2 males singing), SACR (1 calling), PALO (2 flying), CANG (7 flying)
178 (& 180)	01 July	RNPH (1 flushed), SAVS (1 male singing), COEI (4 flying), BAEA (1), CANG (4 flying), HOLA (1 male singing)
181	01 July	WCSP (1 singing), LESA (1 singing & calling), GWTE (1 male flushed)
182	19 June	SAVS (1 male singing), HOLA (2), SAVS (1), CANG (1)
184	19 June	SACR (1), PALO (1), CANG (24 flying), HERG (1), CANG (38 flying), NOPI (1 male), GWFG (1 flying), SAVS (1 singing)
185	19 June	TUSW (1), KIEI (1 male)
188	01 July	LESA (1 agitated & singing), TUSW (3 swimming), HOLA (1 calling), REDP (1 calling), WCSP (1 calling), LESA (1 calling), HOLA (1 calling), NOPI (pair flushed)
189	01 July	NOPI (pair flying), SAVS (1 singing), HOLA (1 singing), SACR (1 singing), WCSP (1 singing)
190	01 July	SACR (2 calling), HOLA (1 singing), REDP (1 calling), WCSP (1 singing), REDP (1 singing)
191	01 July	None Observed
192	01 July	None Observed
194	01 July	LTDU (pair)
195	01 July	None Observed
196	01 July	None Observed
197	01 July	None Observed
198	01 July	None Observed
199	01 July	WCSP (1 singing), SAVS (1 singing), LESA (1 singing), HERG (1 flying), HOLA (1 singing), REDP (1 calling)
205 (& 206)	01 July	None Observed
207	01 July	HOLA (1 carrying food), HOLA (1 singing), REDP (1 calling), AMPI (1 singing)
208	01 July	LESA (1)
209	01 July	HOLA (1 singing), TUSW (1 singing), PALO (1 singing), REDP (1 singing), AMPI (1 singing)
210	01 July	None Observed

Appendix VI

Wetland #	Date (2024)	Observations [1]
211	30 June	None Observed
212	30 June	Doesn't exist; no habitat
215	30 June	None Observed; half of pond dry (5cm deep water)
216	30 June	Doesn't exist; no habitat
218	30 June	None Observed; half of pond dry (4cm deep water)
219	30 June	None Observed; half of pond dry
220	30 June	Doesn't exist; no habitat
221	30 June	None Observed
223	30 June	None Observed
224	30 June	CANG (4 flying), CANG (5), HERG (1), NOPI (1)
225 (& 240)	30 June	None Observed; part of pond #240
226	30 June	None Observed
227	30 June	None Observed
228	30 June	CANG (1 adult incubating on island nest)
229 (& 230)	30 June	None Observed; joined with #230
231 (& 233)	30 June	HERG (1), TUSW (1 flying)
232	30 June	None Observed
234	30 June	Doesn't exist; small puddles of water
235 (& 236)	01 July	PALO (pair)
240 (& 225)	30 June	None Observed
241	30 June	None Observed
242	30 June	None Observed
243	30 June	None Observed
244	30 June	LTDU (pair), HERG (2), SACR (2)
245	30 June	None Observed; same wetland as #246
246	30 June	None Observed
247	01 July	HOLA (2 singing), LESA (2 singing), WCSP (2 singing), CANG (1 calling), REDP (3 singing), AMPI (3 singing), HERG (1), PALO (1 singing)
249	24 June	Doesn't exist; no habitat
250	01 July	LESA (1 agitated & flushed from nest with 4 eggs; distraction display), HOLA (2 singing), CORA (1), SACR (1 calling)
251	01 July	WCSP (1 calling), REDP (2 calling)
252	01 July	WCSP (1 singing), SAVS (1 singing), SACR (2 singing), CANG (1 calling), REDP (1 calling)
253	01 July	None Observed; mostly dry (10% water)

Appendix VI

Wetland #	Date (2024)	Observations [1]
254	01 July	TUSW (2 foraging), SACR (2 calling), HOLA (1 male agitated & flushed from nest with 5 eggs)
255	01 July	HOLA (pair foraging), HOLA (1 juvenile)
256 (& 257, 258)	01 July	LESA (1 male singing), HOLA (1 male singing), SAVS (1 male singing)
259	29 June	CANG (33), TUSW (1)
260	29 June	LTDU (1)
261	27 June	None Observed
262	27 June	SEPL (1); Pond dry (no water)
263	27 June	SEPL (pair; adult flushed from nest & distraction display)

[1] **Bird Codes:** AMCO (American Coot), AMPI (American Pipit), BAEA (Bald Eagle), CACG (Cackling Goose), CANG (Canada Goose), COEI (Common Eider), COGO (Common Goldeneye), CORA (Common Raven), CORE (Common Redpoll), GRLG (Greylag Goose), GRSC (Greater Scaup), GWFG (Greater White-fronted Goose), GWTE (Green-winged Teal), HERG (Herring Gull), HOLA (Horned Lark), KIEI (King Eider), LALO (Lapland Longspur), LESA (Least Sandpiper), LTDU (Long-tailed Duck), NOPI (Northern Pintail), PALO (Pacific Loon), REDP (Redpoll sp.), RLHA (Rough-legged Hawk), RNPH (Red-necked Phalarope), RTLO (Red-throated Loon), SANDPIPER (Sandpiper sp.), SACR (Sandhill Crane), SAVS (Savannah Sparrow), SEPL (Semipalmated Plover), SEPL (Semipalmated Plover), SNBU (Snow Bunting), SNGO (Snow Goose), TUSW (Tundra Swan), WCSP (White-crowned Sparrow), YHBL (Yellow-headed Blackbird)

APPENDIX VII

Summary of Results by Species for the Meliadine Gold Mine Project Waterbird Shoreline Surveys in 2024

Appendix VII

Common Name (Code)	Scientific Name	Wetland #	Total Wetlands
BIRDS			
American Coot (AMCO)	*Fulica americana*	104	1
American Pipit (AMPI)	*Anthus rubescens*	138, 207, 209, 247	4
Bald Eagle (BAEA)	*Haliaeetus leucocephalus*	178, 180	2
Cackling Goose (CACG)	*Branta hutchinsii*	129	1
Canada Goose (CANG)	*Branta canadensis*	4, 10, 16, 17, 22, 23, 45, 68, 75, 76, 90, 91, 102, 104, 108, 109, 110, 111, 114, 118, 123, 124, 129, 130, 131, 134, 138, 142, 149, 153, 158, 160, 162, 164, 177, 178, 179, 180, 182, 184, 224, 228, 238, 247, 252, 259	46
Common Eider (COEI)	*Somateria mollissima*	60, 178, 180, 201	4
Common Goldeneye (COGO)	*Bucephala clangula*	104	1
Common Raven (CORA)	*Corvus corax*	250	1
Greylag Goose (GRLG)	*Anser anser*	68, 238	2
Greater Scaup (GRSC)	*Aythya marila*	138	1
Greater White-fronted Goose (GWFG)	*Anser albifrons*	85, 184	2
Green-winged Teal (GWTE)	*Anas carolinensis*	104, 108, 181	3
Herring Gull (HERG)	*Larus argentatus*	1, 10, 16, 17, 22, 68, 86, 90, 102, 114, 123, 124, 127, 130, 134, 184, 199, 224, 231, 233, 238, 244, 247	23
Horned Lark (HOLA)	*Eremophila alpestris*	60, 130, 138, 139, 178, 180, 182, 188, 189, 190, 199, 201, 207, 209, 247, 250, 254, 255, 256, 257, 258	21
King Eider (KIEI)	*Somateria spectabilis*	185	1
Lapland Longspur (LALO)	*Calcarius lapponicus*	130, 138, 139	3
Least Sandpiper (LESA)	*Calidris minutilla*	1, 16, 17, 23, 38, 75, 88, 90, 91, 104, 107, 129, 145, 146, 176, 181, 188, 199, 208, 247, 250, 256, 257, 258	24
Long-tailed Duck (LTDU)	*Clangula hyemalis*	1, 16, 17, 104, 111, 112, 121, 125, 130, 133, 134, 137, 139, 140, 142, 158, 176, 194, 244, 260	20
Northern Pintail (NOPI)	*Anas acuta*	1, 16, 17, 104, 111, 118, 125, 134, 184, 188, 189, 224	12
Pacific Loon (PALO)	*Gavia pacifica*	16, 22, 60, 61, 85, 129, 150, 161, 177, 179, 184, 201, 202, 209, 235, 236, 247	17
Redpoll sp. (REDP)	*Acanthis*	188, 190, 199, 207, 209, 247, 251, 252	8

Appendix VII

Common Name (Code)	Scientific Name	Wetland #	Total Wetlands
BIRDS			
Rough-legged Hawk (RLHA)	*Buteo lagopus*	138	1
Red-necked Phalarope (RNPH)	*Phalaropus lobatus*	178, 180	2
Red-throated Loon (RTLO)	*Gavia stellata*	16	1
Sandhill Crane (SACR)	*Grus canadensis*	16, 17, 59, 89, 111, 112, 114, 123, 128, 129, 130, 142, 158, 177, 179, 184, 189, 190, 200, 244, 250, 252, 254	23
Sandpiper sp. (SANDPIPER)	*Scolopacidae*	139	1
Savannah Sparrow (SAVS)	*Passerculus sandwichensis*	60, 61, 130, 155, 177, 178, 179, 180, 182, 184, 186, 189, 199, 201, 202, 252, 256, 257, 258	19
Semipalmated Plover (SEPL)	*Charadrius semipalmatus*	4, 16, 17, 45, 84, 87, 104, 111, 114, 138, 162, 164, 171, 262, 263	15
Snow Bunting (SNBU)	*Plectrophenax nivalis*	104	1
Snow Goose (SNGO)	*Anser caerulescens*	130	1
Tundra Swan (TUSW)	*Cygnus columbianus*	1, 45, 47, 68, 104, 162, 164, 166, 170, 171, 185, 188, 209, 231, 233, 238, 254, 259	18
White-crowned Sparrow (WCSP)	*Zonotrichia leucophrys*	138, 181, 188, 189, 190, 199, 247, 251, 252	9
Yellow-headed Blackbird (YHBL)	*Xanthocephalus xanthocephalus*	104	1
Total # of Species			**33**

APPENDIX VIII

Fieldwork Details for the Meliadine Gold Mine Point Counts in 2024

Appendix VIII

Transect & Count #	Date (2024)	Time	Weather	Observers[1]
Transect #1				
1-1	June 22	12:40 - 12:45	12°C, mostly cloudy, no precipitation, wind NW (33km/hr)	NG, TP
1-2	June 22	12:19 to 12:24	12°C, mostly clear, no precipitation, wind NW (31km/hr)	NG, TP
1-3	June 22	12:04 to 12:09	12°C, mostly clear, no precipitation, wind NW (31km/hr)	NG, TP
1-4	June 22	11:49 to 11:54	12°C, mostly clear, no precipitation, wind NW (33km/hr)	NG, TP
1-5	June 22	11:39 to 11:44	12°C, mostly clear, no precipitation, wind NW (31km/hr)	NG, TP
1-6	June 22	11:27 to 11:32	12°C, mostly clear, no precipitation, wind NW (31km/hr)	NG, TP
1-7 (1-13)	June 22	10:10 to 10:15	8°C, mostly cloudy, no precipitation, wind NW (30km/hr)	NG, TP
1-8	June 22	08:38 to 08:43	6°C, mostly cloudy, no precipitation, wind NW (22km/hr)	NG, TP
1-9	June 22	08:49 to 08:54	6°C, mostly cloudy, no precipitation, wind NW (21km/hr)	NG, TP
1-10	June 22	08:59 to 09:04	7°C, mostly cloudy, no precipitation, wind NW (23km/hr)	NG, TP
1-11	June 22	09:10 to 09:15	7°C, mostly cloudy, no precipitation, wind NW (23km/hr)	NG, TP
1-12	June 22	09:22 to 09:27	7°C, mostly cloudy, no precipitation, wind NW (21km/hr)	NG, TP
Transect #2				
2-1a	June 21	12:42 to 12:47	8°C, mostly cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-1b	June 27	08:21 to 08:26	6°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, LQ
2-2a	June 21	12:23 to 12:28	8°C, mostly cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-2b	June 27	08:05 to 08:10	5°C, partly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-3a	June 21	12:04 to 12:09	8°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-3b	June 27	07:50 to 07:55	5°C, partly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-4a	June 21	11:52 to 11:57	8°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-4b	June 27	07:38 to 07:43	5°C, partly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-5a	June 21	11:43 to 11:48	8°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-5b	June 27	07:30 to 07:35	5°C, partly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-6a	June 21	11:34 to 11:39	6°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-6b	June 27	07:22 to 07:27	5°C, mostly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-7 (2-13)a	June 21	11:06 to 11:11	6°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-7 (2-13)b	June 27	06:18 to 06:23	5°C, mostly cloudy, no precipitation, wind NE (15km/hr)	DW, LQ
2-8a	June 21	10:13 to 10:18	7°C, mostly cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-8b	June 27	07:14 to 07:19	8°C, mostly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-9a	June 21	10:22 to 10:27	6°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-9b	June 27	07:04 to 07:09	5°C, mostly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-10a	June 21	10:31 to 10:36	6°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-10b	June 27	06:56 to 07:01	5°C, mostly cloudy, no precipitation, wind NE (30km/hr)	DW, LQ
2-11a	June 21	10:42 to 10:47	6°C, mostly cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-11b	June 27	06:41 to 06:46	5°C, mostly cloudy, no precipitation, wind NE (20km/hr)	DW, LQ
2-12a	June 21	10:53 to 10:58	6°C, cloudy, no precipitation, wind NW (40km/hr)	NG, TP
2-12b	June 27	06:28 to 06:33	5°C, mostly cloudy, no precipitation, wind NE (20km/hr)	DW, LQ

Appendix VIII

Transect & Count #	Date (2024)	Time	Weather	Observers[1]
Transect #3				
3-1a	June 21	08:59 to 09:04	7°C, mostly cloudy, no precipitation, wind NW (37km/hr)	NG, TP
3-1b	June 27	11:19 to 11:24	10°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, NG
3-2a	June 21	08:46 to 08:51	7°C, mostly cloudy, no precipitation, wind NW (36km/hr)	NG, TP
3-2b	June 27	11:09 to 11:14	10°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, NG
3-3a	June 21	08:35 to 08:40	7°C, mostly cloudy, no precipitation, wind NW (36km/hr)	NG, TP
3-3b	June 27	10:59 to 11:04	10°C, mostly clear, no precipitation, wind NE (20km/hr)	DW, NG
3-4a	June 21	08:23to 08:28	7°C, mostly cloudy, no precipitation, wind NW (36km/hr)	NG, TP
3-4b	June 27	10:50 to 10:55	9°C, mostly clear, no precipitation, wind NE (20km/hr)	DW, NG
3-5a	June 21	08:15 to 08:20	7°C, mostly cloudy, no precipitation, wind NW (35km/hr)	NG, TP
3-5b	June 27	10:41 to 10:46	9°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, NG
3-6a	June 21	08:05 to 08:10	7°C, mostly cloudy, no precipitation, wind NW (35km/hr)	NG, TP
3-6b	June 27	10:33 to 10:38	9°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, NG
3-7 (3-13)a	June 21	07:20 to 07:25	7°C, mostly cloudy, no precipitation, wind NW (34km/hr)	NG, TP
3-7 (3-13)b	June 27	09:32 to 09:37	8°C, mostly clear, no precipitation, wind NE (33km/hr)	DW, NG
3-8a	June 21	06:23 to 06:28	7°C, mostly cloudy, no precipitation, wind NW (30km/hr)	NG, TP
3-8b	June 27	10:21 to 10:26	8°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, NG
3-9a	June 21	06:31 to 06:36	7°C, mostly cloudy, no precipitation, wind NW (30km/hr)	NG, TP
3-9b	June 27	10:13 to 10:18	8°C, mostly clear, no precipitation, wind NE (30km/hr)	DW, NG
3-10a	June 21	06:41 to 06:46	7°C, mostly cloudy, no precipitation, wind NW (30km/hr)	NG, TP
3-10b	June 27	10:04 to 10:09	8°C, mostly clear, no precipitation, wind NE (33km/hr)	DW, NG
3-11a	June 21	06:54 to 06:59	7°C, mostly cloudy, no precipitation, wind NW (33km/hr)	NG, TP
3-11b	June 27	09:53 to 09:58	8°C, mostly clear, no precipitation, wind NE (33km/hr)	DW, NG
3-12a	June 21	07:06 to 07:11	7°C, mostly cloudy, no precipitation, wind NW (34km/hr with wind gusts up to 60 km/hr)	NG, TP
3-12b	June 27	09:42 to 09:47	8°C, mostly clear, no precipitation, wind NE (33km/hr)	DW, NG
Transect #4				
4-1	June 22	07:27 to 07:32	6°C, mostly cloudy, no precipitation, wind NW (21km/hr)	NG, TP
4-2	June 22	07:09 to 07:14	6°C, mostly cloudy, no precipitation, wind NW (28km/hr)	NG, TP
4-3	June 22	06:55 to 07:00	5°C, mostly cloudy, no precipitation, wind NW (19km/hr)	NG, TP
4-4	June 22	06:43 to 06:48	5°C, mostly cloudy, no precipitation, wind NW (18km/hr)	NG, TP
4-5	June 22	06:33 to 06:38	5°C, mostly cloudy, no precipitation, wind NW (18km/hr)	NG, TP
4-6a	June 21	15:32 to 15:37	10°C, mostly clear, no precipitation, wind NW (42km/hr)	NG, TP
4-6b	June 22	06:22 to 06:27	5°C, mostly cloudy, no precipitation, wind NW (18km/hr)	NG, TP
4-7 (4-13)	June 21	14:48 to 14:53	11°C, mostly clear, no precipitation, wind NW (40km/hr)	NG, TP
4-8	June 20	16:08 to 16:13	11°C, clear, no precipitation, wind NW (25km/hr)	NG, TP
4-9	June 20	16:00 to 16:05	10°C, clear, no precipitation, wind NW (25km/hr)	NG, TP
4-10	June 20	15:50 to 15:55	10°C, clear, no precipitation, wind NW (25km/hr)	NG, TP

Appendix VIII

Transect & Count #	Date (2024)	Time	Weather	Observers[1]
Transect #4				
4-11	June 21	14:23 to 14:28	10°C, mostly clear, no precipitation, wind NW (40km/hr)	NG, TP
4-12	June 21	14:35 to 14:40	10°C, mostly clear, no precipitation, wind NW (40km/hr)	NG, TP
Transect #5				
5-1	June 20	14:31 to 14:36	10°C, clear, no precipitation, wind NW (25km/hr)	NG, TP
5-2	June 20	14:20 to 14:25	10°C, clear, no precipitation, wind NW (25km/hr)	NG, TP
5-3	June 20	14:02 to 14:07	10°C, mostly clear, no precipitation, wind NW (23km/hr)	NG, TP
5-4	June 20	13:49 to 13:54	10°C, mostly clear, no precipitation, wind NW (23km/hr)	NG, TP
5-5	June 20	13:40 to 13:45	10°C, almost clear, no precipitation, wind NW (23km/hr)	NG, TP
5-6	June 20	13:31 to 13:36	10°C, almost clear, no precipitation, wind NW (23km/hr)	NG, TP
5-7 (5-13)	June 20	12:56 to 13:01	10°C, almost clear, no precipitation, wind NW (23km/hr)	NG, TP
5-8	June 20	11:56 to 12:01	10°C, mostly clear, no precipitation, wind NW (23km/hr)	NG, TP
5-9	June 20	12:06 to 12:11	10°C, mostly clear, no precipitation, wind NW (23km/hr)	NG, TP
5-10	June 20	12:15 to 12:20	10°C, mostly clear, no precipitation, wind NW (23km/hr)	NG, TP
5-11	June 20	12:27 to 12:32	10°C, mostly clear, no precipitation, wind NW (23km/hr)	NG, TP
5-12	June 20	12:42 to 12:47	10°C, almost clear, no precipitation, wind NW (23km/hr)	NG, TP
Transect #6				
6-1	June 20	07:57 to 08:02	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-2	June 20	07:43 to 07:48	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-3	June 20	07:31 to 07:36	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-4	June 20	07:19 to 07:24	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-5	June 20	07:10 to 07:15	5°C, mostly cloudy, no precipitation, wind NW (23km/hr)	NG, TP
6-6	June 20	07:00 to 07:05	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-7 (6-13)	June 20	09:37 to 09:42	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-8	June 20	08:40 to 08:45	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-9	June 20	08:49 to 08:54	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-10	June 20	09:00 to 09:05	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-11	June 20	09:12 to 09:17	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP
6-12	June 20	09:24 to 09:29	5°C, mostly cloudy, no precipitation, wind NW (25km/hr)	NG, TP

APPENDIX IX

Survey Methods and Results for the Meliadine Gold Mine Project Pre-Clearance Bird Survey Monitoring in 2024

Appendix IX

Date 2024	Time	Coordinates (15W)	Observers	Species[6]	Nest Observation[1]	Mitigation Actions
Pump Road Construction						
May 23	16:30-17:00	Start: Unknown End: 539520 6988042	LK, SG	N/A	No birds or nests observed	No mitigation required
May 26	15:38-16:15	Start: 539645 6987314 End: 539674 6987085	JR, LK, SG, SK	Species unidentified	Nest being built but no bird activity observed	No mitigation required
May 27	09:00-19:30	Start: 539665 6987263 End: 539720 6987059	DM, SG	Species unidentified	Two nests being built but no bird activity observed	No mitigation required
May 29	13:35-14:15	Start: 539720 6987059 End: 539869 6986736	NY, SABM, SK	Lapland Longspur	Two nests being built by Lapland Longspur	No mitigation required
Jun 27	14:00-14:50	Start: 540792 6986186 End: 540271 6986633	EC, SG	N/A	No birds or nests observed	No mitigation required
Channel 4 Construction						
Jun 22	08:11-08:30	Start: 539095 6988923 End: 539041 6989024	DM, SG	SACR	One Sandhill Crane adult incubating one egg and one adult attending to one chick.	1,2,3,4,5
AWAR Construction						
Jul 17	14:24-14:40	Start: 542704 6984440 End: 542632 6984370	DM, SG	N/A	No birds or nests observed	No mitigation required
AWAR Construction						
Jul 17	15:01-16:35	Start: 547879 6977013 End: 547708 6975276	DM, SG	Species unidentified	Five unoccupied nests (appears to be lemming winter nests) and no bird activity observed	No mitigation required
Jul 19	13:45-14:47	Start: 547698 6975276 End: 547734 6975267	LK, SG	N/A	No birds or nests observed	No mitigation required
Jul 20	07:39-08:45	Start: 540981 6986097 End: 539475 6987151	LK, SG	Species unidentified	Three unoccupied nests (appears to be lemming winter nests) and no bird activity observed	No mitigation required
Jul 20	08:50-09:30	Start: 539806 6987315 End: 540699 6986672	LK, SG	Species unidentified	One unoccupied nest (appears to be lemming winter nest) and no bird activity observed	No mitigation required

Appendix IX

Date 2024	Time	Coordinates (15W)	Observers	Species[6]	Nest Observation[1]	Mitigation Actions
AWAR Construction						
Jul 22	11:06-12:10	Start: 547879 6977013 End: 547705 6975276	RS, SG	N/A	No birds or nests observed	No mitigation required
Jul 22	13:00-13:30	Start: 542682 6984370 End: 542704 6984410	RS, SG	N/A	No birds or nests observed	No mitigation required
Jul 23	08:30-09:30	Start: 547052 6973862 End: 547725 6975265	DM, SG	Species unidentified	Two unoccupied nests (appears to be lemming winter nests) and no bird activity observed	No mitigation required
Jul 24	07:43-08:30	Start: 540981 6986097 End: 539475 6987151	NY, SG	N/A	No birds or nests observed	No mitigation required
Jul 24	08:35-09:07	Start: 539806 6987315 End: 540699 6986672	NY, SG	N/A	No birds or nests observed	No mitigation required
Jul 26	08:28-09:00	Start: 546294 6972474 End: 546771 6973362	SG	N/A	No birds or nests observed	No mitigation required
Jul 27	08:10-09:25	Start: 547879 6977013 End: 547705 6975276	NY, SG	N/A	No birds or nests observed	No mitigation required
Jul 27	09:55-10:20	Start: 542632 6984370 End: 542704 6984440	NY, SG	N/A	No birds or nests observed	No mitigation required
Jul 28	09:50-10:40	Start: 545538 6971820 End: 546297 6972480	AT, SG	N/A	No birds or nests observed	No mitigation required
Jul 29	08:23-08:50	Start: 544823 6971670 End: 545543 6971831	SG	Species unidentified	One unoccupied nest (appears to be lemming winter nest) and no bird activity observed	No mitigation required
Jul 29	09:29-10:40	Start: 539806 6987315 End: 540699 6986672	SG	N/A	No birds or nests observed	No mitigation required
Jul 31	14:50-15:45	Start: 544841 6970766 End: 544756 6971646	MM, NB	N/A	No birds or nests observed	No mitigation required
Aug 01	09:20-10:20	Start: 542650 6984425 End: 542650 6984425	NB, NY	N/A	No birds or nests observed	No mitigation required

Appendix IX

Date 2024	Time	Coordinates (15W)	Observers	Species[6]	Nest Observation[1]	Mitigation Actions
AWAR Construction						
Aug 01	16:05-17:00	Start: 547195 6974107 End: 547242 6974177	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 01	17:07-17:12	Start: 547907 6977476 End: 547927 6977421	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 02	13:45-14:30	Start: 544246 6970736 End: 543628 6970035	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 02	15:00-15:45	Start: 545531 6971826 End: 546297 6972474	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 03	10:00-12:00	Start: 546297 6972474 End: ND	AT, NB	Unidentified sandpiper	Persistent alarm calls from an unidentified sandpiper; possible nest	No nests found; flagged for future monitoring
Aug 03	12:20-12:55	Start: 545530 6971827 End: 544835 6971670	AT, NB	N/A	No birds or nests observed	No mitigation required
Aug 03	13:37-13:57	Start: 547913 6977064 End: 547852 6976087	AT, NB	N/A	No birds or nests observed	No mitigation required
Aug 05	15:45-16:25	Start: 544240 6970778 End: 544755 6971643	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 05	17:11-17:19	Start: 541089 6986272 End: 541177 6986469	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 06	16:48-16:55	Start: 547190 6974107 End: 547242 6974177	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 07	16:34-16:57	Start: 543627 6970037 End: 544241 6970764	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 07	17:02-17:18	Start: 545531 6971828 End: 546299 6972473	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 08	08:00-09:40	Start: 540866 6986197 End: 540866 6986197	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 10	13:19-13:59	Start: 544243 6970764 End: 544753 6971646	NB, SG	N/A	No birds or nests observed	No mitigation required

Appendix IX

Date 2024	Time	Coordinates (15W)	Observers	Species[6]	Nest Observation[1]	Mitigation Actions
AWAR Construction						
Aug 12	16:15-17:00	Start: 544246 6970756 End: 543628 6990035	NB, SG	N/A	No birds or nests observed	No mitigation required
Aug 13	08:00-09:15	Start: 540866 6986197 End: 540866 6986197	NB, SG	N/A	No birds or nests observed	No mitigation required
DCP1 Construction						
Aug 04	14:23-14:39	Start: 540213 6989406 End: 540232 6989643	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 03	10:00-12:00	Start: 546297 6972474 End: ND	AT, NB	Unidentified sandpiper	Persistent alarm calls from an unidentified sandpiper; possible nest	No nests found; flagged for future monitoring
Aug 03	12:20-12:55	Start: 545530 6971827 End: 544835 6971670	AT, NB	N/A	No birds or nests observed	No mitigation required
Aug 03	13:37-13:57	Start: 547913 6977064 End: 547852 6976087	AT, NB	N/A	No birds or nests observed	No mitigation required
Aug 05	15:45-16:25	Start: 544240 6970778 End: 544755 6971643	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 05	17:11-17:19	Start: 541089 6986272 End: 541177 6986469	NB, NY	N/A	No birds or nests observed	No mitigation required
Aug 06	16:48-16:55	Start: 547190 6974107 End: 547242 6974177	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 07	16:34-16:57	Start: 543627 6970037 End: 544241 6970764	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 07	17:02-17:18	Start: 545531 6971828 End: 546299 6972473	LK, NB	N/A	No birds or nests observed	No mitigation required
Aug 08	08:00-09:40	Start: 540866 6986197 End: 540866 6986197	LK, NB	N/A	No birds or nests observed	No mitigation required taken
Aug 10	13:19-13:59	Start: 544243 6970764 End: 544753 6971646	NB, SG	N/A	No birds or nests observed	No mitigation required

Appendix IX

Date 2024	Time	Coordinates (15W)	Observers	Species[6]	Nest Observation[1]	Mitigation Actions
DCP1 Construction						
Aug 12	16:15-17:00	Start: 544246 6970756 End: 543628 6990035	NB, SG	N/A	No birds or nests observed	No mitigation required
Aug 13	08:00-09:15	Start: 540866 6986197 End: 540866 6986197	NB, SG	N/A	No birds or nests observed	No mitigation required
Aug 04	14:23-14:39	Start: 540213 6989406 End: 540232 6989643	NB, NY	N/A	No birds or nests observed	No mitigation required

1. Delineated setback distance with stakes and maintained protection buffer.
2. Reduced traffic speed.
3. Applied dust suppressants and/or limited dust-generating activities in sensitive areas.
4. Conducted low-impact monitoring (daily observations from a safe distance) to document nesting outcomes.
5. Suspended operations or use of material/equipment.

APPENDIX F

Arctic Raptors Research Program Report, 2024



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Background

Agnico Eagle Mines Limited (Agnico Eagle) operates the Meliadine Mine, located approximately 25 km north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. In February 2015, Meliadine received Project Certificate No. 006 issued by the Nunavut Impact Review Board (NIRB) with Amendment No. 001 in February 2019 and Amendment No. 002 in March 2022. Terms and Conditions related to management and mitigation for birds and bird habitat (including raptorial species) are outlined in the NIRB Project Certificate for the Meliadine Gold Mine Project (NIRB 2022), as follows:

- *Term and Condition (T&C) 59; Species at Risk — If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance based on the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.*
- *T&C 60;* Species at Risk *— The Proponent shall ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans and management plans that may become available during the duration of the Project.*
- *T&C 61; Construction/clearing activities — Prior to bird breeding season, the Proponent shall either conduct clearing activities or identify and install nesting deterrents (e.g., flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities. If clearing is to take place during the nesting season, a nest survey should take place to identify nests and any identified nests must remain undisturbed until the young have fledged or left the nest. Any nests identified shall be included as part of the annual reporting for the Terrestrial Environmental Mitigation and Monitoring Plan (TEMMP).*
- *T&C 62; Construction/clearing activities — The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Mitigation and Monitoring Plan (TEMMP), until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.*
- *T&C 71; Monitoring — The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Kivalliq Inuit Association and communities.*
- *T&C 72; Monitoring — The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Protection Plan and Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) prior to construction. The key indicators for follow up monitoring under this plan will include upland birds (including migratory birds), waterbirds, raptors, and seabirds including migration and wintering.*

Monitoring indicators for nesting raptors are outlined in the Agnico Eagle Meliadine Division Terrestrial Environment Management and Monitoring Plan (TEMMP; Agnico Eagle 2022) as follows:

- *Monitoring Indicator 1; Disturbance of nesting raptors — To be determined in consultation with GN and Alastair Franke, related to occupancy and productivity.*
- *Monitoring Indicator 2; Projected-related mortality — To be determined in consultation with GN and Alastair Franke.*

Species Descriptions

Peregrine Falcon (*Falco peregrinus tundrius*)

The Arctic peregrine falcon (Figure 1, PEFA) is medium- to large-sized falcon. It has a dark hood and face with distinct dark malar stripe, cream to white throat, slate-grey back, barred belly, legs, and tail. Long pointed wings, stocky body. Plumage of immature birds is brown rather than grey, and the breast is streaked rather than barred. In adults, the cere and orbital ring are yellow, and bluish in immature birds. Compared with gyrfalcons, the peregrine is smaller and less stocky. In flight, the wings of peregrines appear narrower and more pointed. In peregrine falcons, wing tips extend to bottom of the tail when perched, while in gyrfalcons, wing tips extend two-thirds down the length of tail.

F. p. tundrius breeds mainly north of the treeline from Alaska east throughout northern Canada to Greenland. It breeds throughout the taiga and tundra wherever suitable nesting habitat and sufficient prey are present. In Nunavut, peregrines appear to have their highest densities in the Kivalliq and Kitikmeot regions. Highest breeding density on record is on the western shores of Hudson Bay in the Kivalliq Region.

F. p. tundrius is a long-distance migrant, wintering mainly throughout South and Central America, but also in southern United States and Mexico. Northern-breeding American and Arctic peregrines are highly migratory (Yates et al. 1988, Schmutz et al. 1991, Fuller et al. 1998), and although fall migration occurs over a broad geographic range (Fuller et al. 1998), Yates et al. (1988) indicated that “separate and distinct autumn migratory populations pass through the east and Gulf coasts” of the United States.

Peregrine falcons usually nests on cliffs and rocky outcrops, but also nest on hilltops, river canyons, rock screes, and on occasion directly on the ground (Court et al. 1988, Ratcliffe 1993). They prefer nesting in locations close to water in south-facing, rugged terrain. Hunting habitat includes rugged coastline areas and rolling tundra that consists of raised beaches, dry tundra, sedge meadows, wetlands, and lakes that are inhabited by a diversity of breeding songbirds and shorebirds.

Peregrine Falcons do not build a nest but make a depression (called a scrape) in the substrate on a cliff ledge. Scrapes are usually approximately 20 cm in diameter and 4 cm deep. Females usually do the majority of incubation and brooding of small young. Males provision incubating females and provide most of the prey when nestlings are small. Thereafter, females do most of the feeding, beginning to hunt after young are large enough to thermoregulate on their own. Clutch size is typically 3 or 4 eggs in Nunavut. In Rankin Inlet and Igloolik, the median incubation period of the first egg was 36 days and decreased 1 day for each additional egg. The incubation period of the 4th egg (33 days) was similar to what has been reported elsewhere (Burnham 1983).

The Arctic peregrine falcon is a generalist predator with a diverse diet that includes passerines, shorebirds , ducks , gulls, terns, jaegers, black guillemots, and, when available, collared lemmings, brown lemmings, and Arctic ground squirrels. Bradley and Oliphant (1991) indicated that, around Rankin Inlet, small birds (64% of prey items) represented the greatest portion of prey items, followed by microtine rodents (25%), large birds (8%), and Arctic ground squirrels (4%). The most important prey measured by percent biomass were large birds (43%), followed by small birds (25%), microtine rodents (18%), and Arctic ground squirrels (15%).

In Nunavut, the earliest documented arrival for Peregrine Falcons is 10 May at a known breeding site near Rankin Inlet. Although arrival timing varies with spring conditions, the majority of sites are

occupied during the 3rd week of May. Median laying date in Rankin Inlet (9 June) is typically earlier than Igloolik (15 June) and northern Baffin Island (16 June). Median date of hatching ranges from 14 July at Rankin Inlet to 18 July on northern Baffin Island and 20 July at Igloolik (Jaffre et al. 2015). Birds depart the breeding grounds from mid-September through early October, arriving on the wintering grounds throughout Central and South America in November.

Gyrfalcon (*Falco rusticolus*)

The gyrfalcon (Figure 2, GYRF) is large with pointed wings, but more rounded and broader than the wings of other falcon species. The tail is relatively long. When perched, wings extend 2/3 down the tail. The body is thick and powerful, particularly in females. Adults have yellow ceres, eye-rings and legs. As in all falcons, the eyes appear black. Three main color morphs occur: black, grey and white. White adults have almost pure white breasts and bellies, with dark wingtips (dipped-in-ink appearance). Grey adults have slate-colored back, with white underparts mottled with gray arrowhead-shaped markings. Dark adults are dark-grey overall above and dark-streaked breasts and belly. There is extreme reverse sex dimorphism, with males being approximately 2/3 the size of females (Ferguson-Lees et al. 2001).

Gyrfalcons distribution extends throughout the circumpolar Arctic. Most of the breeding range occurs north of 60°N, but breeding pairs are known to exist as far south as 55°N, mainly along sea-coasts in eastern Canada. Many adults remain within the breeding range throughout the year, but some disperse southwards in winter, small numbers reaching the northern United States (Cade 1982, Poole 1987). Immature birds are much more likely to winter to south of breeding range, and females are thought to disperse more widely, with many males remaining relatively close to breeding territories throughout the year.

Ptarmigan are often cited as the most important prey species by biomass, but Arctic ground squirrel and Arctic hare are also important, as well as small mammals (mice and voles) and other birds (ducks, sparrows, buntings). In central Nunavut, Poole and Boag (1988) identified eleven species of birds and five species of mammals among the prey. Birds accounted for three quarters of the diet, and adult rock ptarmigan were the most common. Arctic ground squirrel and arctic hare made up the bulk of mammalian prey.

Males occupy and defend nesting territories as early as the end of January, with females arriving in mid-March. In Nunavut, laying typically begin in the first week of May with most pairs laying by the end of the second week in May. Nestlings typically hatch in mid-June, but hatching can occur throughout June. Nestlings fledge in late July or early August after 7 weeks in the nest. In Nunavut, gyrfalcon usually nest on cliff ledges, ideally beneath sheltering overhang; sometimes nests in trees or on man-made structures. Nests are generally on rock ledges or abandoned rough-legged hawk or common raven nests. Use of alternate nest sites is not uncommon. Pairs do not necessarily attempt breeding every year, depending on food supply. Typical clutch size is 3-4 eggs (Booms et al. 2008) that are incubated for 34-36 days mostly by the female (ca. 80%). The North American population including Nunavut is considered to be stable (Clum and Cade 1994, Kirk and Hyslop 1998). Although low spring temperatures are associated with later arrival at nesting territories in Nunavut (Poole and Bromley 1988), there was no effect on laying dates. However, (Poole and Bromley 1988) indicated that increased spring precipitation (snow) reduced reproductive success.

Rough-legged Hawk (*Buteo lagopus)*

The rough-legged hawk (Figure 3, RLHA) is a medium-large bird of prey, with a fairly small beak, predominantly brown in colour and often mottled. Plumage is highly variable with recognized light and dark morphs. Extensive field experience is required to distinguish between males and females, and between adults and juveniles based on plumage alone. A broad chest band is evident in most plumage variations, and in flight, a dark carpal patch is characteristic in light morph individuals. One or more dark terminal bands appear on the tail. The wing tips are long enough to reach or extend past the tail when the animal is perched. Legs are feathered to feet (Ferguson-Lees et al. 2005).

Widespread throughout North America, breeding from the Aleutian Islands, the interior of Alaska, Yukon, northern Mackenzie, and across Nunavut to northern Labrador and Newfoundland and south to Manitoba and southeastern Quebec. In Nunavut, rough-legged hawks are present over most of the territory except for islands without lemmings (Bechard and Swem 2002).

Rough-legged hawks regularly hover, or “kite” while facing into the wind scanning for prey, typically with wings raised in a slight dihedral (V-shape). It is a diurnal raptor that also still-hunts from prominent perching structure on both breeding and wintering grounds. Prey is captured on the ground. Courtship involves soaring and calling, with the male engaged in a flight display of repeated undulating stoops rising upward to mid-air stall. It is gregarious on migration, often travelling in large flocks, but small groups or individuals are not uncommon.

During the summer, breeding pairs prefer rugged terrain areas with steeper slopes in areas associated with primary production (i.e., vegetation), and were most likely to nest in large, productive valleys surrounded by high-elevation plateaus (Galipeau et al. 2016). It is widely distributed in winter, usually found in open habitat resembling the tundra such as prairies, plains, coastal marshes, agricultural fields, and airports (Johnsgard and Johnsgard 1990). More common in wintering areas typified by short growing seasons and low precipitation, with highest densities in the northern United States, Great Basin area, and the western shortgrass prairies (Bock and Lepthien 1976, Bock et al. 1977).

The rough-legged hawk is a small mammal specialist; thus, its breeding activity is generally associated with local abundance of ground squirrels, voles, or lemmings (Hanski 1991, Potapov 1997). It will prey on birds when small mammals are scarce, particularly juvenile passerines and shorebirds, and will resort to consuming carrion opportunistically (Watson 1986). Usually reproductively mature at 2 years of age. Stick-nests are built soon after arrival on territory, typically on cliffs, on bluffs, or on the ground. Clutch sizes are variable (1-7 eggs), depending on food availability, but 3-5 eggs are usual and laid in May. Incubation 31-33 days, provided almost entirely by the female. Nestling period is 35-40 days, and fledglings remain dependent on adults for another 2 weeks. The male provisions the young and the female, which feeds the young. Pairs show nest site fidelity, and in locations where ground squirrels are entirely absent, they may forgo breeding or have small broods when lemmings are low, in contrast to Snowy Owls, which are truly nomadic (Bechard and Swem 2002). Bechard and Swem (2002) indicated that egg-laying date was associated with spring temperatures and snow-free ledges, but Potapov (1997) reported no effect of snow melting date or spring/summer temperatures on number of nesting pairs.

Methods

Terminology

The terminology used throughout this report follows (Franke et al. 2017). The following terms are highlighted in an effort to clarify the terminology used in this report, and/or to distinguish terms used from similar terms that have distinct meaning:

nest — The structure made or the place used by birds for laying their eggs and sheltering their young (Steenhof and Newton 2007) regardless of whether eggs are laid in the nest in a given year or in any year (Millsap et al. 2015, Steenhof et al. 2017), see Scrape for Gyrfalcons.

nesting site — The substrate which supports the nest or the specific location of the nest on the landscape (Ritchie and Curatolo 1982, Millsap et al. 2015, Steenhof et al. 2017).

alternative nesting site — One of potentially several nests within a nesting territory that is not a used nest in the current year (Millsap et al. 2015).

nesting territory — An area that contains, or historically contained, one or more nests within the home range of a mated pair: a confined locality where nests are found, usually in successive years, and where no more than one pair is known to have bred at one time (Newton and Marquiss 1984, Steenhoff and Newton 2007). Note that a nesting territory may or may not be defended (Postupalsky 1974), and probably does not include all of a pair's foraging habitat (Newton and Marquiss 1984, Steenhoff and Newton 2007).

occupancy — A point estimate of the probability that a nesting territory is occupied in a given breeding season; ideally this estimate should include an estimate of uncertainty around the point. The most simple point estimate is the observed proportion calculated as the quotient of the count of occupied nesting territories and the count of known nesting territories that were fully surveyed in a given breeding season (Franke et al. 2017).

Data Exploration

Distance to disturbance

Spatial objects (lines and polygons) describing the project footprint and road were acquired from Agnico Eagle. Euclidean distances from nesting sites to the nearest spatial object were calculated in R (R Development Core Team 2017) using the `sp`, `rgeos`, and `geosphere` packages. Summary data were generated using the `summary` function in R.

Assigning Nesting Sites to Nesting Territories

In the absence of marked individuals, it can be challenging to definitively identify alternative nesting sites. Failure to account for alternative nesting sites can lead to underestimating demographic parameters such as annual productivity. To address this problem, a rule-based approach was used to estimate the number of alternative nesting sites within the study area (Figure 4):

- If two species-specific nesting sites were separated by a distance of ≤ 1 km they were considered alternative nesting sites in a single nesting territory.
- If two nesting sites within 1 km of each other were occupied by the same species in a given year, they were considered separate territories.

- If multiple species-specific nesting sites were within 1 km of one another, discrete geographic landforms or discontinuities in cliff structure were used to separate or combine sites into territories.

Temporal patterns of multi-species occupancy were used to assess the plausibility of decisions based on the application of the three rules listed above. For example, if two nesting sites were located within 1 km of each other and were occupied by two different species in alternating years, these nesting sites were identified as distinct alternative nesting sites for each species.

Assigning Identification Numbers (ID) to Nesting Territories was conducted according to the following rule set:

- Nesting Territory IDs were assigned within species only (e.g., Nesting Territory IDs for Peregrine Falcon and Rough-legged hawk were never shared).
- Nesting Territory IDs were assigned using the Identification Number of one of the Nesting Sites in the cluster according to the following rule set, in order of priority:
    i. Length of tenure (i.e., nesting sites with the longest tenure)
    ii. First tenure (i.e., nesting sites with the first tenure in the event length of tenure was equal).

Data structuring

The full data set included all known nesting sites throughout the Rankin Inlet region where nesting raptors were detected at least once from 1980 - 2024 (n=250). The data were first filtered to include only those nesting sites within the regional study area (RSA; n=205). The data were subsequently filtered to include only those nesting sites with at least one detection during the study period (2022 – 2024), which is a departure from reporting completed from 2022 – 2023. This filtering approach and subsequent analysis was undertaken in order to better reflect occupancy and reproductive success during the study period. Future analysis will likely include additional nesting sites at which breeding birds are detected in survey-specific years.

Field Surveys

Two structured surveys were conducted in 2024 (see Table 1). The focus of these surveys was to search known nesting sites for the presence of cliff-nesting raptors. In addition, incidental observations for other species were recorded (e.g., common raven) In addition to the structured surveys, favorable habitat was searched opportunistically when ferrying between known sites, camps, or other mine infrastructure and when raptors or signs of site use (e.g., whitewash, orange-colored lichen, and unused nests) were observed. Sites were considered occupied if one or more adults displayed territorial or reproductive behavior (e.g., vocalization and/or flight behavior associated with defense of breeding territory or presence of nest building, nest, or eggs). Locations with partially built or unused nests without detection of breeding aged adults were noted as such (e.g., old stick nest; no birds detected). Raptor monitoring in 2024 involved one ground-based survey (by ATV and snowmobile; 17 – 29 May) and one helicopter survey (11 - 12 August) with additional ground - monitoring of potential nesting habitat (natural cliffs, quarries and borrow pits) in coastal areas by boat.

Table 1. Broad scale survey effort from 2022-2024 for raptors breeding Meliadine Mine RSA.

Year	2022		2023		2024	
Survey	1	2	1	2	1*	2
Start	24/05	09/08	25/05	15/08	17/05	11/08
End	25/06	10/08	29/05	18/08	29/05	12/08

* excluding the period 22 – 26 May while conducing raptor surveys a Meadowbank Mine

Mapping

Shapefiles for the road, RSA, and project footprints were read into R and converted to data frames. The spatial extent for the mapping exercise was set using the `get_map` function in the `ggmap` package. Maps portraying species-specific nesting sites were plotted using `ggmap`.

Data Analysis

Distance to disturbance

Spatial objects (lines and polygons) describing the project footprint were acquired from Agnico Eagle. Euclidean distances from nesting sites to the nearest spatial object were calculated in R (R Development Core Team 2017) using the `sp` and `geosphere` packages

Occupancy

Although estimation of nesting site occupancy can serve as a metric of population status (MacKenzie et al. 2002, 2003), detection of nesting pairs is imperfect, and estimating the proportion of occupied sites without accounting for detection error can lead to underestimation of true occupancy (Kéry and Schmidt 2008). Occupancy modeling estimates parameters that influence occupancy, and simultaneously accounts for imperfect detection (Marsh and Trenham 2008). In any given year, the status of a nesting site is limited to one of only two outcomes: occupied or not occupied. Occupancy modelling estimates the following parameters:

1. initial colonization – the probability that a nesting site is occupied in the first survey year (ψ),
2. colonization – the probability that an unoccupied site becomes occupied between years (ε),
3. extinction – the probability that occupied site becomes unoccupied between years (γ); and,
4. detection – the probability that PEFA are detected given that the nesting site is occupied (*p*).

Nesting site survival is estimated as the reciprocal of extinction (i.e., the probability an occupied site remains occupied between years; 1-γ). In addition, environmental covariates can be added to an occupancy model to test whether they influence the above parameters using a logit link function. Multi-year occupancy was calculated in R (R Development Core Team 2019) using the 'unmarked' package. When appropriate, data were standardized (e.g., distance to disturbance was standardized by subtracting the mean from each distance value and dividing by the standard deviation), and then formatted specifically for 'unmarked' using the *unmarkedMultFrame* function.

Occupancy within the regional study area (RSA) among years was analyzed separately for peregrine falcons and rough-legged hawks. To do so, the total number of nesting territories was filtered to include only those that were occupied at least once from 2022 to 2024 for both species. Model fitting for candidate models (Table 2) was performed using the *colext* function. Akaike Information Criterion (AIC) was used for model selection.

Three candidate models were selected *a priori* to estimate the effect anthropogenic disturbance or time (Table 2) when contrasted against the null model. The aim of this analysis was two-fold: 1) to estimate the proportion of occupied nesting sites annually, and; 2) to estimate the trend in nesting site occupancy from 2015 to 2024. Trend in occupancy was estimated using annual occupancy probabilities to calculate average rate of change (λ) at the population level (MacKenzie et al. 2003) where a value <1 indicates population decline and >1 indicates an increase. Initial occupancy and detection probability were set to constant (i.e., 1) time varying (i.e., year), respectively, for all models. Model structure for extinction and colonization varied according to the test for effects (see Table 2).

Table 2. Candidate models

Model structure	Model #	Tests for effect of:
ψ(1) + ε(1) + γ(1) + *p*(year)	m0	Null (contrast to m1 and m2)
ψ(1) + ε(d2d) + γ(d2d) + *p*(year)	m1	Distance to disturbance (project infrastructure)
ψ(1) + ε(year) + γ(year) + *p*(year)	m2	Time (captures effect of missing covariates)

Reproductive success

Surveys were conducted during brood rearing period each year. For this report, estimates of reproductive success are estimated from the number of young hatched from a single nesting attempt by a pair of birds, regardless of age at the time they were observed. Because nestling age varied considerably between years and among sites, measures of annual productivity *per se* are expected to be biased high.

Results

Mapping

Historical data (1980 – 2024) from regional surveys indicates that a total of 250 nesting sites have been detected (A. Franke, unpublished data). Among the survey years reported here, 146 nesting sites have been occupied at least once (102 have no record of occupancy across survey years in this monitoring effort). Peregrine falcons have been documented at 81 nesting sites, rough-legged hawks at 71 nesting sites (13 nesting sites have been occupied by both peregrine falcons and rough-legged hawks, but not in the same year). Gyrfalcons have been documented at 2 nesting sites (once each in two different years) typically held by peregrine falcons. Common ravens have been documented at 6 nesting sites.

Within the Regional Study Area (RSA), nesting raptors have been detected at 205 nesting sites (Table 3; Figure 5). Nesting sites with no occupancy history 2021-2024 (n= 104 left), known peregrine falcon nesting sites (n= 81; middle), and known rough- legged hawk nesting sites (n= 72; right). Counts of nesting sites for other raptor species and common raven are reported in in Table 2. Also shown are roads (black lines), the project footprint (grey polygon), and the boundary of the regional study area (grey circle).) that have a historical record of occupancy, however, among survey years, only 116 have held nesting raptors. Of these, 52 nesting sites have been occupied by only rough-legged hawks and 50 by only peregrine falcons. Ten (10) additional nesting sites have been occupied by either peregrine falcons or rough-legged hawks resulting in a total of 60 known peregrine falcon nesting sites and 62 rough-legged hawk nesting sites. Four (4) nesting sites have been occupied by common ravens. Historically, two nesting sites have held gyrfalcons, but there has been no record of gyrfalcons nesting during the period 2021 - 2024. Within the RSA for the period 2022 – 2024, ten (10) peregrine falcon nesting sites and eight (8) rough-legged hawks nesting sites were deemed alternates, resulting in a total

of 50 peregrine falcon nesting territories and 54 rough-legged hawk nesting territories. Similarly, all nesting territories were fully surveyed except for 2024 (caribou in close proximity to the mine site resulted in a mine shutdown during the spring survey). Mean distance to disturbance was similar for both species (Table 4). Detection histories for peregrine falcons and rough-legged hawks for the period 2022- 2024 are reported in Table 5 and Table 9, respectively.

Table 3. Count of known nesting sites for common raven (CORA), gyrfalcon (GYRF), peregrine falcon (PEFA/PERL), rough-legged hawk (RLHA/PERL), short eared owl (SEOW), snowy owl (SNOW) in the Rankin Inlet region and the regional study area 2021 – 2024. Historically (1980 – 2024), throughout the region, 102 nesting sites are known to have a least one occupancy record (SPP), these sites have no record of occupancy for the period 2022 – 2024.

	CORA	GYRF/PEFA	PEFA	PERL	RLHA	SEOW	SNOW	SPP	Total
Region	6	2	66	13	59	1	1	102	250
RSA	4	0	50	10	52	0	0	89	205

Table 4. Distance to disturbance (km) metrics and count of nesting sites ≤1.5 km and ≤0.6 km from the road and the project footprint for peregrine falcons (PEFA) and rough-legged hawks (RLHA) nesting sites in the vicinity of the Agnico Eagle Meliadine Mine.

Species	Mean	SD	Min	Max	≤ 1.5 km road	≤ 0.6 km road	≤ 1.5 km footprint	≤ 0.6 km footprint
PEFA	6.60	5.58	0.23	23.40	7	2	1	0
RLHA	5.07	3.56	0.23	18.49	3	1	0	0

Peregrine Falcon Occupancy

The null model (m0; Table 5) best explained probability of occupancy among peregrine falcons. Although ranked second, the null model had the fewest parameters (i.e., most simple explanation of occupancy), and inclusion of distance to anthropogenic disturbance (m1) did not improve model fit (Delta AICc<2.0; Table 6; see Table 7 for parameter estimates). Population trend across survey years was 0.91±0.04, which indicates an overall decline from 2022 to 2024 (Figure 6; left panel; see Table 8 for observed and predicted occupancy rates).

Table 5. Count of peregrine falcon nesting territories (2022 -2024) sampled, count of nesting territories where evidence of breeding was detected, count of nesting territories that were colonized (i.e., occupied in the current year that were not occupied in previous year), count of nesting territories that were not occupied in current year that were occupied in previous year (i.e., extinct), count of nesting territories for which occupancy status remained the same for the current year as it was for the previous year, and count of nesting territories in the current year that were common to the previous year.

	Sampled	**Detected**	**Colonized**	**Extinct**	**Static**	**Common**
2022	42	33	NA	NA	NA	NA
2023	50	38	4	7	31	42
2024	50	30	6	14	30	50

Table 6. Model selection based on AIC score peregrine falcons (PEFA) nesting sites in the vicinity of the Agnico Eagle Meliadine Mine.

Model	K	AICc	Delta AICc	AICcWt	Cum.Wt
m1	8	344.40	0.00	0.67	0.67
m0	6	346.09	1.70	0.28	0.95
m2	8	349.52	5.14	0.05	1.00

Table 7. Parameter estimates (null model; log odds scale) for peregrine falcon occupancy (psi) and detection (rho).

	psi (intercept)	col (intercept)	ext (intercept)	*p* (intercept)	*p* (2023)	*p* (2024)
Estimate	2.57	0.02	-1.63	0.49	0.43	0.50
SE	1.17	0.74	0.41	0.31	0.41	0.49

Table 8. Observed and Predicted occupancy rates (probability scale), SE, and 95% CI for peregrine falcons.

	Observed	Predicted	SE	Lower 95% CI	Upper 95% CI
2022	0.79	0.92	0.07	0.78	1.04
2023	0.76	0.81	0.05	0.70	0.92
2024	0.60	0.77	0.07	0.64	0.91

Rough-legged Hawk Occupancy

The null model (m0; Table 10) best explained probability of occupancy among rough-legged hawks see Table 11 for parameter estimates). Including distance to anthropogenic disturbance did not improve model fit. Population trend over the two survey years was 0.0.32, which indicates a decline from 2022 to 2024 (Figure 6; right panel, see Table 12 for observed and predicted occupancy rates).

Table 9. Count of nesting territories sampled, count of nesting territories where evidence of breeding was detected, count of nesting territories that were colonized (i.e., occupied in 2023 that were not occupied in 2022), count of nesting territories that were not occupied in 2023 that were occupied in 2022 (i.e., extinct), count of nesting territories for which occupancy status remain the same from 2022 to 2024, and count of nesting territories that were common to both years, for rough-legged hawk nesting territories in the vicinity of the Agnico Eagle Meliadine Mine.

	Sampled	Detected	Colonized	Extinct	Static	Common
2022	44	26	NA	NA	NA	NA
2023	51	6	2	22	20	44
2024	54	3	2	5	44	51

Table 10. Model selection based on AIC score for rough-legged hawks.

Model	K	AICc	Delta AICc	AICcWt	Cum.Wt
m0	6	199.57	0.00	0.73	0.73
m1	8	202.48	2.91	0.17	0.90
m2	8	203.46	3.89	0.10	1.00

Table 11. Parameter estimates (null model; log odds scale) for rough-legged hawk occupancy (psi) and detection (rho).

	psi (intercept)	**col (intercept)**	**ext (intercept)**	***p* (intercept)**	***p* (2023)**	***p* (2024)**
Estimate	1.61	-2.79	1.67	-0.22	0.88	1.64
SE	1.21	0.76	0.48	0.41	0.91	1.27

Table 12. Predicted occupancy and detection (probability scale), SE, and 95% CI for rough-legged hawks.

	Observed	**Predicted**	**SE**	**Lower 95% CI**	**Upper 95% CI**
2022	0.59	0.83	0.14	0.55	1.00
2023	0.12	0.14	0.07	0.00	0.27
2024	0.06	0.08	0.10	0.00	0.28

Reproductive Success

Mean productivity (Table 13 for both species) for the three years of survey was 1.07 nestling per occupied territory, very similar to the long-term rate (0.9) reported elsewhere (Jaffre et al. 2015) for peregrine falcons breeding in the area surrounding Rankin Inlet. Other studies documenting rough-legged hawk productivity for the region are lacking.

Table 13. Productivity for peregrine falcons and rough-legged hawks for the period 2022 - 2024 in the Meliadine Mine RSA.

Species	Peregrine Falcon			Rough-legged Hawk		
Year	2022	2023	2024	2022	2023	2024
Nesting territories	33	38	30	26	6	3
Nestling count	26	29	50	30	4	6
Productivity	0.79	0.76	1.67	1.15	0.67	2.00

Discussion

Monitoring for breeding raptors has occurred consistently in the region associated with Meliadine Project infrastructure since 1980. Surveys have focused on searching for, documenting, and mapping nesting sites for three raptor species (i.e., peregrine falcons, rough-legged hawks, and gyrfalcons). For this report, the study design required two surveys – one to assess the location of occupied territories during the pre-incubation and incubation periods, and one to assess site productivity during the late brood rearing period. Gyrfalcons have been detected twice since 1980, and were not detected as part of this study.

Mitigation and management measures outlined in the TEMMP (Agnico Eagle, 2022) require the protection of species at risk during the breeding season (T&C 59), and requires that disturbance to birds is minimized through consistent monitoring (T&C 59), including nest-specific mitigation where necessary (T&C 61, 62, and 75; see Table 14 for nesting sies that are candidates for mitigation). Peregrine falcons were assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in November of 2017, and were ranked “Not at Risk”. The responsible Minister rendered a decision on the recommendation made by COSEWIC, and peregrine falcons are no longer considered to be threatened

in Canada. This report meets the T&C outlined by NIRB by documenting and mapping raptor nesting sites within 1.5 km of the project infrastructure, including minimum “no disturbance” buffers.

Jaffre et al. (2015) reported that the average occupancy from 1982 to 2013 was 0.75 ± SD = 0.6. This analysis found occupancy rates to be similar to the long-term rate reported elsewhere for peregrine falcons breeding in the area surrounding Rankin Inlet, and there is no evidence of the effect of distance to disturbance on occupancy. Regardless of this finding, the potential for detecting mine-related anthropogenic disturbance will be challenging in light of the presence of roads, trails, cabins, travel routes and activities on the sea/sea-ice and lake ice associated with the community of Rankin Inlet. Conducting multi-year surveys at the scale of the RSA was recommended in 2022, and this report satisfies that recommendation. Caribou were detected in close proximity to the Meliadine site in May 2024, and the subsequent site shutdown precluded helicopter support. All survey effort in May 2024 was conducted by snowmobile. The presence of caribou and the distance of some nesting sites from the community of Rankin Inlet precluded nesting site visits at some sites. It is possible that the overall results for 2024 are biased as a result. This is a good example of the way that mitigation on behalf of one species can affect monitoring and mitigation on behalf of another species. In addition, further survey effort in northern portion of the RSA where no survey effort had previously been done was also recommended; as was done in 2023, Agnico Eagle undertook additional hours of survey time and searched the northwestern quadrant of the RSA.

Population trend among years for both species suggests that occupancy declined from 2022 to 2024, however, this finding should be interpreted with caution until additional years have been considered. For rough-legged hawks, in particular, the apparent decline is expected to be associated with small mammal abundance, which is cyclical. Given that no evidence of a distance effect was found, and assuming that the apparent decline is real, other causes should be considered; one potential mechanism is Highly Pathogenic Avian Influenza, which spiked in 2022. It is recommended that any found-dead raptors are submitted for disease testing.

Terms and Conditions

T&C 59 - 60: Do not apply to raptors.

T&C 61: Nesting deterrents to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities were not required. Surveys of known nesting sites identified those at which breeding attempts were detected, and are reported here.

T&C 62: 40 known nesting sites are within 1.5 km of project infrastructure. Nine (9) peregrine falcon nesting sites are within 1.5 km of the haul road and one (1) is with 1.5 km of the site footprint. Twenty-three (23) rough-legged hawk nesting sites are within 1.5 km of the haul road and two (2) are within 1.5 km of the site footprint. Of the 40 known nesting sites within 1.5 km of project infrastructure, 19 nesting sites are within 0.6 km of project infrastructure. Four (4) known peregrine falcon nesting sites are within 0.6 km of the haul road and one (1) is within 0.6 km of the site footprint. Nine (9) rough-legged hawk nesting sites are within 0.6 km of the haul road and two are within 0.6 km of the site footprint.

T&C 71: This report and the results herein represent detailed monitoring for raptors.

T&C 72: Comprehensive field surveys conducted from 2022 to 2023 represent the ongoing efforts to develop and update relevant monitoring for raptors.

Table 14. Geographic coordinates (decimal degrees), distance to project footprint (Km2FP), and distance to haul road (Km2HR) and minimum distance to disturbance (minD2D) for 205 known nesting sites in the RSA. Territories within 600 m of infrastructure (road, or footprint) are highlighted in dark yellow, while territories that are within 1500 m are highlighted in light yellow require a mitigation plan. Species column indicates historical occupancy; PEFA = peregrine falcon, RLHA = rough-legged hawk, PERL = peregrine falcon or rough-legged hawk, SPP = unknown, CORA = common raven, GYRF = gyrfalcon, SNOW = snowy owl, SEOW = short eared owl. Not all nesting sites are occupied in any given year.

NSID	Latitude	Longitude	Species	Km2FP	Km2HR	minD2D
184	63.04296	-92.22758	SPP	0.1	2.8	0.1
192	62.98811	-92.15429	SPP	3.8	0.1	0.1
67	62.92744	-92.05212	PERL	12.1	0.2	0.2
14	62.97506	-92.12968	RLHA	5.6	0.2	0.2
215	63.02298	-92.19985	SPP	0.4	0.3	0.3
216	63.02323	-92.19994	SPP	0.5	0.3	0.3
110	62.93445	-92.05718	PEFA	11.3	0.4	0.4
20	62.85597	-92.16164	RLHA	18.2	0.8	0.8
10	62.79271	-92.10331	PERL	25.6	0.9	0.9
125	62.79715	-92.08364	SPP	25.2	0.9	0.9
197	63.0555	-92.25328	SPP	1.0	4.7	1.0
220	62.94755	-92.11851	SPP	8.6	1.0	1.0
242	62.97437	-92.15548	SPP	5.2	1.0	1.0
133	62.80613	-92.15442	SPP	23.8	1.1	1.1
18	62.85466	-92.17141	PERL	18.3	1.2	1.2
158	62.85388	-92.17272	SPP	18.4	1.2	1.2
217	63.02948	-92.28385	SPP	1.2	4.6	1.2
173	62.94207	-92.0525	SPP	10.7	1.2	1.2
8	62.78951	-92.10516	PEFA	25.9	1.3	1.3
159	62.78857	-92.09582	SPP	26.1	1.4	1.4
63	62.86624	-92.07844	PEFA	17.9	1.4	1.4
236	62.80675	-92.17221	RLHA	23.7	1.4	1.4
37	62.85816	-92.17495	PEFA	17.9	1.5	1.5
48	62.80494	-92.16938	SPP	23.9	1.5	1.5
191	63.00545	-92.2249	SPP	1.5	1.8	1.5
156	62.80737	-92.1787	RLHA	23.6	1.6	1.6
200	63.05908	-92.2401	PEFA	1.7	4.6	1.7
47	62.8155	-92.18944	RLHA	22.7	1.7	1.7
123	62.79734	-92.14707	SPP	24.8	1.7	1.7
196	63.05507	-92.18987	SPP	1.9	3.6	1.9
50	62.79457	-92.14462	RLHA	25.1	1.9	1.9
135	63.05417	-92.18661	PEFA	1.9	3.5	1.9
104	62.79592	-92.15	RLHA	24.9	2.0	2.0
185	63.05146	-92.18095	SPP	2.0	3.2	2.0
51	62.7874	-92.1265	PEFA	26.0	2.0	2.0
105	62.78568	-92.12182	CORA	26.2	2.0	2.0
151	62.78581	-92.07715	SPP	26.6	2.0	2.0

117	63.05057	-92.17638	RLHA	2.0	3.2	2.0
11	62.78963	-92.13411	RLHA	25.7	2.1	2.1
137	62.81346	-92.19512	RLHA	22.9	2.1	2.1
186	63.04966	-92.17135	RLHA	2.1	3.2	2.1
78	62.79712	-92.16252	PEFA	24.8	2.1	2.1
108	62.79659	-92.16116	SPP	24.8	2.2	2.2
144	62.80004	-92.17838	CORA	24.4	2.2	2.2
74	62.80017	-92.17944	PEFA	24.4	2.2	2.2
88	62.88853	-92.14969	PERL	14.6	2.3	2.3
56	62.79558	-92.17157	RLHA	24.9	2.5	2.5
187	63.067	-92.22231	SPP	2.5	5.1	2.5
121	62.89437	-92.1321	RLHA	14.1	2.5	2.5
166	62.92743	-92.00643	RLHA	13.4	2.5	2.5
115	62.9717	-92.19602	SPP	5.3	2.6	2.6
201	62.8897	-92.1586	PEFA	14.5	2.7	2.7
36	62.80346	-92.19858	RLHA	24.0	2.7	2.7
213	62.89279	-92.15106	SPP	14.2	2.7	2.7
55	62.7919	-92.16415	RLHA	25.3	2.7	2.7
154	62.80647	-92.20323	SPP	23.7	2.7	2.7
49	62.78624	-92.15094	SPP	26.0	2.8	2.8
138	62.9659	-92.04414	SPP	8.9	2.9	2.9
165	62.8288	-92.21566	SPP	21.2	2.9	2.9
202	62.89697	-92.14091	SPP	13.8	2.9	2.9
152	62.81447	-92.21392	SPP	22.8	3.0	3.0
177	62.93968	-92.15604	SPP	9.0	3.0	3.0
111	62.79798	-92.19711	RLHA	24.6	3.0	3.0
113	62.8969	-92.14893	RLHA	13.7	3.1	3.1
81	62.86605	-92.20228	SPP	17.0	3.1	3.1
221	63.02802	-92.33019	RLHA	3.2	6.9	3.2
52	62.78586	-92.1623	PEFA	26.0	3.2	3.2
2	62.79479	-92.19698	SPP	25.0	3.3	3.3
163	62.8836	-92.01061	SPP	17.4	3.3	3.3
38	62.79128	-92.18887	PEFA	25.4	3.3	3.3
161	62.80963	-92.21833	SPP	23.3	3.3	3.3
109	63.02752	-92.33361	RLHA	3.3	7.0	3.3
149	62.80023	-92.20943	SPP	24.4	3.4	3.4
54	62.81046	-92.21963	RLHA	23.2	3.4	3.4
183	62.82779	-92.2247	SPP	21.3	3.4	3.4
53	62.80257	-92.21385	PEFA	24.1	3.4	3.4
107	62.86341	-92.03104	RLHA	19.0	3.5	3.5
175	62.95735	-92.01853	SPP	10.5	3.6	3.6
84	63.02948	-92.34513	PEFA	3.8	7.6	3.8
30	62.78494	-92.18942	PEFA	26.1	3.9	3.9
189	63.03964	-92.08674	PEFA	4.0	5.4	4.0

15	62.79058	-92.20854	RLHA	25.4	4.0	4.0
195	63.02049	-92.34209	SPP	4.1	7.5	4.1
61	62.91406	-92.1407	PEFA	11.9	4.1	4.1
212	62.86443	-92.01529	PERL	19.3	4.1	4.1
193	62.81945	-92.238	RLHA	22.2	4.1	4.1
69	62.81746	-92.23771	PEFA	22.5	4.2	4.2
33	62.82787	-92.24014	PEFA	21.3	4.2	4.2
32	62.82817	-92.24089	CORA	21.3	4.2	4.2
77	62.86439	-92.01174	PEFA	19.3	4.3	4.3
34	62.83007	-92.24242	RLHA	21.1	4.3	4.3
169	62.86323	-92.23182	RLHA	17.4	4.4	4.4
127	62.89143	-91.97929	RLHA	17.5	4.4	4.4
153	62.84943	-92.0299	SPP	20.5	4.4	4.4
129	63.04116	-92.07213	PEFA	4.8	6.1	4.8
118	62.83578	-92.25304	SPP	20.5	4.8	4.8
237	62.82458	-92.2533	RLHA	21.7	4.9	4.9
95	62.96931	-92.00229	PEFA	10.2	4.9	4.9
79	62.87996	-92.23027	RLHA	15.5	5.0	5.0
190	63.04117	-92.06637	PEFA	5.0	6.4	5.0
199	63.03459	-92.06327	PERL	5.1	6.2	5.1
57	62.82254	-92.25725	RLHA	22.0	5.1	5.1
239	63.07238	-92.35806	PEFA	5.2	9.9	5.2
31	62.81911	-92.25923	PEFA	22.3	5.2	5.2
46	63.07264	-92.36035	SPP	5.3	10.0	5.3
112	62.87769	-92.23878	RLHA	15.8	5.3	5.3
119	62.84214	-92.26161	RLHA	19.8	5.3	5.3
174	62.96577	-91.98637	PEFA	11.1	5.4	5.4
136	63.03012	-92.0563	SPP	5.4	6.4	5.4
145	62.83627	-92.26421	PEFA	20.5	5.4	5.4
243	63.02988	-92.05566	RLHA	5.4	6.5	5.4
209	63.09079	-92.32443	RLHA	5.4	10.0	5.4
172	62.94105	-92.2174	SPP	8.7	5.5	5.5
250	62.84282	-92.26477	RLHA	19.7	5.5	5.5
114	62.97403	-91.99301	SPP	10.3	5.6	5.6
246	63.07397	-92.36822	SPP	5.7	10.4	5.7
134	63.09531	-92.31744	PEFA	5.7	10.2	5.7
1	62.86834	-92.25595	PEFA	16.9	5.7	5.7
162	62.84466	-92.269	PEFA	19.5	5.8	5.8
244	63.0302	-92.04791	RLHA	5.8	6.9	5.8
188	63.03066	-92.04759	SPP	5.8	6.9	5.8
120	62.84616	-92.27536	PEFA	19.4	6.1	6.1
240	62.9143	-91.93674	SPP	16.8	6.1	6.1
194	63.04227	-92.39597	SPP	6.2	10.4	6.2
89	62.92978	-92.22168	PEFA	9.9	6.4	6.4

248	63.10112	-92.32406	SPP	6.4	10.9	6.4
76	62.81964	-91.97574	RLHA	24.6	6.7	6.7
179	62.97345	-92.31911	SPP	6.7	7.1	6.7
103	63.08382	-92.37894	RLHA	6.8	11.5	6.8
6	62.84279	-92.29028	SPP	19.9	6.8	6.8
150	62.95695	-92.28958	SPP	7.5	6.9	6.9
39	62.82981	-91.98092	PERL	23.5	6.9	6.9
86	62.8657	-92.28163	PERL	17.3	6.9	6.9
35	62.85095	-91.96684	RLHA	21.7	7.0	7.0
198	62.87525	-92.28106	SPP	16.2	7.2	7.2
124	62.95798	-91.92937	SPP	14.0	7.2	7.2
176	62.94125	-92.25728	SPP	8.8	7.2	7.2
214	62.87168	-92.28616	RLHA	16.7	7.3	7.3
4	62.84473	-92.29986	PEFA	19.7	7.3	7.3
71	62.85398	-92.2971	PEFA	18.7	7.4	7.4
42	62.82765	-91.96704	RLHA	24.0	7.4	7.4
238	62.82969	-92.30389	SPP	21.4	7.4	7.4
247	63.0857	-92.39252	SPP	7.4	12.2	7.4
41	62.83114	-91.96916	PEFA	23.6	7.5	7.5
148	62.82506	-92.30988	SPP	22.0	7.7	7.7
168	62.8306	-92.31108	SPP	21.4	7.8	7.8
58	62.83214	-92.31168	PEFA	21.2	7.8	7.8
218	62.94964	-92.30101	SPP	8.5	7.9	7.9
147	62.80685	-92.30811	PEFA	24.0	7.9	7.9
26	62.78538	-92.29602	RLHA	26.3	8.0	8.0
72	62.81276	-92.31326	RLHA	23.4	8.0	8.0
98	62.94722	-92.30117	PEFA	8.7	8.0	8.0
40	62.82948	-91.95262	SPP	24.2	8.2	8.2
96	62.94216	-92.29262	RLHA	9.1	8.2	8.2
60	62.80968	-92.31837	SPP	23.8	8.3	8.3
43	62.82485	-91.94098	RLHA	24.9	8.5	8.5
66	62.84227	-92.32505	PEFA	20.3	8.6	8.6
83	62.79965	-92.31923	SPP	24.9	8.6	8.6
5	62.85239	-92.32246	PERL	19.1	8.6	8.6
116	62.94254	-92.30706	SPP	9.3	8.6	8.6
29	62.80025	-92.32125	PEFA	24.8	8.7	8.7
211	62.78424	-92.30925	SPP	26.5	8.7	8.7
219	62.94549	-92.31899	SPP	9.3	8.8	8.8
28	62.79558	-92.3236	PEFA	25.3	8.9	8.9
3	62.82665	-91.93318	PERL	24.9	9.0	9.0
45	62.82539	-91.92347	RLHA	25.3	9.4	9.4
106	62.84457	-92.34248	RLHA	20.2	9.5	9.5
59	62.84242	-92.34399	RLHA	20.5	9.5	9.5
160	62.91917	-92.28156	SPP	11.4	9.6	9.6

224	62.97502	-92.40371	SPP	9.8	11.1	9.8
210	62.85975	-91.88653	SPP	23.1	10.1	10.1
102	62.82212	-91.90668	CORA	26.0	10.1	10.1
164	62.94757	-92.35719	SPP	10.2	10.2	10.2
44	62.82068	-91.90159	RLHA	26.3	10.4	10.4
87	62.85592	-92.35782	SPP	19.3	10.5	10.5
130	62.83242	-91.90268	PEFA	25.1	10.7	10.7
85	62.85595	-91.8748	SPP	23.8	10.8	10.8
99	62.8501	-92.39307	RLHA	20.5	12.1	12.1
100	62.83075	-92.40263	PEFA	22.7	12.5	12.5
245	63.04134	-92.5261	SPP	12.8	16.9	12.8
178	62.85229	-91.82487	SPP	25.8	13.3	13.3
241	62.99313	-92.53252	SPP	14.1	17.3	14.1
222	62.90241	-91.78	PEFA	23.8	14.1	14.1
228	63.10543	-91.91509	PEFA	15.1	16.6	15.1
206	62.98951	-92.55194	SPP	15.2	18.3	15.2
181	63.02383	-92.57773	SPP	15.5	19.4	15.5
205	62.98913	-92.5595	SPP	15.6	18.7	15.6
227	63.07924	-91.87154	SPP	15.7	17.1	15.7
204	62.98325	-92.55981	SPP	15.8	18.8	15.8
251	62.98454	-92.56924	RLHA	16.2	19.2	16.2
180	62.94993	-92.55701	SPP	17.5	19.4	17.5
225	63.03358	-92.62847	SPP	18.0	22.0	18.0
249	63.13407	-91.88545	SPP	18.2	19.8	18.2
203	62.93973	-92.56159	SPP	18.4	19.9	18.4
90	63.03822	-92.64205	SPP	18.7	22.7	18.7
207	63.03754	-92.64405	RLHA	18.8	22.8	18.8
226	63.04958	-91.77335	PEFA	19.8	19.5	19.5
146	62.87033	-92.55531	SPP	23.3	20.6	20.6
235	63.14853	-91.81863	PEFA	21.8	23.4	21.8
234	63.14742	-91.81652	PEFA	21.8	23.4	21.8
233	63.15709	-91.78819	PEFA	23.6	25.2	23.6
232	63.14907	-91.77355	PEFA	23.7	25.3	23.7
231	63.14867	-91.76431	SPP	24.1	25.6	24.1
229	63.10565	-91.71488	SPP	24.2	25.5	24.2
230	63.1425	-91.73424	SPP	25.0	26.5	25.0

Figure 1



Figure 1. Adult male peregrine falcon. Note the dark hood and face with distinct dark malar stripe, white throat, slate-grey back, and barred belly, legs, and tail. Wings are long and pointed. Note the yellow legs, cere and eye ring.

Figure 2



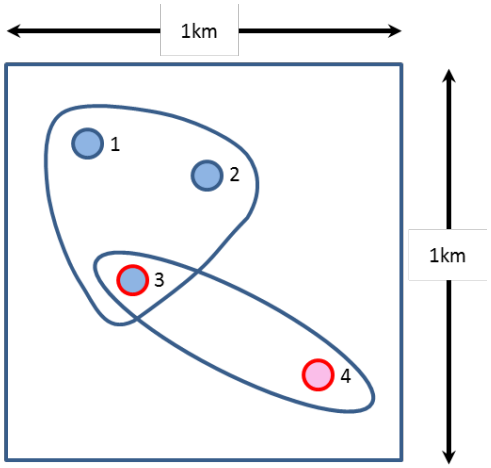
Figure 2. Adult female gyrfalcon. Note that wings are more rounded and broader than the peregrine falcon. The tail is relatively long. When perched, wings extend 2/3 down the tail. The body is thick and powerful, particularly in females. Adults have a yellow cere

Figure3



Figure 3. Adult male rough-legged hawk. Note predominantly brown in colour and mottled. A broad chest band is evident, and dark carpal patches (not evident here) are characteristic in light morph individuals. One or more dark terminal bands appear on the tail.

Figure 4



NS ID	PEFA NT ID	RLHA NT ID	2011	2012	2103	2014	2015	2016	2017
1	**1**	**-**	PEFA	PEFA	NBD	NBD	NBD	PEFA	PEFA
2	1	-	NBD	NBD	PEFA	NBD	PEFA	NBD	NBD
3	1	4	NBD	NBD	NBD	PEFA	RLHA	RLHA	NBD
4	-	4	RLHA	RLHA	NBD	RLHA	NBD	NBD	RLHA

Figure 4. Rule-based approach used to assign nesting sites to nesting territories. A cluster of four nesting sites within 1 km of one another that exhibit a site occupancy history among seven years for two species (PEFA and RLHA). Nesting Sites 1 and 2 (blue circles with blue borders) have been occupied solely by PEFA. Nesting Site 4 (red circle with red border) has been occupied solely by RLHA. Nesting Site 3 (blue circle with red border) has been occupied by both PEFA and RLHA. In this example, Nesting Sites 1, 2 and 3 are grouped into a single PEFA Nesting Territory and assigned Nesting Territory ID 1 based on PEFA–specific tenure length (Nesting Site 1 has the longest tenure) and first tenure. Nesting Sites 3 and 4 are grouped into a single RLHA Territory and assigned Nesting Territory ID 4 based on RLHA–specific tenure length (Nesting Site 4 has the longest tenure) and first tenure. Unique nesting locations are ultimately defined by a Nesting Territory ID and a Nesting Site ID (E.g., NT ID 1, NS ID 2). NBD = no birds detected.

Figure 5

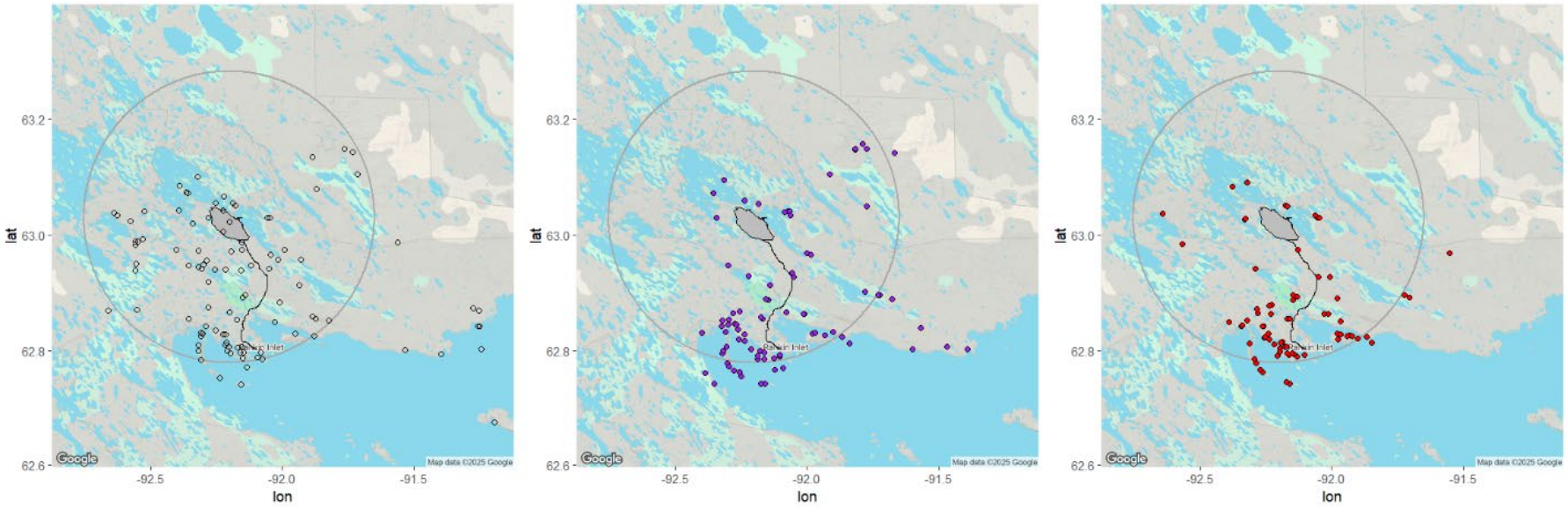


Figure 5. Nesting sites with no occupancy history 2021-2024 (n= 104 left), known peregrine falcon nesting sites (n= 81; middle), and known rough-legged hawk nesting sites (n= 72; right). Count of nesting sites for other raptor species and common raven are reported in in Table 3. Count of known nesting sites for common raven (CORA), gyrfalcon (GYRF), peregrine falcon (PEFA/PERL), rough-legged hawk (RLHA/PERL), short eared owl (SEOW), snowy owl (SNOW) in the Rankin Inlet region and the regional study area 2021 – 2024. Historically (1980 – 2024), throughout the region, 102 nesting sites are known to have a least one occupancy record (SPP), these sites have no record of occupancy for the period 2022 – 2024.. Also shown are roads (black lines), the project footprint (grey polygon), and the boundary of the regional study area (grey circle).

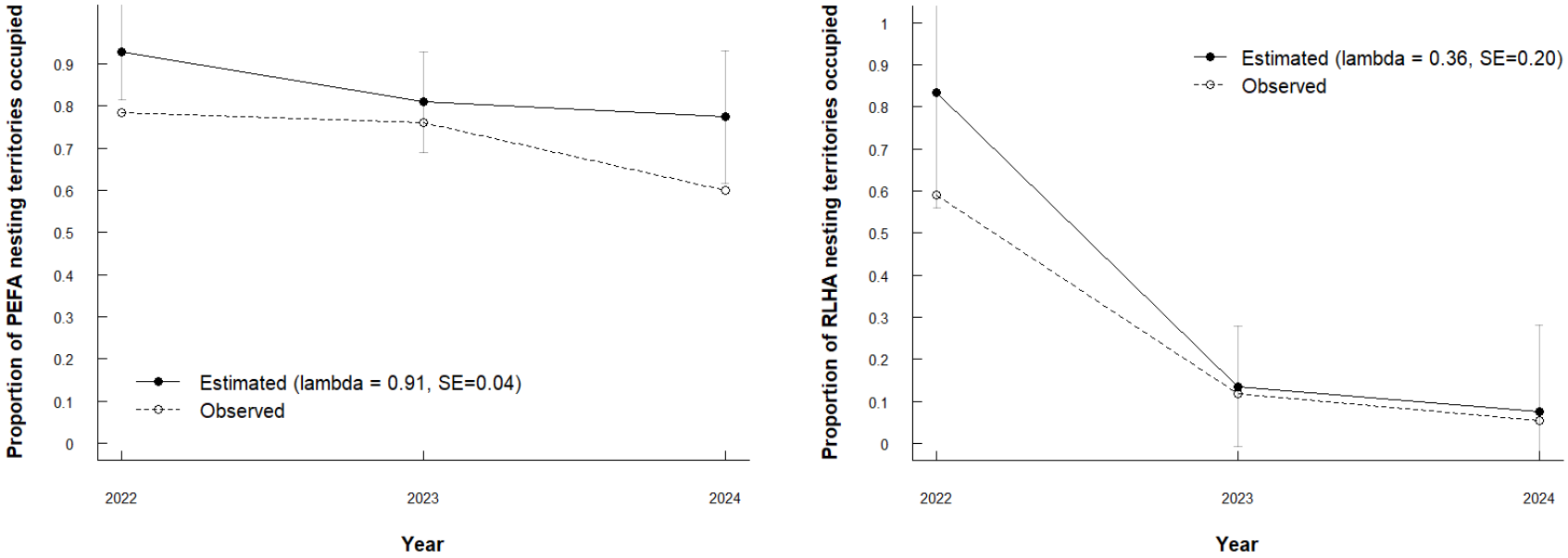


Figure 6. Estimated trend in occupancy for peregrine falcons (L) and rough-legged hawks (R) using annual occupancy probabilities to calculate average rate of change (λ) at the population level, where λ<1.0 . indicates population decline and λ>1.0 indicates an increase.

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APPENDIX G

Den Survey, 2024

AGNICO EAGLE

MELIADINE GOLD MINE

2024 Den Survey

Prepared for:
Nunavut Impact Review Board

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

JANUARY 2025

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Comment
R0	2024-01	All	All	Initial report
R1	2024-02	All	All	Compliance Revision and Finalization

TABLE OF CONTENTS

1 INTRODUCTION 5
1.1 Background 5
1.2 Inuit Qaujimajatuqangit 5
1.3 Purpose of this Document 6

2 METHODS 7

3 RESULTS 7

4 MITIGATION MEASURES 10

5 CONCLUSION 11

6 REFERENCES 12

APPENDIX A. DEN CHARACTERISTICS PER SPECIES 14

APPENDIX B. DEN SURVEY PHOTOS 15

LIST OF FIGURES

Figure 1: 2024 Den Locations at the Mine Site and along the Waterline 9

LIST OF TABLES

Table 1: List of Fox Dens Visited in 2024 7

ABBREVIATIONS AND UNITS

Agnico Eagle	Agnico Eagle Mines Limited
AWAR	All-Weather Access Road
CK	Community Knowledge
cm	centimeter
InK	Indigenous Knowledge
IQ	Inuit Qaujimajatuqangit
IQn	Inuit Qaujimaningit
km	kilometer
ha	hectare
m	meter
NIRB	Nunavut Impact Review Board
RIBR	Rankin Inlet Bypass Road
TEMMP	Terrestrial Environment Management and Monitoring Plan
TK	Traditional Knowledge

1 INTRODUCTION

1.1 BACKGROUND

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Mine, located approximately 25 km north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. In February 2015, Meliadine was issued the Project Certificate No. 006 from the Nunavut Impact Review Board (NIRB) with Amendment No. 001 in February 2019 and Amendment No. 002 in March 2022 to reflect modifications to the Meliadine Gold Mine as proposed in the Saline Effluent Discharge to Marine Environment Proposal (Waterlines Proposal).

The Waterlines Proposal included the installation of dual waterlines along the All-weather Access Road (AWAR) and the Rankin Inlet Bypass Road (RIBR) for the conveyance of treated saline effluent from the Meliadine Mine site to Itivia Harbour in Rankin Inlet. Construction of the waterlines began in 2023 and continued in 2024.

The construction of the Pump Haul Road took place in 2024. Pump Haul Road connects to the existing Haul Road at Tiriganiaq Pit 1 and to an access road that connects to kilometer 27.3 of the AWAR. Pump Haul Road will facilitate access to additional open pits and allow transportation for mining operations.

In accordance with Term and Condition 53 of the NIRB Project Certificate No. 006 (Amendment No. 002):

> *"Prior to construction of Project infrastructure including the waterlines and Phase 2 of the all-weather access road, the Proponent shall conduct a survey that is sufficient to locate any dens of foxes, bears or wolverines that could be damaged or destroyed during construction or operation of the Project."*

In addition, the Terrestrial Environment Management and Monitoring Plan (TEMMP) also specifies that den surveys for fox, bears, and wolverines should be undertaken prior to construction of Project infrastructure and Phase 2 of the AWAR.

Carnivore species around the Project site include the following:

- Arctic fox (*Alopex lagopus*);
- Grey wolf (*Canis lupus*);
- Polar bear (*Ursus maritimus*);
- Barren ground grizzly (*Ursus arctos*); and
- Wolverine (*Gulo gulo*).

1.2 INUIT QAUJIMAJATUQANGIT

Agnico Eagle aims to incorporate Inuit Qaujimaningit (IQn), Inuit Qaujimajatuqangit (IQ), Traditional Knowledge (TK), Community Knowledge (CK), Indigenous Knowledge (InK) in wildlife mitigation and monitoring. Agnico Eagle acknowledges that IQn, IQ, TK, CK, InK is continually learnt and continues to be gathered through various engagements related to the Meliadine Mine. This section highlights IQ, TK and others for better understanding the importance of furbearers for the local communities since time immemorial.

According to the Final Environmental Impact Statement (FEIS; Golder 2014), between 1900 and 1950, trapping foxes was a predominant winter occupation for the Inuit of Rankin Inlet, Whale Cove, and Chesterfield Inlet (Riewe 1992; Freeman 1976). Traplines located near food caches could stretch as long as 160 km. The Meliadine valley area was extensively

harvested back then for that purpose (Nanuk Enterprises 2011). Foxes were trapped for their fur. Wolves and wolverines were hunted when encountered due to their interference with food caches and traps, but also due to their high pelt value (Nanuk Enterprises 2011; Riewe 1992; Freeman 1976). Trapping furbearer species provided local Inuit with skins for trade at the small posts along the coast during spring and summer months (Nanuk Enterprises 2011).

Since 1950, trapping has declined but is still taking place by few people in the communities (Nanuk Enterprises 2011). Baseline studies from 1999 indicated that Arctic foxes remain abundant in the area and represent the main species harvested by trappers (Golder 2014).

Polar bears are the most important marine mammals to the people of Rankin Inlet, Whale Cove, and Chesterfield Inlet, in particular for the Inuit hunters (Burt and Hickes 2012). Even if polar bears are rarely seen, polar bears represent an importance to Inuit culture, identity, a strong connection with the land, and Inuit traditional ways of life (Tomaselli et al 2022). A small quota of polar bears is allowed to be hunted reaching a fine balance between the polar bear population concerns and community safety. They were traditionally hunted using harpoons then carried by dogs for their skins, meat and fat (Burt and Hickes 2012). Today, polar bears still a source of country food to local Inuit Elders that is shared in the communities. Polar bears sustain traditional lifestyle and constitute an important community income for locals associated with the tourism and hunting outfitters industries (Burt and Hickes 2012, Nanuk Enterprises 2011). The hide can be sold or used for clothing, as blankets or as mattresses. Skulls, teeth and claws can be carved and sold as jewelry (Tomaselli et al 2022). The area most suitable for polar bears is along the coast. Specifically in the vicinity of the Mine site, the lower Meliadine valley and the lowlands areas were identified to potentially being more suitable for polar bears (Nanuk Enterprises 2011).

In the FEIS, Elders mentioned that grizzly observations were increasing along the coast of Hudson Bay (Golder 2014). Elders also mentioned that they were commonly seen between the Diana River and Meliadine River area and therefore considered as a safety threat to humans and cabins. Grizzlies are consequently hunted if they are seen as a precaution instead of being purposefully hunted for food (Golder 2014).

1.3 PURPOSE OF THIS DOCUMENT

This document was prepared to address the above referenced Term and Condition 53, and aims to:

- Summarize den survey methodology;
- Locate carnivore dens that could be impacted by the mining activities or mining-related activities;
- Present the results from the den survey conducted around the Mine site, AWAR, RIBR, proposed Discovery Road, Pump Haul Road, and along the waterline proposed routing; and
- Summarize the mitigation measures to be implemented when dens are found in and around construction site(s).

2 METHODS

The den survey consisted of visual observations of den openings generally located on sandy and/or vegetated mound or ridges with a gentle south-facing slope, which are indicators of suitable ground for a den (Macpherson 1996; Lai and Berteaux 2013). Signs of wildlife such as animal observations, tracks, scats, bones, trail conditions, and fresh digging were also used to determine the species using the den and if the den was active in 2024 (Elbroch 2003; Murie 1989). When a den was found:

- Location was recorded using a GARMIN map 78s;
- Pictures of the den and the surrounding habitat were taken;
- Den openings were measured; and
- Signs of wildlife were documented.

Appendix A further describes the den characteristics for furbearer species targeted. However, the emphasis of this report is on the Arctic fox as it is the only known species to den in the area during the survey period.

The circumstance under which den surveys were conducted varies. Most of the surveys occurred opportunistically while conducting other tasks in the vicinity. In other occasion, they were conducted prior to the construction of project infrastructure to verify den presence and/or if historical dens were active.

Depending on the locations, the distances, or the areas to cover, surveys were conducted by environmental technicians walking or driving all-terrain vehicles (ATV). When mining-related activities were planned within the setback distance of known dens, the locations were revisited to assess if the den was active. In that situation, the use of drone, binoculars, or trail cameras were used to limit disturbance.

3 RESULTS

The historical dens found in 2022 and 2023 were revisited in 2024; with the exception of Fox-2023-01 since it is located outside of the site boundary and no activities were planned in its vicinity (Table 1, Figure 1). A total of 11 dens were revisited as identified in Table 1. Figure 1 shows the den locations. The photos of the dens can be found in Appendix B.

Throughout the summer of 2024, no new fox dens were observed. Before the start of the Pump Haul Road construction, the den "Fox-2022-6" was visited using a drone and binoculars on May 27th, 2024, to see if the den was active. At the time of the survey, no signs of activity were observed. Also, surface drilling activities were planned at Fox den "Fox-2022-07". Before drilling occurred, the den area was surveyed on January 5th, 2024, and was determined to be inactive. The new sections of waterline were surveyed prior to construction.

Table 1: List of Fox Dens Visited in 2024

Fox Den Number	Location	UTM Zone 15 NAD 83		Den Area (m^2)	Active in 2024
		Easting	Northing		
Known dens revisited in 2024					
Fox-2022-1	AWAR	541443	6987064	25	No
Fox-2022-2	AWAR	541562	6987030	300	Unknown
Fox-2022-3	RIBR	545356	6964105	250	Yes – Most likely Siksik burrow
Fox-2022-4	Site	536995	6990914	30	No

Fox Den Number	Location	UTM Zone 15 NAD 83		Den Area (m^2)	Active in 2024
		Easting	Northing		
Fox-2022-5	Site	537301	6990794	30	Yes – Most likely Siksik burrow
Fox-2022-6	Pump Haul Road	538991	6988119	60	No
Fox-2022-8	Site	541971	6988814	25	No – Most likely Siksik burrow
Fox-2022-9	Site	542139	6989139	40	Yes – Most likely Siksik burrow
Fox-2023-2	Discovery Road	547534	6981527	150	Yes-Fox
Fox-2023-3	Apache Bypass	543315	6968010	30	Yes-Fox
Fox-2023-4	Apache Bypass	543395	6968750	40	Yes-Siksik observed at time of assessment

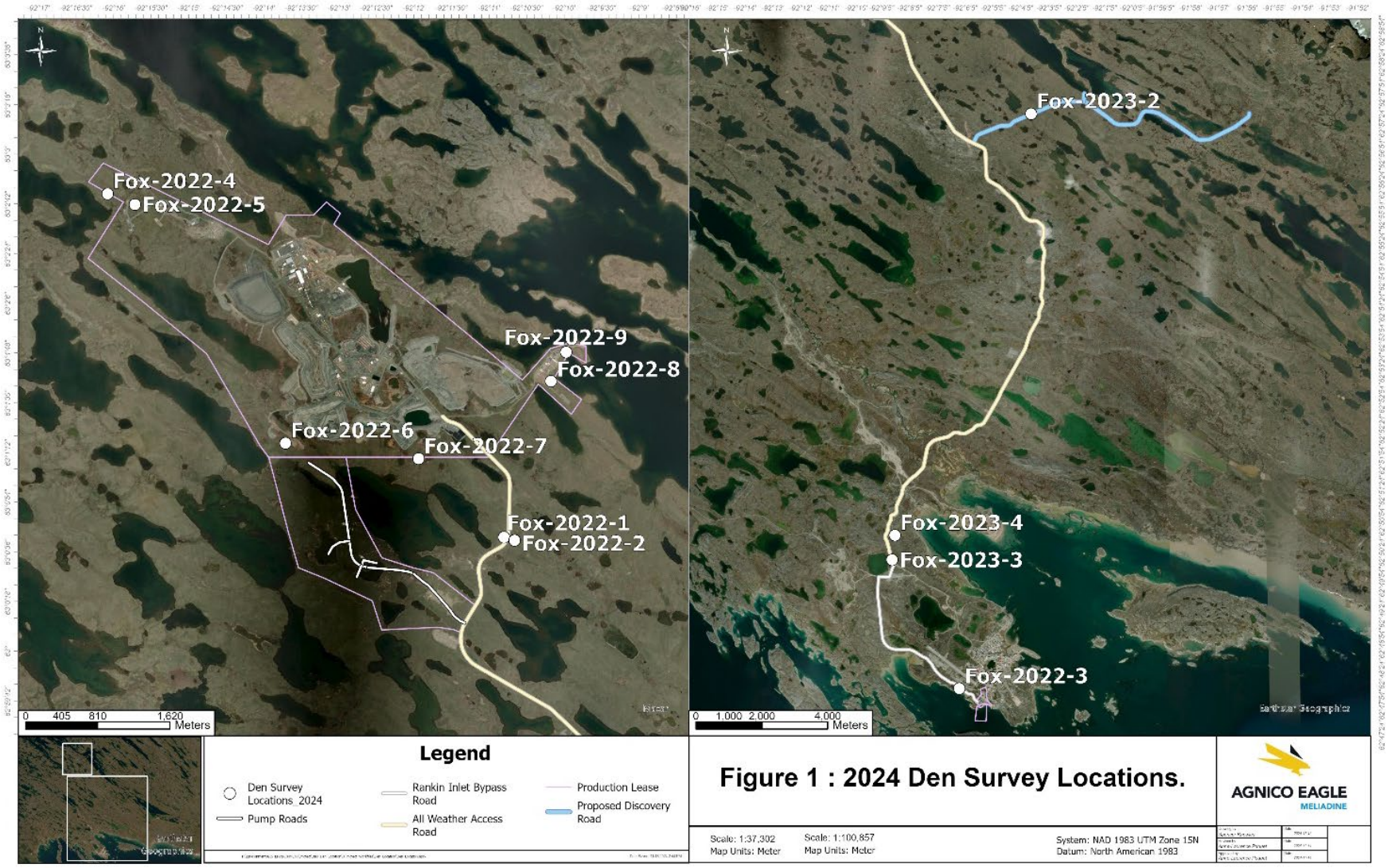


Figure 1: 2024 Den Survey Location

4 MITIGATION MEASURES

This section presents the recommendations in the situation where construction activities are within the recommended setback distances of an active den. The recommended construction setbacks are a protection buffer zone around a den where further mitigation measures will be implemented as described below. The setback distances depend on the species, the time of the year and the type of construction activities. The relevant recommended construction setbacks are presented in Table 2.

Table 2: Recommended Construction Setbacks per Species.

Species	Construction Setbacks	Sensitive period	Type of activity
Fox dens	150 m	May 1-Sept 15	General industrial activity
Wolf dens	800 m	May 1-Sept 15	General industrial activity
Bear dens polar bear, grizzly	800 m	Sept 30-Mar 30	General industrial activity
Bear dens polar bear, grizzly	1500 m	Sept 30-Mar 30	Blasting
Wolverine dens	2000 m	Oct 15-July 15	General industrial activity

Source: GNWT 2016

Precautions will be taken to not damage or destroy dens. In the situation where a new den is discovered, the Environment Department will be contacted to implement mitigation measures. Otherwise, the mitigation measures of known den locations will consist of:

- Incorporating known den locations and setback distances on the construction plans (drawings and engineering specifications);
- Delineating protective areas clearly at the working site;
- Minimizing the footprint to what is necessary for construction;
- Informing the workers in the area when work is performed at proximity of the dens;
- Keeping the working site clean and free of garbage that could impact or attract wildlife;
- Avoiding harassing wildlife; and
- Implementing the Wildlife Encounter and Deterrence found as an appendix in the TEMMP.

5 CONCLUSION

In conclusion, den surveys were completed in the summer of 2024 at the Meliadine Mine Site along a section of the proposed waterlines alignment, proposed Discovery Road, and proposed Pump Haul Road. The focus was on Arctic fox as the survey was conducted during their denning period. No new den locations were found, and 11 dens were revisited. Six (6) dens have been identified as active in 2024, of which 2 were used by foxes and 4 by siksiks. The recommended construction setback and mitigation measures as described in Section 4 were applied at active fox dens where construction activities were happening in the area.

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APPENDIX A. DEN CHARACTERISTICS PER SPECIES

Table A-1: Den Characteristics per Species

Species	Den Characteristics
Arctic fox	• Locate on mounds, ridges, slopes, or riverbanks. • Excavate from sandy soil or other well-drained substrate where active layer over permafrost is deeper. • Situate on south facing or early thawed areas. • Can be found under large rocks and boulders. • Dens openings are 15-20 cm in diameter. (Lai and Berteaux 2013; Hendrickson et al 2005)
Grey wolf	• Excavate in eskers, ridges of gravel and sand formed by melting glaciers. • Can take over dens of other animals (foxes, ground squirrel). • Close access to caribou. (Hendrickson et al 2005; Cluff et al 2002)
Polar bear	• Excavate soil on land along the slopes of fiords, on peninsulas or islands with sufficient snow cover in early winter for the construction of the dens or on moving multi-year ice and areas of annual rough ice. • Maternity dens in hilly or mountainous coastal areas with good snow coverage (including in proximity of glacier complex), landscape features facilitating snowdrift formation, and abundant preys. • Females typically give birth to cubs in maternity dens in December and January, and leave their dens around March or April at the time of year when ringed seal pups are born. (Nirlungayuk et al. 2016; Tomaselli et al 2022)
Barren ground grizzly	• Excavate in soil. • Rock cavity dens are either caves or cavities in boulder piles. • Locate mid to upper slope positions. (Hodder et al 2014)
Wolverine	• Rocky scree slopes, along eskers, within hard packed snowdrifts or under snow-covered boulders. • Snow greater than 1 m deep, distributed uniformly or accumulated in drifts. • Long, complex snow tunnels in hardened snowdrifts characterize den sites in tundra and alpine areas, and in some cases, the tunnels lead down to entrances under boulders. • Denning period (February-May). (Wolverine Foundation online; Awan et al. 2020)

APPENDIX B. DEN SURVEY PHOTOS



Photo 1: Fox-2023-2 on September 19th, 2024



Photo 2: Fox-2023-3 on September 17th, 2024



Photo 3: Fox-2023-4 on September 17th, 2024



Photo 4: Fox-2022-1 on September 13th, 2024

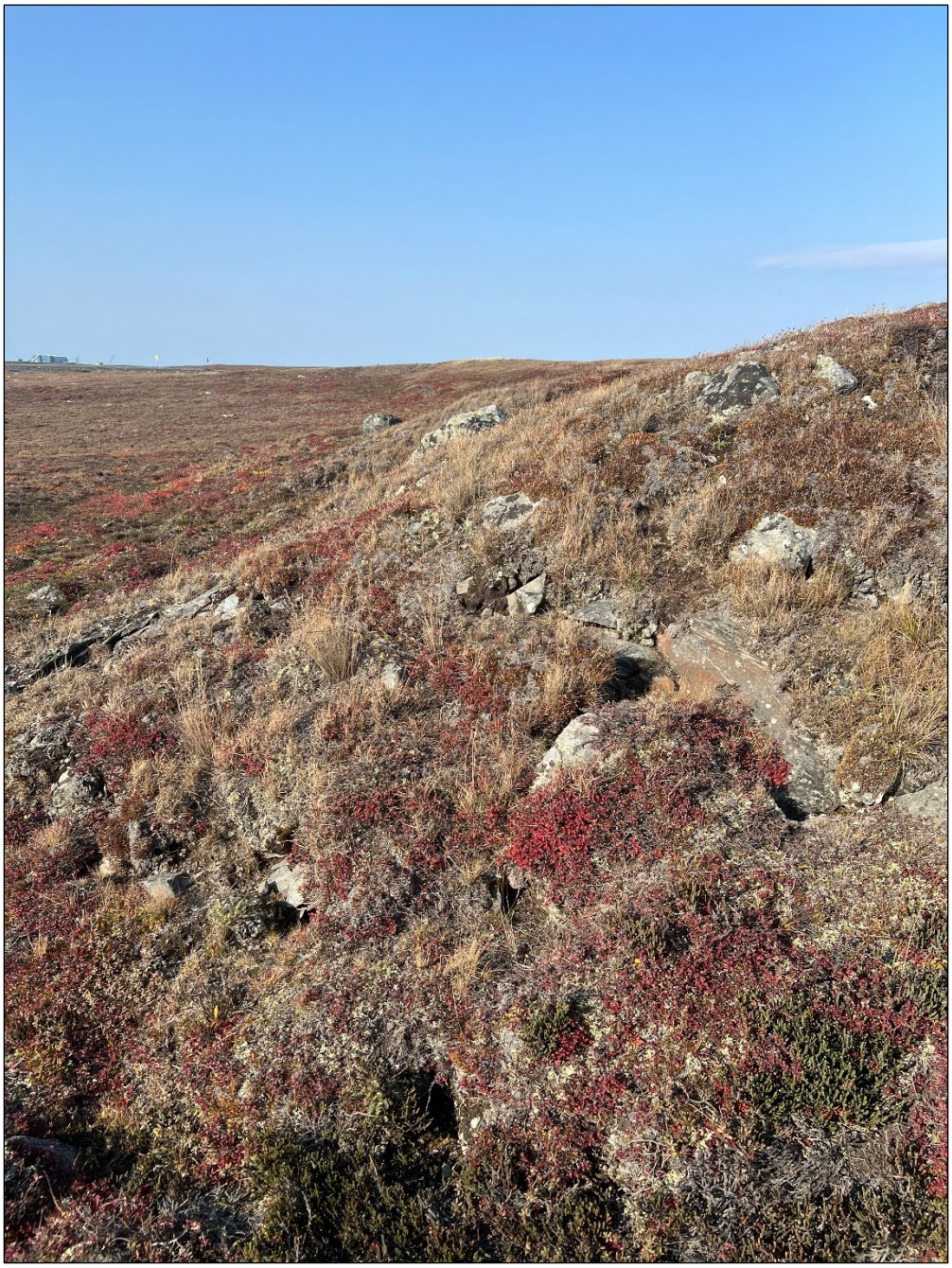


Photo 5: Fox-2022-2 on September 13th, 2024



Photo 6: Fox-2022-3 on September 17th, 2024.



Photo 7: Fox-2022-4 on September 13th, 2024.



Photo 8: Fox-2022-5 on September 13th, 2024.



Photo 9: Fox-2022-6 on September 13th, 2024.



Photo 10: Fox-2022-8 on September 13th, 2024.



Photo 11: Fox-2022-9 on September 13th, 2024.

APPENDIX H

Meliadine Project Caribou Behaviour Study, 2024

PREPARED FOR

AGNICO EAGLE

Agnico Eagle Mines Limited

Meliadine Mine

2024 Caribou Behaviour Report

DATE
February 2025

REFERENCE
0740666-02



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Meliadine Mine

2024 Caribou Behaviour Report

February 2025



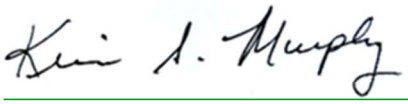
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CONTENTS

EXECUTIVE SUMMARY 1

1. INTRODUCTION 3

1.1 TERRESTRIAL ENVIRONMENT MANAGEMENT AND MONITORING PLAN 3

2. STUDY OBJECTIVES 6

3. BACKGROUND 7

3.1 QAMANIRJUAQ HERD 7

3.2 TERRESTRIAL ADVISORY GROUP 7

4. STUDY AREA 8

5. METHODS 9

5.1 FIELD SURVEYS 9

5.2 DATA ANALYSIS 10

6. RESULTS AND DISCUSSION 12

6.1 CARIBOU DISTRIBUTION RELATIVE TO THE MINE 12

6.2 FIELD SURVEYS COMPLETED 12

6.3 EXPLORATORY ANALYSIS RESULTS 15

6.3.1 Road Crossing 15
6.3.2 Group Size and Distance to Infrastructure 17
6.3.3 Behaviour Type, Group Size, and Distance to Infrastructure 17
6.3.4 Behaviour Type and Environmental Variables 17
6.3.5 Upstream or Downstream Observations 20
6.3.6 Number of Disturbances 20
6.3.7 Response to Disturbances 23

6.4 STATISTICAL ANALYSIS RESULTS 25

6.4.1 Proportion of Response Behaviour 25
6.4.2 Duration of Response 28
6.4.3 Results Summary 33

7. SUMMARY 34

8. REFERENCES 35

APPENDIX A DETAILED METHODS FOR CARIBOU BEHAVIOUR SURVEYS
APPENDIX B DATA FROM CARIBOU BEHAVIOUR SURVEYS
APPENDIX C PROPORTION OF ALERT AND RUNNING CARIBOU IN EACH SURVEY

LIST OF TABLES

TABLE 6.2-1	MELIADINE CARIBOU BEHAVIOUR SURVEYS DATA SUMMARY	14
TABLE 6.4-1A	SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR RESPONSE BEHAVIOUR MODEL WITH DISTANCE TO ROAD (N = 230)	25
TABLE 6.4-1B	SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR RESPONSE BEHAVIOUR MODEL WITH CARIBOU GROUP SIZE (N = 230)	26
TABLE 6.4-2A	SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR WALKING AND RESPONSE BEHAVIOUR MODEL WITH DISTANCE TO ROAD (N = 230)	26
TABLE 6.4-2B	SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR WALKING AND RESPONSE BEHAVIOUR MODEL WITH CARIBOU GROUP SIZE (N = 230)	27
TABLE 6.4-3	PROBABILITY (MEAN AND 95% CONFIDENCE INTERTVAL) OF RETURNING TO NORMAL BEHAVIOUR WITHIN A CERTAIN TIME BY NUMBER OF DISTURBANCES	32

LIST OF FIGURES

FIGURE 1-1	MELIADINE GOLD MINE LOCATION	4
FIGURE 6.1-1	LOCATIONS OF BEHAVIOUR SURVEYS BY DATE	13
FIGURE 6.3-1	CARIBOU GROUP SIZE VERSUS DISTANCE FROM THE CARIBOU TO THE ROAD AT THE START OF THE SURVEY	16
FIGURE 6.3-2	AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE OBSERVED	18
FIGURE 6.3-3	PROPORTION OF ALERT OR RUNNING CARIBOU BY TEMPERATURE, WIND SPEED, AND DATE	19
FIGURE 6.3-4	AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE OBSERVED ON EAST AND WEST SIDE OF ROAD	21
FIGURE 6.3-5	COMPARISON OF RESPONSE BEHAVIOURS BY NUMBER OF DISTURBANCES	22
FIGURE 6.3-6	PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2024	24
FIGURE 6.4-1	PAIRWISE COMPARISONS OF AVERAGE PROPORTION OF CARIBOU EXHIBITING RESPONSE BEHAVIOUR AMONG CATEGORIES OF CARIBOU GROUP SIZE	29
FIGURE 6.4-2	PAIRWISE COMPARISONS OF AVERAGE PROPORTION OF CARIBOU EXHIBITING RESPONSE AND WALKING BEHAVIOUR AMONG CATEGORIES OF CARIBOU GROUP SIZE	30
FIGURE 6.4-3	CUMULATIVE PROBABILITY OF RETURN TO NORMAL BEHAVIOUR BY DURATION OF RESPONSE FOR DIFFERENT NUMBERS OF DISTURBANCES	31

ACRONYMS AND ABBREVIATIONS

Agnico Eagle	Agnico Eagle Mines Limited
AIC	Akaike information criterion
ATV	All-terrain vehicle
AWAR	Meliadine Mine All-Weather Access Road
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
BQCMB	Beverly Qamanirjuaq Caribou Management Board
ERM	ERM Consultants Canada Ltd.
GLMMs	Generalized linear mixed-effects models
GN	Government of Nunavut
GNWT-ENR	Government of Northwest Territories Department of Environment and Natural Resources
ID	Survey Identifier
IOL	Inuit Owned Land
KivIA	Kivalliq Inuit Association
km	Kilometre
km/h	Speed expressed as kilometres per hour
m	Metre
the Mine	The Meliadine Mine
NIRB	Nunavut Impact Review Board
NWT	Northwest Territories
SD	Standard Deviation
TAG	Terrestrial Advisory Group
T&C	Terms and Conditions
TEMMP	Terrestrial Environment Management and Monitoring Plan

EXECUTIVE SUMMARY

The Meliadine Mine (the Mine) is operated by Agnico Eagle Mines Limited (Agnico Eagle) and located on Inuit Owned Land (IOL), approximately 25 km north of Rankin Inlet, Nunavut. Since 2019, caribou from the Qamanirjuaq herd have passed within 15 km of the Mine, particularly during the months of June and July, including crossing the All-Weather Access Road (AWAR). In compliance with the Nunavut Impact Review Board's Project Certificate #006 and associated amendments, Agnico Eagle has conducted a behaviour monitoring program since 2020 to assess the impact of Mine and AWAR operations on caribou behaviour.

The monitoring program has comprised a total of 230 surveys across five years, using scan-sampling methods developed by the Government of Northwest Territories, and has yielded several key results from 2020 to 2024, including:

- **Survey Methods:** Survey protocols have been refined to improve data quality based on feedback from stakeholder organizations, including the Terrestrial Advisory Group (TAG), yet the results remain consistent over five years of monitoring. This consistency provides confidence in the reliability of observed behavioural trends.
- **Environmental Variables:** The proportion of caribou with response behaviours in a group was unrelated to measured environmental variables, including temperature, wind speed, or insect responses.
- **Caribou Presence:** Qamanirjuaq caribou were uncommon near the Mine from 2010 to 2019, but Traditional Knowledge indicated that caribou habitat use cycled and that they would return to this area. From 2019 to 2023, caribou began calving west of Meliadine Lake and peak caribou activity near the Mine was common from late June to early July (post-calving for the Qamanirjuaq herd). However, in 2024, caribou calved west of Meliadine Lake and then proceeded directly south, and did not interact with the Mine to the degree they did in previous years.
- **Dominance of Non-Response Behaviours:** The monitoring program indicates that caribou near the Mine primarily engaged in non-response behaviours, such as standing, laying, and feeding. Walking behaviour was noted as a potential response to disturbances, and as such was included in a subset of statistical models, which showed disturbances as a significant predictor of combined walking and response behaviours.
- **Group Size, Distance to Infrastructure, and Response Behaviours:** Caribou in smaller groups (fewer than 25 individuals) exhibited a higher frequency of response behaviours—such as running and being alert—compared to larger groups. Furthermore, groups closer to infrastructure (within 300 m) showed increased responsive behaviour compared to those at greater distances, highlighting a consistent trend across all five years of data.
- **Impact of Disturbances:** Approximately 50% of all surveys noted disturbances (note that this reflects an intentional bias in surveys to include situations with potential disturbances), mainly due to essential Mine vehicles and local All Terrain Vehicles (ATVs) that travel along the AWAR. Immediately following disturbance events, caribou exhibited a statistically significant rise in response behaviours.

- **Behavioural Recovery:** Following disturbance events, caribou responses (alert, walking, running) increased, but typically returned to baseline behaviours within a relatively short period. Statistical models show that after a single disturbance, 89% of caribou will return to baseline behaviours within nine minutes or less. Surveys with more than one disturbance resulted in longer durations of response, highlighting that the existing mitigation of using convoys to consolidate essential Mine traffic is likely effective at reducing impact to caribou.
- **Road Crossing:** Groups of caribou were observed near the road in equal proportions on both the upstream and downstream sides of the road suggesting that caribou are not accumulating at the side of the road, waiting to cross. Increased response behaviours were observed on the downstream (east) side of the road in 2022 and 2023.

1. INTRODUCTION

The Mine, owned and operated by Agnico Eagle, is located on IOL, approximately 25 km directly north of Rankin Inlet, Nunavut. A 30 km AWAR connects the Mine to Rankin Inlet. The Rankin Inlet Bypass Road was constructed to the west and south of Rankin Inlet to allow Mine traffic to circumvent the hamlet of Rankin Inlet when traveling from the AWAR to Itivia Harbour (i.e., Melvin Bay), southwest of Rankin Inlet (Figure 1-1).

The Mine was approved by the Nunavut Impact Review Board (NIRB) in 2015 (Project Certificate #006) with a Life of Mine Plan that includes production from five ore bodies. The Mine Plan includes open pits, underground mining and associated ore processing, waste management, and ancillary infrastructure. Construction of the AWAR, camp, ore processing facilities, and ancillary infrastructure began in 2017, and production began in Q2 2019. In 2019, the Mine NIRB Project Certificate (#006 No. 001) was amended to include discharge of treated saline effluent to the marine environment via diffuser at Itivia Harbour, and to convey via truck treated saline effluent along the AWAR to Itivia Harbour. In 2022, the Project Certificate (#006 No. 002) was further amended to allow for the construction of a 34 km waterline, which consists of two 16-inch diameter waterlines needed to convey treated saline effluent from the Mine to Itivia Harbour.

Caribou behaviour studies were conducted in June and July from 2020 to 2024 at the Mine and along the AWAR in support of existing NIRB conditions, as outlined in Project Certificate #006 and the associated amendments.

1.1 TERRESTRIAL ENVIRONMENT MANAGEMENT AND MONITORING PLAN

As per the 2015 Project Certificate, and 2019 and 2022 Project Certificate Amendments from the NIRB, Term and Condition 57 requires the Mine to report in its annual NIRB report:

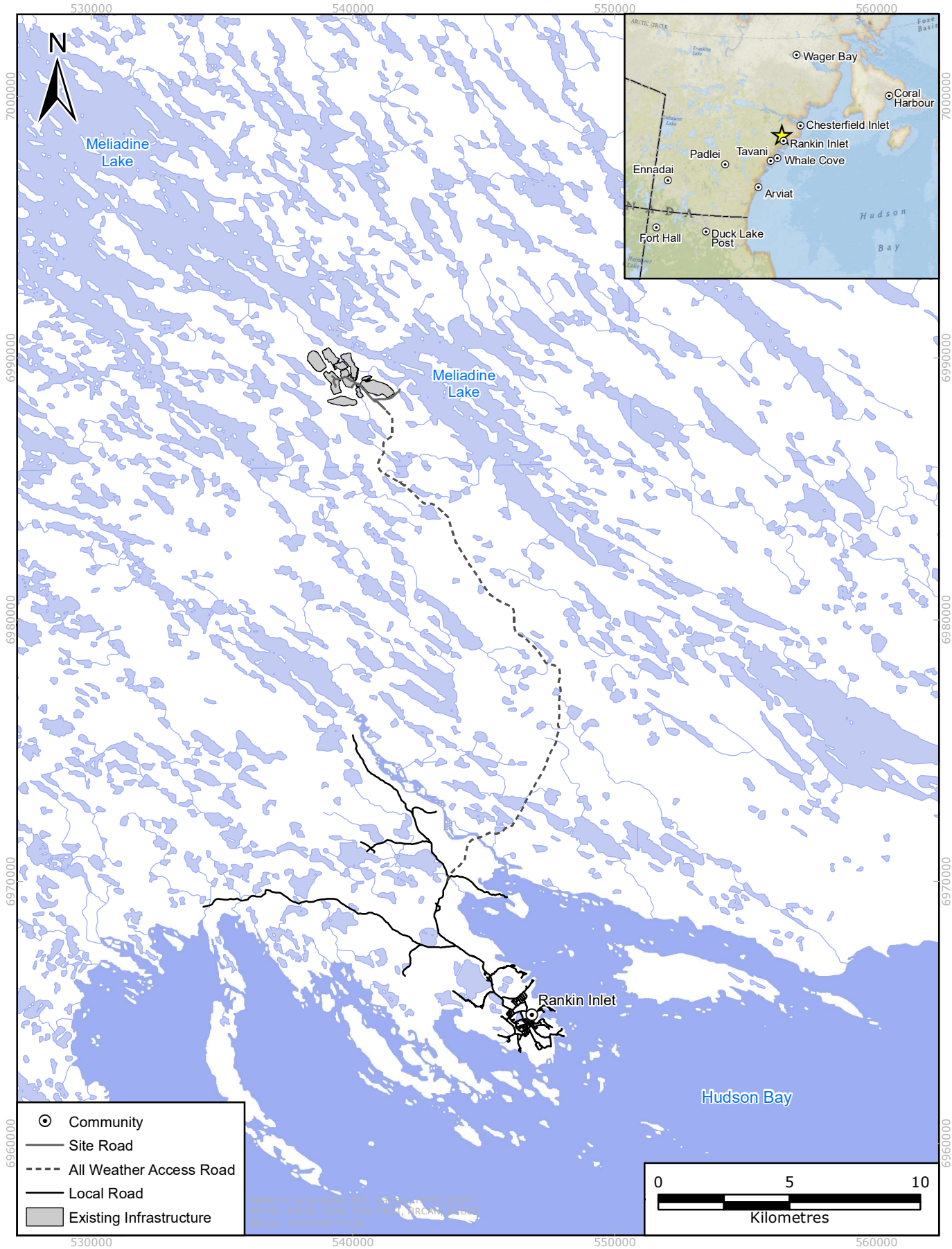
> (T&C 57, b.) A detailed analysis of wildlife responses to operations with emphasis on wildlife behaviour, mortalities and displacements (if any), responses to operations of the all-weather access road and associated access roads/trails, and the waterlines;

The Meliadine Mine Terrestrial Environment Management and Monitoring Plan (TEMMP; Agnico Eagle 2022) is designed to meet this condition, with a behaviour monitoring program (Section 4.5) that has two objectives:

- To determine if caribou activity budgets change with distance from the Mine, and to document caribou response to stressors; and
- To determine if caribou distribution changes with proximity to the Mine (i.e., do caribou avoid the Mine).

The behaviour monitoring program described in this report is designed to address the first of these objectives, while the second objective is met via a broader scale location-based global positioning system (GPS) collar analyses and a wildlife camera program (ERM [ERM Consultants Canada Ltd.] 2024a).

FIGURE 1-1 MELIADINE GOLD PROJECT LOCATION



ERM

CLIENT: AGNICO EAGLE MINES LIMITED
GIS NUMBER: MEL-23-041

DATE: 02/13/2024

PROJECTION: NAD 1983 UTM Zone 15N
SCALE: 1:200,000 when printed at 8.5x11

The TEMMP also specifies mitigation measures for traffic on the AWAR when caribou are in the area, namely that the AWAR must be closed to non-essential Mine traffic when 50 or more caribou are within 100 m of the road. Further mitigation measures relate to the Mine site itself, where more than 50 caribou observed within 5 km of the Mine results in enactment of a Level 3 caribou response, limiting surface activities at the Mine to approved light duty activities. These mitigations are designed to protect caribou from any undue disturbance as they move through the Mine area during seasonal migration, particularly in the post-calving period.

2. STUDY OBJECTIVES

The overall objective of the caribou behaviour monitoring program as stated in the TEMMP is:

- To determine if caribou activity budgets change with distance from the Mine, and to document caribou response to stressors.

Per the Project Certificate (T&C 57, b), a detailed analysis of caribou responses to operations of the AWAR is required at the Mine. This report serves to summarize this analysis, investigating patterns both within years and across multiple years of collected data. The intent of the 2024 study was:

1. To conduct a study using behaviour survey methodology at the Mine site to estimate how the AWAR and Mine infrastructure may contribute to the effects of the Mine on caribou; and
2. To use information from the surveys (combined across five years of data collection) to determine which factors predict caribou behaviour near the Mine site, specifically looking at distance, group size, and vehicle disturbances.

The primary hypothesis of this study was that caribou closer to infrastructure would demonstrate a stronger response to vehicle disturbances. Multiple years of data collected at the Mine have supported this hypothesis, suggesting that caribou may exhibit increased response behaviours closer to the AWAR or Mine site, particularly when observed in smaller groups.

3. BACKGROUND

3.1 QAMANIRJUAQ HERD

The Qamanirjuaq caribou subpopulation is a large barren-ground caribou herd numbering approximately 252,892 animals in 2022, down from over 348,000 animals reported in 2008, but consistent with the population size in the 1980s, and stable from the 2017 estimate of approximately 288,000 (Campbell et al. 2024; Boulanger et al. 2018; COSEWIC [Committee on the Status of Endangered Wildlife in Canada] 2016).

The Beverly and Qamanirjuaq Caribou Management Board (BQCMB) rated the Qamanirjuaq herd as having "Medium" vulnerability in 2014 due to population declines since 2008 (BQCMB 2023) and upgraded this rating to "Medium-High" in 2016, a status that remains unchanged (BQCMB 2024).

Spring migration brings the caribou north along the coast of Hudson Bay, past the communities of Arviat, Whale Cove, and Rankin Inlet to a broad calving ground, generally centered on Qamanirjuaq Lake (BQCMB 2024).

Following calving, the caribou form into large groups of hundreds to thousands and radiate out from the calving grounds, including east towards the coast. During June and July, groups of animals from this herd migrate in proximity to the hamlet of Rankin Inlet, the Meliadine Mine, and the AWAR connecting the two.

During summer and fall, the caribou generally move south and inland, gradually returning south towards their wintering areas by early December. Maps of the caribou range and movement are available on the BQCMB website (https://arctic-caribou.com/resources/).

3.2 TERRESTRIAL ADVISORY GROUP

A Terrestrial Advisory Group (TAG) was formed in 2022 and formalized via creation of the Terms of Reference in 2023, as a collaborative forum to discuss the application of Inuit Qaujimajatuqangit, Traditional Knowledge, and western science to mitigation and monitoring programs for the terrestrial environment in the Mine area. Members of the group include the local, regional, territorial, and federal governments, as well as Indigenous groups.

Wherever sample size allowed, suggestions made by the TAG have been added into the 2024 analysis. Agnico Eagle has endeavored to incorporate the suggestions of the TAG into the 2024 analyses presented in this report, including the collection of insect harassment data during behaviour surveys, and the assessment of distance to infrastructure as a continuous rather than discrete variable.

4. STUDY AREA

The study area for behaviour monitoring included the existing Mine footprint, or the Meliadine Mine site and the AWAR (see Figure 1-1). Surveys were conducted on any caribou that could be visually observed from Mine infrastructure (including the AWAR) up to 3 km away with the aid of binoculars or a spotting scope.

The dominant terrain in the Mine area comprises of glacial landforms, such as drumlins (glacial till), eskers (gravel and sand), and lakes. A series of low relief ridges are composed of glacial deposits, oriented in a northwest-southeast direction, which control the regional surface drainage patterns. The Mine area is approximately 60 metres above sea level in low-lying topography with numerous lakes (Final Environmental Impact Statement; Agnico Eagle 2015).

5. METHODS

5.1 FIELD SURVEYS

Survey methods followed protocols for monitoring caribou behaviour developed by the Government of Northwest Territories Department of Environment and Natural Resources (GNWT-ENR 2017). In 2020, ERM refined these methods for Agnico Eagle's Nunavut Mine operations. The updated methods focus on scan samples, in lieu of both scan and focal samples. Given time and personnel constraints, this was determined to be a more efficient use of time and produce better quality data that is suitable for statistical analysis. The updated methods also include an initial survey step to randomize which group of caribou to monitor when multiple groups are available. In 2021, these methods were further refined to reflect lessons learned in 2020. The 2021 updates included using a rangefinder to measure distance and recording additional information, such as whether the caribou occurred on the east or west side of the road. The methodology used in 2022 through 2023 included the 2021 updates, but was otherwise unchanged. In 2024, updates included assessment of insect response behaviours once during each survey. Detailed protocols are attached in Appendix A.

Prior to the arrival of caribou in June, a wildlife biologist from ERM conducted a classroom and practical training program for Agnico Eagle environmental technicians from the Mine. The ERM wildlife biologist, with an assistant, was tasked with conducting behaviour observations as a primary role during July, while Meliadine environmental technicians conducted behaviour observations opportunistically during other fieldwork in alignment with the TEMMP.

The overall method for the field surveys was to identify caribou groups visible from the Mine site and AWAR, to select some groups for observation, and to record the behaviour of individuals in groups of different sizes, including their responses without any disturbance and in response to Mine-related activities and natural factors. Surveys were conducted in late June and early July during the post-calving and early summer periods, when caribou are most likely to pass through the Mine area in large numbers.

Field methods included the recording of site information at the location of each survey, including GPS coordinates, weather conditions, road structure, and location of the caribou group in relation to the surveyors and the road. Individuals in the observed group were categorized when the survey started and every three minutes until 30 minutes had elapsed. Behaviour categories and their definitions were standardized following GNWT-ENR (2017) classifications. The behaviour categories were feeding, lying down, standing, alert, walking, and trotting or running.

At each three-minute interval, surveyors recorded the numbers of individuals in the group exhibiting each behaviour at that time. If the group was too large to be counted in each interval (>50 individuals), an identifiable subset of the group was surveyed during each interval and the total group size was recorded on the datasheet. In the case that a disturbance event occurred during the survey, the time and type of disturbance was recorded. A disturbance is defined as any human-caused loud noise, low-flying aircraft, or vehicle travelling on the road, in addition to predators observed in the immediate area of the surveyed group.

Alert behaviour and trotting or running were considered disturbance "response behaviours" and were grouped together in the subsequent data analysis. In this report, alert and running behaviours are referred to collectively as response behaviours, but it is important to note that this is irrespective of whether there were disturbances recorded. Caribou may exhibit these behaviours without a disturbance occurring. Walking was also assessed as a response behaviour in some analyses, which are specifically noted in the results.

5.2 DATA ANALYSIS

The objective of the data analysis was to quantify trends in the survey data and determine whether factors, such as distance to infrastructure, group size, or disturbances, could be used to explain caribou behaviour. The primary hypothesis was that caribou closer to the road would demonstrate a stronger response to disturbances. An initial exploratory analysis was conducted to visualize the data and determine the appropriate method for analyzing the data.

A regression analysis was conducted to test for statistically significant trends in the data. To increase the statistical power to detect changes in caribou behaviour, the behaviour categories were grouped for analysis into "response behaviours" (alert and running) and "non-response behaviours" (feeding, lying down, standing, and walking).

Following the 2021 analysis, there was a suggestion from the TAG to explore whether the proportion of walking caribou changed as a response to disturbance. This was done to see if walking would be better categorized as a response behaviour or a non-response behaviour. To test this, a model that included walking, running, and alert behaviours was conducted in addition to the original model with only running and alert behaviours.

Generalized linear mixed-effects models (GLMMs) were used to assess the differences in the proportion of response behaviours in surveyed animals as a function of various controlling variables, including the occurrence of disturbances. Proportions were modelled using a binomial distribution. Because small groups naturally have greater variability in values (i.e., more likely that "all" or "none" of caribou are alarmed when there are only two caribou), an offset was included for the total number of caribou with tallied behaviour. This regression framework provides a means to control for environmental variables, repeated measurements, and spatial correlation. Random effects were included for survey ID and year to control for spatial and temporal autocorrelation.

Statistical analyses were conducted using R Statistical Software version 4.4.2 (R Core Development Team 2024). Two dependent variables were tested:

1. The first dependent variable tested was the proportion of response behaviours (alert and running) in each 3-minute interval in each survey; and
2. The second dependent variable tested was the proportion of walking plus response behaviours in each 3-minute interval in each survey.

The two dependent variables were each modelled against a suite of potentially important variables to determine if there was any statistical relationship with response behaviour. Based on an initial assessment of which variables were most statistically relevant, the variables included in this analysis were group size, distance to infrastructure, wind speed, and a binary variable identifying

whether a disturbance occurred during each 3-minute interval. Based on comments from the Government of Nunavut (GN) on the 2022 and 2023 analyses, distance from caribou to infrastructure was considered as a continuous variable. An index of insect harassment was included in surveys conducted in 2024 at the request of the Sayisi Dene First Nation/Northlands Denesuline First Nation, but only one survey resulted in observation of any insect response behaviours, precluding use of this variable in the final models.

For each dependent variable, GLMMs were constructed and tested for model fit, as evidenced by the Akaike Information Criterion (AIC). AIC is a number that is helpful for comparing models, as it includes measures of both how well the model fits the data and how complex the model is (simpler is usually better). The top models were identified as having a low AIC and were within a 2-unit difference in AIC ($\Delta AIC \leq 2$) of the top-ranked model (i.e., the model with the lowest AIC; Burnham & Anderson 2004). This is the industry standard for identifying models that are essentially "equally good" at explaining the data. Models with a difference in AIC (ΔAIC) of 2 to 4 from the top model are generally considered to have "limited support" (Burnham & Anderson 2004).

A second modelling procedure was used to investigate the amount of time caribou were engaged in response behaviour associated with disturbances during a survey. For a response to be included, the proportion of alert or running caribou after a disturbance had to be 40% greater than in the interval before disturbance. The response was considered "over" when the proportion of alert or running caribou returned to the level observed in the interval before the disturbance (±5%). This variable, called "duration of response", was assessed for each survey, during which at least one disturbance occurred. Surveys that started with 100% of individuals exhibiting response behaviour were excluded, as the associated disturbance was unclear. In surveys where there was more than a single period of response behaviour, the total time disturbed was calculated for that survey. Because the duration of response is a "time to event" variable (time to return to background behaviour), we used a Cox's proportional hazards regression to model the duration. Durations were right-censored if the caribou did not return to background behaviour prior to the end of the observation period. As the start and end of the response could happen within 3-minute intervals, but the exact time was not recorded, we assumed the duration was 3 minutes for every interval included. For example, if the response behaviour occurred only within one interval, it was given a duration of 3 minutes, while if it occurred in two intervals, it was given a duration of 6 minutes. If no response occurred after a disturbance, it was given a duration of 0 minutes.

A model was fit with caribou group size, and a variable indicating the number of intervals which contained a disturbance (number of disturbances). The sample size was too small to include other variables or interaction terms and still achieve convergence.

6. RESULTS AND DISCUSSION

6.1 CARIBOU DISTRIBUTION RELATIVE TO THE MINE

During late June and early July, in the 5 years surveyed (2020 to 2024), caribou GPS collar locations were provided to the Mine though a data sharing agreement by the GN. This data indicated when caribou were approaching the Mine site. In the field, confirmation of caribou presence using height of land and road surveys were conducted three times per day by Agnico Eagle Environment Technicians to trigger management actions (as per the TEMMP; Agnico Eagle 2022). This data informed the decision to begin behaviour surveys for caribou as they approached the site.

Survey locations by year are presented in Figure 6.1-1. From June 19 to July 3, 2024, groups of caribou from the Qamanirjuaq herd were surveyed passing through or near the study area, with limited numbers throughout this period. An earlier peak in caribou observations near the Mine occurred in May 2024, though no behaviour surveys were able to be completed. The number of days caribou were visible from the AWAR or Mine site and able to be surveyed in 2024 was 14. This was decreased from 16 days in 2020, 18 days in 2021, and 23 days in both 2022 and 2023. Surveys in 2024 were distributed more commonly at the north end of the AWAR, with surveys also conducted around the Mine site wherever possible based on caribou presence.

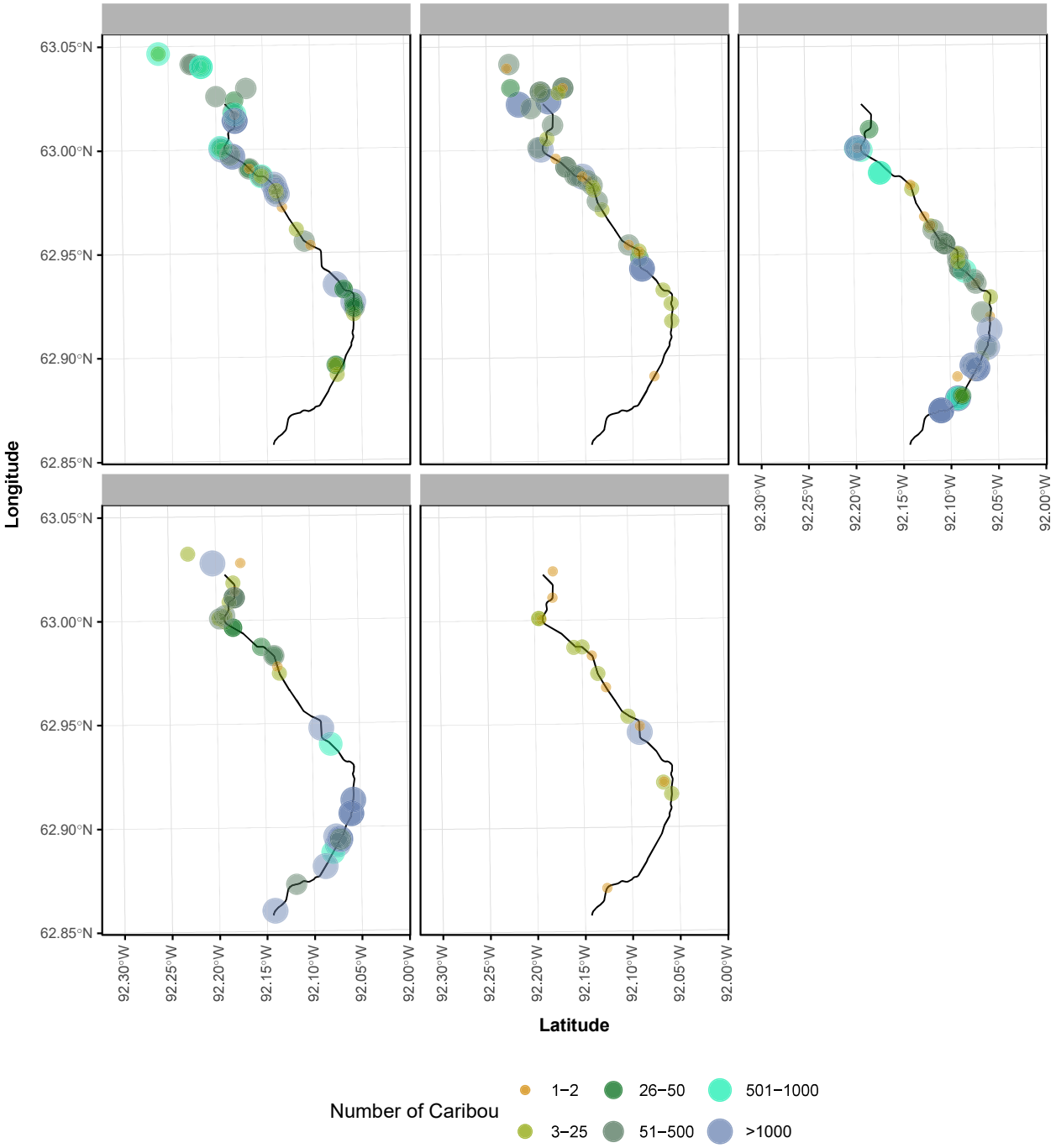
6.2 FIELD SURVEYS COMPLETED

In total, 17 behaviour surveys were conducted in 2024 during the period (June 19 to July 3) when groups of caribou were near the Mine. This is compared to the 56, 46, 69, and 42 surveys completed from 2020 to 2023, respectively (Table 6.2-1). Surveys were conducted opportunistically whenever caribou were encountered during daily reconnaissance drives, primarily along the AWAR, but also around the Mine site when the opportunity arose. These numbers represent the upper limit of what could be achieved in each year, given the logistical challenges of: 1) the caribou being onsite for a short period; and 2) the safety risk of vehicles being stopped by caribou on the road, leaving surveyors stranded for long periods of time.

In general, during the post-calving and early summer periods (June to July), barren-ground caribou aggregate into large groups (COSEWIC 2016; Russell and Gunn 2019). While in previous years, it has been common to experience several days where groups of up to 50,000 individuals were encountered, in 2024, predominantly, very small groups or lone individuals were observed near Meliadine. This shift in caribou observations around the Meliadine area align with those reported by the KivIA, GN collar data, and incidental observations reported by community members.

Overall, the survey methodology worked well for the Mine location and circumstances, and the survey results remain consistent between all years from 2020 to 2024. All reported results use the combined data from 2020 to 2024, unless otherwise stated.

FIGURE 6.1-1 LOCATIONS OF BEHAVIOUR SURVEYS BY DATE



Note: Colour and size indicate group size, and the location of the All–Weather Access Road is indicated by the black line.

TABLE 6.2-1 MELIADINE CARIBOU BEHAVIOUR SURVEYS DATA SUMMARY

Year	Type of Survey	Caribou Group Size						
		Small Group			Large Group			Total
		1–2	3–25	26–50	51–500	501–1,000	>1,000	
2020	Total # of surveys	5	11	9	14	6	11	**56**
	Surveys with disturbances	4	2	3	11	3	6	**29**
	Surveys with observed road crossings	2	2	0	1	1	0	**6**
2021	Total # of surveys	8	11	2	16	0	9	**46**
	Surveys with disturbances	5	7	0	8	0	7	**27**
	Surveys with observed road crossings	0	3	0	6	0	3	**12**
2022	Total # of surveys	11	9	3	18	8	20	**69**
	Surveys with disturbances	9	7	1	15	4	17	**53**
	Surveys with observed road crossings	3	4	0	6	0	2	**15**
2023	Total # of surveys	3	11	4	8	2	14	**42**
	Surveys with disturbances	2	1	1	3	0	5	**12**
	Surveys with observed road crossings	0	1	4	1	0	6	**12**
2024	Total # of surveys	8	8	0	0	0	1	**17**
	Surveys with disturbances	6	4	0	0	0	1	**11**
	Surveys with observed road crossings	1	2	0	0	0	0	**3**

General observations on survey methodology and results included:

- Surveys were well distributed across a range of group sizes from 2020 to 2023 (Table 6.2-1). In 2024, most groups sampled were in the categories of 1 to 2 or 3 to 25 caribou, with only a single group of more than 1,000 caribou surveyed, due to a lack of caribou occurrence within sight of the Mine.
- Of the 230 surveys completed across five years, more than half recorded at least one disturbance during the survey (Table 6.2-1). In 2024, 65% of surveys recorded a disturbance. Due to a lack of caribou exceeding the thresholds established in the TEMMP (>50 caribou within 100 m), Mine traffic on the AWAR was not suspended during the period when behaviour surveys were conducted in 2024. Note that surveys were conducted specifically to record

responses to disturbances, so the proportion of surveys with disturbances is higher than the actual proportion of caribou exposed to disturbances.

- From 2020 to 2023, the AWAR was closed to Mine traffic as a mitigation measure during many of the surveys, leaving a small number of essential vehicles on the road, generally pickup trucks. It is expected that the ratio of ATVs to total traffic would, therefore, be higher during road closures because total traffic is much reduced while the number of ATVs used by local community members commonly increases during these closures.
- Caribou surveys were considered an essential activity by the Mine, allowing the survey pickup trucks to be used on the AWAR, even when the road was closed to normal Mine traffic. However, vehicles were stopped, following guidance in the TEMMP, when caribou were on or near the road.
- The methodology allowed for the estimation of baseline behaviour, response to disturbance, and return to baseline behaviour. Few surveys from 2020 to 2024 (6%) ended before caribou returned to baseline behaviour. Thus, 30 minutes appears to be an appropriate survey length.
- Most caribou behaviours were calm, generally foraging, and not moving quickly (non-response). The one exception was smaller groups who moved more than larger groups, exhibiting more walking and trotting.
- Caribou were observed crossing the road in 18% of surveys in 2024, 28% of surveys in 2023, 22% of surveys in 2022, 25% of surveys in 2021, and 10% of surveys in 2020, primarily in small groups of less than 25 individuals. Large groups of caribou were also observed crossing the road in each year other than 2024, including groups of over 10,000 caribou.
- In 2020, distance was inconsistently estimated. Hence, distance was categorized into blocks of 0 to 50 m, 50 to 100 m, etc. As agreed with the TAG, distance was estimated with a rangefinder from 2021 to 2024. For the analyses completed here, distance was considered as a continuous variable, with data from 2020 using the most conservative (smallest) value of the associated distance category.

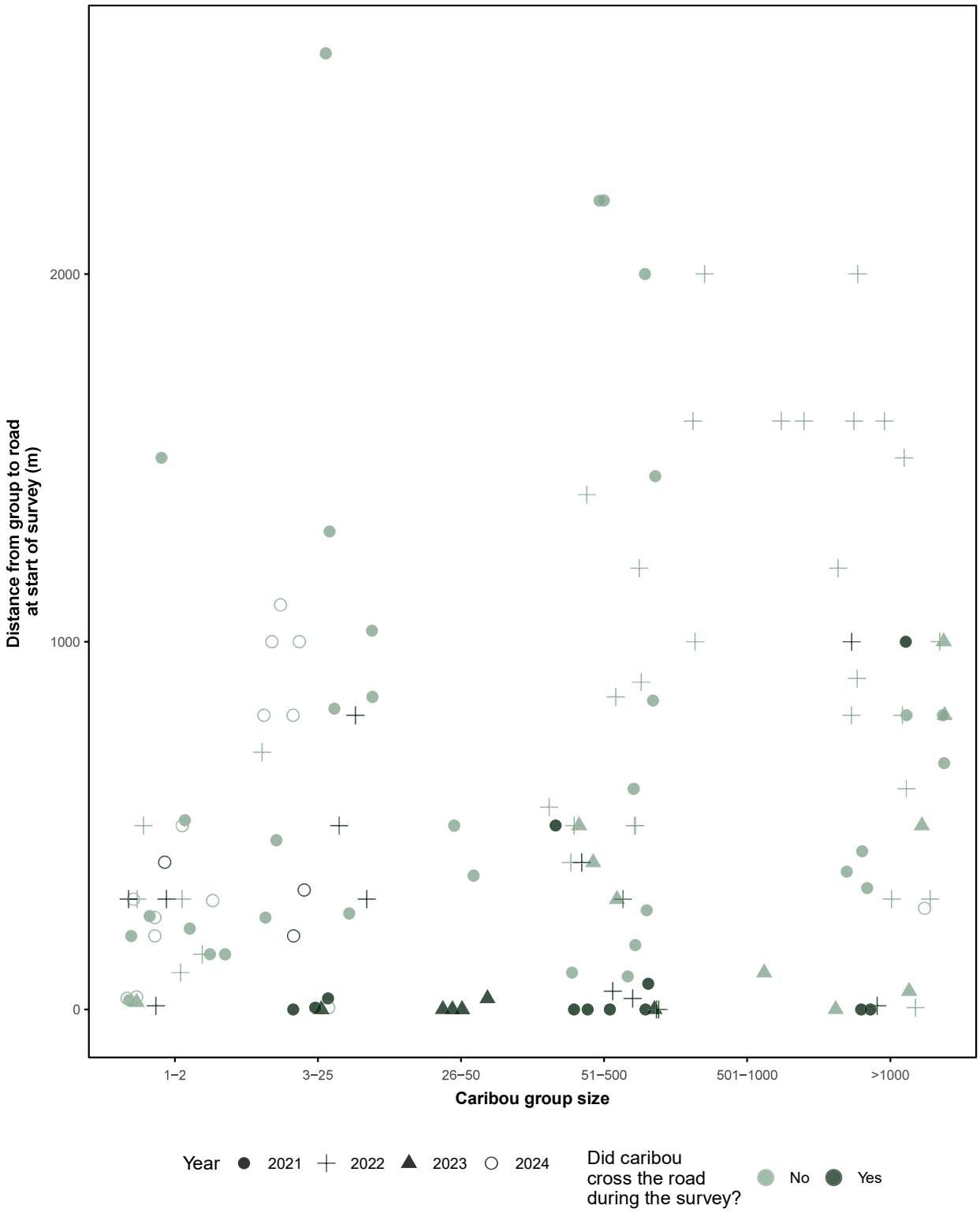
6.3 EXPLORATORY ANALYSIS RESULTS

The exploratory analysis was conducted to determine if there were any trends or interactions in the following variables: road crossing, group size, distance to infrastructure (AWAR/Mine), weather and timing, side of the road (east or west), number of disturbances, and response time following disturbances. An analysis of insect response as a variable was also planned, but only a single datapoint was available from the 2024 surveys precluding further exploration of this variable. All results use the combined data from 2020 to 2024, unless otherwise stated. Exploratory analyses are focused on exploring potential trends in the data, with results being a qualitative interpretation of the patterns observed. Statistical analyses are presented in Section 6.4.

6.3.1 ROAD CROSSING

Results of the exploratory analysis indicated that groups closer to the road at the start of the survey were more likely to cross the road during the survey (Figure 6.3-1). This trend was seen in all survey years.

FIGURE 6.3-1 CARIBOU GROUP SIZE VERSUS DISTANCE FROM THE CARIBOU TO THE ROAD



Note: Distance from surveyors to the caribou is considered equivelant to distance from the road in this report

6.3.2 GROUP SIZE AND DISTANCE TO INFRASTRUCTURE

Plotting the caribou group size against the distance of caribou groups to the road at the start of the survey revealed that small groups (less than 50 individuals) were observed in equal proportions across all distances, regardless of year (Figure 6.3-1). Large groups tended to be observed further from the road at the start of the survey, and smaller groups closer to the road when data is combined across years.

6.3.3 BEHAVIOUR TYPE, GROUP SIZE, AND DISTANCE TO INFRASTRUCTURE

Average proportions of each behaviour type by group size and by distance to road are presented in Figure 6.3-2. When analyzed by group size (Figure 6.3-2, panel a), the results suggest that the proportion of response behaviours “Alert” and “Trotting” are inconsistent across group sizes and years.

When analyzed by distance to infrastructure (Figure 6.3-2, panels b and c), the results suggest that the proportion of response behaviours was higher, closer to infrastructure than further away. This pattern was observed annually from 2020 to 2022 and in 2024, though this pattern was not observed in 2023 where qualitative exploratory analysis suggests no clear trend in response to distance to infrastructure. In 2021 through 2024, distance to infrastructure and distance to observer were collected separately; therefore, distance to infrastructure was used except for 2020, where distance to observer was used as a proxy.

The level of response behaviours by small groups (<25) was higher than large groups (>1,000) in all years surveyed other than 2024, though only one large group was surveyed in this year. This pattern was especially true near the road (i.e., within 50 m where the survey started).

6.3.4 BEHAVIOUR TYPE AND ENVIRONMENTAL VARIABLES

Figure 6.3-3 shows the relationship between: 1) the proportion of response behaviours and; 2) environmental variables temperature, wind speed, and date. This comparison was included to explore the possibility that environmental factors, such as heat or high winds, were influencing caribou behaviour during the survey. No trend is visible in the data and trend lines fit to the abiotic environmental data are nearly flat with wide confidence intervals, suggesting that environmental factors do not have a substantial effect on behaviour relative to other factors. Date was also included to explore the hypothesis that caribou behaviour may change as the season transitions from the more sensitive post-calving season into summer; however, the results indicated that date was not associated with caribou behaviour.

No relationship was observed between wind speed and caribou behaviour. However, observations were largely collected in June, with a smaller proportion in early July, generally before most mosquitos emerge, and therefore, there is less likely to be an effect of wind relief from insects at this time of year. Further, a dedicated assessment of insect response behaviours was added to the survey protocol for 2024, but only one survey resulted in observation of insect responses, precluding further assessment of this variable.

FIGURE 6.3-2 AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE OBSERVED

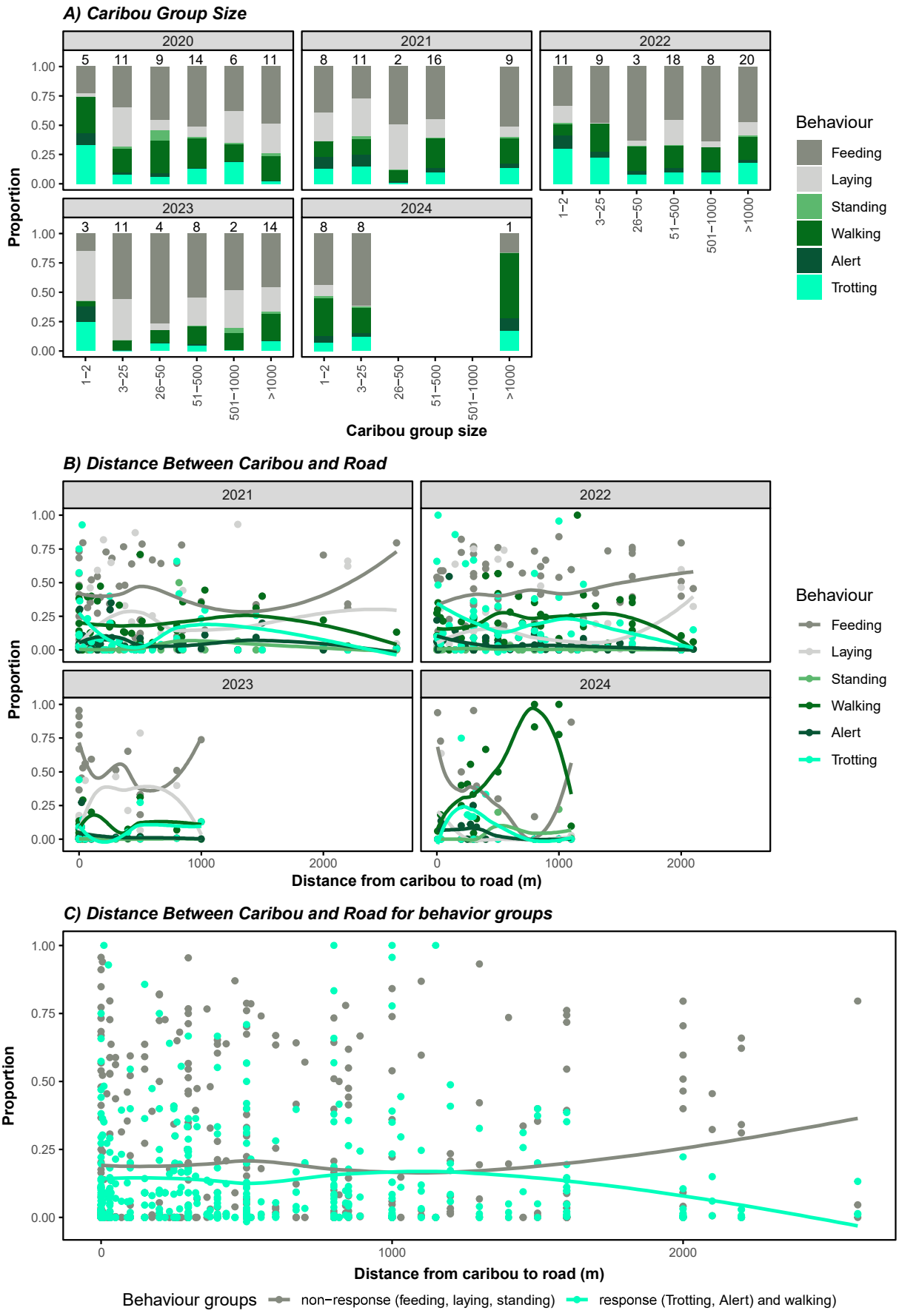
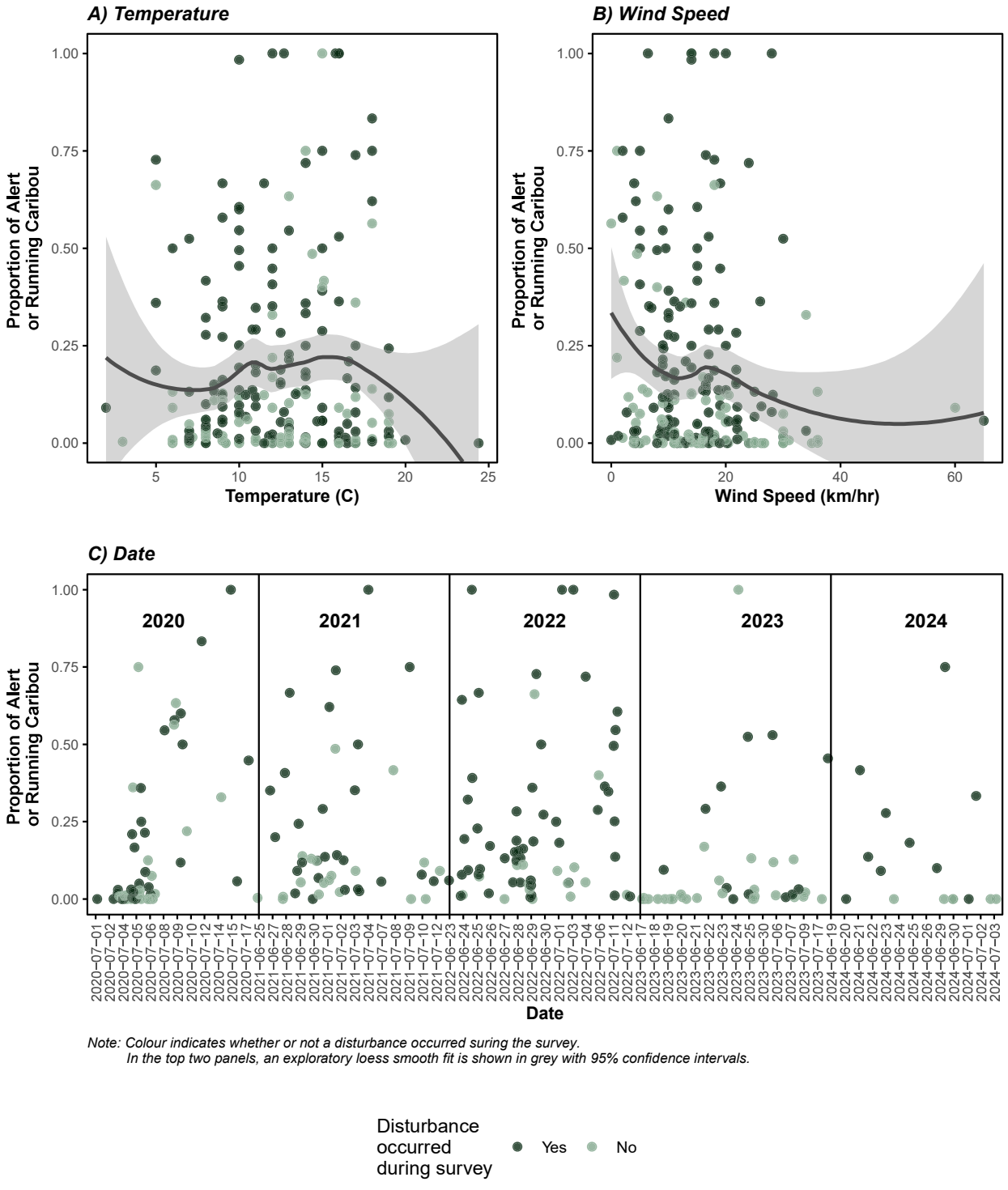


FIGURE 6.3-3 PROPORTION OF ALERT OR RUNNING CARIBOU BY TEMPERATURE, WIND SPEED AND DATE



6.3.5 UPSTREAM OR DOWNSTREAM OBSERVATIONS

The movement pattern for caribou in the Mine area is variable. In some years, caribou primarily cross the road travelling east to west, and in other years, it is the opposite. From 2020 to 2023, most of the observed caribou were travelling northwest to southeast from their calving grounds, around the west side of Meliadine Lake and on to the coast to feed. In 2024, a different pattern was observed, with most post-calving caribou travelling west and south, resulting in fewer opportunities to conduct behaviour surveys.

The pattern from 2020 to 2023 aligns with observations from community members in Rankin Inlet and observations at the Mine (e.g., "The majority of collared caribou going Northward when the lake is frozen. Some come through the south end then cross at KM 25-27 then go east" [KivIA, personal communication]). Because of this, it is hypothesized that behaviour may vary depending on whether the caribou had crossed the road already (east, or the "downstream" side) or whether they were anticipating doing so (west, or the "upstream" side). The pattern observed in 2024 is irregular, but has been suggested by community members from Chesterfield Inlet as occurring periodically based on oral history and Traditional Knowledge.

One hypothesis is that caribou may be hesitant to cross the road, but that once they cross the road, they move away quickly. If this were the case, the prediction would be that groups of caribou would be observed close to the road on the upstream side, with fewer groups or groups further away on the downstream side. This predicted distribution was not observed in any year. Instead, groups of caribou were observed near the road on both sides of the road, and frequently crossed in both directions. Figure 6.3-4 compares the distance to the road at the start of the survey with the location relative to the road (east or west). More surveys occurred on caribou further from the road, but this was independent of which side of the road the caribou were on.

When proportion of each behaviour type was compared between surveys on the east and west (Figure 6.3-4), the two subsets were almost identical in 2020, 2021, and 2024, and more response behaviours were observed on the east (downstream) side of the road in 2022 and 2023.

6.3.6 NUMBER OF DISTURBANCES

When duration of response (i.e., time taken for caribou to return to a baseline condition following a disturbance) is compared with the proportion of response behaviours, surveys with a higher proportion of caribou responding to the disturbance tend to take longer to recover to a baseline condition (Figure 6.3-5, panel a). Interestingly, it appears that surveys with multiple disturbances don't consistently produce a larger response or a longer one. Although the long-lasting full-group responses are in surveys with multiple disturbances, there are surveys with multiple disturbances that don't have large reactions or longer-lasting (>15 minute) response durations.

Figure 6.3-5 (panel b) shows a density plot for the proportion of response behaviours in three subsets of surveys: those with no disturbances, those with one disturbance, and those with multiple disturbances. The results suggest a slightly higher proportion of alert or running caribou in surveys when one or more disturbances occurred. Surveys with multiple disturbances do not appear to have a greater overall response than surveys with one disturbance.

FIGURE 6.3-4 AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE OBSERVED ON EAST AND WEST SIDE OF ROAD

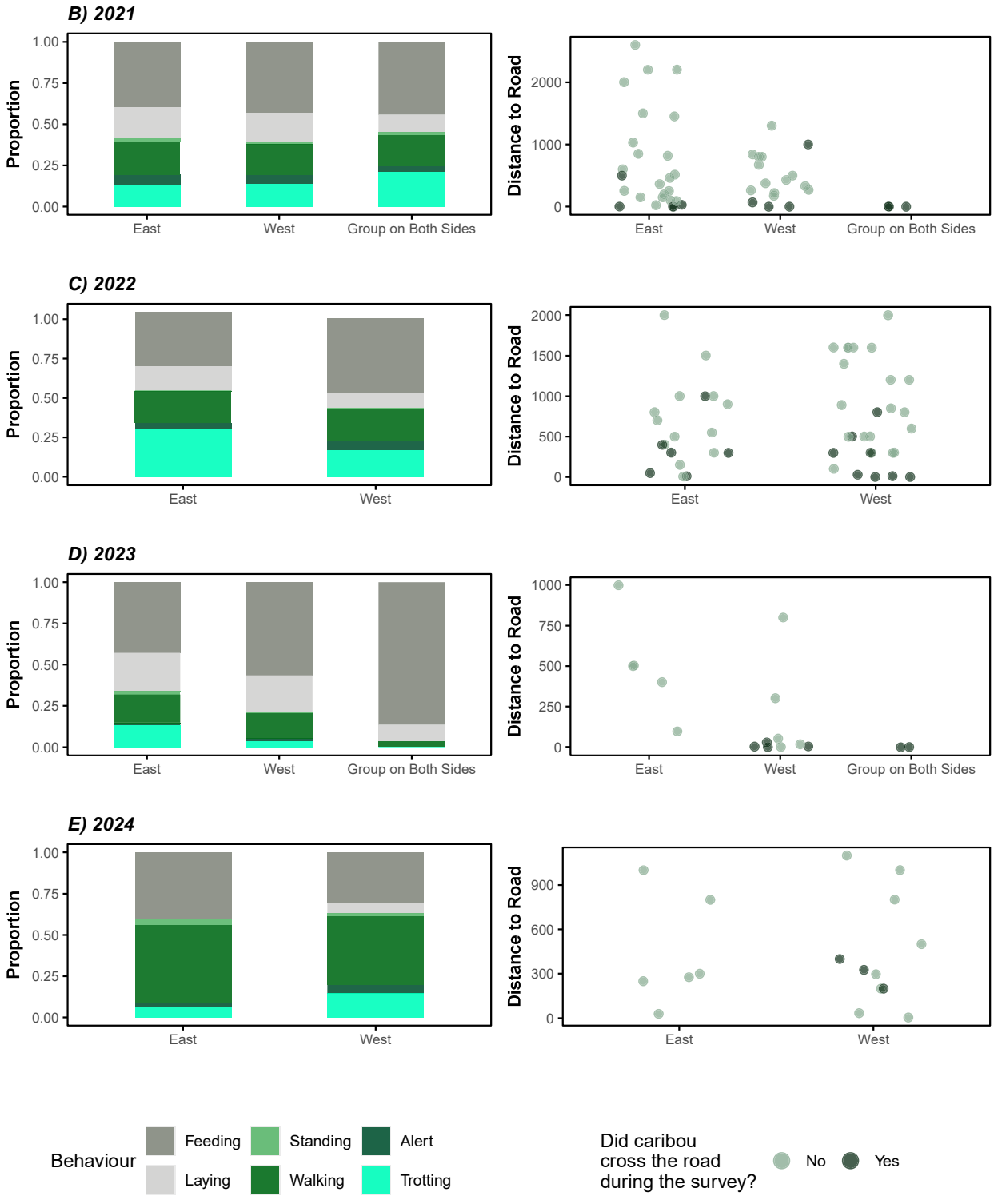
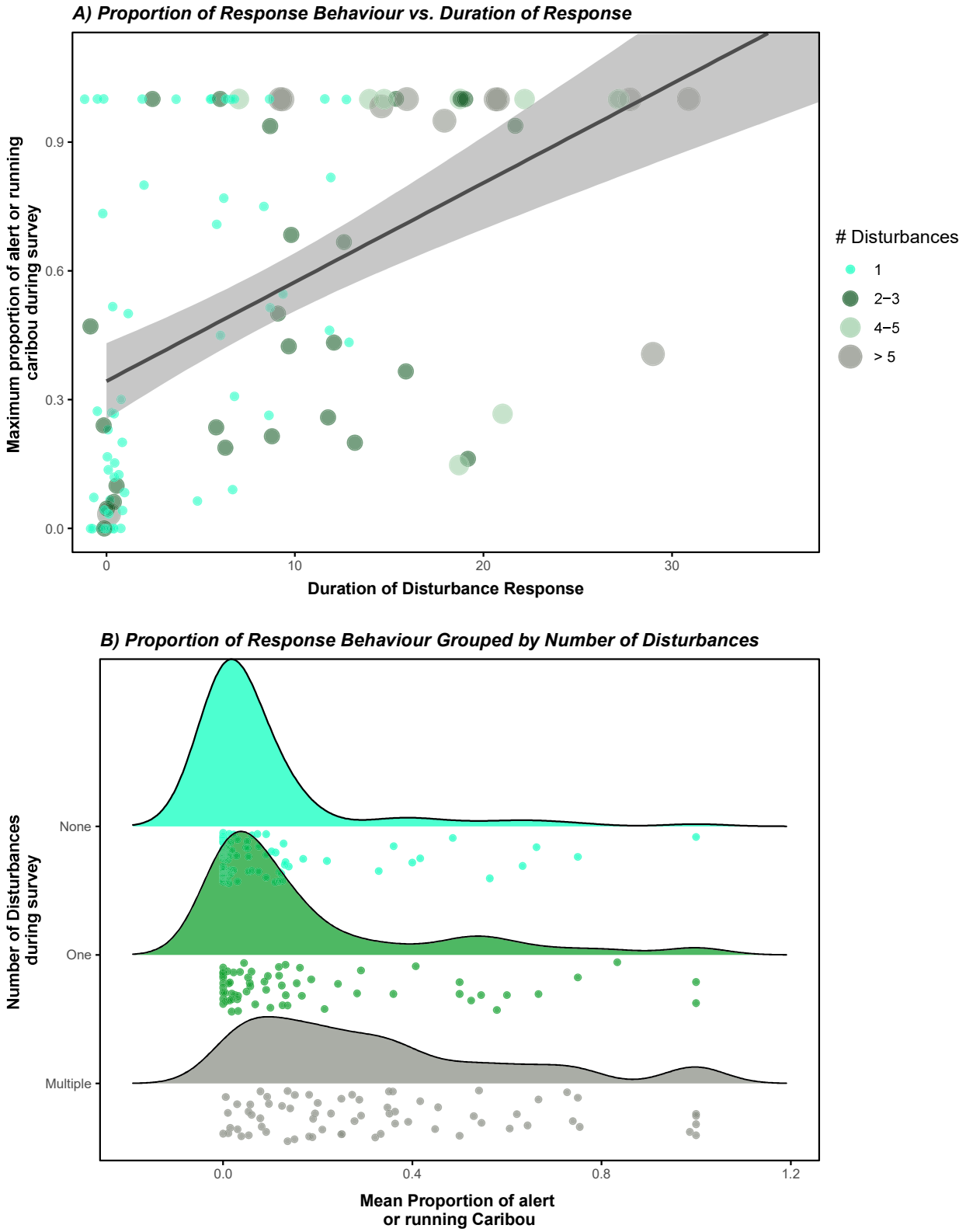


FIGURE 6.3-5 COMPARISON OF RESPONSE BEHAVIOURS BY NUMBER OF DISTURBANCES



It should be noted that this figure is an average proportion of response behaviours across the entire 30-minute survey, so in some instances, the proportion of response behaviours may have been obscured by the large number of intervals with no response behaviour.

6.3.7 RESPONSE TO DISTURBANCES

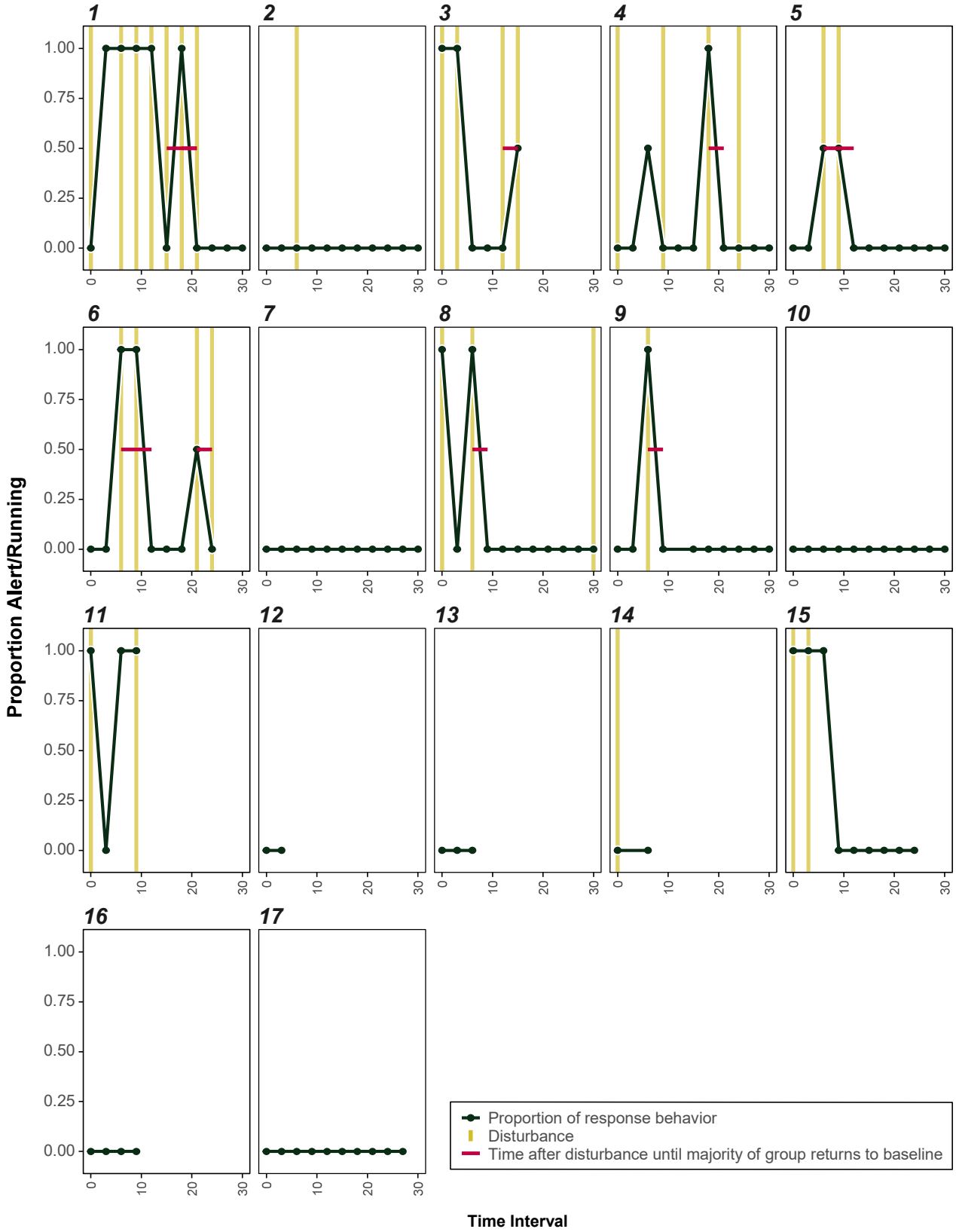
Summarizing data over the entire 30-minute survey is useful for broad comparisons, but has the disadvantage that response behaviour can be washed out in a relatively uneventful survey. To examine the response to disturbances within a survey, the proportion of response behaviours was plotted by 3-minute intervals for each survey, as shown for all 2024 surveys in Figure 6.3-6 (see Appendix C for plots of all surveys from 2020 to 2023).

In Figure 6.3-6, the response behaviours of "alert" and "trotting or running" are combined to create the total proportion of responding caribou in any given time interval and plotted over time within the 30-minute survey. Disturbances are denoted with a vertical bar. A spike in response behaviours in the interval during a disturbance or immediately following a disturbance, suggests that the caribou are responding to the disturbance. Disturbance response time is denoted with a horizontal red bar, with the end of the bar representing either a lower proportion of response behaviours than prior to the disturbance, or a 40% reduction in response behaviours from the peak following the disturbance.

The results show that even in the absence of disturbances, an average of 0 to 10% of caribou typically exhibit response behaviours at any given time. Figure 6.3-6 and Appendix C suggest that following a disturbance event, there was commonly a spike in the proportion of caribou with response behaviours increasing from 0 to 10% up to 60 to 90% of the group. The proportion of caribou with response behaviours returned to a pre-disturbance level quickly, often within three intervals (less than 9 minutes). For example, when a vehicle passed, most caribou would look up (which is classified as an alert response behaviour), then return to feeding or standing (pre-disturbance behaviour).

There was some variability in the proportion of response behaviours. During some surveys, there was a spike in response behaviours when no vehicle or other obvious disturbance was observed. There are several things that may account for this, including a disturbance that could not be detected by surveyors, insect harassment, or gregarious behaviour (i.e., one caribou reacting triggers a chain reaction). In some surveys of varying group sizes and distances to the road (approximately 16% of surveys from 2020 to 2024), a vehicle passed by (which would be considered as a disturbance), but there was no increase in response behaviours observed in the caribou group during the subsequent time period.

FIGURE 6.3-6 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2024



CLIENT: Agnico Eagle Mines Limited
GRAPHICS NUMBER: AGN-24ERM-008:7

6.4 STATISTICAL ANALYSIS RESULTS

As group size and distance to infrastructure were identified as being potentially correlated during the exploratory analysis, a Chi-square test was conducted between the two variables to determine if they were too closely related to be included in a model together. A Chi-square ($\chi 2$) statistic can be used to test for the correlation between two categorical variables. The resulting Chi-square statistic was significant ($p = 0.0002$), indicating that group size is associated with distance to road. To prevent overfitting the models, two separate models were run that included group size as an independent variable and distance to road as an independent variable, respectively. To bolster the sample size for statistical analyses, all analyses in this section were conducted on the pooled dataset of 2020 to 2024 data, with the survey year and survey id as a random effect.

The final models had many parameters, and it was difficult to attain model convergence. As a result, model variables that had little or no explanatory power and were not variables of interest (such as temperature) were dropped from the final model sets. Three response (dependent) variables were tested in three separate model sets as described in the methods: proportion of response behaviour (alert or running), proportion of walking and response behaviour, and duration of response following disturbance.

6.4.1 PROPORTION OF RESPONSE BEHAVIOUR

The estimates and significance levels for the best-fitting models (one each with group size or distance to road) that used response behaviour as the dependent variable are presented in Tables 6.4-1A and 6.4-1B, for the best-fitting model that used walking and response behaviour as the dependent variable in Tables 6.4-2A and 6.4-2B, and for the best-fitting model that used duration of response in the time to event model in Table 6.4-3.

TABLE 6.4-1A SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR RESPONSE BEHAVIOUR MODEL WITH DISTANCE TO ROAD (N = 230)

Effect Type	Group	Variable	Estimate	Standard Error	P-Value
Fixed	-	(Intercept)	0.019	0.012	<0.001***
		Distance to road (m)	0.998	0	< 0.001***
		Disturbance during interval	3.907	0.22	< 0.001***
		Wind speed (km/h)	0.972	0.023	0.23
Random	Survey ID	SD for random effect	2.372	-	-
	Year	SD for random effect	0.852	-	-

Notes:
Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values (p<0.001) are indicated with three asterisks. P-values <0.10 and >0.05 are indicated with a dot.

TABLE 6.4-1B SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR RESPONSE BEHAVIOUR MODEL WITH CARIBOU GROUP SIZE (N = 230)

Effect Type	Group	Variable	Estimate	Standard Error	P-Value
Fixed	-	(Intercept)	0.332	0.203	-
		Caribou group size:	-	-	< 0.001***
		• 1–2	Reference	Reference	-
		• 3–25	0.024	0.013	-
		• 26–50	0.004	0.003	-
		• 51–500	0.005	0.003	-
		• 501–1,000	0.004	0.003	-
		• >1,000	0.005	0.003	-
	-	Disturbance during interval	4.268	0.213	< 0.001***
		Wind speed (km/h)	0.965	0.018	0.06 ▪
Random	Survey ID	SD for random effect	2.247	-	
	Year	SD for random effect	0.74	-	

Notes:
Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values (p<0.001) are indicated with three asterisks. P-values <0.10 and >0.05 are indicated with a dot.

TABLE 6.4-2A SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR WALKING AND RESPONSE BEHAVIOUR MODEL WITH DISTANCE TO ROAD (N = 230)

Effect Type	Group	Variable	Estimate	Standard Error	P-Value
Fixed	-	(Intercept)	0.107	0.1	0.02*
		Distance to road	0.999	0	<0.001***
		Disturbance during interval	2.219	0.114	< 0.001***
		Wind speed (km/h)	0.984	0.02	0.42
Random	Survey ID	SD for random effect	2.162	-	-
	Year	SD for random effect	1.655	-	-

Notes:
Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values (p<0.001) are indicated with three asterisks. P-values <0.10 and >0.05 are indicated with a dot.

TABLE 6.4-2B SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR WALKING AND RESPONSE BEHAVIOUR MODEL WITH CARIBOU GROUP SIZE (N = 230)

Effect Type	Group	Variable	Estimate	Standard Error	P-Value
Fixed	-	(Intercept)	1.438	0.722	-
		Caribou group size:	-	-	< 0.001***
		• 1–2	Reference	Reference	-
		• 3–25	0.089	0.043	-
		• 26–50	0.015	0.009	-
		• 51–500	0.016	0.008	-
		• 501–1,000	0.011	0.007	-
		• >1,000	0.017	0.008	-
		Disturbance during interval	2.115	0.089	< 0.001***
		Wind speed (km/h)	0.963	0.015	0.06 ▪
Random	Survey ID	SD for random effect	1.947	-	-
	Year	SD for random effect	0.449	-	-

Notes:
Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values (p<0.001) are indicated with three asterisks. P-values <0.10 and >0.05 are indicated with a dot.

In Tables 6.4-1 and 6.4-2, the statistics presented include the type of term in the model (fixed versus random effects), and variable estimate (Odds Ratio), which can be interpreted as the expected effect on the dependent variable as the independent variable increases. For example, in Table 6.4-1, the <1 estimate for windspeed indicates that as the wind speed increases, the proportion of caribou with response behaviours decreases. However, estimates should always be considered in tandem with the standard error; if the standard error is larger than the estimate, the estimate has little precision. For random effects, the estimate indicates the standard deviation of the random term. The p-value statistic indicates whether there is a relationship between the variable and the response, taking into account the other variables in the model. Significant p-values (<0.05) for variables with more than two categories were followed up with pairwise post-hoc tests to determine which groups were different. A p-value of less than 0.05 suggests that the variable is an important determinant of the response, as it indicates there was less than 5% probability that we would see an association as strong as we did if there was no relationship.

Tables 6.4-1 and 6.4-2 suggest that in both models, whether a disturbance occurred during an interval, was a significant predictor of the proportion of animals exhibiting response behaviour during that interval. In both models for response alone, the Odds Ratio is approximately four, suggesting that there is a four times higher chance of response behaviour in intervals containing a disturbance averaged across group size or distance to road. In the models with walking behaviour included, there is approximately two times higher odds of exhibiting this behaviour in intervals where a disturbance occurred.

The models also suggest that both distance to road and caribou group size are significantly associated with the proportion of caribou exhibiting response behaviour. Post-hoc pairwise test results are illustrated in Figures 6.4-1 and 6.4-2 for different categories of caribou group size. The shaded grey bars indicate the 95% confidence intervals around the estimates of average proportion of caribou exhibiting response behaviour. The points indicate the means (averaged over whether a disturbance occurred), and the green arrows the pairwise comparisons among groups. Where these arrows do not overlap suggests a significantly different response between the groups.

For the response models, there is a significant effect of distance to infrastructure. This suggests a change in behaviour that occurs more strongly when caribou are closer to roads or the Mine site. Categorical distance analyses conducted in previous years (2021 to 2023) suggest a change in the response proportion at approximately 300 m distance from the AWAR, with those closest exhibiting a higher proportion of response behaviour (ERM 2024b). Based on pairwise post-hoc tests, the smallest group size (1 to 2 caribou) had the largest proportion of response behaviour and this was different from all other group sizes (Figures 6.4-1 and 6.4-2). The next largest group size (3 to 26 caribou) also showed a significantly higher proportion of response compared to the larger group sizes, which were all similar to each other. Taken together, these results suggest that small groups of caribou near the road are more likely to have a higher response to disturbance compared to larger groups further from the road. The response and walking models had the same pattern of results.

6.4.2 DURATION OF RESPONSE

The average number of survey intervals with a disturbance was 1.4, while the most common (median) number of survey intervals with a disturbance was 1 and the maximum was 11. The final model duration of response models included the number of disturbances that occurred during the survey, as further covariates were not possible due to the level of data available while still reaching model convergence. The estimated term (hazard ratio) for number of disturbances was less than one, which indicates a longer duration of response for increasing numbers of disturbances. We can use the estimates from the model to calculate the probability of returning to normal behaviour within a certain period for different numbers of disturbances. Table 6.4-3 and Figure 6.4-3 give the estimates and confidence intervals for the probability of returning to normal behaviour within a certain time by number of intervals in which a disturbance occurred. Over the range of number of disturbances and group sizes, the model suggests that 89% (95% CI = 80 to 94%) of surveyed groups will have returned to normal behaviour within 9 minutes or less following a single disturbance, while increasing numbers of survey intervals with a disturbance result in a longer duration of response behaviours.

FIGURE 6.4-1 PAIRWISE COMPARISONS OF AVERAGE PROPORTION OF CARIBOU EXHIBITING RESPONSE BEHAVIOUR AMONG CATEGORIES OF CARIBOU GROUP SIZE

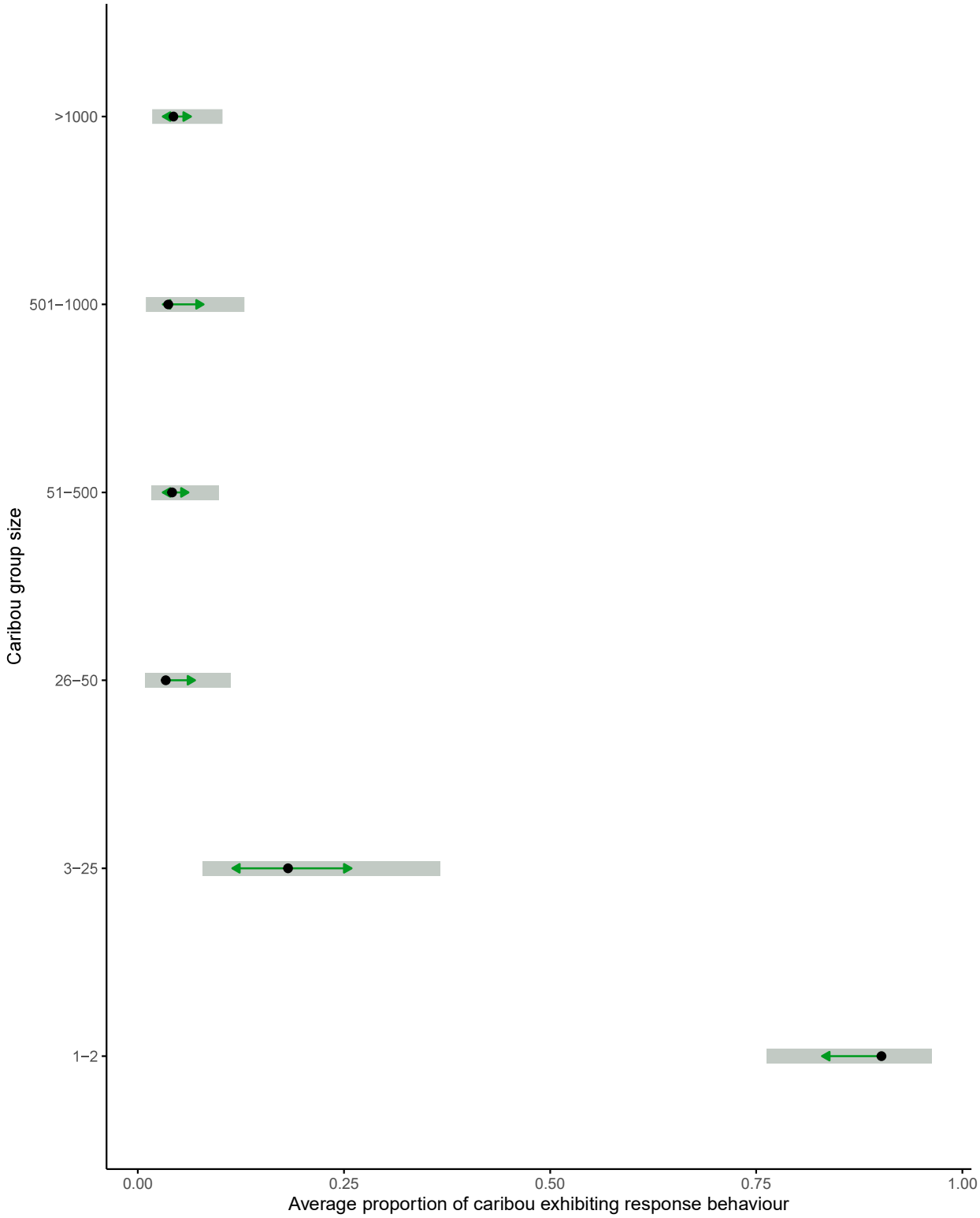


FIGURE 6.4-2 PAIRWISE COMPARISONS OF AVERAGE PROPORTION OF CARIBOU EXHIBITING RESPONSE AND WALKING BEHAVIOUR AMONG CATEGORIES OF CARIBOU GROUP SIZE

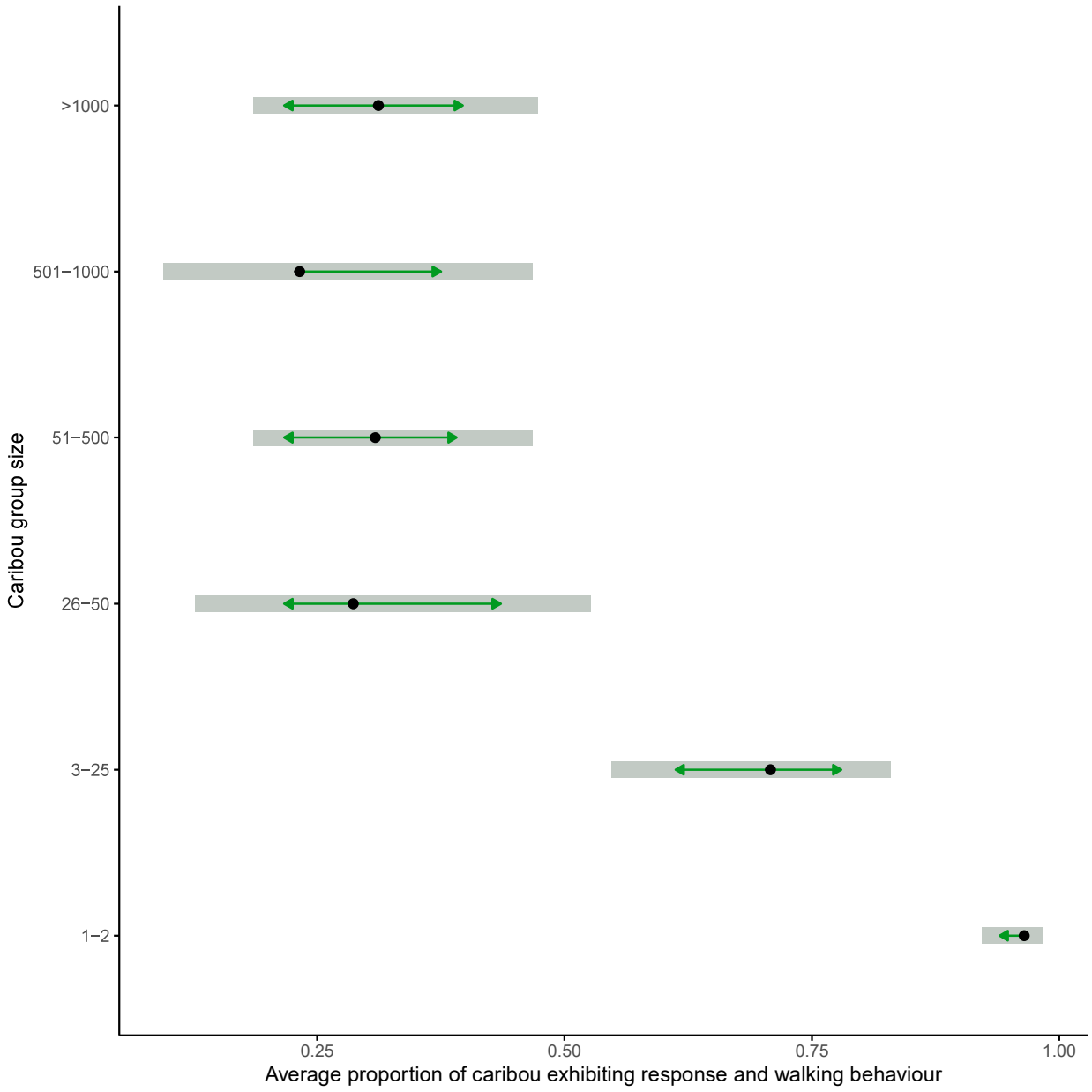


FIGURE 6.4-3 CUMULATIVE PROBABILITY OF RETURN TO NORMAL BEHAVIOUR BY DURATION OF RESPONSE FOR DIFFERENT NUMBERS OF DISTURBANCES

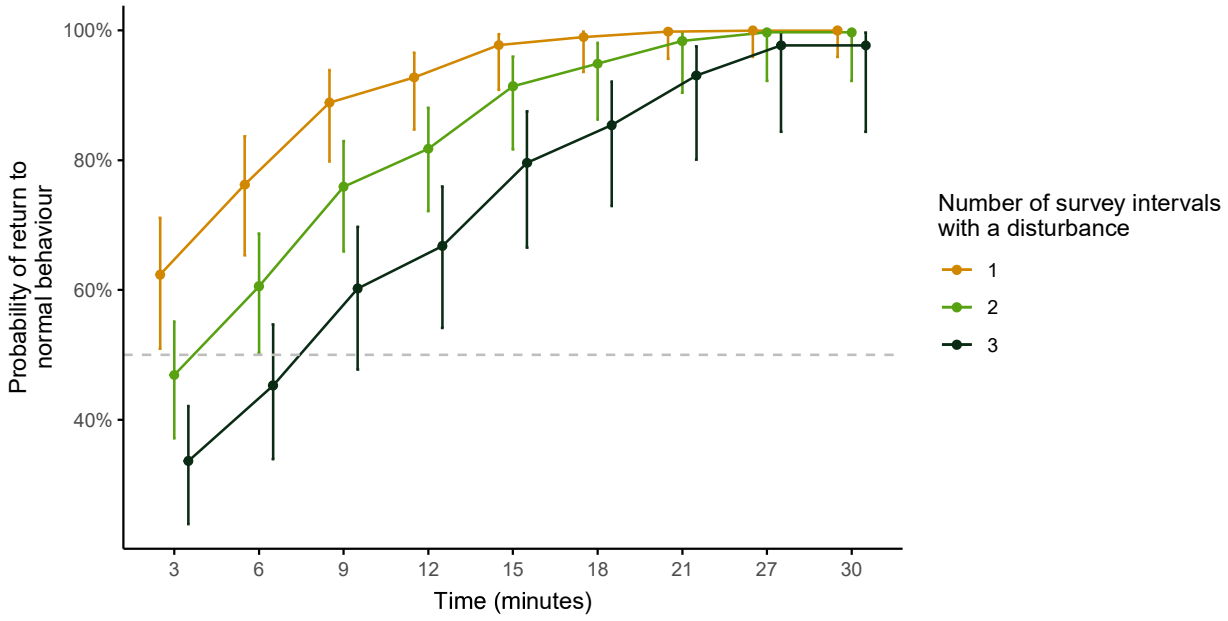


TABLE 6.4-3 PROBABILITY (MEAN AND 95% CONFIDENCE INTERTVAL) OF RETURNING TO NORMAL BEHAVIOUR WITHIN A CERTAIN TIME BY NUMBER OF DISTURBANCES

Number of Disturbances	3 minutes	6 minutes	9 minutes	12 minutes	15 minutes	18 minutes	21 minutes	27 minutes	30 minutes
1	62% (51%, 71%)	76% (65%, 84%)	89% (80%, 94%)	93% (85%, 97%)	98% (91%, 99%)	99% (94%, 100%)	100% (96%, 100%)	100% (96%, 100%)	100% (96%, 100%)
2	47% (37%, 55%)	61% (50%, 69%)	76% (66%, 83%)	82% (72%, 88%)	91% (82%, 96%)	95% (86%, 98%)	98% (90%, 100%)	100% (92%, 100%)	100% (92%, 100%)
3	34% (24%, 42%)	45% (34%, 55%)	60% (48%, 70%)	67% (54%, 76%)	80% (67%, 88%)	85% (73%, 92%)	93% (80%, 98%)	98% (84%, 100%)	98% (84%, 100%)

6.4.3 RESULTS SUMMARY

The results of these statistical analyses provide support for the hypothesis that caribou tend to respond to disturbances for several minutes, particularly when they are close to the road or in smaller groups. Our modelling approach provides information on the duration of caribou responses to disturbances, supporting that more than 85% of caribou will return to baseline behaviours within 9 minutes or less of a single disturbance event, while it may take up to 18 minutes for 85% of caribou to return to baseline following three disturbances. This finding supports the hypothesized effectiveness of consolidating disturbance events (vehicles) into convoys to reduce the overall time caribou may react. Similar analyses focused on convoys at the Meadowbank Mine show returns to baseline behaviours approximately 15 minutes after a convoy of multiple vehicles (ERM 2024c).

The proportion of caribou walking was also linked to disturbances, leading to inclusion in post-hoc models as a response behaviour, which was not possible due to data sparsity in previous years. Both response only and walking, in addition to response models, showed an increased proportion of response closer to infrastructure. This supports the continued consideration of walking behaviour as a potential response to disturbance for caribou. Pairwise comparisons showed that increased proportions of response behaviours were observed for 25 or less caribou, with no differences between larger groups.

These results are consistent with other surveys recorded on barren-ground caribou during the post-calving and early summer periods, which suggest that caribou behavioural responses to all-season haul roads tend to taper off beyond approximately 500 m (Curatolo et al. 1987; Johnson and Lawhead 1989; Dyer et al. 2001). However, zone of influence estimates are highly variable in the literature and this method of data collection is not designed to estimate it. In addition, responses to roads and infrastructure have previously been linked to increased harvest from roadways (Plante et al. 2018; Russell and Gunn 2019), a factor which was not included in this analysis.

7. SUMMARY

The behaviour monitoring data from 2024 was combined with data from 2020 to 2023, to determine if caribou activity budgets change with distance from the Mine, and to document caribou response to potential disturbances. All results outlined in this report used all five years, providing increased opportunity for insight as compared to a single year analysis. The program and combined data resulted in several key findings:

- Caribou mostly exhibited the non-response behaviours of standing, laying, feeding, and the variable behaviour of walking, which may be considered both a response or non-response behaviour.
- Observations were well distributed across a range of caribou group sizes from single individuals to groups over 1,000.
- Small (<25) groups tended to have a higher proportion of response behaviours (running, alert) than larger groups, irrespective of disturbances.
- Groups closer to the road exhibit a higher proportion of response behaviours than those further away. This was apparent in both the categorical distance analysis conducted in 2023, and the continuous distance analysis conducted in 2024.
- Caribou were statistically more likely to be walking (a potential response or non-response variable), alert, or running within survey intervals where there was a disturbance (i.e., vehicle traffic). Inclusion of walking as a potential response behaviour may represent a milder response to disturbance events than the other two behaviours, representing a spectrum of possible reactions when disturbed.
- More than 85% of caribou will return to baseline behaviours within 9 minutes or less of a single disturbance event, within 15 minutes of two disturbance events, and within 18 minutes following three disturbances. This finding lends support to the effectiveness of the existing use of convoys to consolidate multiple essential vehicles into a single disturbance event.
- Groups of caribou were observed near the road in equal proportions on both the upstream and downstream sides of the road. Increased response behaviours were observed on the downstream (east) side of the road in 2022 and 2023.
- The proportion of caribou with response behaviours in a group was unrelated to measured environmental variables, including temperature, wind speed, or insect responses.

Analyses summarized here provide support for the hypothesis that caribou tend to respond to disturbances, particularly when they are closer to the infrastructure (the AWAR or Mine site) or in smaller groups. These results also put caribou responses to disturbances into context, with most caribou returning to previous behaviours after 6 to 9 minutes. Statistical results suggest different reactions based on the number of disturbances experienced, with more disturbances resulting in increased time until caribou return to baseline behaviours, providing information that can be used to implement adaptive management and effective mitigations.

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APPENDIX A DETAILED METHODS FOR CARIBOU BEHAVIOUR SURVEYS



AGNICO EAGLE

Meadowbank Gold Mine

Caribou Behaviour Monitoring

September 15, 2021

Project No.: 0597635

The business of sustainability

ERM

CONTENTS

1. INTRODUCTION 1
1.1 Objectives 1
2. STUDY AREA 2
3. STANDARD OPERATING PROCEDURES 3
3.1 General Field Data 3
3.2 General Equipment List 4
3.3 Field Methods 4
3.3.1 Group Selection 4
3.3.2 Selection of an Observation Site 5
3.3.3 Data Recording 5
3.3.4 Behaviour Classification 7
4. DATA MANAGEMENT 8
5. CLOSURE 9
6. REFERENCES 10

APPENDIX A MEADOWBANK GOLD MINE: CARIBOU BEHAVIOUR MONITORING DATA SHEET

1. INTRODUCTION

Agnico Eagle Mines Ltd. (Agnico Eagle) would like to determine whether caribou behaviour changes in response to mine activities. The purpose of caribou behaviour surveys is to provide information to characterize the effects of the physical road and mine-related activities on caribou behaviour, including the All Weather Access Road (AWAR) and Haul Road.

The planned monitoring program is designed to collect data on caribou behaviour using standardized, scientifically-defensible methods. The data will be used to monitor Project effects.

1.1 Objectives

Following discussions with the Kivalliq Inuit Association and Government of Nunavut during the spring of 2021, the objectives of the behaviour monitoring program for caribou have been updated to the following:

- Evaluate the baseline behaviour of caribou (behaviour in the absence of disturbance);
- Evaluate the response of caribou to disturbances;
- Compare the behaviour of caribou between the following categories, if there is sufficient data:
    1) in large vs. small groups,
    2) near vs. far from the road,
    3) when the road is open vs. closed,
    4) east vs. west of the road, (upstream and downstream), and
    5) spring migration vs. summer and fall periods.

2. STUDY AREA

The study area for behaviour monitoring is anywhere that caribou may interact with the mine, including the All Weather Access Road (AWAR), the Meadowbank Mine site, Whale Tail site and the Haul Road connecting Meadowbank to Whale Tail.

3. STANDARD OPERATING PROCEDURES

The purpose of caribou behaviour surveys is to provide information to characterize the effects of the physical road and mine-related activities on caribou behaviour, including the All Weather Access Road (AWAR) and Haul Road. The overall method for the surveys is to identify caribou groups visible from the road, to select some groups for observation, and to record the behaviour of individuals in groups of different sizes including their behaviour without any disturbance and responses to both mine-related activities and natural factors.

Notes to guide the work include:

- Systematic surveys will be conducted along all Project roads during spring, summer and fall periods.
- The survey team will consist of a driver/observer and a second observer when available.

Surveys should be performed:

- During spring, summer and fall when caribou may be in the Project area,
- Of caribou at various distances from the road and group sizes, and
- If surveying effects of a convoy, conduct two surveys, one at least an hour before convoy deployment so that a pre-disturbance measurement can be made, and a second survey during the convoy passing by caribou.

3.1 General Field Data

For each survey day, the appropriate general field data will be recorded onto field data sheets supplied in Appendix A and B. A new data sheet will be used for each survey, including additional sheets as necessary to record all observations. General information includes:

- Survey date and start and end times.
- Field personnel (full names on the data sheet header and initials thereafter).
- Weather conditions during and prior to sampling (e.g., snow in the last 24 hours, current wind conditions).
- Site description: provide location and description (GPS coordinates, road name and distance marker).
- Photographs or video (if possible):
    - Take a photo of the caribou every time an observation is recorded so that the observations can be verified by a biologist.
    - For any photographs taken, record the picture IDs in the comments field on the field data sheet.
    - Write descriptions of any photos taken for specific reasons.
- General observations/notes of the environment/sampling procedures.
- Any deviation from the SOPs outlined below.

Note: When in doubt take pictures and make field notes explaining the situation, your response or consequent changes in methods. It is better to have more data/notes than not enough when interpreting the results later on.

3.2 General Equipment List

- A GPS unit with waypoints of road km markings.
- Field data sheets (Appendix A and B), clipboard, pencils, or iPad with data form.
- A timer capable of alarm setting for repeat time intervals (i.e., can be set to go off every three minutes, like a smart phone).
- Binoculars or spotting scope.
- Compass (or use compass function on GPS unit).
- Portable weather station (temperature and wind speed).
- Camera.
- Rangefinder.

3.3 Field Methods

3.3.1 Group Selection

The survey day will begin with a reconnaissance survey to determine how many caribou groups are present near the road, how large they are, and where they are. This will be accomplished by driving from the mine site along the road and noting relevant information about the groups and their sizes along the way (using the standard, tablet-based road survey form). Observers will preferentially choose groups to survey to across group sizes and distances from the road. Ideally, caribou would be sampled in an even distribution across these variables and along the AWAR and Haul Road. However, the nature of caribou and field sampling mean that observers may need to survey what caribou are available, rather than what is “ideal”.

Allow approximately one hour to survey each group. If the length of the survey day permits all groups to be surveyed then they should all be surveyed. If there are more groups to survey than the time in the day, then do the following:

1. Look at how many of each group size (bullet list below) have been surveyed to date. If one of them is under-represented and there is a group of that size on the road, then go survey that group. If there is more than one group of that size, choose it randomly using the procedure in step 4.
    - 1 or 2 caribou
    - 3 to 25 caribou
    - 26 to 50 caribou
    - >50 caribou
2. During 2020, few groups of caribou within 300 m of the road were observed or sampled. Preferentially choose groups of caribou within 300 m of the road, with a soft target of approximately 1/3 of samples in this area.
3. If any Project-tolerant caribou are observed (e.g., caribou observed near the road or mine site for more than 72 hours in summer and 48 hours in other seasons; TEMP 2020), then select these animals for sampling. In Appendix A data sheet, record that the group is Project tolerant in the notes field.
4. If there are multiple groups available, choose groups to fill in an even distribution of group sizes and distances from roads.

Record all caribou groups observed during the reconnaissance survey in the standard, tablet-based survey form and submit that data along with the results of behaviour monitoring.

3.3.2 Selection of an Observation Site

Find a safe parking location and follow site safety protocols. The observation location may be the vehicle itself or a safe location off the road. If observers exit the vehicle, the observation location should be chosen where observer activity is not likely to influence caribou behaviour and where the observer can remain comfortable for a period of approximately 45 minutes without needing to move. Ideally, the vehicle should be stopped a minimum of ~250-300 m from the caribou – adapt this distance as needed. If the animals are staring at the truck or moving away, then the truck is too close.

3.3.3 Data Recording

Allow 15 minutes between arrival and the time at which behavioural observations begin. This is to allow animals to return to behaviour that may have been interrupted by the arrival of observers. In the time before recording behaviour, fill in the top portion of the form with location, weather, and group size information.

After 15 minutes, begin recording data in the form in Appendix A. The start time to record is the time that observations begin.

3.3.3.1 Location

Location: Collect a waypoint of the location from which the observations will be made. Note the waypoint number and the UTM coordinates on the data sheet.

Road Condition: If observing caribou on a road, record whether the AWAR or Haul Road are open or closed.

Distance: Estimate the distance to the group using a laser rangefinder and, using a compass or the GPS unit compass feature, record the bearing (0° to 360°) to the group being observed. If the group of caribou is large and spread over a considerable distance from the road, estimate the distance to nearby caribou and the caribou furthest away that will be sampled. If some caribou in the group are too far away to sample, then do not include them in the distance estimate.

Behaviour: At each time interval during the survey, observers should record the number of individuals in the group exhibiting behaviour in each category. For clarity, observers should record zero values for behaviours not observed.

East vs. West: Note if the group is on the east or west side of the road. At the end of the 30 minute observation period return to the top of the form and record (Y or N) if the group crossed the road during the survey period. If monitoring at the mine site or Whale Tail, leave this section blank.

Sex: Note the sex of the group. This can be difficult in large groups, so record in the following categories: mostly males, mostly females, mostly females with calves, juveniles, or mixed group.

3.3.3.2 Weather Conditions

Use the portable weather station to record:

- Air temperature;
- Wind speed;
- Wind direction;
- Precipitation; and
- Humidity (if the weather station has this function).

3.3.3.3 Road Structure

At the location of the caribou group, record the road characteristics:

- Height of the road above the tundra (m);
- Slope of the road side (with of the slope in m);
- Approximate height of snow bank (m); and
- Any structures, such as bridges, present.

3.3.3.4 Caribou Behaviour

Individuals in the group being observed will be categorized when the survey starts and at three minute intervals. Standardized behaviour categories will be used (Section 3.3.4). The standardization of behaviour is necessary for clarity and data analysis. If the observed behaviour does not fit within any of the categories then observers have the option of noting other behaviour in the comments field. However, this should be used only rarely as most behaviour should fit in the primary categories listed below.
If noting a new/different behaviour, please take a photo or video of the caribou.

The data to record at each three-minute interval are the numbers of individuals in the group exhibiting each behaviour at that time. Do not attempt to characterize the behaviour that occurred during the interval. If the group is too large to be counted in each interval, choose an identifiable subset of the group, count the individuals exhibiting each behaviour at each time interval, and add a comment that a subset of the group was sampled.

Indicate the total group size at the top of the data form, not the size of the subset whose behaviour was recorded. Count the number of caribou up to 100 animals, and then record group size in categories above 100; 100-200 animals, etc. (see Appendix A).

Practically, the easiest way to do this is to have the observer scan across the group of caribou from Left to Right, calling out the behaviour of each animal, while the recorder adds tick marks to the data sheet. When complete, count up the tick marks.

3.3.3.5 Disturbance Events

Caribou behaviour is expected to vary in response to some disturbance events. The bottom of the data form should be used to record any potential disturbance events evident to the observer regardless of whether caribou respond to them. The main categories of events are included in the data sheet:

- Light truck;
- Haul truck;
- Road maintenance vehicle (e.g., grader);
- ATV or skidoo;
- Aircraft; and
- Predator (note species).

Record the number and approximate speed of the vehicle (regular driving speed, or moving slowly, ~10 km/h, past caribou).

Record the time of the disturbance event (0:00 to 30:00 of the survey), indicate which type of disturbance was observed in the appropriate column. Record any additional comments and records of photographs taken in the final column.

Record whether the vehicle stopped when approaching caribou or continued to drive slowly. If possible, coordinate with passing vehicles on the road to have some vehicles stop for 10 minutes, and others drive by slowly.

3.3.4 Behaviour Classification

With the exception of Alert behaviour, the primary behaviour categories and their definitions follow classifications from the Government of Northwest Territories (GNWT 2017). The categories appear as columns on the data form, with descriptions on the form. The behaviour categories are:

- **Feeding –** standing or walking posture, with the muzzle touching or nearly touching the ground; can be ingesting food or not; head down or moving from side to side.
- **Lying down –** bedded on the ground, either upright or lying on its side, in a resting or ruminating position.
- **Standing –** stationary in an upright, standing posture with head elevated above the ground, and usually above the knees; if cow is nursing, if possible record the time spend nursing.
- **Alert –** head up scanning horizon or focused on a source of disturbance (e.g., vehicle, predator, human).
- **Walking –** similar to standing posture but moving at a slow gait (<5 km/h).
- **Trotting/running –** similar to standing posture but moving rapidly in symmetrical or asymmetrical gait.

Other behaviours that may be observed (record in comments field on form) are:

- **Nursing –** calf is suckling cow.
- **Sparring –** two males in contact.
- **Insect response behavior –** twitching, stamping, tossing head.

In the comments, record if any animals are moving towards the road, parallel or away from the road.

4. DATA MANAGEMENT

Please scan all data sheets at the end of the day. Data from behaviour surveys should be entered into Excel. Data from group selection surveys (standard tablet data form) and behaviour surveys should be delivered at the end of each month to ERM for QA/QC.

5. CLOSURE

This SOP has been produced for Agnico Eagle Meadowbank Division by ERM Canada. Please contact the authors with any questions.

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APPENDIX A MEADOWBANK GOLD MINE: CARIBOU BEHAVIOUR MONITORING DATA SHEET

Meadowbank Gold Mine: Caribou Behaviour Monitoring Data Sheet

Date:	Time (24 hr [00:00 to 24:00]) Start:		End:
Observers:			
Location Waypoint number:	UTM Easting:	UTM Northing:	Road name and distance marker:
Distance from caribou to observer location (use rangefinder).		(if group diffuse, estimate average distance)	Bearing:
Is group location East or West of the Road at start of survey? Circle one: **E W**		Did the group cross the road during the survey? Circle one: **Y N**	
Caribou group size: Exact count (up to 100): _____ Estimated size for larger groups. Circle one: **101-200 201-500 501-1000 >1000**			
Record sex of group (mostly males, females, females with calves, mostly juveniles, or mixed group):			
Temperature: ___°C Wind speed: _____km/h Wind direction:_____° Humidity:_____% Days since last snow or wind event: _____			
Weather observations:			
Road: Open? Closed? Road Height:	Road Side Width:	Structures/snowbank Present:	

Observation time from start of survey	Number of animals exhibiting each behaviour type						Comments and photo numbers (Note if any caribou crossed road or travelled along road)
	Feeding	Lying Down	Standing	Walking	Alert	Trotting or running	
0 minutes							
3 minutes							
6 minutes							
9 minutes							
12 minutes							
15 minutes							
18 minutes							
21 minutes							
24 minutes							
27 minutes							
30 minutes							

Observed disturbance events

(record time from start of survey and check type of disturbance. Record whether vehicle stopped (s) or drove slowly (d) past caribou)

Time from start of survey	Light truck	Haul Truck	Road maintenance vehicle (e.g., grader)	ATV	Aircraft	Predator (note species)	Comments and photo numbers. Note other disturbances here

Categories and Definitions of Behaviour[1]:

- **Feeding –** standing or walking posture, with the muzzle touching or nearly touching the ground; can be ingesting food or not; head down or moving from side to side.
- **Lying down –** bedded on the ground, either upright or lying on its side, in a resting or ruminating position.
- **Standing –** stationary in an upright, standing posture with head elevated above the ground, and usually above the knees; if cow is nursing, if possible record the time spend nursing.
- **Alert –** head up scanning horizon or focused on a source of disturbance (e.g., vehicle, predator, human).
- **Walking –** similar to standing posture but moving at a slow gait (<5 km/h).
- **Trotting/running –** similar to standing posture but moving rapidly in symmetrical or asymmetrical gait.

Other behaviours that may be observed (record in comments field on form) are:

- **Nursing –** calf is suckling cow.
- **Sparring –** two males in contact.
- **Insect response behavior –** twitching, stamping, tossing head.

[1] Primary source: GNWT-ENR 2017 caribou behaviour monitoring field protocols, courtesy of GNWT Yellowknife, NT.

APPENDIX B DATA FROM CARIBOU BEHAVIOUR SURVEYS

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Observers	UTM E	UTM N	Road Name and Distance Marker	Distance from Caribou to Observer Location (m)	Distance from Caribou to Road	Bearing to Caribou Group	Is Group East or West of Survey?	Did the Group Cross the Road During the Survey?	Caribou Group Size	Temperature (°C)	Wind Speed (km/h)	Wind Direction	Days since Last Snow or Wind Event
1	6/19/2024	Mitch Fennell	542629	6984401	AWAR KM 25	325	325	290	West	Yes	3	10	15	285	1
2	6/20/2024	Mitch Fennell	540759	6985946	Mine Site KM Pump Road	5	5	355	West	No	3	12	11	320	2
3	6/21/2024	Mitch Fennell	543596	6983970	AWAR KM 24	296	296	195	West	No	2	8	15	260	0
4	6/22/2024	Mitch Fennell	540895	6985903	AWAR KM 27	34	34	350	West	No	2	14	16	265	NA
5	6/23/2024	Mitch Fennell	541507	6988481	Mine Site KM Explo	30	30	190	East	No	2	2	10	345	NA
6	6/23/2024	Mitch Fennell	546170	6979864	AWAR KM 19	275	275	98	East	No	>1000	8	10	290	NA
7	6/24/2024	Mitch Fennell	540744	6985955	AWAR KM 27	1100	1100	255	West	No	15	10	12	295	NA
8	6/25/2024	Emma Cooke, Mitch Fennell	546179	6980191	AWAR KM 19	250	250	22	East	No	1	11	11	195	NA
9	6/29/2024	Emma Cooke	544362	6982266	AWAR KM 22	200	200	300	West	No	1	8	10	90	NA
10	6/29/2024	Emma Cooke, Other	541488	6987067	AWAR KM 28	300	300	150	East	No	2	15	15	30	NA
11	6/29/2024	Emma Cooke, Other	547444	6977178	AWAR KM 15	200	200	20	West	Yes	6	18	5	90	NA
12	6/30/2024	Emma Cooke, Other	543080	6984427	AWAR KM 25	1000	1000	200	West	No	8	15	5	90	NA
13	6/30/2024	Emma Cooke, Other	543921	6983007	AWAR KM 23	1000	1000	170	East	No	10	15	5	90	NA
14	7/1/2024	Emma Cooke	545536	6980711	AWAR KM 20	800	800	260	West	No	3	13	5	20	NA
15	7/2/2024	Emma Cooke, Other	544435	6971496	AWAR KM 8	400	400	20	West	Yes	1	14	10	30	NA
16	7/3/2024	Emma Cooke, Other	547885	6976561	AWAR KM 14	800	800	45	East	No	3	13	35	150	NA
17	7/3/2024	Emma Cooke	547473	6977202	AWAR KM 15	500	500	270	West	No	1	13	30	150	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Weather Observations	Road Height (cm)	Road Side Width (cm)	Structures Present	Feeding 0	Laying 0	Standing 0	Walking 0	Alert 0	Trotting 0	Comments 0
1	6/19/2024	Overcast	100	300	NA	2	0	0	1	0	0	NA
2	6/20/2024	Sunny; clear	100	150	Road under construction. TIRI1 1 km away	3	0	0	0	0	0	NA
3	6/21/2024	Overcast	200	250	NA	0	0	0	0	2	0	NA
4	6/22/2024	Sunny; breezy	150	250	KM27 quarry	2	0	0	0	0	0	NA
5	6/23/2024	Sunny	30	100	Explo camp; WRSF3	2	0	0	0	0	0	NA
6	6/23/2024	Sunny	120	150	NA	0	0	0	2	0	0	NA
7	6/24/2024	Sunny; hot	100	200	KM27 quarry	12	0	0	0	0	0	NA
8	6/25/2024	NA	100	250	Waterline seacan	0	0	0	0	0	1	NA
9	6/29/2024	Overcast; low wind	100	500	NA	0	0	0	1	0	0	NA
10	6/29/2024	NA	150	500	NA	2	0	0	0	0	0	NA
11	6/29/2024	Sun and clouds	100	500	NA	0	0	0	0	0	6	NA
12	6/30/2024	Sunny	100	500	NA	0	0	0	8	0	0	NA
13	6/30/2024	NA	100	500	NA	0	0	0	10	0	0	NA
14	7/1/2024	NA	100	600	NA	0	0	0	3	0	0	NA
15	7/2/2024	Sunny; low wind	100	400	Bridge	0	0	0	0	0	1	NA
16	7/3/2024	Very windy morning	100	400	NA	0	0	0	3	0	0	NA
17	7/3/2024	Sun and clouds; windy	100	500	Survey completed from quarry; cabin within 500 m of caribou	1	0	0	0	0	0	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Feeding 3	Laying 3	Standing 3	Walking 3	Alert 3	Trotting 3	Comments 3	Feeding 6	Laying 6	Standing 6	Walking 6	Alert 6	Trotting 6	Comments 6
1	6/19/2024	0	0	0	0	0	3	Crossing road	0	0	0	0	0	3	NA
2	6/20/2024	3	0	0	0	0	0	NA	1	0	0	2	0	0	NA
3	6/21/2024	0	0	0	0	0	2	NA	2	0	0	0	0	0	NA
4	6/22/2024	0	0	0	2	0	0	NA	1	0	0	0	1	0	NA
5	6/23/2024	2	0	0	0	0	0	NA	0	0	0	1	1	0	NA
6	6/23/2024	1	0	0	1	0	0	NA	0	0	0	0	2	0	NA
7	6/24/2024	9	0	0	3	0	0	NA	12	0	0	0	0	0	NA
8	6/25/2024	1	0	0	0	0	0	NA	0	0	0	0	0	1	NA
9	6/29/2024	0	0	0	1	0	0	NA	0	0	0	0	1	0	NA
10	6/29/2024	2	0	0	0	0	0	NA	2	0	0	0	0	0	NA
11	6/29/2024	0	0	0	6	0	0	NA	0	0	0	0	0	6	NA
12	6/30/2024	0	0	0	4	0	0	NA	0	0	0	0	0	0	Travelled behind hill out of sight
13	6/30/2024	0	0	0	10	0	0	NA	0	0	4	2	0	0	NA
14	7/1/2024	0	0	0	0	0	0	Dipped behind hill out of sight	0	0	0	1	0	0	Hidden in a rocky area
15	7/2/2024	0	0	0	0	0	1	NA	0	0	0	0	0	1	NA
16	7/3/2024	0	0	0	3	0	0	NA	1	0	0	2	0	0	NA
17	7/3/2024	0	0	1	0	0	0	NA	0	0	0	1	0	0	Walking by cabin

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Feeding 9	Laying 9	Standing 9	Walking 9	Alert 9	Trotting 9	Comments 9	Feeding 12	Laying 12	Standing 12	Walking 12	Alert 12	Trotting 12	Comments 12
1	6/19/2024	0	0	0	0	0	3	NA	0	0	0	0	0	3	NA
2	6/20/2024	3	0	0	0	0	0	NA	3	0	0	0	0	0	NA
3	6/21/2024	0	0	0	2	0	0	NA	1	0	0	1	0	0	NA
4	6/22/2024	0	2	0	0	0	0	NA	0	2	0	0	0	0	Sleeping
5	6/23/2024	1	0	0	0	1	0	NA	1	0	0	1	0	0	NA
6	6/23/2024	0	0	0	0	0	2	NA	0	0	0	2	0	0	NA
7	6/24/2024	11	0	0	1	0	0	NA	7	2	1	2	0	0	NA
8	6/25/2024	0	0	0	1	0	0	NA	1	0	0	0	0	0	NA
9	6/29/2024	1	0	0	0	0	0	NA	0	0	0	0	0	0	Caribou dipped behind a hill; out of sight
10	6/29/2024	2	0	0	0	0	0	NA	2	0	0	0	0	0	NA
11	6/29/2024	0	0	0	0	0	6	Running from hunter on ATV	0	0	0	0	0	0	NA
12	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
13	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
14	7/1/2024	0	0	0	0	0	0	Continue to travel behind hill out of sight; finished survey here	0	0	0	0	0	0	NA
15	7/2/2024	0	0	0	1	0	0	Crossing the river	0	0	0	1	0	0	NA
16	7/3/2024	1	0	0	2	0	0	NA	0	0	0	0	0	0	Travelled behind hill out of sight
17	7/3/2024	0	0	0	1	0	0	NA	0	0	0	1	0	0	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Feeding 15	Laying 15	Standing 15	Walking 15	Alert 15	Trotting 15	Comments 15	Feeding 18	Laying 18	Standing 18	Walking 18	Alert 18	Trotting 18	Comments 18
1	6/19/2024	2	0	0	1	0	0	NA	0	0	0	0	3	0	NA
2	6/20/2024	3	0	0	0	0	0	NA	3	0	0	0	0	0	NA
3	6/21/2024	0	0	0	1	1	0	NA	0	0	0	0	0	0	Out of sight
4	6/22/2024	0	2	0	0	0	0	NA	0	0	0	0	2	0	NA
5	6/23/2024	2	0	0	0	0	0	NA	2	0	0	0	0	0	NA
6	6/23/2024	1	0	0	1	0	0	NA	1	0	0	1	0	0	NA
7	6/24/2024	10	0	0	2	0	0	NA	12	0	0	3	0	0	More appearing from behind hill
8	6/25/2024	1	0	0	1	0	0	NA	0	0	0	1	0	0	NA
9	6/29/2024	0	0	0	1	0	0	NA	1	0	0	0	0	0	NA
10	6/29/2024	2	0	0	0	0	0	NA	2	0	0	0	0	0	NA
11	6/29/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
12	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
13	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
14	7/1/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
15	7/2/2024	0	0	0	1	0	0	NA	0	0	0	1	0	0	NA
16	7/3/2024	0	0	0	0	0	0	Out of sight	0	0	0	0	0	0	NA
17	7/3/2024	1	0	0	0	0	0	NA	1	0	0	0	0	0	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Feeding 21	Laying 21	Standing 21	Walking 21	Alert 21	Trotting 21	Comments 21	Feeding 24	Laying 24	Standing 24	Walking 24	Alert 24	Trotting 24	Comments 24
1	6/19/2024	2	0	0	1	0	0	NA	3	0	0	0	0	0	NA
2	6/20/2024	3	0	0	0	0	0	NA	3	0	0	0	0	0	NA
3	6/21/2024	0	0	0	0	0	0	Out of sight	0	0	0	0	0	0	Out of sight
4	6/22/2024	0	2	0	0	0	0	NA	0	2	0	0	0	0	NA
5	6/23/2024	2	0	0	0	0	0	NA	0	0	0	2	0	0	NA
6	6/23/2024	0	0	0	1	0	1	NA	0	0	0	2	0	0	NA
7	6/24/2024	10	2	0	3	0	0	NA	12	0	0	0	0	0	Rest out of view
8	6/25/2024	1	0	0	0	0	0	NA	1	0	0	0	0	0	NA
9	6/29/2024	0	0	0	1	0	0	NA	1	0	0	0	0	0	NA
10	6/29/2024	2	0	0	0	0	0	NA	2	0	0	0	0	0	NA
11	6/29/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
12	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
13	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
14	7/1/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
15	7/2/2024	0	0	0	1	0	0	NA	0	0	0	1	0	0	NA
16	7/3/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
17	7/3/2024	0	0	1	0	0	0	NA	0	0	0	1	0	0	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Feeding 27	Laying 27	Standing 27	Walking 27	Alert 27	Trotting 27	Comments 27	Feeding 30	Laying 30	Standing 30	Walking 30	Alert 30	Trotting 30	Comments 30
1	6/19/2024	3	0	0	0	0	0	NA	1	0	0	2	0	0	NA
2	6/20/2024	3	0	0	0	0	0	NA	3	0	0	0	0	0	NA
3	6/21/2024	0	0	0	0	0	0	Out of sight	0	0	0	0	0	0	Out of sight
4	6/22/2024	0	2	0	0	0	0	NA	0	2	0	0	0	0	NA
5	6/23/2024	2	0	0	0	0	0	NA	2	0	0	0	0	0	NA
6	6/23/2024	0	0	0	0	0	0	Out of sight	0	0	0	0	0	0	NA
7	6/24/2024	12	0	0	0	0	0	NA	12	0	0	0	0	0	NA
8	6/25/2024	0	0	0	1	0	0	Crossing road	0	0	0	1	0	0	NA
9	6/29/2024	1	0	0	0	0	0	NA	1	0	0	0	0	0	NA
10	6/29/2024	1	0	0	1	0	0	NA	2	0	0	0	0	0	NA
11	6/29/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
12	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
13	6/30/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
14	7/1/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
15	7/2/2024	0	0	0	0	0	0	Dropped behind hill out of sight	0	0	0	0	0	0	Out of sight
16	7/3/2024	0	0	0	0	0	0	NA	0	0	0	0	0	0	NA
17	7/3/2024	0	0	0	1	0	0	NA	0	0	0	0	0	0	Walked out of sight behind hill

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	Disturbance 0	Disturbance Comments 0	Disturbance 3	Disturbance Comments 3	Disturbance 6	Disturbance Comments 6	Disturbance 9	Disturbance Comments 9	Disturbance 12	Disturbance Comments 12
1	6/19/2024	Light truck	Hto truck	NA	NA	Haul truck	NA	Haul Truck	30 km/h	Haul truck	10 km/h
2	6/20/2024	NA	NA	NA	NA	Haul truck	On AWAR	NA	NA	NA	NA
3	6/21/2024	ATV	Hunter chasing caribou	ATV	NA	NA	NA	NA	NA	ATV	Hunter
4	6/22/2024	Light truck	20 km/h	NA	NA	NA	NA	Light Truck	NA	NA	NA
5	6/23/2024	NA	NA	NA	NA	Light truck	5 km/h	Light Truck	NA	NA	NA
6	6/23/2024	NA	NA	NA	NA	Light truck	30 km/h	Haul Truck	NA	NA	NA
7	6/24/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	6/25/2024	Light truck	40 km/h	NA	NA	Light truck	40 km/h	NA	NA	NA	NA
9	6/29/2024	NA	NA	NA	NA	Light truck	50 km/hr	NA	NA	NA	NA
10	6/29/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	6/29/2024	Haul truck	40 km/hr	NA	NA	NA	NA	ATV	ATVs travelling behind caribou group in the same direction	NA	NA
12	6/30/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	6/30/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	7/1/2024	Haul truck	Septic truck passed	NA	NA	NA	NA	NA	NA	NA	NA
15	7/2/2024	ATV	NA	Light truck	50 km/hr	NA	NA	NA	NA	NA	NA
16	7/3/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	7/3/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

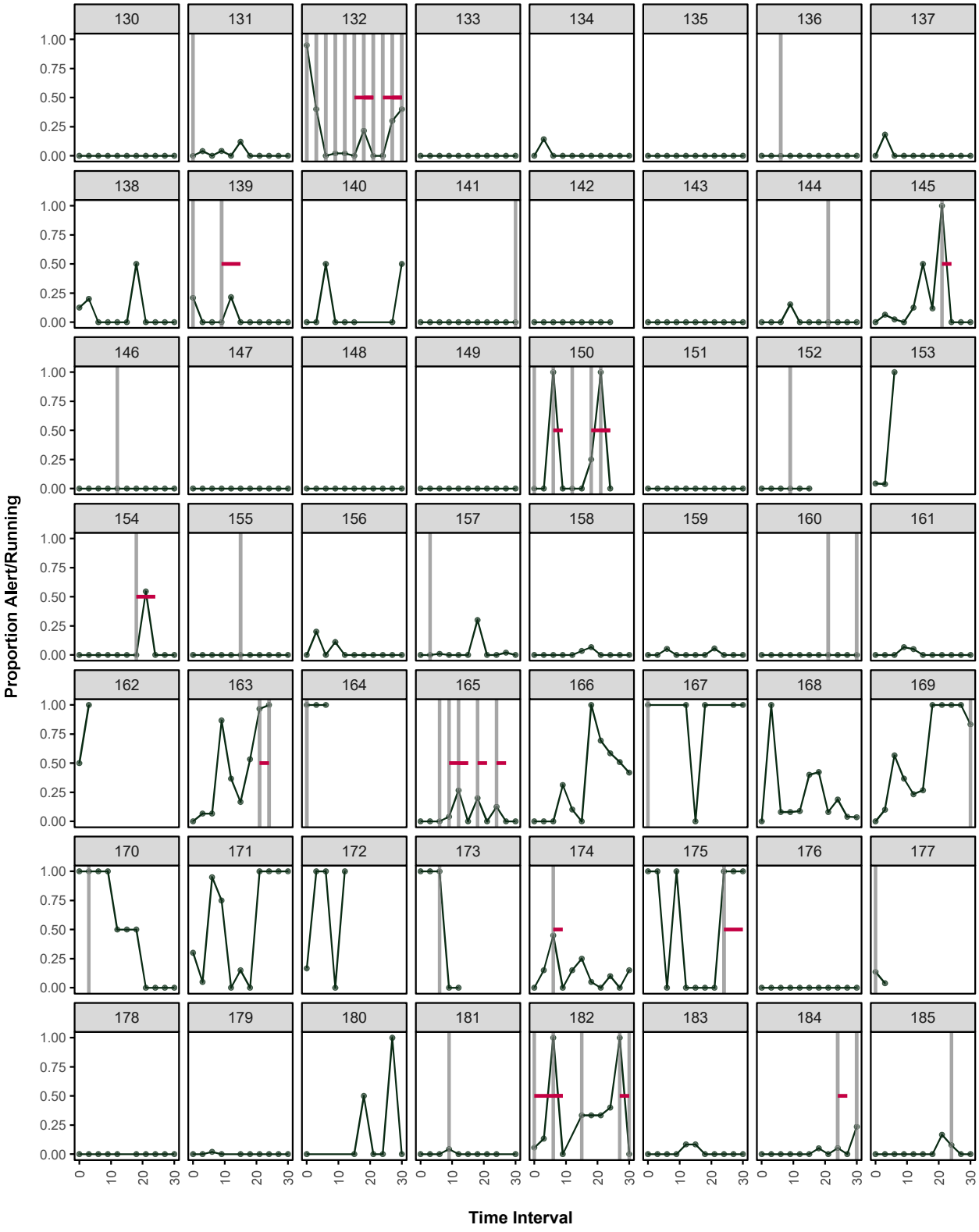
Survey ID	Date	Disturbance 15	Disturbance Comments 15	Disturbance 18	Disturbance Comments 18	Disturbance 21	Disturbance Comments 21	Disturbance 24	Disturbance Comments 24	Disturbance 27	Disturbance Comments 27	Disturbance 30	Disturbance Comments 30
1	6/19/2024	Haul truck	10 km/h	Haul truck	30 km/h	Light truck	HTO truck	NA	NA	NA	NA	NA	NA
2	6/20/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	6/21/2024	ATV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	6/22/2024	NA	NA	ATV	Local, ATV moving fast	NA	NA	Light truck	45 km/h	NA	NA	NA	NA
5	6/23/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	6/23/2024	NA	NA	NA	NA	Light truck	10 km/h truck	Light truck	NA	NA	NA	NA	NA
7	6/24/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8	6/25/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Light truck	NA
9	6/29/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	6/29/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	6/29/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	6/30/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	6/30/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	7/1/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	7/2/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	7/3/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	7/3/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey ID	Date	General Comments
1	6/19/2024	Lots of traffic; slowed
2	6/20/2024	Relaxed feeding
3	6/21/2024	Hunter missed shot just before survey start
4	6/22/2024	Resting and relaxed
5	6/23/2024	Same pair as yesterday at KM27
6	6/23/2024	YLY and one adult female
7	6/24/2024	Appear to be all males
8	6/25/2024	Stood in middle of the road; turned around
9	6/29/2024	Antlers present
10	6/29/2024	Feeding along lakeshore; undisturbed by passing vehicles ~200 m away
11	6/29/2024	Only observations until 9 min., then disappeared across road to the east, running from ATV
12	6/30/2024	Watched for 5 min. until they travelled behind a hill; no disturbances, were mostly walking, some feeding
13	6/30/2024	Walking south; disappeared behind hill at 6 min.
14	7/1/2024	In rocky area; travelled west behind hill early in the survey
15	7/2/2024	NA
16	7/3/2024	Travelling east
17	7/3/2024	NA

APPENDIX C PROPORTION OF ALERT AND RUNNING CARIBOU IN EACH SURVEY

FIGURE C-1 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2020



CLIENT: Agnico Eagle Mines Limited
GRAPHICS NUMBER: AGN-24ERM-008:11

FIGURE C-2 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2021

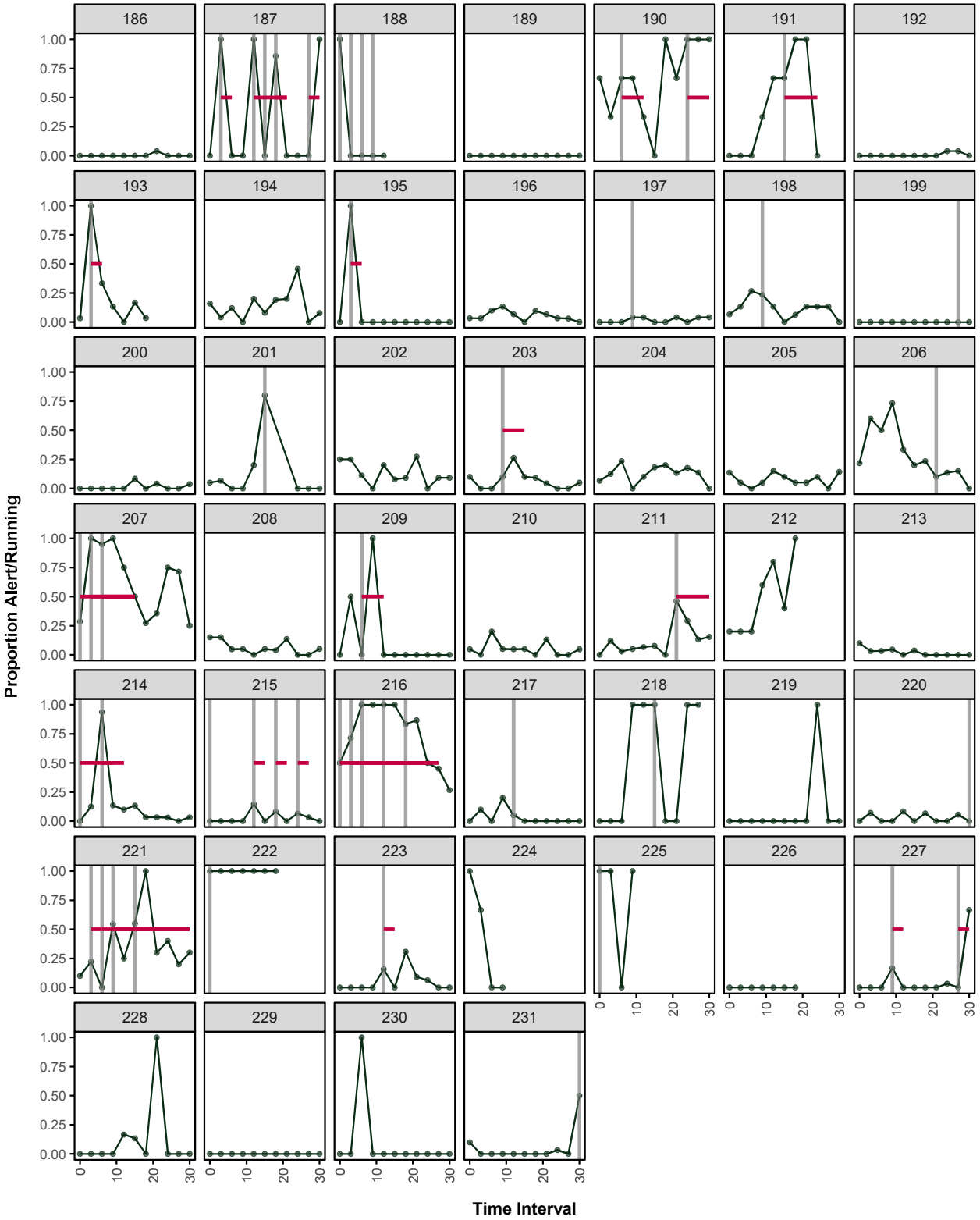
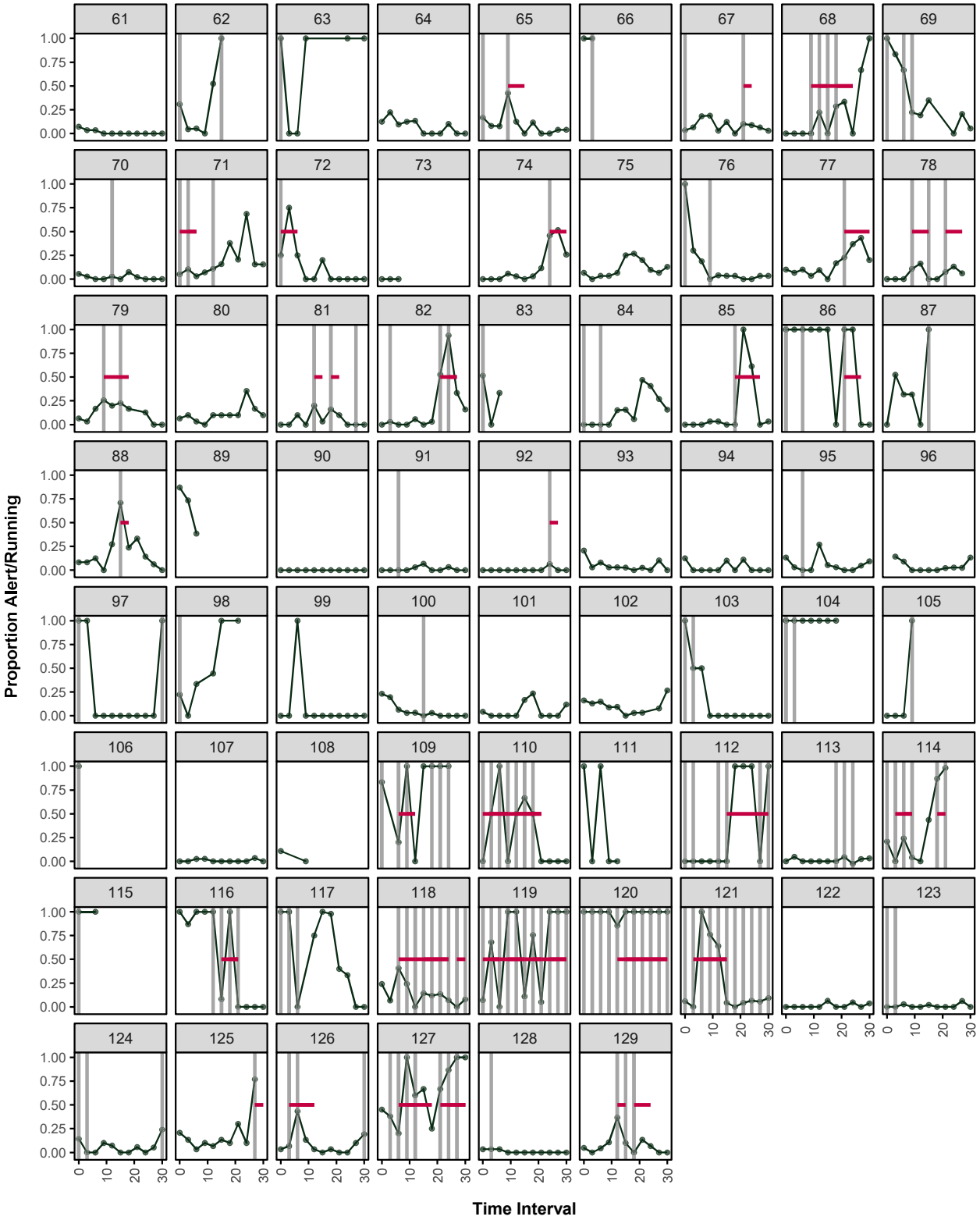
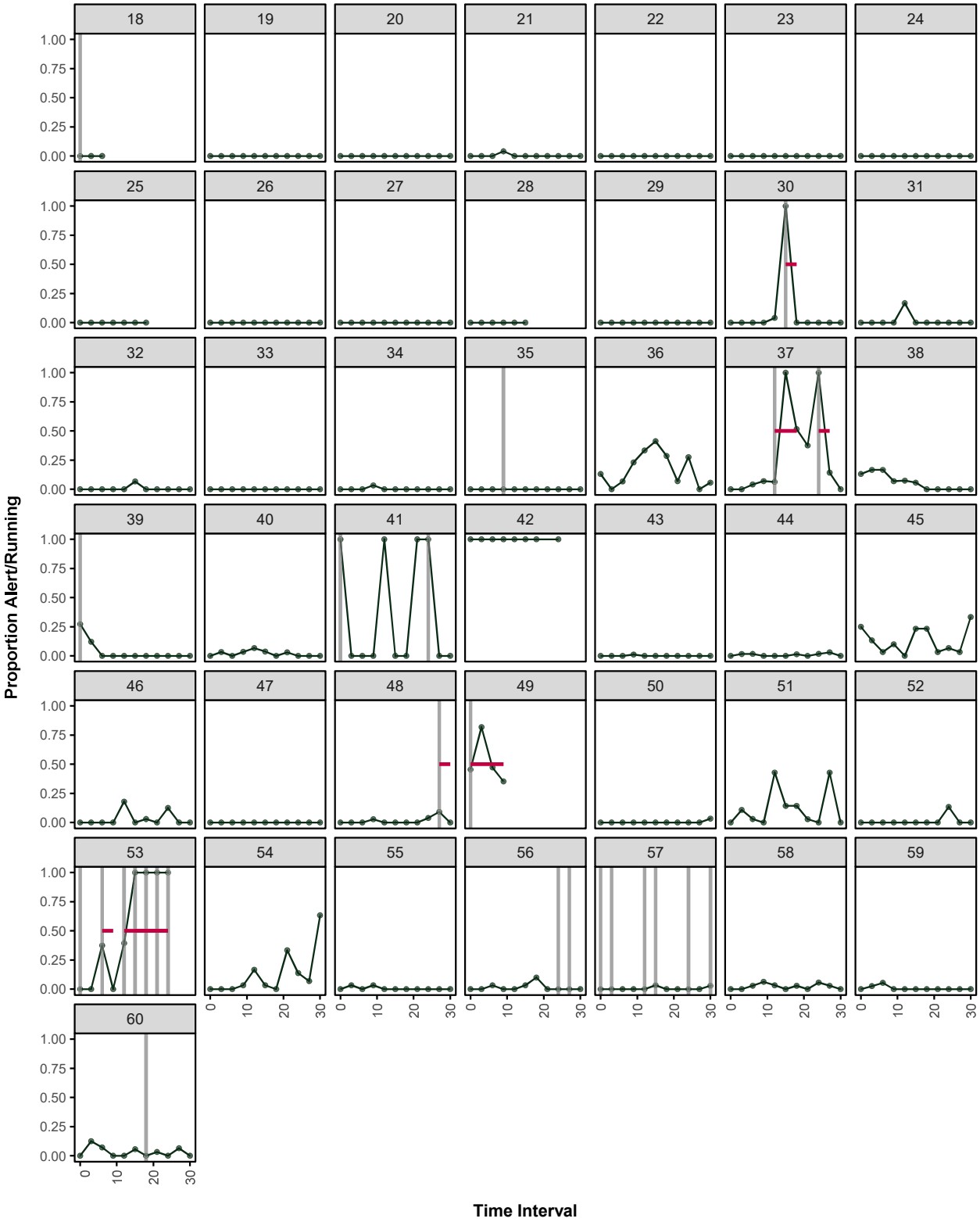


FIGURE C-3 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2022



CLIENT: Agnico Eagle Mines Limited
GRAPHICS NUMBER: AGN-24ERM-008:13

FIGURE C-4 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2023





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APPENDIX I

Meliadine Project Caribou Trail Camera Study, 2024

PREPARED FOR

AGNICO EAGLE

Agnico Eagle Mines Limited

Meliadine Mine

Caribou Trail Camera Program Compilation Report, 2020 to 2024

DATE
February 2025

REFERENCE
0740666-03



SIGNATURE PAGE

Meliadine Mine

Caribou Trail Camera Program Compilation Report, 2020 to 2024

February 2025

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CONTENTS

EXECUTIVE SUMMARY		1
1.	PROJECT OVERVIEW	3
1.1	REGULATORY REQUIREMENTS	3
2.	PROGRAM OBJECTIVES	6
3.	BACKGROUND	7
3.1	QAMANIRJUAQ HERD	7
3.2	TERRESTRIAL ADVISORY GROUP	7
4.	STUDY AREA	8
5.	METHODS	9
5.1	CAMERA FIELD PROGRAM	9
5.2	ROAD STRUCTURE FIELD PROGRAM	12
5.3	PHOTO PROCESSING	13
5.4	SATELLITE COLLAR DATA	13
5.5	DATA ANALYSIS	14
6.	RESULTS AND DISCUSSION	15
6.1	FIELD WORK	15
6.2	CARIBOU DISTRIBUTION RELATIVE TO THE MINE	15
6.2.1	AWAR Cameras	15
6.2.2	Mine Site Cameras	18
6.2.3	Discovery Cameras	18
6.3	ROAD STRUCTURE SURVEY RESULTS AND CARIBOU	25
6.4	VEHICLE DETECTIONS ON THE AWAR	28
6.5	VEHICLE DETECTIONS AND CARIBOU	30
7.	SUMMARY	31
8.	REFERENCES	32

APPENDIX A DATA FROM WILDLIFE CAMERAS

LIST OF TABLES

TABLE 5.1-1	CAMERA DEPLOYMENTS AT THE MELIADINE MINE FROM 2020 TO 2024	11
TABLE 6.2-1	WILDLIFE DETECTIONS (DETECTIONS PER 100 CAMERA DAYS) AT THE MELIADINE MINE FROM 2020 TO 2024	16
TABLE 6.2-2	DISTRIBUTION OF MELIADINE MINE AWAR CARIBOU CROSSING LOCATIONS FROM CAMERAS (2020 TO 2024) AND FROM COLLAR DATA (2013-2024)	21
TABLE 6.4-1	VEHICLE DETECTIONS ACROSS THE THREE AWAR CAMERAS PROCESSED, MAY 29 – JULY 31, 2024	28

LIST OF FIGURES

FIGURE 1-1	MELIADINE GOLD MINE LOCATION	4
FIGURE 5.1-1	LOCATIONS OF MOTION-TRIGGER CAMERAS AT THE MELIADINE MINE, MAY AUGUST 2024	10
FIGURE 6.2-1	DATES OF CARIBOU DETECTIONS AT MELIADINE MINE AWAR CAMERAS, 2020 TO 2024	17
FIGURE 6.2-2	DISTRIBUTION OF CARIBOU DETECTIONS ON AWAR CAMERAS, 2020 TO 2024	19
FIGURE 6.2-3	TIME OF DAY OF CARIBOU DETECTIONS ON ALL MELIADINE MINE CAMERAS, 2020 TO 2024	20
FIGURE 6.2-4	CARIBOU DETECTIONS AT ALL MELIADINE MINE CAMERAS, 2023 AND 2024	22
FIGURE 6.2-5	DATES OF CARIBOU DETECTIONS AT MELIADINE MINE SITE CAMERAS, 2023 AND 2024	23
FIGURE 6.2-6	DATES OF CARIBOU DETECTIONS AT MELIADINE MINE DISCOVERY CAMERAS, 2023 AND 2024	24
FIGURE 6.3-1	ROAD STRUCTURE SURVEY RESULTS	26
FIGURE 6.3-2	COMPARISONS OF ROAD STRUCTURE AND CARIBOU DETECTIONS FROM 2020 TO 2024	27
FIGURE 6.4-1	NUMBER OF VEHICLE DETECTIONS ON THE MELIADINE MINE AWAR, MAY 29 TO JULY 28, 2024	29

LIST OF PHOTOS

PHOTO 5.1-1	TYPICAL CAMERA SETUP FROM THE MELIADINE 2024 CAMERA PROGRAM.	12

ACRONYMS AND ABBREVIATIONS

Agnico Eagle	Agnico Eagle Mines Limited
AI	Artificial intelligence
ATV	All-terrain vehicle
AWAR	All weather access road
BQCMB	Beverly Qamanirjuaq Caribou Management Board
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
ERM	ERM Consultants Canada Ltd.
GLMs	Generalized linear models
GN	Government of Nunavut
GPS	Global Positioning System
IOL	Inuit-owned land
IQ	Inuit Qaujimajatuqangit (Inuit Traditional Knowledge)
KivIA	Kivalliq Inuit Association
km	Kilometre
KM	Kilometre marker
m	Metre
NIRB	Nunavut Impact Review Board
NWT	Northwest Territories
TAG	Terrestrial Advisory Group
TEMMP	Meliadine Mine Terrestrial Environment Management and Monitoring Plan
The Mine	The Meliadine Mine
TSF	Tailings Storage Facility

EXECUTIVE SUMMARY

The Meliadine Mine (the Mine) is operated by Agnico Eagle Mines Limited (Agnico Eagle) and is located on Inuit Owned Land (IOL), approximately 25 km north of Rankin Inlet, Nunavut. Since 2019, caribou from the Qamanirjuaq herd have passed within 15 km of the Mine, particularly during the months of June and July, including crossing the All-Weather Access Road (AWAR). In compliance with the Nunavut Impact Review Board's (NIRB) Project Certificate #006 and associated amendments, Agnico Eagle has conducted a camera monitoring program since 2020 to examine caribou interactions with Mine infrastructure and the AWAR during their annual migration. The purpose of the camera program is to assess whether caribou distribution and movement near the Mine and AWAR are affected by infrastructure and disturbance by vehicles.

The initial camera program was designed to identify features of the AWAR (i.e., slope, substrate, height, and surrounding habitat) that may facilitate higher rates of caribou passage during annual migratory movements. Cameras were also placed at locations identified by community members and Inuit Elders from Inuit Qaujimajatuqangit (IQ) where caribou more frequently crossed the road. In 2023 and 2024, following a request from the Kivalliq Inuit Association (KivIA) some cameras were moved from the AWAR to the Mine site and additional cameras were placed along the future Discovery Access Road (Discovery Road) to the south end of Meliadine Lake.

The program provides insights into caribou occurrence near the Mine site and AWAR with large numbers of caribou recorded by cameras between 2020 and 2023. In 2024, a notable shift in caribou distribution to the south and west of the mine reduced the number of observations for this year. Key findings indicate that the camera installations successfully recorded caribou consistently across various locations, including the AWAR, the Mine area, and along the proposed Discovery Access Road throughout the course of the program.

The primary objectives of the program included assessing caribou distribution and movement near the Mine, AWAR and Discovery Road, identifying hotspots for caribou interaction with infrastructure, and investigating the relationship between vehicle traffic and caribou movements. Key outcomes from the 2020 to 2024 analysis include:

1. **Camera Effort:** 45 cameras were installed in late May and retrieved at the end of July 2024, which is similar to previous years; 37 in 2020, 27 in 2021, 32 in 2022 and 41 in 2023. In 2020-2023 cameras were predominantly installed along the AWAR but cameras were shifted to a relatively even distribution between the AWAR, Mine site and Discovery Road in 2023 and 2024.
2. **Caribou Habitat Use:** Between 2020 and 2023, caribou passed by the Mine and crossed the AWAR during the post-calving season from west to east and typically crossed the AWAR again in late summer going east to west. 2024 saw a change in movement patterns for the Qamanirjuaq herd, stopping south of the Mine, and only a few photos on AWAR cameras. However, caribou continued to inhabit the Meliadine area.
3. **Road Crossing and Group Size:** Observations pooled across the five years reveal caribou in a variety of group sizes crossing the AWAR from 1-2 caribou to thousands of animals, indicating a lack of avoidance behaviour by both small and large caribou groups.

4. **Road Construction and Crossing:** Data from 2020 to 2023 indicated that road height and road-side slope at each camera location was not related to the number of caribou observed at each camera location, suggesting that differences in the structure of the AWAR do not significantly influence the locations where caribou cross. The AWAR was constructed with strict design criteria including having a side slope and material that promoted caribou crossing the road – and thus there may not be enough variability in the road construction to influence caribou crossing.
5. **Crossing Hotspots**: In 2020, when cameras were first deployed, locations were chosen from land user and IQ information of common movement paths and crossing locations for caribou – crossing hotspots. Cameras results from 2020-2023 supported the use of these hotspots by caribou. Due to the limited caribou detections in 2024, further analysis of specific locations with high observation counts along the AWAR, as compared to previous years and tracking data, was not possible. An analysis comparing hotspots identified by IQ to crossing locations from cameras and Global Positioning System (GPS) collar data strongly supported consistency in identified crossing locations on the AWAR.
6. **Vehicle Traffic Analysis**: Data from 2020 to 2023 was used to explore whether, and how much, caribou hesitate to cross the AWAR after a vehicle has passed. Median time lag from a vehicle passing to a caribou crossing when the AWAR was open was 1.7 hours. This indicates that road closures of relatively short periods will allow caribou to cross the road – i.e., caribou do not delay crossing by many hours after seeing a vehicle. These results are likely over-estimates of true crossing times, since caribou may pass behind a camera or out of range of the camera motion detector, and therefore not all caribou crossings will be captured by all cameras. The absence of new caribou detections in 2024 prevented a re-analysis of this data in 2024.
7. **Caribou Occurrence in the Mine site and Discovery areas**: The program found that caribou were present in both the Discovery and Mine areas, with a detection rate of 1.32 caribou per 100 camera days at the proposed Discovery Access Road in 2024. This rate decreased compared to 2023, reflecting the different caribou migratory pattern observed in 2024. These observations remain useful for understanding caribou occurrence and movement in the Meliadine area.

Overall, this multi-year program provides important information related to caribou occurrence and movements at the Mine. The findings underscore the utility of motion-trigger cameras in understanding the multiple potential factors influencing caribou occurrence in, and movement through, the Meliadine area, including variations in annual conditions, road traffic, and other environmental factors. The data summarized here may be integrated with other research such as collar analysis and behaviour monitoring to inform potential cumulative effects of the Meliadine Mine (ERM 2023, 2024a).

1. PROJECT OVERVIEW

The Meliadine Mine (the Mine) is operated by Agnico Eagle Mines Limited (Agnico Eagle) and is located on Inuit Owned Land (IOL), approximately 25 km north of Rankin Inlet, Nunavut. A 30 km All Weather Access Road (AWAR) connects the Mine to Rankin Inlet. The Rankin Inlet Bypass Road was constructed around the hamlet, to the west and south of Rankin Inlet to allow Mine traffic to circumvent the Rankin Inlet when traveling from the AWAR to Itivia Harbour (i.e., Melvin Bay), southwest of Rankin Inlet (Figure 1-1).

The Mine was approved by Nunavut Impact Review Board (NIRB) in 2015 (Project Certificate #006) with a Mine Plan that includes production from five ore bodies. The Mine Plan includes open pits, underground mining and associated ore processing, waste management, and ancillary infrastructure. Construction of the AWAR, camp, ore processing facilities, and ancillary infrastructure began in 2017, and production began in Q2 2019. In 2019, the NIRB Project Certificate (#006 No. 001) was amended to include transport of treated saline effluent from the Mine to Itivia Harbour and discharge to the marine environment via diffuser. In 2022, the Project Certificate (#006 No. 002) was further amended to allow for the construction of a 34 km waterline, which consists of two 16-inch diameter waterlines needed to convey the treated saline effluent from the Mine to Itivia Harbour.

A camera program was conducted annually in June and July from 2020 to 2024 at the Mine and along the AWAR to monitor caribou in support of existing NIRB monitoring conditions as outlined in Project Certificate #006 and the associated amendments.

1.1 REGULATORY REQUIREMENTS

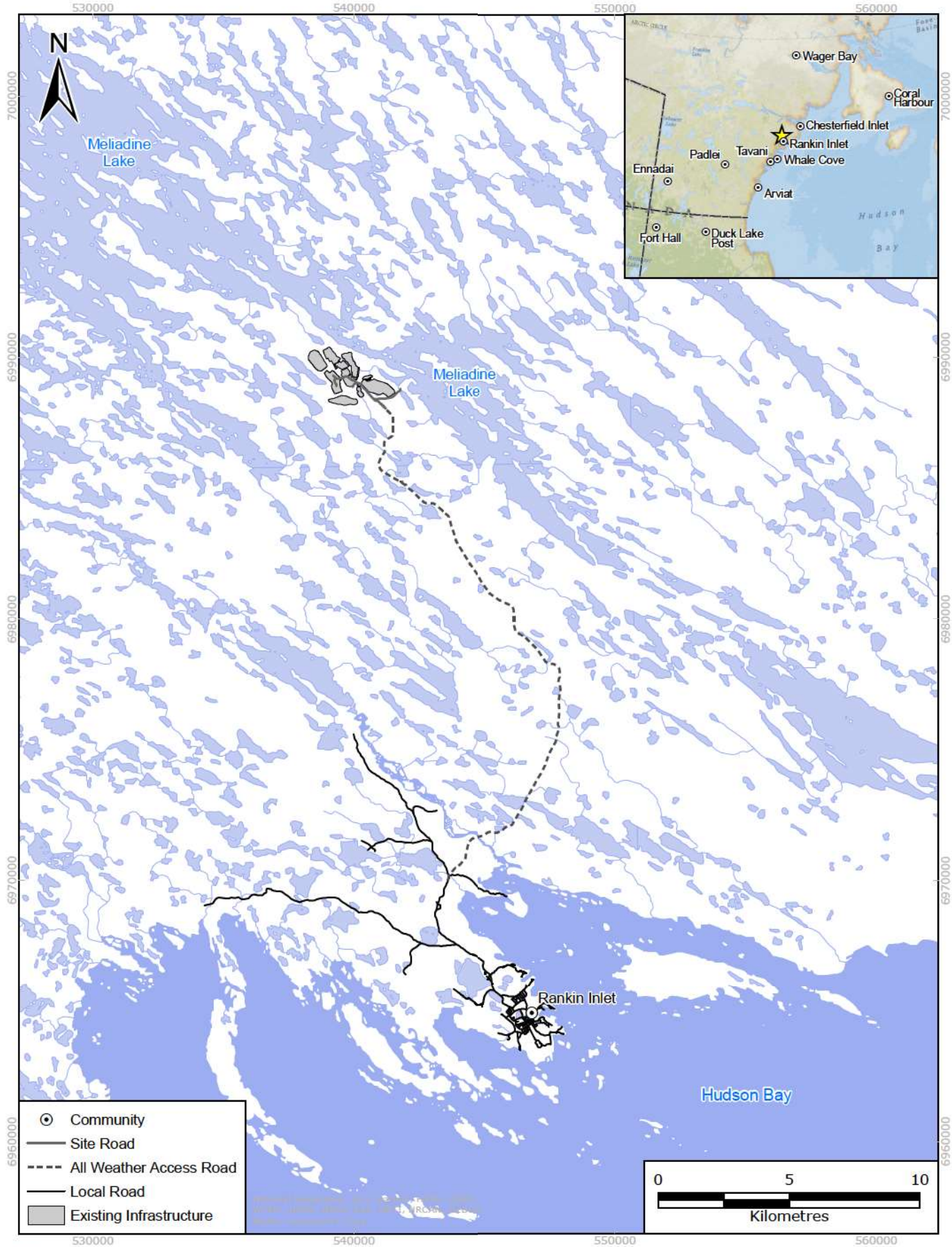
As per the 2015 NIRB Project Certificate, and 2019 and 2022 Amendments, Term and Condition 57 requires the Mine to report in its annual NIRB report:

> (T&C 57, b.) A detailed analysis of wildlife responses to operations with emphasis on wildlife behaviour, mortalities and displacements (if any), responses to operations of the all-weather access road and associated access roads/trails, and the waterlines; and
>
> (T&C 57, c.) A demonstration and description of how the monitoring results, including the all-weather access road, and associated access roads/trails, and waterlines contribute to cumulative effects of the project.

The Meliadine Mine Terrestrial Environment Management and Monitoring Plan (TEMMP; Agnico Eagle 2022) includes components designed to meet these conditions, with a road surveillance monitoring program (Section 4.3) that has the following objective:

> "To record the presence of wildlife and/or wildlife signs (e.g., tracks, nesting) in relation to the Mine infrastructure. Of particular importance is the frequency of wildlife entering the Mine infrastructure areas and along the AWAR corridor. This information can then be used to determine any areas of attraction to wildlife, document human-wildlife conflicts, areas/timing of wildlife mortality or potential mortality; seasonal trends of wildlife occurrence in the Project area, and effectiveness of mitigation (e.g., waste management and landfill)."

FIGURE 1-1 MELIADINE GOLD PROJECT LOCATION



ERM

CLIENT: AGNICO EAGLE MINES LIMITED
GIS NUMBER: MEL-23-041

DATE: 02/13/2024

PROJECTION: NAD 1983 UTM Zone 15N
SCALE: 1:200,000 when printed at 8.5x11

The caribou camera program described in this report is designed to be complementary to the objectives of the caribou behaviour monitoring program and GPS collaring program (TEMMP Sections 4.5 and 4.7), which are:

- To determine if caribou activity budgets change with distance from the Mine, and to document caribou response to stressors;
- To determine if caribou distribution changes with proximity to the Mine (i.e., do caribou avoid the Mine);
- To contribute to the scientific knowledge of caribou activity near mining operations and caribou population dynamics in Nunavut; and
- To assess whether caribou movement near the Mine area is hindered by Mine infrastructure (i.e., Mine site infrastructure and the AWAR).

The behaviour monitoring program (ERM Consultants Canada Ltd. [ERM] 2024a) is designed to address the first of these objectives, while the remaining objectives are met via consideration of the results of all three monitoring programs in conjunction.

2. PROGRAM OBJECTIVES

The overall objective of the camera monitoring program is:

- To record the presence of wildlife in relation to the Mine infrastructure, including the frequency of wildlife entering the Mine infrastructure areas and along the AWAR corridor. This information may be used to determine potential areas of increased use by wildlife, annual trends of wildlife occurrence in the Mine area, and the effectiveness of mitigation efforts.

The specific objectives of the 2024 program were:

1. To conduct a program using motion-trigger cameras at the Mine to estimate how the Mine infrastructure including the AWAR may affect caribou movement during seasonal migration.
2. To evaluate if there were specific locations with high numbers of caribou observations along the AWAR in 2024 and compare these locations with camera data from 2020 to 2023, and with those identified by Inuit IQ and GPS collar data.
3. To test if areas with certain road characteristics might be used preferentially by caribou crossing the AWAR, specifically:
    a. Material of road construction (esker vs. quarry);
    b. Side slope;
    c. Road height; and
    d. Surrounding vegetation type.
4. To evaluate what relationship (if any) there is between vehicles recorded on the road and location/timing of caribou observations.
5. To provide data on caribou occurrence in the Discovery area and in proximity to the Mine site.

3. BACKGROUND

3.1 QAMANIRJUAQ HERD

The Qamanirjuaq caribou subpopulation is a large barren-ground caribou herd numbering approximately 252,892 animals in 2022 (Campbell et al. 2024). This estimate is down from over 348,000 animals reported in 2008, and stable from the 2017 estimate of approximately 288,000 (Boulanger et al. 2018; COSEWIC [Committee on the Status of Endangered Wildlife in Canada] 2016). This number is also consistent with the population size reported in the 1980s (COSEWIC 2016).

The Beverly and Qamanirjuaq Caribou Management Board (BQCMB) rated the Qamanirjuaq herd as having "Medium" vulnerability in 2014 due to population declines since 2008 (BQCMB 2023) and upgraded this rating to "Medium-High" in 2016, a status that remains unchanged (BQCMB 2024).

Spring migration brings the caribou north along the coast of Hudson Bay, past the communities of Arviat, Whale Cove, and Rankin Inlet to a broad calving ground, generally centered on Qamanirjuaq Lake (BQCMB 2024).

Following calving, the caribou form into large groups of hundreds to thousands and radiate out from the calving grounds, including east towards the coast. During June and July, groups of animals from this herd migrate in proximity to the hamlet of Rankin Inlet, the Meliadine Mine, and the AWAR connecting the two.

During summer and fall, the caribou generally move south and inland, gradually returning south towards their wintering areas by early December. Maps of the caribou range and movement are available on the BQCMB website (https://arctic-caribou.com/resources/).

3.2 TERRESTRIAL ADVISORY GROUP

A TAG was formed in 2022 and formalized via creation of the Terms of Reference in 2023 as a collaborative forum to discuss the application of IQ, Traditional Knowledge (TK) and western science to mitigation and monitoring programs for caribou movement in the Mine area. Members of the group include the local, regional, territorial, and federal governments, as well as Indigenous groups.

Following discussion of the camera program results in 2022, 2023, and 2024 with the TAG, several modifications to the program protocol and analysis methods from previous years were suggested. These modifications included adding cameras around the Mine site and in the Discovery area permitted for future development of the Mine, as well as additional statistical investigation of relationships between vehicles on the AWAR and caribou. Wherever possible, suggestions made by the TAG have been added into the 2024 analysis.

4. STUDY AREA

The dominant terrain in the Mine area comprises glacial landforms such as drumlins (glacial till), eskers (gravel and sand), and lakes. A series of low relief ridges are composed of glacial deposits, oriented in a northwest-southeast direction, which control the regional surface drainage patterns. The property is approximately 60 metres (m) above sea level in low-lying topography with numerous lakes (Final Environmental Impact Statement; Agnico Eagle 2015).

The study area for the camera program included the length of the AWAR from kilometre marker (KM) 7 to KM 30 (the Mine site; see Figure 1-1). During 2020 cameras were installed along the AWAR and around the mine site. In 2021 the program was repeated with a focus on the AWAR and modifications to the survey design to better capture vehicle traffic, with these modifications retained in 2022 and 2023. In 2023 and 2024, cameras were also deployed around the Mine site and along the proposed Discovery Access Road to record caribou use of these areas in addition to the AWAR at the suggestion of the TAG.

5. METHODS

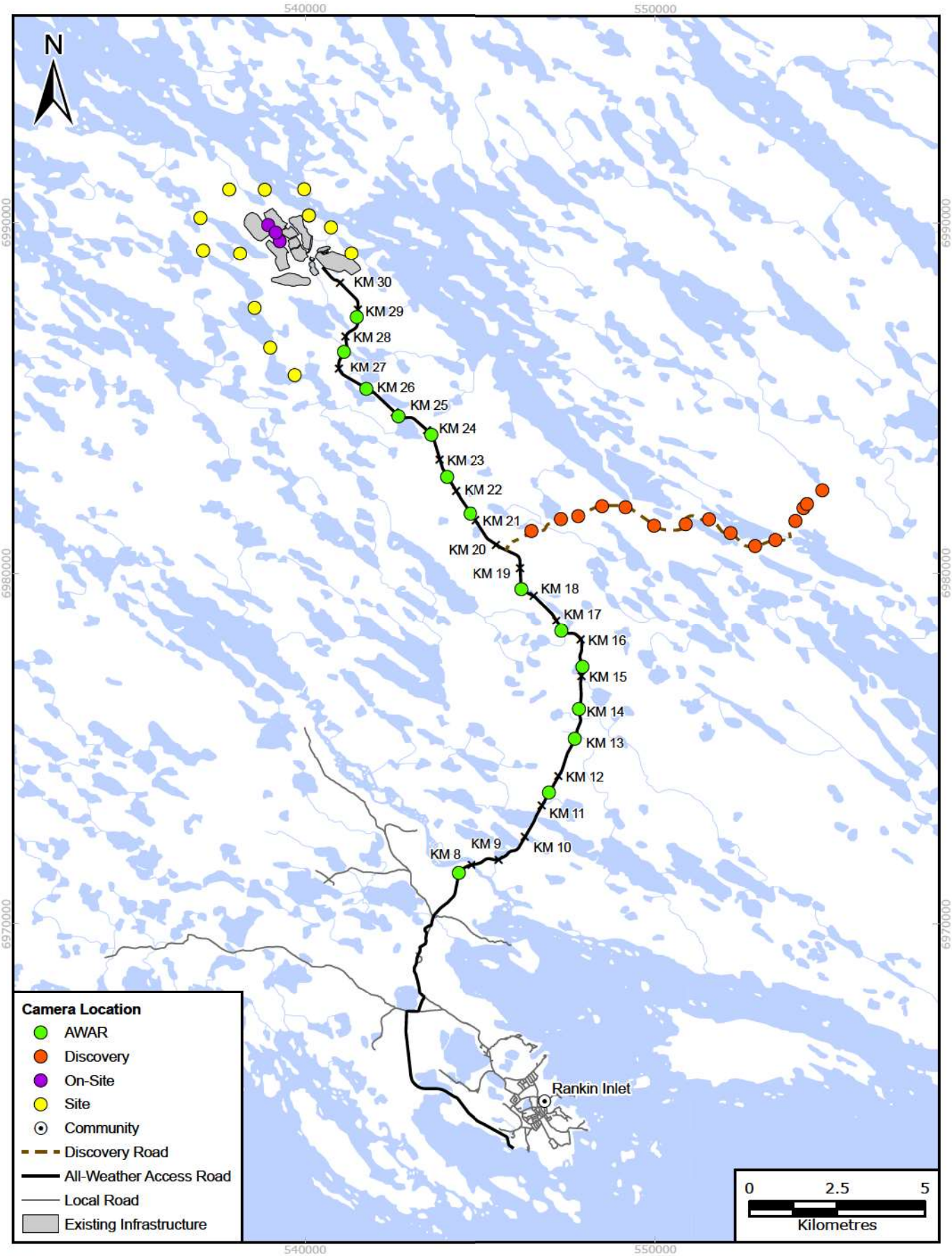
5.1 CAMERA FIELD PROGRAM

The cameras were programmed and installed in late-May by a biologist from ERM and/or Meliadine Environment technician. In previous years this deployment timing has provided multiple weeks of advance recording prior to caribou arrival, though in 2024 caribou were present in the area earlier than historical norms (mid-May). Cameras were deployed as soon as possible once caribou were no longer in the immediate area to prevent any disturbance during the deployment process. An ERM wildlife biologist maintained the cameras for the duration of the program and Meliadine Environment technicians disassembled the cameras in late July when caribou were no longer in the area in substantial numbers.

Camera locations were selected to maximize coverage and representation of habitat and road types, and to best detect caribou and vehicles along the AWAR (Figure 5.1-1). The same approximate locations were used in 2020, 2021, and 2022 with five additional locations added in 2022 to extend camera coverage south along the AWAR (Table 5.1-1). Cameras were added in the Discovery and Mine site areas in 2023, at request of the TAG. In 2024 fewer cameras were deployed along the AWAR (14), with cameras instead distributed around the Mine site (13), and along the proposed Discovery Access Road (15):

- Fourteen (14) cameras were installed at a spacing of approximately 1,500 m along the AWAR, starting from KM 7 and ending at the mine site at KM 30.
- Through previous consultation and community meetings, community members and Inuit Elders identified locations on the AWAR where caribou are known to cross more frequently, including at KM 9, 12, 16, 22, and 27 (Public Meeting; Rankin Inlet, March 17, 2020). Cameras were placed at or near these locations.
- The camera locations were stratified by road structure, with approximately half of the cameras placed in areas where the road shoulder was esker material and half where the shoulder was quarry rock. Locations were also selected to have equal representation of steep and flat road shoulders with roughly half in each stratum.
- All AWAR cameras were installed on the west side of the road facing north with the road in the camera field of view on the right side of images. In 2020, cameras were located up to 15 m from the road, whereas from 2021 to 2024 AWAR cameras were placed no more than 5 m from the side of the road to better capture vehicle traffic.
- Thirteen (13) cameras were roughly equally spaced around the perimeter of the Mine site.
- Fifteen (15) cameras were deployed along the proposed Discovery Access Road with roughly equal spacing between locations.

FIGURE 5.1-1 LOCATIONS OF MOTION-TRIGGER CAMERAS AT THE MELIADINE MINE, MAY - AUGUST 2024



ERM

CLIENT: AGNICO EAGLE MINES LIMITED
GIS NUMBER: MEL-23-045-01

DATE: 01/14/2025

PROJECTION: NAD 1983 UTM Zone 15N
SCALE: 1:150,000 when printed at 8.5x11

TABLE 5.1-1 CAMERA DEPLOYMENTS AT THE MELIADINE MINE FROM 2020 TO 2024

Year	Number of AWAR Cameras	Number of Discovery Cameras	Number of Mine Site Cameras	Deployment Dates
2020	30	-	7	June 22 – July 11
2021	27	-	-	June 23 – July 13
2022	32[1]	-	-	June 22 – July 22
2023	16[2]	15	10	June 4 – August 14
2024	16	15	13	May 28 – July 31

[1] 34 cameras were deployed in 2022, but two did not collect data due to malfunction.
[2] Three camera locations had two cameras of different models deployed for comparison of detectability, for a total of 19 cameras at 16 locations.

During initial camera setup in 2020, the surrounding habitat type, road structure, and GPS location were recorded. If any all-terrain vehicle (ATV) trails or caribou trails were detected near the camera site, these were noted. Any changes to these factors in subsequent years were noted. The coordinates for the AWAR cameras were used to calculate the distance to the mine and to Rankin Inlet along the AWAR.

Cameras were installed at a height of approximately 50 centimetres, which was determined to be the optimal height for detecting movement of a passing caribou (ERM, unpublished data). Cameras on the AWAR were positioned to capture part of the road in the field of view. In 2020, cameras were not explicitly set up to capture vehicle traffic, but from 2021 to 2024 AWAR cameras were placed closer to the road (no more than 5 m) to capture traffic.

The installation setup was a simple bucket-and-stick design, where the camera was strapped onto a 2" × 4" piece of lumber that was stabilized in a bucket full of quarry rock (Photo 5.1-1). This setup was designed to be temporary and to minimize impact on the ground where it was placed. When the cameras were removed at the end of the program, all setup materials were returned to the Mine site.

All cameras took five pictures whenever motion was detected within approximately 40 m of the motion detector, including wildlife, vehicles, and occasionally objects moving in the wind. In addition, all Bushnell cameras (this feature is not available on the Wild Game Innovations cameras) were programmed to take one photo every 30 minutes, day or night. This was done for two reasons:

- To help capture activity happening beyond the range of the motion detector; and
- To provide assurance that the cameras were operational during the entire duration of the program (measure effort).

The cameras were checked after one week to ensure battery life, SD card space, and positioning was still adequate. Throughout the duration of the program, field technicians and the ERM field biologist regularly checked the cameras to ensure they were still in place and functioning properly.



Photo 5.1-1 Typical camera setup from the Meliadine 2024 Camera Program.

5.2 ROAD STRUCTURE FIELD PROGRAM

In 2020, additional surveys were conducted on the as-built AWAR to help address the objective of determining whether there are road characteristics that caribou prefer to cross on. As the AWAR structure did not significantly change after this survey, the same data were used in the 2020 to 2024 analyses. Ongoing construction of the waterlines parallel to the AWAR may affect future analyses using these data, and as such they may be revised in future years.

An ERM wildlife biologist and Meliadine Environment technician surveyed the road structure, taking the measurements every 100 m along the road, including:

- GPS location;
- Width of the road (m);
- Height of the road above the tundra (m);
- Road-side slope angle – measured with an inclinometer (east and west side);
- Road-side material (esker or quarry stone);
- Substrate grain size, i.e., the area of the roadside shoulder covered by <0.75 inch, 0.75 to 6 inch, 6 to 12 inch, and >12 inch stones (measurement standards used by road engineers); and
- Surrounding habitat features.

5.3 PHOTO PROCESSING

All photos from 2022 to 2024 were pre-processed by an artificial intelligence (AI) algorithm to automatically sort photos into four categories: animals, vehicles, humans, and blank images (Beery et al. 2019; Fennell et al. 2022). ERM personnel then reviewed all photos as classified by the AI algorithm and confirmed all detections of wildlife or vehicles. In 2020 and 2021, ERM personnel reviewed all photos from the cameras and recorded every detection of wildlife and vehicles.

A detection is an event where an individual or group triggers the camera, or at least one animal is captured in a timed photo. There can be one photo or many photos in quick succession, depending on how long the caribou were in front of the camera. Hence, one detection may have many individual caribou which may not be able to be individually differentiated. The number of caribou recorded for each detection event is the largest number of caribou visible in any one photo during the event. To ensure consistency, a detection event was defined as a time lag of at least 30 minutes between photos of the same species, which was applied programmatically to group individual photos into independent detection events.

Data recorded for each wildlife detection event included:

- The time of the first photo;
- The species of wildlife;
- The number of individuals in the group; and
- For events where multiple photos were captured, the duration of the motion-trigger event.

In 2024, three cameras spaced along the AWAR at KM 8, 21, and 29 were analyzed for detailed vehicle traffic in addition to wildlife. Data recorded for each vehicle detection included:

- The time of the detection;
- The type of vehicle; and
- Whether the vehicle was travelling in a convoy or not.

At all other AWAR cameras all vehicles detected were recorded, though not classified to vehicle type.

5.4 SATELLITE COLLAR DATA

Satellite collar data presented here was collected by the Government of Nunavut (GN; collected 2013 to 2024), and previously made public via a data sharing agreement. GPS location data from all Qamanirjuaq herd individuals was processed from 2013 to 2024, and the location of any AWAR crossings was recorded. Due to the temporal resolution of collar data (four-hour location fixes) the AWAR crossing points may not be exact, but instead provide an approximation of the most likely crossing area based on the data available. These crossing locations are cross referenced with the camera data to provide additional insight on relative proportions of caribou use in different areas of the AWAR, but are not analyzed further in the scope of the camera monitoring program.

Maps of collar data are also shared by the GN with Agnico Eagle multiple times per week, and are used to estimate when caribou will arrive at the Mine (to plan when cameras will be deployed and to implement early mitigation preparations), and whether they have left for the season and it is safe to recover the cameras.

5.5 DATA ANALYSIS

The analysis in this report was designed to quantify trends in the program data both between and within years, and to determine whether factors such as road structure, vehicle traffic on the AWAR, or placement of the cameras could be used to explain caribou occurrence and identify hotspots where caribou may be likely to cross the AWAR. Additionally, cameras around the Mine site and along the proposed Discovery Access Road provide information on caribou movement through the Mine area during the program period.

An initial exploratory analysis was conducted to visualize the data and determine the appropriate method for analyzing the data. Where data were complete, generalized linear models (GLMs) were used to assess the differences in the number of caribou detection events as a function of various controlling variables, including road structure. This regression framework provides a means to control for habitat, environmental variables, repeated measurements, and spatial correlation. For some comparisons in which statistical models were not useful due to a small sample size, summary statistics and correlations were calculated.

All analyses were carried out using program R version 4.4.2 (R Core Team 2024).

6. RESULTS AND DISCUSSION

6.1 FIELD WORK

In total, 45 cameras were deployed beginning May 28, 2024, and were removed July 31, 2024. The program concluded on July 31, 2024, when caribou had not been observed for several weeks at or near the Mine and collar maps indicated that they were not expected to return. Upon program completion cameras were removed and the stands were disassembled. Collar maps and in-person observations indicated that most of the migration was captured during the deployment period, though very few caribou travelled through the Mine area, instead generally staying to the west of Meliadine Lake, and travelling south post-calving. Camera survey efforts amounted to 2,757 trap-nights and over 200,000 photos. More than two-thirds of all photos were from timed photos, most of which did not contain wildlife or vehicles. The remainder were from motion-triggered events. Of the 45 cameras deployed, most remained in operation for the entire deployed period with regular checks to service batteries and SD cards.

6.2 CARIBOU DISTRIBUTION RELATIVE TO THE MINE

Of the 470 independent wildlife detection events from the cameras in 2024, 24 were of caribou. Table 6.2-1 summarizes the relative detection rates of all species detected from 2020 to 2024.

The first caribou recorded on cameras occurred on June 6, 2024, which was earlier than previous survey years. Prior to camera deployment in late May, a number of small groups of caribou were observed near the Mine, reflecting an earlier arrival than annual norms. While caribou have historically travelled through the Mine area post-calving, in 2024 most caribou stayed west of Meliadine Lake post-calving, then returned directly south based on GPS collar data and reports from community members on the land. As such, far fewer caribou were recorded on cameras in 2024 as compared to previous years of the program.

6.2.1 AWAR CAMERAS

One of the objectives of this program was to evaluate if there were specific locations with high numbers of caribou observations along the AWAR in 2024, and compare these locations with those identified from 2020 to 2023, and with collar data and IQ. This information can be used to inform mitigation along the AWAR relating to caribou crossing. Despite this objective, no caribou were recorded on the AWAR cameras in 2024, preventing any new insights as to high-use crossing locations. This finding aligned with the GPS collar data, where no collared caribou were observed approaching the AWAR in 2024.

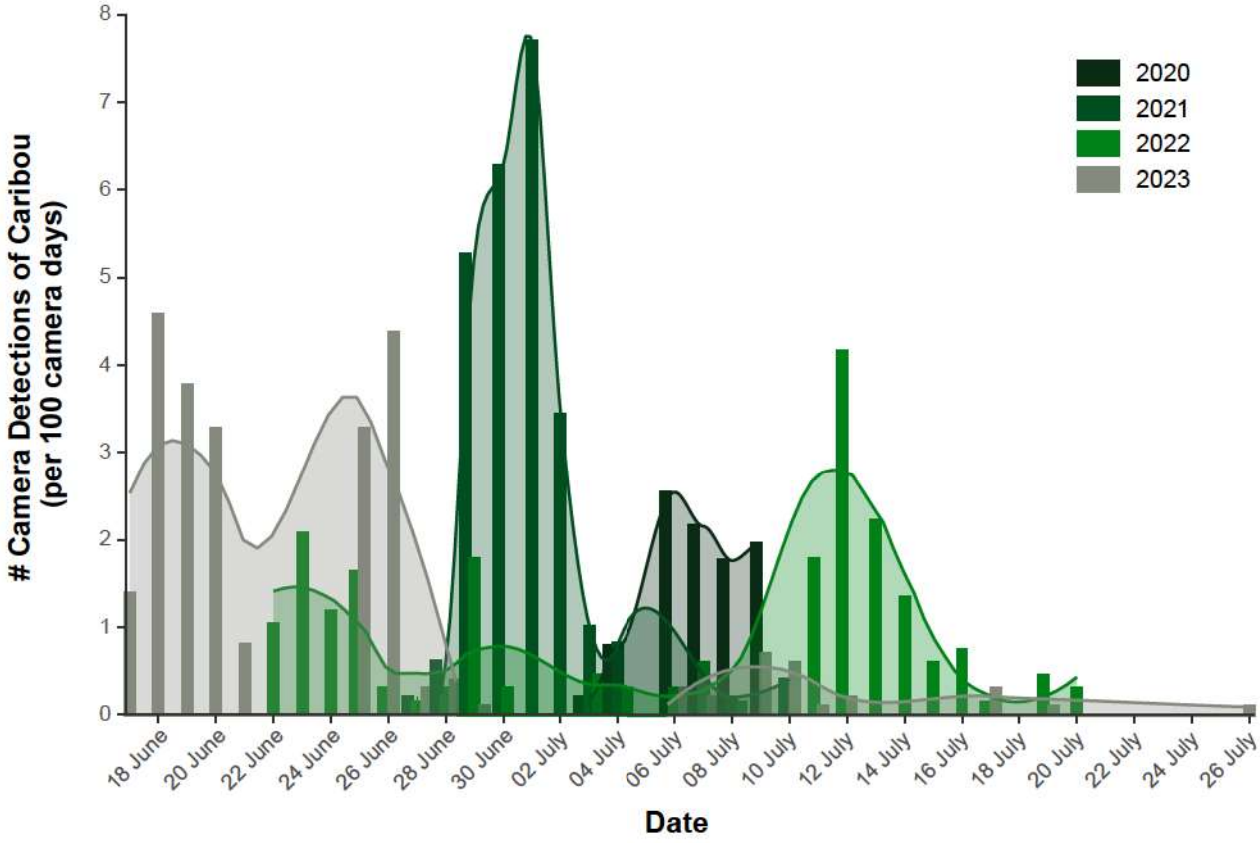
For reference, standardized for sampling effort each year, the number of caribou detections per 100 camera days on the AWAR cameras was 10.76, 25.91, 16.43, and 24.85 in 2020, 2021, 2022, and 2023 respectively. Figure 6.2-1 shows the number of independent caribou detections per 100 active camera days in each year detections were available (2020 to 2023) along the AWAR, which allows comparison of the number of detections recorded each year despite a differing number of cameras. The shaded outline in the background of each panel is the density of these data recorded through time, with higher values signifying a higher number of caribou detections during that period when accounting for camera effort.

TABLE 6.2-1 WILDLIFE DETECTIONS (DETECTIONS PER 100 CAMERA DAYS) AT THE MELIADINE MINE FROM 2020 TO 2024

Species	2020	2021	2022	2023			2024		
	AWAR	AWAR	AWAR	AWAR	Discovery	Mine Site	AWAR	Discovery	Mine Site
Arctic Fox	1.54	2.83	8.43	6.16	5.13	6.55	1.32	0.07	3.78
Arctic Ground Squirrel	0.35	1.62	1.42	0.60	0.42	-	0.26	-	0.76
Arctic Hare	0.47	0.81	3.61	4.37	-	3.79	1.46	-	2.08
Caribou	10.76	25.91	16.43	24.85	42.58	10.34	-	1.32	0.95
Gull	1.42	2.23	-	-	-	-	-	-	-
Raptor	0.12	0.40	-	-	-	-	-	-	-
Sandhill Crane	0.71	5.67	-	-	-	-	-	-	-
Songbird	2.72	3.44	-	-	-	-	-	-	-
Uncategorized Bird	4.12	22.27	3.50	4.87	9.29	35.52	4.37	9.13	40.08
Unknown	0.12	-	-	-	-	-	-	0.07	1.89
Waterfowl	6.02	6.07	-	-	-	-	-	-	-
Uncategorized Mammal	-	1.21	-	-	-	-	-	-	-
Total	**28.37**	**72.47**	**33.41**	**40.85**	**57.42**	**56.20**	**7.42**	**10.59**	**49.53**

Note: Detections may be from motion-triggered photos or from timed photos. Results from 2023 and 2024 include cameras along the AWAR, along the proposed Discovery Access Road, and around the Mine site. Results from 2020 to 2022 include only the AWAR. Birds from 2022 to 2024 were not classified to species.

FIGURE 6.2-1 DATES OF CARIBOU DETECTIONS AT MELIADINE MINE AWAR CAMERAS, 2020 TO 2024



Note: No caribou were recorded on the AWAR cameras in 2024.

Most caribou observations were concentrated in the northern half of the AWAR from 2020 to 2022, with the most observations along the AWAR in the southern half in 2023 (Figure 6.2-2). As cameras were deployed for a longer period in 2022 and 2023, there is a possibility that this is an artifact of the data representing the migration more fully than in the initial program years. Road crossing was further analyzed in 2023 using satellite collar data, as summarized in WSP 2023a and WSP 2023b.

Time of day was not related to the number of caribou detections when visualized across all camera locations, although there was some evidence that caribou were consistently detected earlier in the day (03:00 to 12:00) than at night from 2021 to 2024 (Figure 6.2-3). The same trend was not noted in 2020 where caribou were more frequently observed in the evening (15:00 to 21:00).

Overall, the results pooled across all years of sampling suggest that the span from KM 21-25 is a major crossing area, and an additional major crossing area was identified spanning from KM 10 to KM 12 (Figure 6.2-2, Table 6.2-2). The major caribou crossing locations identified by Elders and community members in March 2020 are at KM 16, 22, and 27. The results from both the cameras and GPS collars are highly consistent with this IQ.

The distribution of caribou crossings recorded in the camera data from 2020 to 2023, and collar data from previous years (2013 to 2024) is shown in Table 6.2-2, where values for each kilometre segment of the road are expressed as the proportion of total crossing events that occurred in that segment.

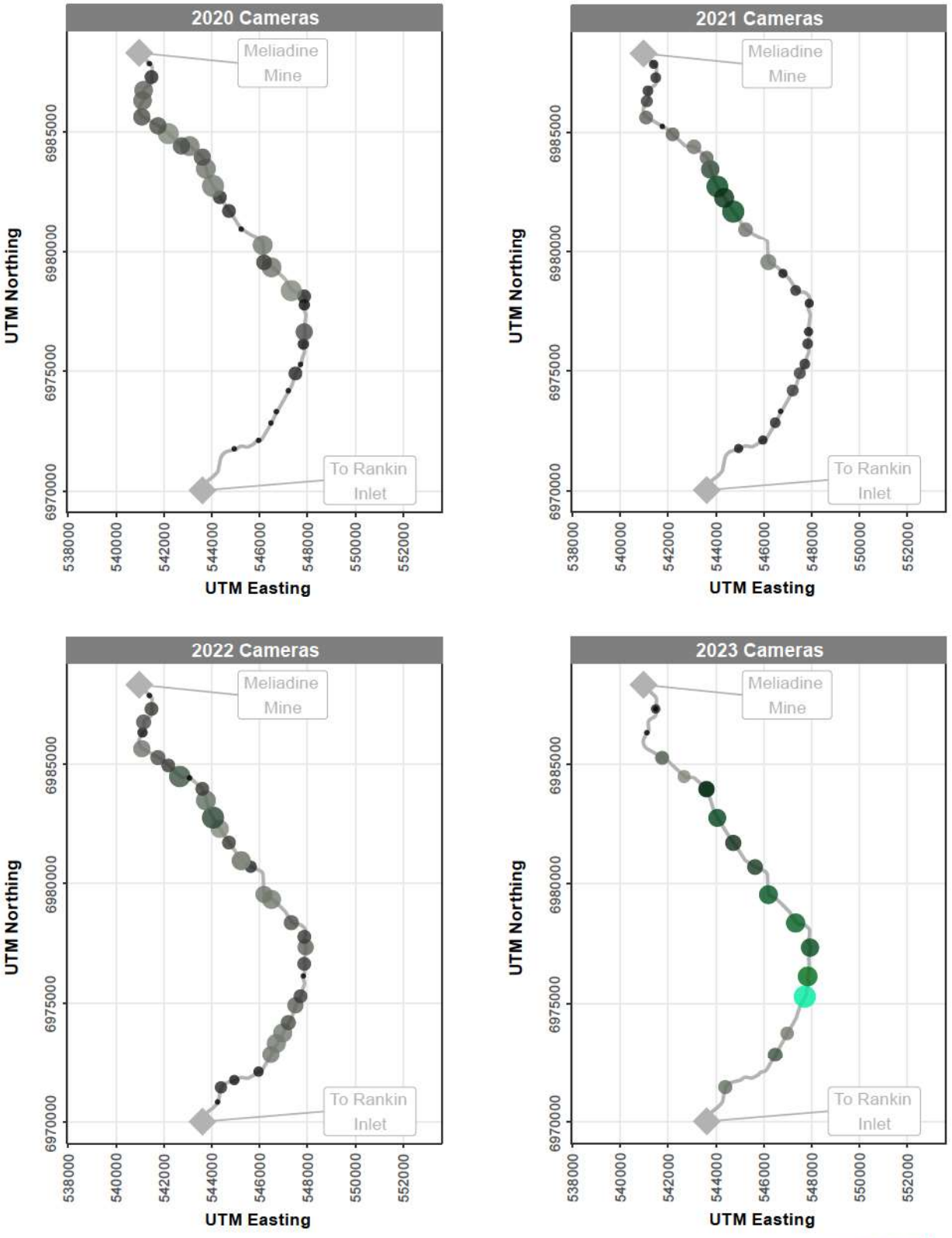
6.2.2 MINE SITE CAMERAS

In 2024, the number of caribou detections per 100 camera days on the Mine site cameras was 0.95, while in 2023 this value was 10.34. The spatial location of detections around the Mine site are presented in Figure 6.2-4, and the timing of the detections in 2023 and 2024 are presented in Figure 6.2-5. In 2024, caribou were predominantly detected northwest of the Mine site, closer to the west arm of Meliadine Lake. Caribou detections recorded on camera around the Mine site occurred from June 4 to July 7 in 2024, while detections in 2023 occurred from June 11 to July 27.

6.2.3 DISCOVERY CAMERAS

In 2024, the number of caribou detections per 100 camera days on the Discovery cameras was 1.32, while this value was 42.58 in 2023. The location of detections around the Discovery area are presented in Figure 6.2-4, and the timing of detections in 2023 and 2024 are presented in Figure 6.2-6. Caribou detection density was relatively consistent across all cameras along the proposed Discovery Access Road, with no clear spatial pattern in detections in either 2023 or 2024. Most detections of caribou at Discovery occurred in late June and early July in 2024, and the peak of detections in 2023 occurred in late June (June 17 to June 28), with a second peak in detections around July 9.

FIGURE 6.2-2 DISTRIBUTION OF CARIBOU DETECTIONS ON AWAR CAMERAS, 2020 TO 2024



ERM

CLIENT: Agnico Eagle Mines Limited
GRAPHICS NUMBER: AGN-25ERM-002:2

FIGURE 6.2-3 TIME OF DAY OF CARIBOU DETECTIONS ON ALL MELIADINE MINE CAMERAS, 2020 TO 2024

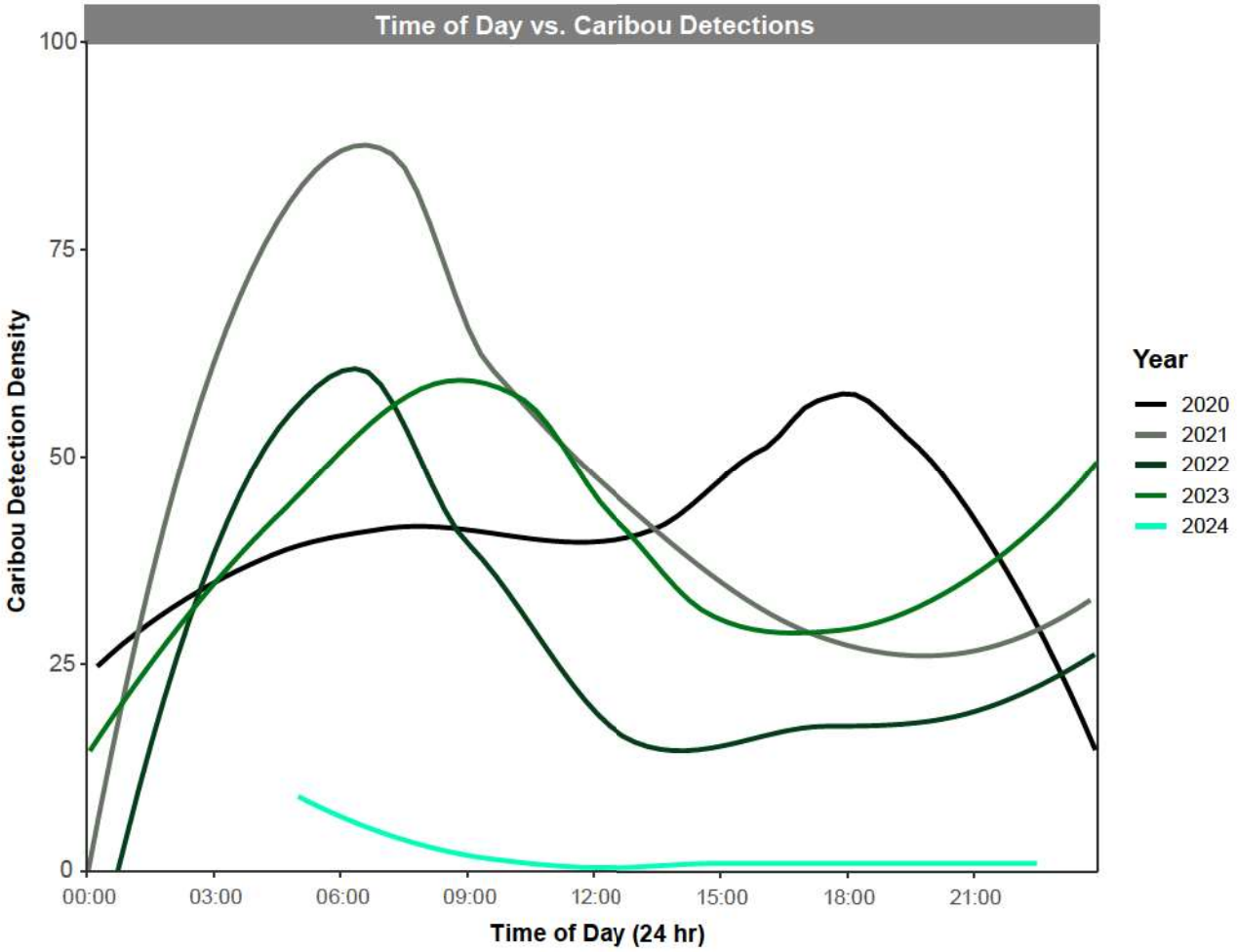


TABLE 6.2-2 DISTRIBUTION OF MELIADINE MINE AWAR CARIBOU CROSSING LOCATIONS FROM CAMERAS (2020 TO 2024) AND FROM COLLAR DATA (2013-2024)

AWAR KM	Proportion of Camera Observations (%)					Proportion of Collar Observations (%)
	2020	2021	2022	2023	2024	2012-2024
7	-	-	0	0	-	2
8	-	-	1	4	-	2
9	0	1	1	0	-	3
10	0	1	1	0	-	6
11	0	2	9	4	-	6
12	0	2	8	3	-	7
13	2	2	3	0	-	6
14	0	2	2	14	-	6
15	5	2	2	10	-	4
16	1	1	5	8	-	5
17	10	2	3	9	-	2
18	0	1	0	0	-	3
19	10	6	9	9	-	6
20	7	0	1	5	-	2
21	0	5	10	0	-	3
22	4	27	7	6	-	2
23	9	15	8	8	-	8
24	11	13	8	11	-	3
25	11	5	7	3	-	3
26	8	4	2	0	-	4
27	9	4	7	6	-	2
28	5	2	1	0	-	4
29	8	3	5	1	-	4
30	0	1	0	0	-	4

FIGURE 6.2-4 CARIBOU DETECTIONS AT ALL MELIADINE MINE CAMERAS, 2023 AND 2024

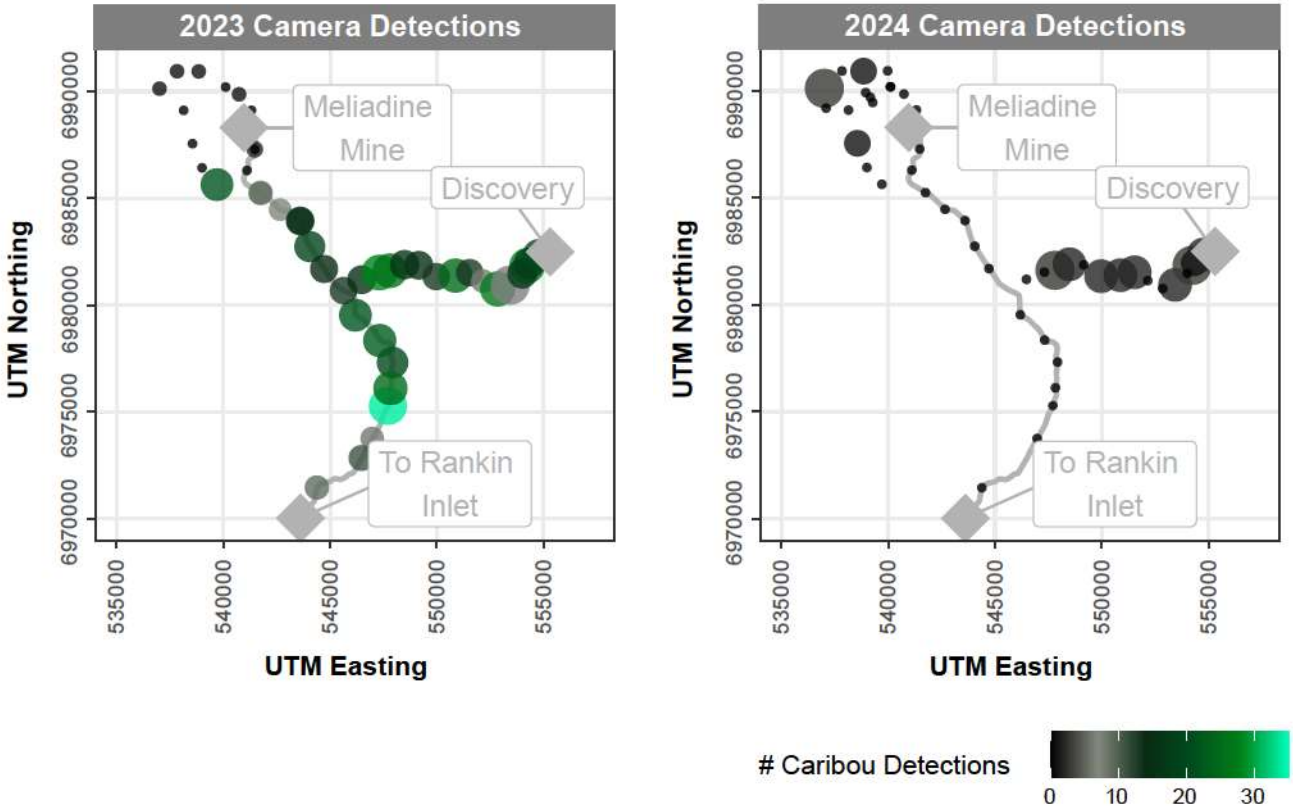


FIGURE 6.2-5 DATES OF CARIBOU DETECTIONS AT MELIADINE MINE SITE CAMERAS, 2023 AND 2024

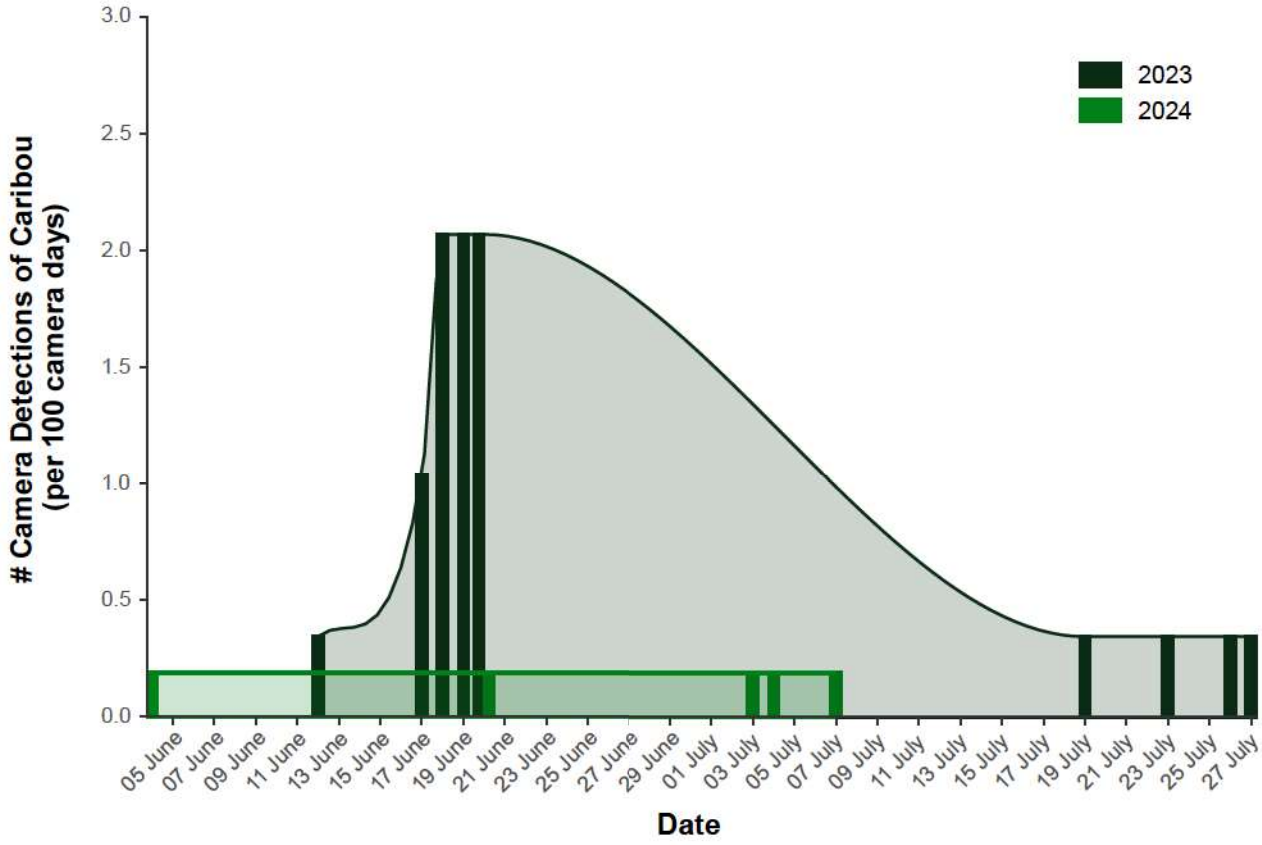
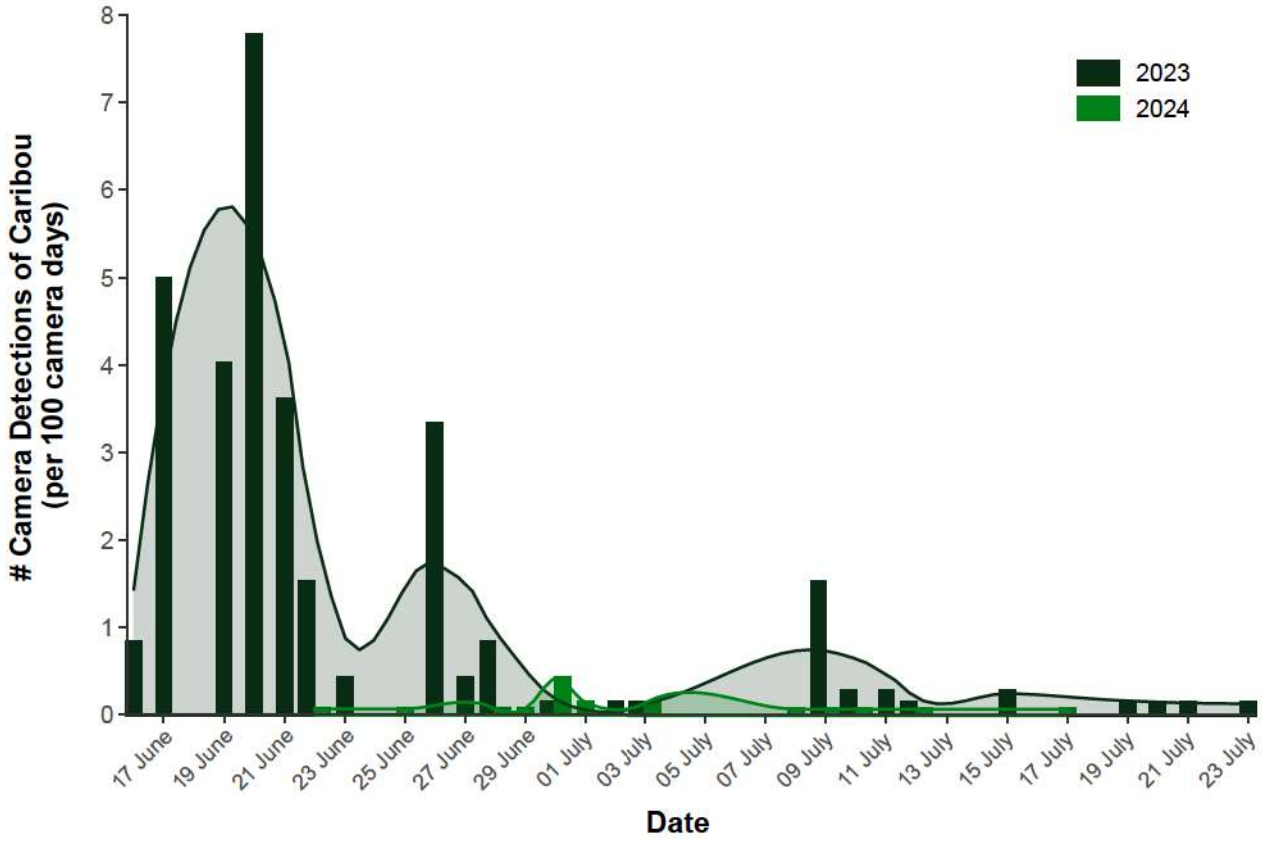


FIGURE 6.2-6 DATES OF CARIBOU DETECTIONS AT MELIADINE MINE DISCOVERY CAMERAS, 2023 AND 2024



6.3 ROAD STRUCTURE SURVEY RESULTS AND CARIBOU

The next objective for this program was to use the information on the number of road crossings at each camera to determine if caribou tend to use certain road conditions for crossing, specifically: material of road construction (esker vs. quarry); side slope; road height; and surrounding vegetation type.

In 2020, road surveys for structure and substrate type were completed every 100 m along the length of the AWAR from KM 8 to the mine entrance at KM 30, totaling 210 surveys. The results of these surveys are presented in Figure 6.3-1. As the road structure has not changed significantly since 2020, the results from the survey were also used for analysis from 2021 to 2023. Road structure was generally consistent, with 88% of the roadside slope measurements falling within the "moderate" category (15-30 degrees), and only 6% classified as steep (>30 degrees). Similarly, 92% of road height measurements were either low (<1 m from the tundra; 48%), or moderate (between 1-2 m from the tundra; 44%). The maximum road height measured was 4.9 m, but this value represented an outlier as it was measured on a bridge ramp.

The surveys indicated there was a higher proportion of road with esker as the substrate material in the northern two-thirds of the AWAR, and a higher proportion of quarry rock as the substrate material in the southern third of the AWAR (Figure 6.3-1). This was likely because there is a large esker at approximately KM 18 that was used to construct most of the northern part of the road. There was also a higher proportion of lowland habitat in the southern third of the AWAR.

The road structure at the site of each camera was compared with the number of caribou detected combined across all years where they were recorded (Figure 6.3-2). Neither slope nor road height was highly correlated with the number of caribou detected crossing the road, as evidenced by the flat regression line fitted to the data. This may be due to the lack of variability in road height and slope along the length of the AWAR – most of the road had moderate side slope and low height.

When data was pooled from 2020 to 2023 (with no detections recorded in 2024) caribou did appear to cross the road more readily where esker material was the substrate vs. fine-grained quarry rock, though quarry rock was concentrated in the southern portion of the road where the cameras were removed earlier in 2021, and sampling effort was lower in 2020. Differences in grain size between esker and quarry rock were also relatively small, which may limit any preference by caribou. This suggests that the apparent preference by caribou of esker over quarry rock may be an artifact of the data, and not a true effect. The presence of a higher proportion of lowland habitat in the southern portion of the AWAR, which includes marshes and lakes, may have also reduced the number of locations where caribou are likely to cross.

Prior to the 2023 and 2024 caribou migration, preparatory work and construction for waterline installation took place along the AWAR alignment. Changes included placement of the waterline "bedding" (consisting of a narrow strip of flattened earthworks) along the side of the AWAR in 2023, and installation and burial of the lines themselves in 2024 for a portion of the AWAR. While this change does not largely effect the side slope or predominant material of the AWAR shoulder, the area at the toe of the slope was compacted and surfaced with smoothed substrate as compared to 2020 when the road survey was completed.

FIGURE 6.3-1 ROAD STRUCTURE SURVEY RESULTS

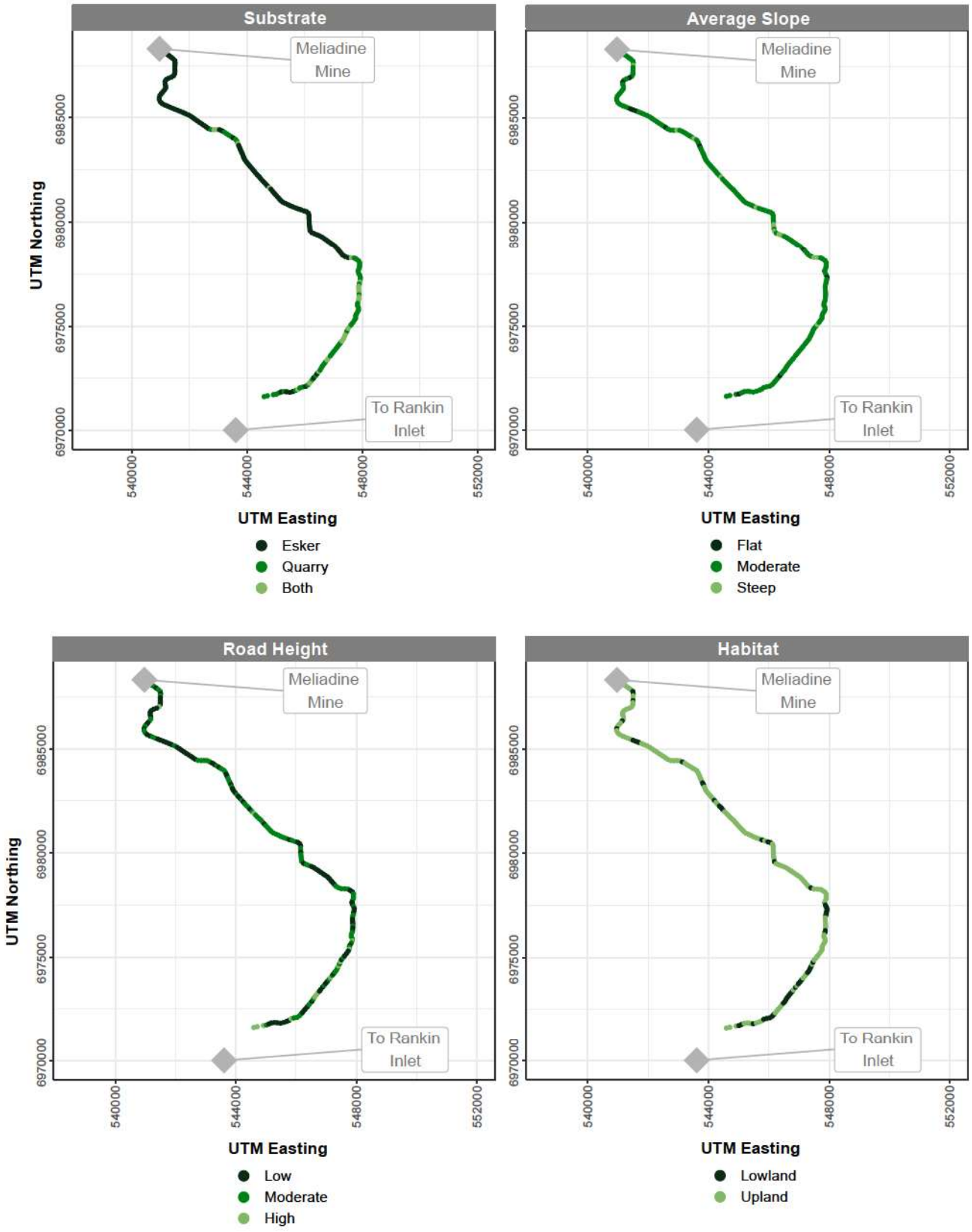
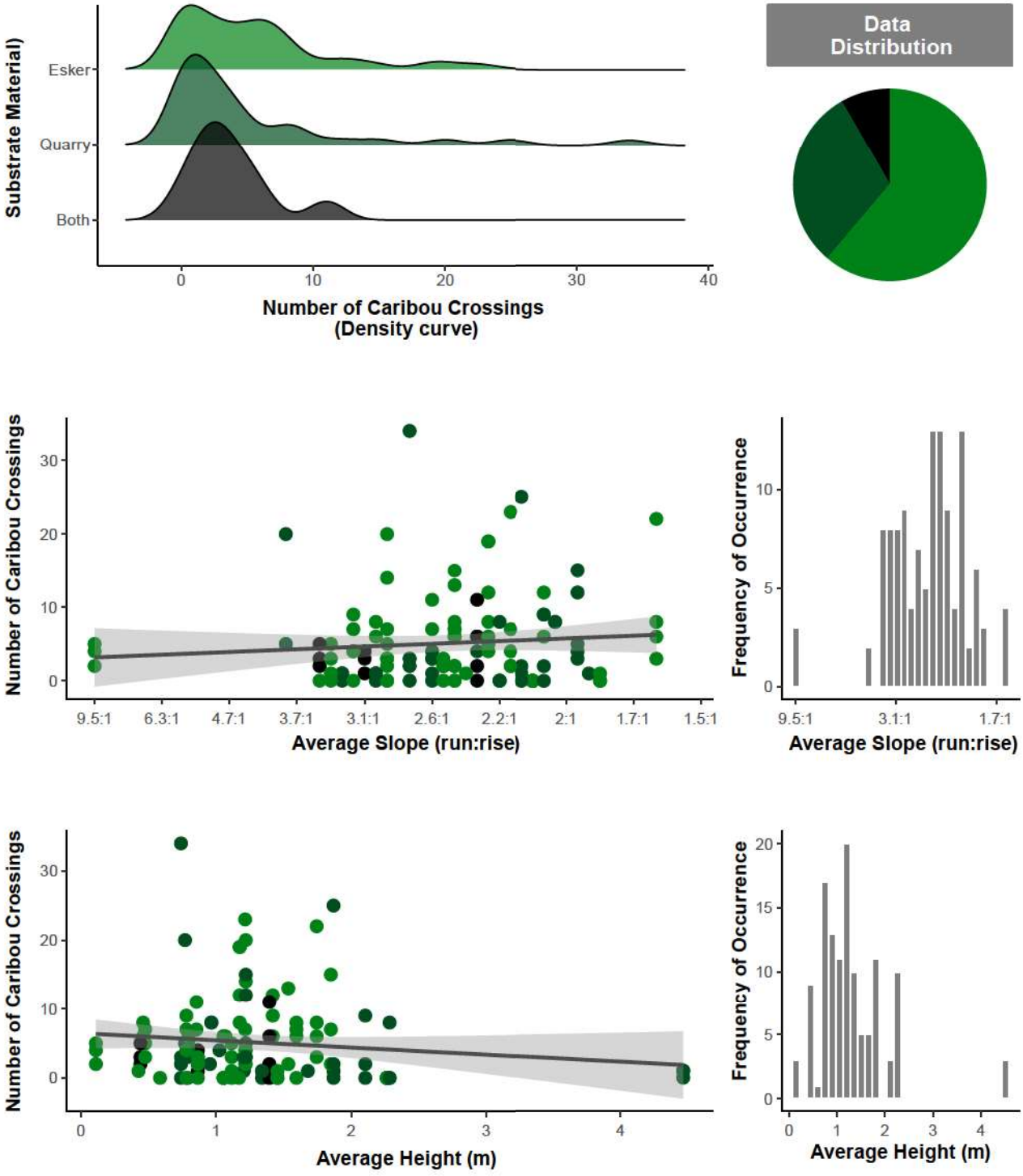


FIGURE 6.3-2 COMPARISONS OF ROAD STRUCTURE AND CARIBOU DETECTIONS, 2020 TO 2024



Note: No caribou were recorded on the AWAR cameras in 2024.

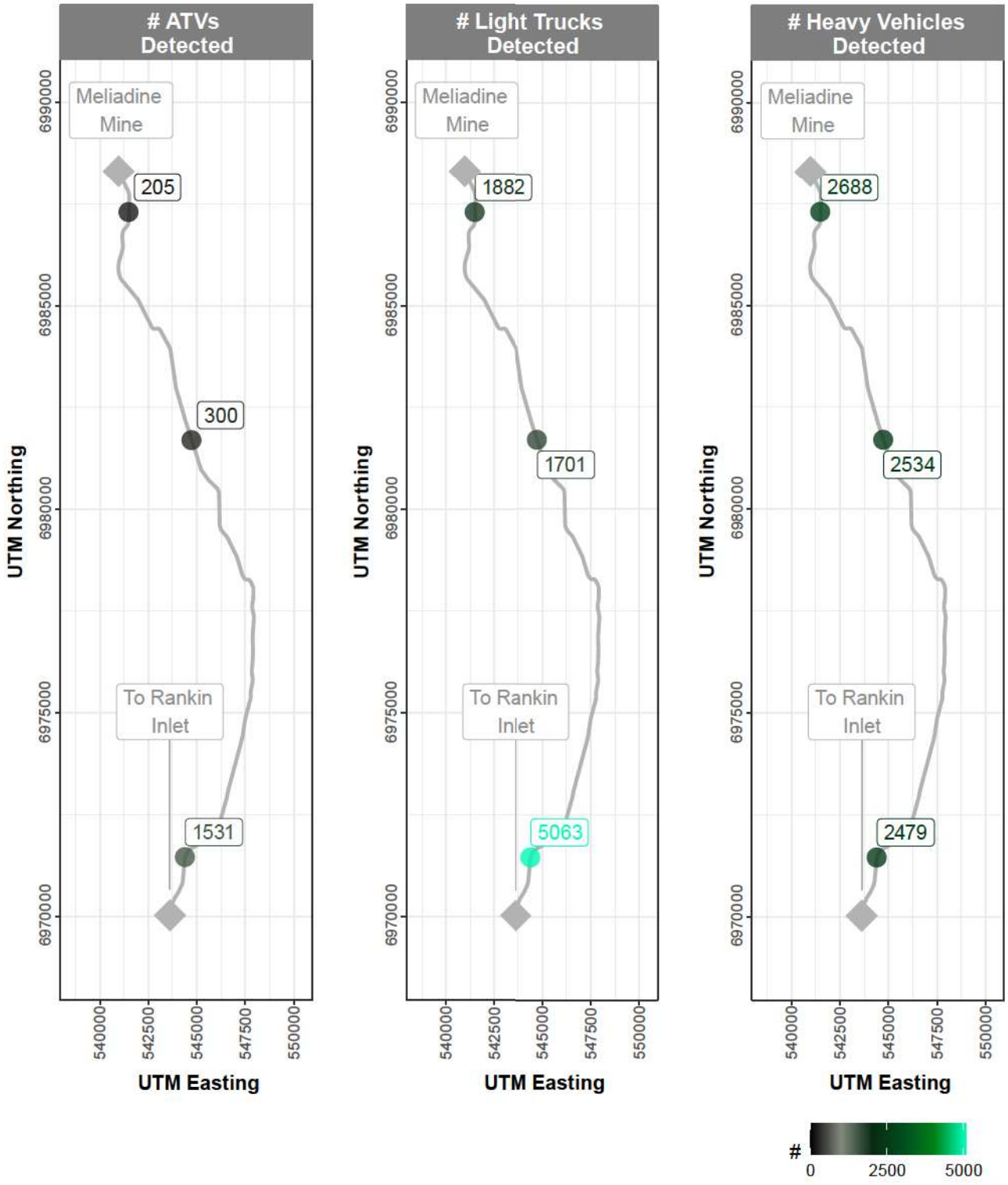
6.4 VEHICLE DETECTIONS ON THE AWAR

From 2021 to 2024, the cameras were angled to better capture vehicle traffic on the road based on lessons learned in 2020 when vehicle traffic was only captured incidentally. Because each camera had hundreds of vehicle triggers, it was decided that only three cameras (KM 8, 21, and 29) would be fully processed for detailed vehicle information, while all other cameras had only the presence of an unclassified vehicle type recorded. A summary of vehicles detected on those three cameras is presented in Table 6.4-1 and Figure 6.4-1. It should be noted that the camera at KM 8 is south of the gatehouse, and thus captures increased local traffic (largely light vehicles and ATVs).

TABLE 6.4-1 VEHICLE DETECTIONS ACROSS THE THREE AWAR CAMERAS PROCESSED, MAY 29 – JULY 31, 2024

Vehicle Type	Vehicle	AWAR Open		
		Average Number of Detections Across Cameras	Proportion of Total Detections (%)	Average Number of Detections Per Camera Day
Heavy Vehicle	Ambulance	2	0.03	0.01
	Box Truck	84	1.36	0.46
	Forklift	17	0.28	0.09
	Tanker	208	3.38	1.15
	Grader	75	1.22	0.42
	Haul Truck	950	15.43	5.26
	Bus	331	5.38	1.83
	Tractor Trailer	833	13.52	4.61
	Water Truck	51	0.83	0.28
Light Truck	Pickup Truck	2855	46.36	15.79
	Service Truck	27	0.44	0.15
ATV	Side by Side and Quad	664	10.78	3.67
	Motorcycle	45	0.73	0.25
Other	Misc. Equipment	15	0.24	0.08
Total		**6,157**	-	-

FIGURE 6.4-1 NUMBER OF VEHICLE DETECTIONS ON THE AWAR, MAY 29 TO JULY 28, 2024



The three primary groups of vehicles (ATVs, pickups, and heavy vehicles) exhibited slightly different patterns of observations:

- There were more ATVs and light trucks in the southern section of the road compared to the northern section. This is consistent with a scenario of people traveling out from Rankin Inlet and either stopping along the road prior to the gatehouse or turning off to side trails and cabins along the road. Fewer ATVs were detected at KM 29 near the Mine.
- Heavy vehicles are relatively consistent between all three cameras, reflecting travel of the length of the AWAR between the Mine and Itivia Harbour to transport materials.

6.5 VEHICLE DETECTIONS AND CARIBOU

Due to a lack of detections of caribou on the AWAR cameras in 2024, no additional metrics could be calculated for relationships between caribou and vehicles as compared to the 2023 Meliadine Camera Report (ERM 2024b).

7. SUMMARY

The results of this combined five-year program continue to support the utility for cameras as an effective monitoring method. Despite a shift in expected seasonal patterns in caribou occurrence near the Mine, the camera program provides useful information to inform mitigation and future monitoring at the Mine. Overall, this camera program was successful at recording caribou in numerous locations, including crossing the AWAR, in proximity to the Mine site, and along the proposed Discovery Access Road during the five years of program.

The **first objective** of this program was to evaluate how the AWAR and Mine site may affect caribou movement during migration. While caribou were not recorded on the AWAR cameras and in limited numbers in the other areas in 2024 limiting the ability to provide new insights, caribou do continue to be recorded in the Mine area. Across the five program years, caribou were observed crossing the AWAR in different group sizes, ranging from single individuals to thousands, suggesting no strong avoidance by small or large caribou groups.

The **second and third objectives** of this program were to evaluate if there were specific locations with high numbers of caribou observations along the AWAR in 2024, and compare these locations with those identified from 2020 to 2023, and by collar data and IQ. With a lack of caribou detections along the AWAR in 2024, no further analysis relating to these objectives were possible beyond that provided in the 2023 report.

The **fourth objective** of the program was to evaluate what relationship (if any) there is between vehicles recorded on the road and location/timing of caribou observations. With no caribou detections along the AWAR in 2024, further analysis related to this objective was not feasible.

The **final objective** of the 2024 program was to provide data on caribou occurrence in the Discovery area and in proximity to the Mine site. Key findings related to this objective are:

- Caribou were observed in both the Discovery and Mine areas, with the highest rate of detection on the Discovery cameras (1.32 caribou per 100 camera days). The detection rate of caribou in both areas had decreased from rates noted in 2023, corresponding to the change in annual caribou movement patterns observed in 2024.
- Detections of caribou from these areas in 2024 contribute to the overall understanding of caribou use of the Meliadine area during important parts of their lifecycle. These data may provide a comparison against data collected in the future to assist in understanding caribou response to the Mine and other factors.

Data discussed in this program provide multiple insights into caribou occurrence and movement in the Meliadine area, including differences across five years of available data. The findings from this program may be incorporated with other data sources, including concurrent behaviour surveys and collar data to inform potential cumulative effects on caribou from the Meliadine Mine and associated infrastructure or development. This program highlights the power of using motion-trigger cameras to draw connections between the many possible variables explaining caribou movement. The results suggest that multiple factors including interannual variation, vehicle traffic, and road substrate may contribute to when and where caribou occur in the Meliadine area, including crossing the AWAR.

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APPENDIX A DATA FROM WILDLIFE CAMERAS

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
A1	5/29/2024 9:49	Unknown	1	0			
A1	5/29/2024 10:38	Bird	2	0	Feeding		
A13	5/30/2024 1:17	Arctic Hare	1	0	Running		
A2	5/30/2024 1:57	Arctic Hare	1	0	Walking		
A9	5/30/2024 9:07	Bird	1	0	Flying		
CAM33	6/3/2024 18:59	Bird	3	0	Resting	SNGO	
CAM33	6/3/2024 20:00	Bird	3	0	Resting	SNGO	
CAM33	6/3/2024 21:29	Bird	4	0	Feeding	SNGO	
CAM33	6/3/2024 21:59	Bird	2	0	Feeding	SNGO	
A8	6/4/2024 3:26	Arctic Hare	1	0	Feeding		
CAM30	6/4/2024 8:29	Bird	5	0	Feeding	SNGO	
CAM30	6/4/2024 8:59	Bird	11	0	Feeding	SNGO	
A2	6/4/2024 11:03	Bird	1	0	Flying		
CAM30	6/4/2024 11:29	Bird	2	0	Walking	TUSW	
CAM29	6/4/2024 11:59	Caribou	1	0	Walking	Too far away to ID sex	
CAM29	6/4/2024 11:59	Bird	3	0	Feeding	SNGO	
CAM30	6/4/2024 11:59	Bird	2	0	Feeding	TUSW	
CAM29	6/4/2024 12:29	Bird	4	0	Feeding	SNGO	
CAM30	6/4/2024 12:29	Bird	2	0	Walking	TUSW	
CAM29	6/4/2024 12:59	Bird	8	0	Feeding	SNGO	
CAM30	6/4/2024 12:59	Bird	5	0	Feeding	TUSW	
CAM30	6/4/2024 13:59	Bird	13	0	Feeding	SNGO	
CAM30	6/4/2024 14:29	Bird	12	0	Feeding	SNGO	
CAM30	6/4/2024 14:59	Bird	15	0	Feeding		
CAM30	6/4/2024 15:29	Bird	12	0	Feeding	SNGO	
CAM29	6/4/2024 15:59	Bird	10	0	Feeding	SNGO	
CAM30	6/4/2024 15:59	Bird	7	0	Feeding	SNGO	
CAM29	6/4/2024 16:29	Bird	4	0	Feeding	SNGO	
CAM29	6/4/2024 16:59	Bird	4	0	Feeding	SNGO	
CAM29	6/4/2024 17:59	Bird	7	0	Feeding	SNGO	
CAM21	6/5/2024 4:29	Bird	1	0	Resting	HOLA	Male

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM29	6/5/2024 6:29	Bird	1	0	Standing	SNGO	
CAM29	6/5/2024 6:59	Bird	2	0	Resting	Unknown duck	
CAM29	6/5/2024 6:59	Bird	8	0	Resting	SNGO	
CAM29	6/5/2024 7:29	Bird	11	0	Feeding	SNGO	
CAM33	6/5/2024 7:29	Bird	2	0	Walking	SNGO	
CAM33	6/5/2024 7:59	Bird	2	0	Feeding	SNGO	
CAM29	6/5/2024 8:00	Bird	2	0	Feeding	SNGO	
CAM29	6/5/2024 8:59	Bird	2	0	Standing	SNGO	
CAM29	6/5/2024 9:29	Bird	2	0	Feeding	SNGO	
CAM29	6/5/2024 9:59	Bird	4	0	Feeding	SNGO	
CAM29	6/5/2024 10:29	Bird	11	0	Feeding	SNGO	
CAM29	6/5/2024 10:59	Bird	20	0	Feeding	SNGO	
CAM29	6/5/2024 11:29	Bird	16	0	Feeding	SNGO	
CAM29	6/5/2024 11:59	Bird	21	0	Resting	SNGO	
CAM11	6/5/2024 12:29	Bird	9	0	Resting	SNGO	
CAM29	6/5/2024 12:29	Bird	4	0	Feeding	SNGO	
CAM11	6/5/2024 12:59	Bird	1	0	Resting	SNGO	
CAM29	6/5/2024 13:59	Bird	4	0	Feeding	SNGO	
CAM34	6/5/2024 14:30	Bird	2	0	Walking	CCGO	
CAM29	6/5/2024 15:29	Bird	17	0	Feeding	SNGO	
CAM29	6/5/2024 15:59	Bird	21	0	Feeding	SNGO	
A2	6/5/2024 16:13	Bird	1	0	Flying	CORA	
CAM29	6/5/2024 16:29	Bird	2	0	Feeding	SNGO	
CAM29	6/5/2024 16:59	Bird	12	0	Feeding	SNGO	
CAM30	6/5/2024 22:00	Bird	1	0	Flying	Unknown gull	
A2	6/6/2024 6:15	Bird	0	0	Flying	NOHA	
CAM35	6/6/2024 8:00	Bird	14	0	Feeding	SNGO	
CAM35	6/6/2024 8:30	Bird	8	0	Feeding	SNGO	
CAM35	6/6/2024 9:30	Bird	16	0	Feeding	SNGO	
CAM35	6/6/2024 10:00	Bird	8	0	Feeding	SNGO	
CAM29	6/6/2024 10:59	Bird	6	0	Feeding	SNGO	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM35	6/6/2024 12:00	Bird	4	0	Feeding	SNGO	
CAM35	6/6/2024 12:30	Bird	7	0	Feeding	SNGO	
CAM35	6/6/2024 14:30	Bird	13	0	Feeding	SNGO	
CAM35	6/6/2024 15:30	Bird	14	0	Feeding	SNGO	
CAM35	6/6/2024 16:00	Bird	0	0		SNGO	
CAM35	6/6/2024 16:30	Bird	11	0	Feeding	SNGO	
CAM34	6/6/2024 17:00	Bird	1	0	Walking	CCGO	
CAM35	6/6/2024 17:30	Bird	8	0	Feeding	SNGO	
CAM35	6/6/2024 18:00	Bird	1	0	Feeding	SNGO	
CAM21	6/6/2024 18:31	Arctic Fox	1	0	Walking		
CAM35	6/6/2024 19:30	Bird	5	0	Feeding	SNGO	
CAM35	6/6/2024 20:00	Bird	9	0	Feeding	SNGO	
CAM35	6/6/2024 20:30	Bird	8	0	Feeding	SNGO	
CAM29	6/6/2024 21:29	Bird	1	0	Feeding	SACR	
CAM35	6/6/2024 21:30	Bird	40	0	Feeding	SNGO	
CAM20	6/7/2024 5:25	Bird	9	0	Flying	SNGO	
CAM20	6/7/2024 7:53	Bird	2	0	Flying	SNGO	
CAM20	6/7/2024 10:01	Bird	3	0	Flying	SNGO	
CAM20	6/7/2024 10:56	Bird	13	0	Flying	SNGO	
CAM29	6/7/2024 11:59	Bird	2	0	Standing	SNGO	
CAM20	6/7/2024 12:00	Bird	2	0	Flying	SNGO	
CAM35	6/7/2024 15:28	Bird	3	0	Flying	SNGO	
CAM11	6/7/2024 16:02	Bird	1	0	Flying	SACR	
CAM20	6/7/2024 19:36	Bird	18	0	Flying	SNGO	
A6	6/7/2024 22:42	Bird	0	0	Walking	SACR	
CAM20	6/8/2024 6:44	Bird	1	0	Flying	SNGO	
CAM20	6/8/2024 7:56	Bird	1	0	Flying	SNGO	
CAM11	6/8/2024 9:59	Bird	1	0	Flying	Unknown gull	
CAM35	6/8/2024 10:14	Bird	1	0	Flying	CCGO	
CAM11	6/8/2024 13:02	Bird	2	0	Flying	CCGO	
CAM20	6/8/2024 13:55	Bird	1	0	Flying	Unknown bird	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
A10	6/8/2024 19:08	Arctic Fox	1	0	Walking		
CAM35	6/8/2024 20:00	Bird	0	0	Flying	CCGO	
A6	6/9/2024 3:51	Arctic Hare	1	0	Walking		
CAM35	6/9/2024 16:00	Bird	1	0	Feeding	CCGO	
A8	6/9/2024 18:48	Arctic Fox	1	0	Walking		
CAM11	6/10/2024 6:59	Bird	1	0	Walking	SACR	
A2	6/10/2024 7:47	Arctic Hare	0	0	Standing		
CAM20	6/10/2024 13:32	Bird	2	0	Flying	TUSW	
CAM20	6/10/2024 16:25	Bird	0	0	Resting		
CAM20	6/10/2024 17:12	Bird	1	0	Resting		
CAM20	6/10/2024 19:09	Bird	1	0	Resting		
A12	6/11/2024 1:30	Arctic Hare	1	0	Running		
A8	6/11/2024 3:10	Arctic Fox	1	0	Running		
CAM20	6/11/2024 4:31	Bird	1	0	Resting		
CAM20	6/11/2024 5:19	Bird	1	0	Resting		
CAM20	6/11/2024 6:59	Bird	1	0	Resting		
A10	6/11/2024 7:46	Arctic Ground Squirrel	1	0	Standing		
CAM20	6/11/2024 8:38	Bird	1	0	Resting		
A10	6/11/2024 9:05	Bird	1	0	Resting	Raptor	
CAM15	6/11/2024 15:39	Bird	1	0	Walking	SACR	
A5	6/12/2024 1:18	Arctic Fox	1	0	Running		
CAM15	6/12/2024 6:59	Bird	1	0		NOPI	Male
CAM11	6/12/2024 9:25	Bird	1	0	Flying	CCGO	
CAM34	6/12/2024 10:29	Bird	1	0	Standing	SNBU	Male
A12	6/12/2024 20:08	Arctic Hare	1	0	Feeding		
CAM33	6/13/2024 7:29	Bird	1	0	Walking	SACR	
CAM29	6/13/2024 9:59	Bird	1	0	Standing	SACR	
A13	6/13/2024 10:09	Bird	1	0	Standing	Raptor	
CAM30	6/13/2024 11:02	Bird	1	0	Flying	Unknown bird	
CAM15	6/13/2024 11:18	Bird	1	0	Walking	SACR	
CAM15	6/13/2024 11:19	Bird	1	0		Unknown duck	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM10	6/13/2024 13:29	Bird	1	0	Flying	CCGO	
CAM05	6/13/2024 19:29	Bird	1	0	Walking	SACR	
CAM20	6/14/2024 7:59	Bird	14	0	Flying	CCGO	
CAM30	6/14/2024 9:01	Unknown	1	0	Inspecting camera		
CAM30	6/14/2024 12:47	Unknown	1	0	Inspecting camera		
CAM15	6/14/2024 13:05	Bird	1	0	Walking	SACR	
CAM30	6/14/2024 16:22	Bird	1	0	Flying	Unknown bird	
CAM30	6/14/2024 16:53	Bird	1	0	Flying	Unknown bird	
CAM05	6/14/2024 20:29	Bird	1	0	Standing	GWFG	
CAM20	6/15/2024 6:15	Bird	18	0	Flying	CCGO	
CAM08	6/15/2024 9:14	Bird	2	0	Flying	CCGO	
CAM34	6/15/2024 10:29	Bird	1	0	Feeding	CCGO	
CAM38	6/15/2024 11:18	Arctic Hare	1	0	Flying	LALO	
CAM38	6/15/2024 16:20	Bird	1	0	Standing	RLHA	
CAM08	6/15/2024 20:00	Bird	25	0	Flying	CCGO	
CAM38	6/15/2024 21:53	Bird	1	0	Flying	SACR	
CAM38	6/15/2024 22:52	Bird	1	0	Inspecting camera	LALO	
CAM34	6/15/2024 22:59	Bird	1	0	Feeding	SACR	
CAM35	6/16/2024 1:07	Arctic Fox	1	0	Running		
CAM38	6/16/2024 6:48	Bird	1	0	Inspecting camera	LALO	
CAM38	6/16/2024 7:52	Bird	1	0	Inspecting camera	LALO	
CAM12	6/16/2024 8:06	Bird	1	0	Flying	TUSW	
CAM38	6/16/2024 8:45	Bird	1	0	Standing	LALO	
CAM38	6/16/2024 10:17	Bird	1	0	Inspecting camera	LALO	
CAM31	6/16/2024 10:59	Bird	1	0	Feeding	SACR	
CAM38	6/16/2024 13:15	Bird	1	0	Inspecting camera	LALO	
CAM38	6/16/2024 14:24	Bird	1	0	Inspecting camera	LALO	
CAM38	6/16/2024 15:19	Bird	1	0	Inspecting camera	LALO	
CAM31	6/16/2024 17:59	Bird	1	0	Feeding	CCGO	
CAM38	6/16/2024 20:42	Bird	1	0	Inspecting camera	Unknown bird	
CAM35	6/16/2024 21:28	Bird	2	0	Feeding	SACR	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM35	6/16/2024 23:00	Bird	2	0	Standing	SACR	
CAM09	6/17/2024 14:00	Bird	1	0	Standing	CCGO	
CAM33	6/17/2024 19:29	Unknown	1	0	Walking		
CAM35	6/18/2024 10:00	Bird	1	0	Walking	SACR	
A6	6/18/2024 18:17	Bird	1	0	Flying	GOEA	
CAM04	6/19/2024 3:52	Bird	1	0	Inspecting camera		
CAM04	6/19/2024 4:59	Bird	1	0	Resting	RLHA	
CAM04	6/19/2024 6:12	Bird	1	0	Flying	RLHA	
CAM35	6/19/2024 11:45	Bird	5	0	Feeding	CCGO	
CAM15	6/19/2024 14:59	Bird	1	0		Unknown duck	
CAM35	6/19/2024 19:00	Bird	1	0	Standing	SACR	
CAM35	6/19/2024 19:27	Arctic Fox	1	0	Walking		
A8	6/20/2024 6:24	Bird	2	0	Standing	SACR	
CAM38	6/20/2024 8:29	Caribou	1	1	Feeding		Female
CAM15	6/20/2024 8:59	Bird	1	0		Unknown duck	
CAM38	6/20/2024 9:07	Bird	1	0	Flying	CCGO	
A1	6/20/2024 11:23	Bird	4	0	Feeding	CCGO - BRAHUC	
CAM03	6/20/2024 14:00	Bird	5	0	Walking		
A10	6/21/2024 7:06	Bird	1	0	Flying	Unknown gull	
CAM15	6/21/2024 9:59	Bird	1	0		NOPI	Male
CAM15	6/21/2024 11:59	Bird	1	0		Unknown duck	
CAM14	6/21/2024 15:30	Bird	5	0	Feeding	CCGO	
CAM01	6/21/2024 16:06	Bird	1	0	Flying	SACR	
CAM05	6/21/2024 16:29	Bird	1	0	Standing	GWFG	
CAM14	6/21/2024 20:11	Bird	1	0	Flying	HERG	
CAM15	6/21/2024 20:46	Bird	1	0	Flying	Unknown duck	
A13	6/21/2024 21:00	Bird	19	0	Flying		
A8	6/21/2024 22:08	Arctic Fox	1	0	Running		
CAM35	6/21/2024 22:58	Arctic Fox	1	0	Running		
CAM15	6/22/2024 6:37	Bird	1	0	Flying	GWTE	Male
CAM09	6/22/2024 8:59	Caribou	1	0	Feeding		Female

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM09	6/22/2024 9:29	Bird	1	0	Standing	CCGO	
CAM15	6/22/2024 10:29	Bird	2	0	Feeding	CCGO	
CAM08	6/22/2024 11:19	Bird	3	0	Flying	CCGO	
CAM08	6/22/2024 11:59	Bird	2	0	Walking	CCGO	
CAM15	6/22/2024 12:30	Bird	2	0		Unknown duck	
CAM08	6/22/2024 13:29	Bird	1	0	Standing	CCGO	
CAM35	6/22/2024 17:30	Bird	1	0	Walking	SACR	
CAM15	6/22/2024 17:59	Bird	1	0		Unknown duck	
CAM34	6/22/2024 20:30	Bird	1	0	Feeding	CCGO	
CAM34	6/22/2024 21:59	Bird	1	0	Feeding	SACR	
CAM15	6/23/2024 5:29	Bird	1	0	Standing	Unknown bird	
CAM18	6/23/2024 6:59	Bird	1	0	Flying	RLHA	
CAM15	6/23/2024 8:29	Bird	1	0		NOPI	Male
CAM15	6/23/2024 8:30	Bird	1	0	Flying	Unknown duck	Female
CAM35	6/23/2024 10:35	Bird	2	0	Walking	SACR	
CAM31	6/23/2024 16:29	Bird	1	0	Walking	SACR	
A1	6/23/2024 17:40	Bird	1	0	Walking	CCGO - BRAHUC	
CAM28	6/23/2024 19:01	Arctic Ground Squirrel	1	0	Standing		
CAM38	6/23/2024 22:29	Bird	1	0	Inspecting camera	Unknown bird	
CAM15	6/24/2024 0:00	Bird	1	0		Unknown duck	
A7	6/24/2024 6:49	Bird	2	0	Walking	SACR	
CAM30	6/24/2024 8:23	Bird	1	0	Flying	Unknown sparrow	
A8	6/24/2024 8:59	Bird	2	0	Flying	SACR	
CAM13	6/24/2024 12:38	Bird	5	0	Flying	CCGO	
CAM25	6/24/2024 19:29	Caribou	1	1	Feeding		Female
CAM18	6/24/2024 21:33	Bird	1	0	Flying	RLHA	
A8	6/24/2024 23:27	Arctic Fox	1	0	Running		
CAM15	6/24/2024 23:29	Bird	0	0		Unknown duck	
CAM31	6/24/2024 23:59	Bird	1	0	Walking	SACR	
CAM15	6/25/2024 0:00	Bird	1	0		Unknown duck	
CAM19	6/25/2024 0:00	Bird	2	0	Feeding	CCGO	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM18	6/25/2024 3:31	Bird	1	0	Flying	RLHA	
CAM30	6/25/2024 6:25	Bird	1	0	Flying	Unknown sparrow	
CAM35	6/25/2024 6:35	Arctic Fox	1	0	Walking		
CAM10	6/25/2024 13:00	Bird	2	0	Feeding	CCGO	
CAM38	6/25/2024 15:08	Bird	1	0	Inspecting camera	Unknown bird	
CAM09	6/25/2024 18:59	Bird	2	0	Feeding	SACR	
CAM16	6/25/2024 20:00	Bird	2	0	Resting	TUSW	
CAM35	6/25/2024 20:18	Bird	1	0	Feeding	SACR	
CAM31	6/25/2024 21:18	Bird	1	0	Walking	SACR	
CAM30	6/25/2024 22:23	Arctic Fox	1	0	Walking		
CAM18	6/26/2024 1:30	Bird	1	0	Flying	RLHA	
CAM30	6/26/2024 5:47	Arctic Fox	1	0	Walking		
CAM15	6/26/2024 5:59	Bird	0	0		Unknown duck	
CAM15	6/26/2024 6:29	Bird	1	0		Unknown duck	
CAM09	6/26/2024 9:29	Bird	1	0	Walking	SACR	
CAM35	6/26/2024 15:01	Bird	1	0	Walking	SACR	
CAM10	6/26/2024 16:30	Bird	1	0	Standing	CCGO	
A10	6/26/2024 19:33	Bird	1	0	Flying		
CAM31	6/26/2024 20:08	Bird	1	0	Walking	CCGO	
CAM38	6/26/2024 20:44	Unknown	1	0	Inspecting camera		
CAM19	6/27/2024 6:59	Bird	1	0	Standing	SACR	
CAM33	6/27/2024 10:59	Bird	2	0	Walking	SACR	
CAM10	6/27/2024 17:00	Bird	10	0	Flying		
CAM04	6/28/2024 4:59	Bird	1	0	Resting	Unknown raptor	
CAM31	6/28/2024 5:05	Bird	1	0	Flying	Unknown passerine	
CAM19	6/28/2024 7:17	Bird	1	0	Standing	SACR	
CAM31	6/28/2024 7:46	Arctic Fox	1	0	Walking		
CAM08	6/28/2024 9:13	Caribou	6	1	Walking		Female
CAM31	6/28/2024 11:18	Bird	1	0	Walking	SACR	
CAM31	6/28/2024 12:29	Bird	1	0	Feeding	SACR	
CAM31	6/28/2024 13:29	Bird	1	0	Feeding	CCGO	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM08	6/28/2024 16:00	Bird	1	0	Feeding	CCGO	
CAM08	6/28/2024 16:30	Bird	1	0	Walking	CCGO	
CAM38	6/28/2024 16:55	Bird	1	0	Inspecting camera	Unknown bird	
CAM31	6/28/2024 17:30	Bird	1	0	Walking	SACR	
CAM38	6/28/2024 17:30	Bird	3	0	Flying	SNGO	
CAM13	6/28/2024 17:50	Bird	1	0	Flying	HERG	
CAM25	6/28/2024 20:30	Caribou	1	0	Feeding		
CAM31	6/28/2024 20:55	Bird	1	0	Walking	SACR	
A1	6/29/2024 1:53	Arctic Hare	1	0	Running		
CAM15	6/29/2024 15:00	Bird	1	0	Standing	TUSW	
CAM15	6/29/2024 15:30	Bird	4	0	Standing	TUSW	
CAM15	6/29/2024 16:00	Bird	4	0	Standing	TUSW	
CAM34	6/29/2024 17:30	Bird	2	0	Feeding	SACR	
CAM34	6/29/2024 18:00	Bird	1	0	Feeding	SACR	
CAM08	6/29/2024 22:29	Caribou	1	0	Running		
A1	6/29/2024 23:05	Bird	7	0	Feeding	CCGO - BRAHUC	
A1	6/29/2024 23:06	Bird	10	0	Feeding	CCGO - BRAHUC	
CAM15	6/30/2024 1:30	Bird	1	0		Unknown duck	
CAM15	6/30/2024 4:59	Caribou	15	0	Feeding		Female
CAM04	6/30/2024 6:29	Bird	1	0	Walking	SACR	
A6	6/30/2024 7:55	Bird	1	0	Standing		
CAM15	6/30/2024 7:59	Bird	1	0	Walking	NOPI	Male
CAM35	6/30/2024 8:00	Bird	0	0	Feeding	SACR	
CAM16	6/30/2024 9:59	Caribou	1	0	Feeding		Female
CAM09	6/30/2024 10:08	Caribou	0	0	Walking		Female
CAM03	6/30/2024 12:55	Bird	1	0	Flying		
CAM04	6/30/2024 15:59	Caribou	1	0			
CAM04	6/30/2024 16:30	Caribou	1	0	Feeding		Female
CAM04	6/30/2024 17:29	Caribou	1	0	Standing		Female
CAM38	6/30/2024 17:29	Bird	0	0	Inspecting camera	Unknown bird	
CAM31	6/30/2024 18:21	Bird	2	0	Walking	SACR	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM16	6/30/2024 19:30	Bird	1	0	Feeding	TUSW	
CAM16	6/30/2024 20:30	Bird	2	0	Walking	TUSW	
CAM18	6/30/2024 20:30	Bird	4	0	Standing	SNGO	
CAM28	7/1/2024 1:29	Bird	1	0	Standing	Unknown gull	
CAM14	7/1/2024 5:13	Caribou	2	0	Running		Female
CAM38	7/1/2024 9:39	Bird	0	0	Inspecting camera	Unknown bird	
CAM08	7/1/2024 13:29	Bird	2	0	Feeding	SACR	
CAM08	7/1/2024 15:30	Bird	1	0	Walking	SACR	
CAM10	7/1/2024 17:30	Bird	1	0	Walking	CCGO	
CAM04	7/1/2024 20:09	Bird	0	0	Flying		
CAM31	7/1/2024 21:04	Bird	1	0	Walking	SACR	
CAM04	7/1/2024 21:59	Bird	1	0	Resting		
CAM04	7/1/2024 22:30	Unknown	1	0			
CAM04	7/1/2024 23:29	Bird	1	0			
CAM38	7/2/2024 4:58	Bird	1	0	Inspecting camera	Unknown bird	
CAM38	7/2/2024 6:22	Bird	1	0	Inspecting camera	Unknown bird	
CAM38	7/2/2024 6:59	Bird	1	0	Inspecting camera	Unknown bird	
CAM10	7/2/2024 7:30	Bird	3	0	Feeding	SACR	
CAM31	7/2/2024 7:33	Bird	2	0	Walking	SACR	
CAM38	7/2/2024 8:26	Bird	1	0	Inspecting camera	Unknown bird	
CAM38	7/2/2024 9:14	Bird	1	0	Flying	Unknown bird	
CAM38	7/2/2024 10:52	Bird	1	0	Inspecting camera	Unknown bird	
CAM14	7/2/2024 11:00	Bird	1	0	Walking	SACR	
CAM31	7/2/2024 13:51	Bird	2	0	Standing	CCGO	
A10	7/2/2024 14:59	Bird	2	0	Walking	SACR	
CAM38	7/2/2024 15:31	Bird	1	0	Inspecting camera	Unknown bird	
CAM31	7/2/2024 16:43	Bird	1	0	Walking	SACR	
CAM38	7/2/2024 17:00	Bird	1	0	Inspecting camera	Unknown bird	
CAM12	7/2/2024 21:30	Bird	1	0	Resting	TUSW	
CAM15	7/3/2024 4:59	Bird	1	0		TUSW	
CAM15	7/3/2024 5:29	Bird	0	0		TUSW	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM31	7/3/2024 9:29	Bird	2	0	Walking	SACR	
CAM15	7/3/2024 9:59	Bird	1	0		TUSW	
CAM10	7/3/2024 10:00	Caribou	0	0	Standing		Female
CAM38	7/3/2024 10:11	Bird	0	0	Flying	CCGO	
CAM15	7/3/2024 10:29	Bird	1	0		TUSW	
CAM10	7/3/2024 10:30	Caribou	0	0	Resting		Female
CAM12	7/3/2024 10:30	Bird	1	0	Resting	TUSW	
CAM10	7/3/2024 11:00	Bird	1	0	Feeding		Female
CAM12	7/3/2024 11:00	Bird	1	0	Resting	TUSW	
CAM15	7/3/2024 11:00	Bird	1	0		TUSW	
CAM12	7/3/2024 11:30	Bird	1	0	Resting	TUSW	
CAM15	7/3/2024 11:59	Bird	1	0	Feeding	TUSW	
CAM12	7/3/2024 12:00	Bird	1	0	Resting	TUSW	
CAM15	7/3/2024 12:30	Bird	1	0		TUSW	
CAM15	7/3/2024 12:59	Bird	1	0	Feeding	TUSW	
CAM15	7/3/2024 13:30	Bird	1	0		TUSW	
A1	7/3/2024 15:59	Caribou	1	0	Walking		Female
CAM31	7/3/2024 16:26	Bird	1	0	Walking	SACR	
CAM38	7/4/2024 6:38	Bird	0	0	Flying	Unknown bird	
CAM30	7/4/2024 6:54	Arctic Fox	1	0	Running		
CAM33	7/4/2024 9:59	Bird	1	0	Walking	SACR	
CAM33	7/4/2024 10:29	Unknown	1	0			
CAM38	7/4/2024 11:59	Unknown	1	0	Inspecting camera		
CAM04	7/4/2024 13:29	Bird	2	0	Walking	SACR	
A1	7/4/2024 15:13	Caribou	1	0	Running		Female
CAM38	7/4/2024 15:26	Unknown	1	0	Inspecting camera		
CAM15	7/4/2024 15:29	Bird	2	0	Walking	SACR	
CAM16	7/4/2024 15:30	Bird	2	0	Feeding	SACR	
CAM30	7/4/2024 19:00	Bird	1	0	Resting	Unknown duck	
CAM35	7/4/2024 21:30	Bird	1	0	Feeding	SACR	
CAM35	7/5/2024 2:35	Arctic Fox	1	0	Running		

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM30	7/5/2024 5:44	Arctic Hare	3	0	Walking		
CAM30	7/5/2024 7:08	Unknown	0	0	Inspecting camera		
CAM38	7/5/2024 15:24	Bird	1	0	Inspecting camera	Unknown bird	
CAM30	7/5/2024 15:30	Bird	25	0		CCGO	
CAM38	7/5/2024 16:06	Bird	1	0	Inspecting camera	Unknown bird	
CAM30	7/5/2024 16:18	Bird	1	0	Feeding	CCGO	
CAM30	7/5/2024 17:09	Bird	1	0	Feeding	CCGO	
CAM30	7/5/2024 22:26	Bird	1	0	Feeding	CCGO	
CAM15	7/6/2024 2:29	Bird	1	0		Unknown duck	
CAM30	7/6/2024 5:10	Arctic Fox	1	0	Walking		
CAM06	7/6/2024 10:55	Bird	1	0	Flying	SACR	
CAM06	7/6/2024 10:59	Bird	2	0	Walking	SACR	
CAM15	7/6/2024 12:29	Bird	1	0	Walking	SACR	
A10	7/6/2024 16:05	Bird	1	0	Flying	HEGU	
A1	7/6/2024 20:54	Caribou	1	0	Walking		Female
CAM30	7/7/2024 8:04	Bird	3	0	Feeding	CCGO	
A13	7/7/2024 11:24	Bird	1	0	Flying	Gull species	
CAM06	7/7/2024 23:29	Bird	1	0	Walking	TUSW	
A6	7/8/2024 2:58	Arctic Hare	1	0	Walking		
CAM14	7/8/2024 10:00	Caribou	2	0	Feeding		Female
CAM31	7/9/2024 2:07	Arctic Hare	3	0	Walking		
CAM38	7/9/2024 4:36	Bird	1	0	Inspecting camera	Unknown bird	
CAM38	7/9/2024 8:57	Bird	1	0	Inspecting camera	Unknown bird	
CAM15	7/9/2024 14:00	Caribou	1	0	Feeding		Male
CAM15	7/9/2024 17:00	Bird	1	0		Unknown duck	
CAM38	7/9/2024 18:57	Bird	1	0	Inspecting camera	Unknown bird	
CAM19	7/9/2024 20:30	Bird	1	0		Unknown duck	
A1	7/9/2024 22:10	Arctic Fox	1	0	Running		
A8	7/10/2024 1:06	Arctic Hare	1	0	Running		
CAM04	7/10/2024 2:23	Bird	0	1	Walking		
A8	7/10/2024 2:24	Arctic Hare	1	0	Running		

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM05	7/10/2024 15:00	Caribou	1	0	Feeding		Female
A4	7/10/2024 17:16	Arctic Fox	1	0	Walking		
A10	7/12/2024 10:04	Bird	2	0	Feeding	CCGO - BRAHUC	
CAM05	7/12/2024 10:59	Caribou	1	0	Feeding		Female
A13	7/12/2024 13:30	Bird	1	0	Flying		
CAM14	7/12/2024 18:59	Bird	1	0	Resting	Unknown duck	
CAM19	7/12/2024 19:23	Bird	2	0	Flying	SACR	
CAM31	7/12/2024 19:50	Arctic Fox	1	0	Walking		
CAM30	7/12/2024 20:30	Bird	1	0	Standing	CCGO	
A4	7/12/2024 22:37	Arctic Fox	1	0	Walking		
CAM35	7/13/2024 5:36	Arctic Fox	1	0	Running		
CAM14	7/13/2024 16:00	Bird	1	0	Feeding	Unknown duck	
CAM34	7/13/2024 20:00	Bird	2	0	Feeding	SACR	
CAM12	7/14/2024 8:30	Bird	2	0	Feeding	TUSW	
CAM12	7/14/2024 9:00	Bird	1	0	Walking	TUSW	
CAM14	7/14/2024 10:30	Bird	2	0	Resting	TUSW	
CAM14	7/14/2024 17:00	Bird	1	0	Resting	TUSW	
CAM14	7/14/2024 17:30	Bird	3	0	Feeding	TUSW	
CAM30	7/14/2024 19:40	Arctic Ground Squirrel	1	0	Running		
CAM30	7/14/2024 20:30	Bird	2	0	Feeding	CCGO	
CAM30	7/14/2024 20:55	Arctic Fox	1	0	Running		
CAM31	7/15/2024 1:58	Bird	1	0	Walking	SACR	
CAM30	7/15/2024 4:38	Bird	1	0	Walking	TUSW	
CAM35	7/15/2024 6:59	Bird	1	0	Walking	SACR	
CAM30	7/15/2024 7:11	Arctic Hare	1	0	Flying	LALO	Male
CAM14	7/15/2024 16:30	Bird	1	0	Standing	SACR	
CAM19	7/15/2024 18:36	Bird	2	0	Standing	SACR	
CAM14	7/15/2024 20:29	Bird	2	0	Walking	TUSW	
CAM14	7/15/2024 21:00	Bird	2	0	Feeding	TUSW	
CAM35	7/15/2024 21:00	Arctic Ground Squirrel	1	0	Standing		
CAM14	7/15/2024 21:30	Bird	0	0	Feeding	TUSW	

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM14	7/16/2024 8:00	Bird	1	0	Feeding	TUSW	
CAM14	7/16/2024 12:30	Bird	2	0	Resting	TUSW	
CAM17	7/16/2024 17:22	Bird	2	0	Walking	SACR	
CAM38	7/16/2024 18:15	Bird	1	0	Flying	HEGU	
CAM15	7/16/2024 19:30	Bird	1	0		Unknown duck	
CAM30	7/16/2024 19:30	Bird	2	0	Feeding	CCGO	
CAM14	7/16/2024 21:30	Bird	2	0		TUSW	
A8	7/16/2024 22:26	Bird	3	0	Walking	SACR	
CAM30	7/17/2024 0:43	Arctic Hare	1	0	Walking		
CAM35	7/17/2024 1:00	Bird	1	0	Walking	SACR	
A1	7/17/2024 4:55	Unknown	1	0			
CAM14	7/17/2024 10:00	Bird	1	0	Resting	TUSW	
CAM14	7/17/2024 11:00	Bird	1	0	Standing	TUSW	
CAM15	7/17/2024 13:29	Caribou	1	0	Feeding		Female
CAM31	7/17/2024 14:00	Bird	2	0	Feeding	SACR	
CAM15	7/18/2024 3:41	Arctic Fox	1	0	Walking		
CAM34	7/18/2024 15:30	Bird	2	0	Feeding	SACR	
CAM30	7/18/2024 16:00	Bird	36	0	Feeding	CCGO	
CAM30	7/18/2024 19:00	Bird	16	0		CCGO	
CAM30	7/18/2024 19:30	Bird	27	0	Walking	CCGO	
CAM35	7/18/2024 22:33	Bird	1	0	Standing	SACR	
CAM35	7/19/2024 1:36	Arctic Fox	0	0	Walking		
CAM31	7/19/2024 2:01	Arctic Fox	1	0	Running		
CAM30	7/19/2024 3:11	Arctic Hare	2	0	Walking		
CAM30	7/19/2024 3:45	Arctic Fox	1	0	Running		
CAM15	7/19/2024 5:33	Bird	1	0	Walking	SACR	
CAM17	7/19/2024 5:45	Arctic Fox	1	0	Walking		
CAM14	7/19/2024 17:00	Bird	1	0	Standing	TUSW	
CAM14	7/19/2024 21:30	Bird	4	0	Feeding	TUSW	
A4	7/20/2024 0:54	Arctic Hare	1	0	Standing		
CAM31	7/20/2024 1:42	Arctic Hare	1	0	Walking		

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM04	7/20/2024 15:30	Bird	3	0	Walking	SACR	
CAM30	7/20/2024 23:10	Arctic Hare	1	0	Walking		
CAM38	7/21/2024 9:30	Bird	1	0	Feeding	SACR	
CAM38	7/21/2024 10:00	Bird	0	0	Walking	SACR	
CAM17	7/21/2024 18:58	Bird	2	2	Feeding	CCGO	
CAM17	7/21/2024 19:52	Bird	2	5	Walking	CCGO	
CAM30	7/22/2024 7:12	Bird	2	0	Walking	SACR	
CAM35	7/22/2024 8:33	Arctic Ground Squirrel	1	0	Running		
CAM34	7/23/2024 7:30	Bird	1	0	Standing	SACR	
CAM30	7/23/2024 15:45	Bird	2	2	Feeding	CCGO	
A13	7/23/2024 17:13	Bird	1	0	Flying	Gull species	
CAM30	7/24/2024 0:26	Arctic Hare	1	0	Walking		
CAM35	7/25/2024 3:00	Arctic Hare	1	0	Walking		
A10	7/25/2024 7:27	Bird	1	0	Flying	RLHA	
A9	7/25/2024 10:40	Bird	3	0	Flying		
CAM04	7/25/2024 15:17	Bird	2	0	Flying	SACR	
A9	7/25/2024 16:21	Bird	5	0	Flying	SACR	
CAM17	7/25/2024 18:52	Arctic Ground Squirrel	1	0	Running		
CAM30	7/25/2024 20:05	Bird	1	0	Walking	CCGO	
CAM15	7/26/2024 15:00	Bird	3	0	Feeding	SACR	
A8	7/26/2024 20:33	Arctic Fox	1	0	Running		
CAM01	7/27/2024 4:00	Bird	3	0	Feeding	TUSW	
CAM14	7/27/2024 6:00	Bird	3	0	Feeding	SACR	
CAM14	7/27/2024 7:30	Bird	1	0	Walking	SACR	
CAM04	7/27/2024 7:55	Bird	1	0	Flying	SACR	
CAM14	7/27/2024 11:00	Bird	3	0	Standing	CCGO	
CAM30	7/27/2024 16:53	Bird	2	0	Feeding	SACR	
CAM01	7/28/2024 9:30	Bird	3	0	Standing		
CAM14	7/28/2024 10:00	Bird	2	0	Feeding	CCGO	
CAM35	7/28/2024 11:28	Bird	1	0	Walking	SACR	
CAM30	7/29/2024 1:53	Arctic Fox	1	0	Walking		

APPENDIX A: DATA FROM WILDLIFE CAMERAS

Camera Location	DateTime	Species	Number of Adults	Number of Juveniles	Behaviour	Comments	Sex
CAM17	7/29/2024 5:40	Bird	1	0	Flying	Unknown gull	
CAM15	7/29/2024 14:41	Bird	1	0	Flying	SACR	
CAM30	7/29/2024 17:55	Bird	5	3	Feeding	CCGO	
CAM30	7/30/2024 5:35	Arctic Fox	1	0	Running		
CAM04	7/30/2024 7:30	Bird	1	0	Standing	SACR	



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APPENDIX J

Caribou Observations and Advisory, 2024

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
12-May-24	10:30:00 AM	N	38	Level 3	5000	TSF
12-May-24	10:30:00 AM	N	60	Level 3	1200	TSF
12-May-24	10:30:00 AM	N	44	Level 3	1500	TSF
12-May-24	2:30:00 PM	N	38	Level 3	800	TSF
12-May-24	2:30:00 PM	N	16	Level 3	2400	WRSF
12-May-24	2:30:00 PM	N	10	Level 3	1500	TSF
12-May-24	6:00:00 PM	N	50	Level 3	4000	TSF
12-May-24	6:00:00 PM	N	17	Level 3	2750	TSF
12-May-24	6:00:00 PM	N	15	Level 3	1600	TSF
13-May-24	4:30:00 AM	N	34	Level 3	1000	Dyno Road
13-May-24	4:30:00 AM	N	70	Level 3	2000	WRSF1
13-May-24	4:30:00 AM	N	0	Level 3	-	AWAR
13-May-24	4:30:00 AM	N	0	Level 3	-	AWAR
13-May-24	10:30:00 AM	N	50	Level 3	1000	Dyno Road
13-May-24	10:30:00 AM	N	47	Level 3	2000	WRSF1
13-May-24	10:30:00 AM	N	51	Level 3	1000	WRSF1
13-May-24	10:30:00 AM	N	12	Level 3	5000	WRSF1
13-May-24	10:30:00 AM	N	250	Level 3	1000	Weather Station
13-May-24	4:00:00 PM	N	150	Level 3	2000	Dyno Road
13-May-24	4:00:00 PM	N	400	Level 3	3000	WRSF1
13-May-24	4:00:00 PM	N	100	Level 3	4000	WRSF1
13-May-24	4:00:00 PM	N	50	Level 3	1000	Weather Station
13-May-24	4:00:00 PM	N	30	Level 3	1000	Weather Station
14-May-24	4:30:00 AM	N	30	Level 3	10	WRSF1
14-May-24	4:30:00 AM	N	100	Level 3	800	WRSF1
14-May-24	4:30:00 AM	N	24	Level 3	1000	WRSF1
14-May-24	4:30:00 AM	N	40	Level 3	1000	Weather Station
14-May-24	4:30:00 AM	N	80	Level 3	4000	Weather Station
14-May-24	4:30:00 AM	N	0	Level 3	-	AWAR KM25
14-May-24	4:30:00 AM	N	0	Level 3	-	AWAR KM19
14-May-24	4:30:00 AM	N	0	Level 3	-	AWAR KM16
14-May-24	4:30:00 AM	N	0	Level 3	-	AWAR KM12
14-May-24	4:30:00 AM	N	0	Level 3	-	AWAR KM10
14-May-24	4:30:00 AM	N	0	Level 3	-	BPR
14-May-24	10:30:00 AM	N	13	Level 3	10	WRSF1
14-May-24	10:30:00 AM	N	40	Level 3	1000	WRSF1
14-May-24	10:30:00 AM	N	4	Level 3	1000	WRSF1
14-May-24	10:30:00 AM	N	82	Level 3	1000	Weather Station
14-May-24	10:30:00 AM	N	35	Level 3	3000	WRSF1
14-May-24	2:30:00 PM	N	100	Level 3	1000	WRSF1
14-May-24	2:30:00 PM	N	15	Level 3	1000	WRSF1
14-May-24	2:30:00 PM	N	29	Level 3	500	Weather Station
14-May-24	2:30:00 PM	N	42	Level 3	1000	Weather Station
14-May-24	2:30:00 PM	N	75	Level 3	4000	WRSF1
14-May-24	2:30:00 PM	N	227	Level 3	3000	OB3
14-May-24	2:30:00 PM	N	12	Level 3	100	OB3
14-May-24	2:30:00 PM	N	12	Level 3	500	WRSF1
14-May-24	2:30:00 PM	N	73	Level 3	1500	WRSF1
15-May-24	6:00:00 AM	N	28	Level 3	1000	WRSF1
15-May-24	6:00:00 AM	N	34	Level 3	20	Camp
15-May-24	6:00:00 AM	N	4	Level 3	800	Weather Station
15-May-24	6:00:00 AM	N	0	Level 3	-	AWAR KM30
15-May-24	12:00:00 PM	N	250	Level 3	2000	WRSF1
15-May-24	12:00:00 PM	N	150	Level 3	4000	WRSF1
15-May-24	12:00:00 PM	N	150	Level 3	2000	WRSF1
15-May-24	12:00:00 PM	N	23	Level 3	20	Weather Station
15-May-24	12:00:00 PM	N	35	Level 3	50	TSF
15-May-24	12:00:00 PM	N	50	Level 3	30	TSF
15-May-24	12:00:00 PM	N	35	Level 3	2000	Weather Station

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
15-May-24	12:00:00 PM	N	0	Level 3	-	AWAR KM27
15-May-24	12:00:00 PM	N	0	Level 3	-	AWAR KM16
15-May-24	12:00:00 PM	N	0	Level 3	-	AWAR KM19
15-May-24	12:00:00 PM	N	0	Level 3	-	AWAR KM11
15-May-24	12:00:00 PM	N	15	Level 3	300	AWAR KM27
15-May-24	12:00:00 PM	N	3	Level 3	75	AWAR KM26
15-May-24	6:00:00 PM	N	62	Level 3	1000	WRSF1
15-May-24	6:00:00 PM	N	280	Level 3	1000	WRSF1
15-May-24	6:00:00 PM	N	29	Level 3	2000	WRSF1
15-May-24	6:00:00 PM	N	63	Level 3	500	WRSF3
15-May-24	6:00:00 PM	N	4	Level 3	2000	Weather Station
16-May-24	6:00:00 AM	N	250	Level 3	1000	WRSF1
16-May-24	6:00:00 AM	N	150	Level 3	1000	WRSF1
16-May-24	6:00:00 AM	N	25	Level 3	1000	WRSF1
16-May-24	6:00:00 AM	N	30	Level 3	1000	WRSF1
16-May-24	6:00:00 AM	N	34	Level 3	1000	WRSF1
16-May-24	6:00:00 AM	N	100	Level 3	1000	Weather Station
16-May-24	6:00:00 AM	N	100	Level 3	1000	Weather Station
16-May-24	6:00:00 AM	N	50	Level 3	1000	AWAR KM27
16-May-24	12:00:00 PM	N	63	Level 3	1000	WRSF3
16-May-24	12:00:00 PM	N	90	Level 3	1000	WRSF3
16-May-24	12:00:00 PM	N	32	Level 3	3000	WRSF1
16-May-24	12:00:00 PM	N	12	Level 3	5000	WRSF1
16-May-24	12:00:00 PM	N	63	Level 3	6000	WRSF1
16-May-24	12:00:00 PM	N	95	Level 3	500	WRSF1
16-May-24	12:00:00 PM	N	49	Level 3	6000	Weather Station
16-May-24	12:00:00 PM	N	4	Level 3	200	Weather Station
16-May-24	12:00:00 PM	N	53	Level 3	2000	Weather Station
16-May-24	12:00:00 PM	N	12	Level 3	2000	AWAR KM27
16-May-24	2:00:00 PM	N	88	Level 3	3000	WRSF1
16-May-24	2:00:00 PM	N	47	Level 3	2000	WRSF1
16-May-24	2:00:00 PM	N	25	Level 3	50	WRSF1
16-May-24	2:00:00 PM	N	153	Level 3	500	WRSF1
16-May-24	6:00:00 PM	N	8	Level 3	3000	WRSF1
16-May-24	6:00:00 PM	N	136	Level 3	1000	WRSF1
16-May-24	6:00:00 PM	N	36	Level 3	3500	AWAR KM26
16-May-24	6:00:00 PM	N	18	Level 3	1000	WRSF3
16-May-24	6:00:00 PM	N	44	Level 3	10	Weather Station
16-May-24	6:00:00 PM	N	44	Level 3	1000	Weather Station
16-May-24	6:00:00 PM	N	47	Level 3	800	TSF
17-May-24	6:00:00 AM	N	25	Level 3	133	WRSF1
17-May-24	6:00:00 AM	N	6	Level 3	281	AWAR KM27
17-May-24	6:00:00 AM	N	16	Level 3	970	AWAR KM27
17-May-24	6:00:00 AM	N	6	Level 3	278	Industrial Pad
17-May-24	6:00:00 AM	N	53	Level 3	463	Camp
17-May-24	6:00:00 AM	N	100	Level 3	610	Weather Station
17-May-24	6:00:00 AM	N	7	Level 3	408	Camp
17-May-24	12:00:00 PM	N	156	Level 3	300	TSF
17-May-24	12:00:00 PM	N	185	Level 3	2000	TSF
17-May-24	12:00:00 PM	N	0	Level 3	-	WRSF1
17-May-24	12:00:00 PM	N	88	Level 3	1000	WRSF1
17-May-24	12:00:00 PM	N	13	Level 3	1000	WRSF3
17-May-24	12:00:00 PM	N	42	Level 3	1000	WRSF3
17-May-24	12:00:00 PM	N	36	Level 3	1000	AWAR KM29
17-May-24	12:00:00 PM	N	17	Level 3	3000	AWAR KM29
17-May-24	12:00:00 PM	N	6	Level 3	400	3Mil Fuel
17-May-24	12:00:00 PM	N	32	Level 3	1000	Weather Station
17-May-24	6:00:00 PM	N	29	Level 3	2000	AWAR KM29
17-May-24	6:00:00 PM	N	41	Level 3	300	AWAR KM26
17-May-24	6:00:00 PM	N	0	Level 3	0	AWAR KM19
17-May-24	6:00:00 PM	N	47	Level 3	50	Weather Station
17-May-24	6:00:00 PM	N	63	Level 3	1000	Weather Station
17-May-24	6:00:00 PM	N	77	Level 3	1000	TSF
17-May-24	6:00:00 PM	N	49	Level 3	1000	WRSF1
18-May-24	6:00:00 AM	N	65	Level 3	911	WRSF1
18-May-24	6:00:00 AM	N	25	Level 3	775	WRSF1
18-May-24	6:00:00 AM	N	7	Level 3	278	WRSF1
18-May-24	6:00:00 AM	N	130	Level 3	75	Camp
18-May-24	6:00:00 AM	N	300	Level 3	341	Weather Station
18-May-24	6:00:00 AM	N	25	Level 3	390	Weather Station
18-May-24	6:00:00 AM	N	25	Level 3	30	Weather Station
18-May-24	6:00:00 AM	N	75	Level 3	914	AWAR KM30

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
18-May-24	12:00:00 PM	N	25	Level 3	3000	TSF
18-May-24	12:00:00 PM	N	26	Level 3	1000	TSF
18-May-24	12:00:00 PM	N	100	Level 3	100	TSF
18-May-24	12:00:00 PM	N	12	Level 3	500	Weather Station
18-May-24	12:00:00 PM	N	250	Level 3	1000	Weather Station
18-May-24	12:00:00 PM	N	46	Level 3	1000	WRSF1
18-May-24	12:00:00 PM	N	59	Level 3	500	AWAR KM29
18-May-24	12:00:00 PM	N	5	Level 3	20	AWAR KM25
18-May-24	12:00:00 PM	N	9	Level 3	40	AWAR KM27
18-May-24	6:00:00 PM	N	89	Level 3	2000	AWAR KM29
18-May-24	6:00:00 PM	N	0	Level 3	-	AWAR KM25
18-May-24	6:00:00 PM	N	13	Level 3	1000	AWAR KM27
18-May-24	6:00:00 PM	N	44	Level 3	3000	WRSF3
18-May-24	6:00:00 PM	N	350	Level 3	200	WRSF3
18-May-24	6:00:00 PM	N	200	Level 3	100	TSF
18-May-24	6:00:00 PM	N	600	Level 3	1000	TSF
18-May-24	6:00:00 PM	N	29	Level 3	50	TSF
18-May-24	6:00:00 PM	N	24	Level 3	200	TSF
18-May-24	6:00:00 PM	N	7	Level 3	100	WRSF1
18-May-24	6:00:00 PM	N	8	Level 3	700	WRSF1
18-May-24	6:00:00 PM	N	54	Level 3	100	WRSF1
19-May-24	6:00:00 AM	N	350	Level 3	831	WRSF1
19-May-24	6:00:00 AM	N	130	Level 3	73	Camp
19-May-24	6:00:00 AM	N	400	Level 3	30	Weather Station
19-May-24	6:00:00 AM	N	63	Level 3	305	AWAR KM30
19-May-24	12:00:00 PM	N	61	Level 3	200	AWAR KM29
19-May-24	12:00:00 PM	N	1	Level 3	30	AWAR KM27
19-May-24	12:00:00 PM	N	9	Level 3	150	AWAR KM26
19-May-24	12:00:00 PM	N	71	Level 3	3000	TSF
19-May-24	12:00:00 PM	N	200	Level 3	1000	TSF
19-May-24	12:00:00 PM	N	16	Level 3	1000	TSF
19-May-24	12:00:00 PM	N	350	Level 3	1000	Weather Station
19-May-24	12:00:00 PM	N	3	Level 3	4000	WRSF1
19-May-24	12:00:00 PM	N	47	Level 3	2000	WRSF1
19-May-24	12:00:00 PM	N	22	Level 3	500	WRSF1
19-May-24	6:00:00 PM	N	190	Level 3	100	TSF
19-May-24	6:00:00 PM	N	300	Level 3	3000	TSF
19-May-24	6:00:00 PM	N	46	Level 3	400	TSF
19-May-24	6:00:00 PM	N	3	Level 3	100	WRSF1
19-May-24	6:00:00 PM	N	159	Level 3	500	AWAR KM29
19-May-24	6:00:00 PM	N	29	Level 3	1000	AWAR KM27
19-May-24	6:00:00 PM	N	500	Level 3	500	Weather Station
20-May-24	6:00:00 AM	N	300	Level 3	484	WRSF1
20-May-24	6:00:00 AM	N	16	Level 3	946	WRSF1
20-May-24	6:00:00 AM	N	21	Level 3	374	Camp
20-May-24	6:00:00 AM	N	800	Level 3	1101	Weather Station
20-May-24	6:00:00 AM	N	13	Level 3	771	Weather Station
20-May-24	6:00:00 AM	N	5	Level 3	303	Service Road
20-May-24	6:00:00 AM	N	130	Level 3	220	AWAR KM30
20-May-24	12:00:00 PM	N	37	Level 3	150	AWAR KM30
20-May-24	12:00:00 PM	N	34	Level 3	300	AWAR KM29
20-May-24	12:00:00 PM	N	3	Level 3	10	AWAR KM29
20-May-24	12:00:00 PM	N	85	Level 3	40	AWAR KM29
20-May-24	12:00:00 PM	N	2	Level 3	10	AWAR KM29
20-May-24	12:00:00 PM	N	4	Level 3	40	AWAR KM29
20-May-24	12:00:00 PM	N	68	Level 3	100	AWAR KM28
20-May-24	12:00:00 PM	N	34	Level 3	10	AWAR KM29
20-May-24	6:00:00 PM	N	20	Level 3	200	TSF
20-May-24	6:00:00 PM	N	150	Level 3	100	TSF
20-May-24	6:00:00 PM	N	400	Level 3	3000	TSF
20-May-24	6:00:00 PM	N	35	Level 3	250	AWAR KM29
20-May-24	6:00:00 PM	N	1	Level 3	400	AWAR KM27
20-May-24	6:00:00 PM	N	14	Level 3	100	WRSF3
20-May-24	6:00:00 PM	N	35	Level 3	1000	WRSF3
20-May-24	6:00:00 PM	N	500	Level 3	2000	Weather Station
20-May-24	6:00:00 PM	N	130	Level 3	300	Vent Raise
21-May-24	6:00:00 AM	N	21	Level 3	448	WRSF1
21-May-24	6:00:00 AM	N	130	Level 3	424	WRSF1
21-May-24	6:00:00 AM	N	130	Level 3	65	Camp
21-May-24	6:00:00 AM	N	600	Level 3	1342	Weather Station
21-May-24	6:00:00 AM	N	54	Level 3	349	Service Road
21-May-24	6:00:00 AM	N	5	Level 3	578	AWAR KM28

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
21-May-24	6:00:00 AM	N	16	Level 3	2092	WRSF1
21-May-24	12:00:00 PM	N	8	Level 3	600	AWAR KM28
21-May-24	12:00:00 PM	N	18	Level 3	2000	WRSF3
21-May-24	12:00:00 PM	N	12	Level 3	4000	WRSF3
21-May-24	12:00:00 PM	N	142	Level 3	4000	WRSF3
21-May-24	12:00:00 PM	N	81	Level 3	2000	Weather Station
21-May-24	12:00:00 PM	N	73	Level 3	1500	Weather Station
21-May-24	12:00:00 PM	N	27	Level 3	1000	Weather Station
21-May-24	12:00:00 PM	N	200	Level 3	2000	Weather Station
21-May-24	12:00:00 PM	N	54	Level 3	1000	TSF
21-May-24	12:00:00 PM	N	78	Level 3	4000	TSF
21-May-24	12:00:00 PM	N	100	Level 3	2000	TSF
21-May-24	12:00:00 PM	N	19	Level 3	2000	WRSF1
21-May-24	6:00:00 PM	N	68	Level 3	500	WRSF3
21-May-24	6:00:00 PM	N	14	Level 3	1500	WRSF3
21-May-24	6:00:00 PM	N	7	Level 3	200	CP1
21-May-24	6:00:00 PM	N	16	Level 3	3500	Weather Station
21-May-24	6:00:00 PM	N	80	Level 3	2000	Weather Station
21-May-24	6:00:00 PM	N	87	Level 3	200	TSF
21-May-24	6:00:00 PM	N	100	Level 3	2000	TSF
21-May-24	6:00:00 PM	N	11	Level 3	2000	AWAR KM26
21-May-24	6:00:00 PM	N	7	Level 3	2000	AWAR KM27
21-May-24	6:00:00 PM	N	15	Level 3	1000	AWAR KM28
22-May-24	6:00:00 AM	N	24	Level 3	184	Camp
22-May-24	6:00:00 AM	N	7	Level 3	229	Service Road
22-May-24	6:00:00 AM	N	6	Level 3	252	AWAR KM28
22-May-24	12:00:00 PM	N	8	Level 3	125	AWAR KM29
22-May-24	12:00:00 PM	N	5	Level 3	300	AWAR KM28
22-May-24	12:00:00 PM	N	50	Level 3	3000	WRSF3
22-May-24	12:00:00 PM	N	30	Level 3	4000	WRSF3
22-May-24	12:00:00 PM	N	38	Level 3	500	Weather Station
22-May-24	12:00:00 PM	N	3	Level 3	2000	Weather Station
22-May-24	12:00:00 PM	N	15	Level 3	1000	TSF
22-May-24	12:00:00 PM	N	40	Level 3	2000	TSF
22-May-24	12:00:00 PM	N	7	Level 3	2000	WRSF1
22-May-24	12:00:00 PM	N	6	Level 3	6000	WRSF1
22-May-24	12:00:00 PM	N	5	Level 3	5000	WRSF1
22-May-24	12:00:00 PM	N	5	Level 3	4000	WRSF1
22-May-24	12:00:00 PM	N	20	Level 3	3000	WRSF1
22-May-24	6:00:00 PM	N	8	Level 3	100	AWAR KM28
22-May-24	6:00:00 PM	N	7	Level 3	1000	WRSF3
22-May-24	6:00:00 PM	N	4	Level 3	1000	Weather Station
22-May-24	6:00:00 PM	N	4	Level 3	4000	TSF
22-May-24	6:00:00 PM	N	8	Level 3	4000	TSF
22-May-24	6:00:00 PM	N	15	Level 3	3000	TSF
22-May-24	6:00:00 PM	N	36	Level 3	6000	WRSF1
23-May-24	6:00:00 AM	N	8	Level 3	0	Dyno Road
23-May-24	6:00:00 AM	N	8	Level 3	65	AWAR KM29
23-May-24	6:00:00 AM	N	6	Level 3	100	AWAR KM27
23-May-24	6:00:00 AM	N	10	Level 3	20	AWAR KM30
23-May-24	6:00:00 AM	N	8	Level 3	150	Dyno Road
23-May-24	6:00:00 AM	N	20	Level 3	3000	WRSF1
23-May-24	6:00:00 AM	N	10	Level 3	3000	WRSF1
23-May-24	8:30:00 AM	N	1	Level 3	300	TSF
23-May-24	2:00:00 PM	N	1	Level 3	250	AWAR KM26
23-May-24	2:00:00 PM	N	1	Level 3	100	Dyno road
23-May-24	6:00:00 PM	N	0	Level 3	-	WRSF1
23-May-24	6:00:00 PM	N	0	Level 3	-	WRSF3
23-May-24	6:00:00 PM	N	0	Level 3	-	Explo
23-May-24	6:00:00 PM	N	0	Level 3	-	Weather Station
23-May-24	6:00:00 PM	N	0	Level 3	-	Camp
23-May-24	6:00:00 PM	N	0	Level 3	-	Dyno Road
23-May-24	6:00:00 PM	N	0	Level 3	-	AWAR KM27
23-May-24	6:00:00 PM	N	0	Level 3	-	AWAR KM19
23-May-24	6:00:00 PM	N	0	Level 3	-	AWAR KM10
24-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
24-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
24-May-24	6:00:00 AM	N	0	Level 2	-	Explo
24-May-24	6:00:00 AM	N	0	Level 2	-	AWAR
24-May-24	12:00:00 PM	N	15	Level 2	5000	AWAR KM27
24-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
24-May-24	6:00:00 PM	N	10	Level 2	5000	WRSF1

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
24-May-24	6:00:00 PM	N	0	Level 2	-	TSF
24-May-24	6:00:00 PM	N	0	Level 2	-	AWAR
24-May-24	6:00:00 PM	N	0	Level 2	-	Site
25-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
25-May-24	6:00:00 AM	N	0	Level 2	-	Dyno Road
25-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
25-May-24	6:00:00 AM	N	0	Level 2	-	Explo
25-May-24	6:00:00 AM	N	0	Level 2	-	AWAR
25-May-24	12:00:00 PM	N	0	Level 2	-	AWAR
25-May-24	12:00:00 PM	N	0	Level 2	-	WRSF3
25-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
25-May-24	12:00:00 PM	N	0	Level 2	-	TSF
25-May-24	12:00:00 PM	N	0	Level 2	-	Dyno Road
25-May-24	1:30:00 PM	N	3	Level 2	250	Pump Road
25-May-24	6:00:00 PM	N	0	Level 2	-	WRSF1
25-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
25-May-24	6:00:00 PM	N	0	Level 2	-	Explo
26-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
26-May-24	6:00:00 AM	N	0	Level 2	-	Dyno Road
26-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
26-May-24	6:00:00 AM	N	0	Level 2	-	Explo
26-May-24	6:00:00 AM	N	0	Level 2	-	AWAR
26-May-24	12:00:00 PM	N	0	Level 2	-	Dyno Road
26-May-24	12:00:00 PM	N	0	Level 2	-	AWAR
26-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
26-May-24	12:00:00 PM	N	0	Level 2	-	WRSF3
26-May-24	12:00:00 PM	N	0	Level 2	-	Explo
26-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM27
26-May-24	6:00:00 PM	N	0	Level 2	-	WRSF1
26-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
26-May-24	6:00:00 PM	N	0	Level 2	-	Explo
26-May-24	6:00:00 PM	N	0	Level 2	-	AWAR
27-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
27-May-24	6:00:00 AM	N	0	Level 2	-	Dyno Road
27-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
27-May-24	6:00:00 AM	N	0	Level 2	-	Explo
27-May-24	6:00:00 AM	N	0	Level 2	-	AWAR
27-May-24	12:00:00 PM	N	0	Level 2	-	Weather Station
27-May-24	12:00:00 PM	N	0	Level 2	-	Dyno Road
27-May-24	12:00:00 PM	N	0	Level 2	-	TSF
27-May-24	12:00:00 PM	N	0	Level 2	-	AWAR
27-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
27-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM27
27-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM16
27-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
27-May-24	6:00:00 PM	N	0	Level 2	-	EXPLO
27-May-24	6:00:00 PM	N	0	Level 2	-	WRSF1
28-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
28-May-24	6:00:00 AM	N	0	Level 2	-	Dyno Road
28-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
28-May-24	6:00:00 AM	N	0	Level 2	-	WRSF3
28-May-24	6:00:00 AM	N	0	Level 2	-	AWAR
28-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
28-May-24	12:00:00 PM	N	0	Level 2	-	WRSF3
28-May-24	12:00:00 PM	N	0	Level 2	-	Explo
28-May-24	12:00:00 PM	N	0	Level 2	-	RIBR
28-May-24	12:00:00 PM	N	0	Level 2	-	AWAR
28-May-24	6:00:00 PM	N	0	Level 2	-	WRSF1
28-May-24	6:00:00 PM	N	0	Level 2	-	TSF
28-May-24	6:00:00 PM	N	0	Level 2	-	Dyno Road
28-May-24	6:00:00 PM	N	0	Level 2	-	Weather Station
28-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
28-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM10
28-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM16
28-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM27
29-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM30
29-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM27
29-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM16
29-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM10
29-May-24	6:00:00 AM	N	0	Level 2	-	WRSF3
29-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
29-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
29-May-24	12:00:00 PM	N	0	Level 2	-	AWAR
29-May-24	12:00:00 PM	N	0	Level 2	-	RIBR
29-May-24	12:00:00 PM	N	0	Level 2	-	Dyno Road
29-May-24	12:00:00 PM	N	0	Level 2	-	TSF
29-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
29-May-24	12:00:00 PM	N	0	Level 2	-	Weather Station
29-May-24	12:00:00 PM	N	0	Level 2	-	WRSF3
29-May-24	6:00:00 PM	N	0	Level 2	-	Dyno Road
29-May-24	6:00:00 PM	N	0	Level 2	-	TSF
29-May-24	6:00:00 PM	N	0	Level 2	-	WRSF1
29-May-24	6:00:00 PM	N	0	Level 2	-	Weather Station
29-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM27
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM19
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM16
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM12
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM10
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM5
29-May-24	6:00:00 PM	N	0	Level 2	-	RIBR
29-May-24	6:00:00 PM	N	0	Level 2	-	AWAR
30-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM27
30-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM16
30-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM10
30-May-24	6:00:00 AM	N	0	Level 2	-	WRSF3
30-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
30-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
30-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
30-May-24	12:00:00 PM	N	0	Level 2	-	WRSF3
30-May-24	12:00:00 PM	N	0	Level 2	-	EXPLO
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM30
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM26
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM20
30-May-24	12:00:00 PM	N	4	Level 2	800	AWAR KM19
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM16
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM12
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM10
30-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM5
30-May-24	12:00:00 PM	N	0	Level 2	-	RIBR
30-May-24	6:00:00 PM	N	0	Level 2	-	Dyno Road
30-May-24	6:00:00 PM	N	0	Level 2	-	TSF
30-May-24	6:00:00 PM	N	0	Level 2	-	WRSF1
30-May-24	6:00:00 PM	N	0	Level 2	-	WRSF3
30-May-24	6:00:00 PM	N	0	Level 2	-	Weather Station
30-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM25
30-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM19
30-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM16
30-May-24	6:00:00 PM	N	0	Level 2	-	AWAR KM10
30-May-24	6:00:00 PM	N	0	Level 2	-	RIBR
31-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM27
31-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM19
31-May-24	6:00:00 AM	N	0	Level 2	-	AWAR KM10
31-May-24	6:00:00 AM	N	0	Level 2	-	WRSF3
31-May-24	6:00:00 AM	N	0	Level 2	-	WRSF1
31-May-24	6:00:00 AM	N	0	Level 2	-	Weather Station
31-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM19
31-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM12
31-May-24	12:00:00 PM	N	0	Level 2	-	RIBR
31-May-24	12:00:00 PM	N	0	Level 2	-	AWAR KM8
31-May-24	12:00:00 PM	N	0	Level 2	-	Explo
31-May-24	12:00:00 PM	N	0	Level 2	-	WRSF1
31-May-24	12:00:00 PM	N	0	Level 2	-	TSF
31-May-24	12:00:00 PM	N	0	Level 2	-	TSF
1-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM27
1-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM19
1-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM10
1-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF3
1-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
1-Jun-24	6:00:00 AM	N	0	Level 1	-	Weather Station
1-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM25
1-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM19
1-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM13
1-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM12

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
1-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM10
1-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM8
1-Jun-24	12:00:00 PM	N	0	Level 1	-	RIBR
1-Jun-24	12:00:00 PM	N	0	Level 1	-	Dyno Road
1-Jun-24	12:00:00 PM	N	0	Level 1	-	TSF
1-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
1-Jun-24	12:00:00 PM	N	0	Level 1	-	Weather Station
2-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM27
2-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM19
2-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM10
2-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF3
2-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
2-Jun-24	6:00:00 AM	N	0	Level 1	-	Weather Station
2-Jun-24	12:00:00 PM	N	0	Level 1	-	RIBR
2-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM7
2-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM10
2-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM16
2-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM19
2-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM19
2-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM24
2-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
2-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
2-Jun-24	12:00:00 PM	N	0	Level 1	-	TSF
2-Jun-24	12:00:00 PM	N	0	Level 1	-	TSF
2-Jun-24	6:00:00 PM	N	0	Level 1	-	RIBR
2-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM10
2-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM19
2-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM23
2-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
2-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
2-Jun-24	6:00:00 PM	N	0	Level 1	-	TSF
2-Jun-24	6:00:00 PM	N	0	Level 1	-	TSF
3-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM27
3-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM19
3-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM10
3-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF3
3-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
3-Jun-24	6:00:00 AM	N	0	Level 1	-	Weather Station
3-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM12
3-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM16
3-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM19
3-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM20
3-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM23
3-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
3-Jun-24	12:00:00 PM	N	0	Level 1	-	TSF
3-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM12
3-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM16
3-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM17
3-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM19
3-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM23
4-Jun-24	6:00:00 AM	N	0	Level 1	-	Weather Station
4-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
4-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF3
4-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM27
4-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM19
4-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM10
4-Jun-24	6:00:00 PM	N	0	Level 1	-	Weather Station
4-Jun-24	6:00:00 PM	N	0	Level 1	-	TSF
4-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM12
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM16
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM17
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM19
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM20
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM24
5-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM27
5-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
5-Jun-24	6:00:00 AM	N	0	Level 1	-	TSF
5-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
5-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
5-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
5-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
5-Jun-24	12:00:00 PM	N	0	Level 1	-	WRSF1
5-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM29
5-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM27
5-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM25
5-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM19
5-Jun-24	12:00:00 PM	N	0	Level 1	-	AWAR KM12
5-Jun-24	12:00:00 PM	N	0	Level 1	-	Weather Station
5-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM29
5-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM27
5-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM19
5-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM16
5-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM12
5-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
5-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
6-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
6-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM16
6-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM23
6-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM27
6-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
6-Jun-24	6:00:00 PM	N	0	-	-	TSF
7-Jun-24	6:00:00 AM	N	0	-	-	TSF
7-Jun-24	6:00:00 AM	N	0	-	-	TSF
7-Jun-24	6:00:00 AM	N	0	-	-	TSF
7-Jun-24	6:00:00 AM	N	0	-	-	TSF
7-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
7-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM16
7-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM19
7-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM25
7-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
7-Jun-24	6:00:00 PM	N	0	-	-	TSF
8-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
8-Jun-24	6:00:00 AM	N	0	-	-	TSF
8-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM27
8-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM24
8-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM19
8-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
8-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM16
8-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM25
8-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
8-Jun-24	6:00:00 PM	N	0	-	-	TSF
9-Jun-24	6:00:00 AM	N	0	-	-	TSF
9-Jun-24	6:00:00 AM	N	0	-	-	TSF
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM26
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM23
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM20
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM18
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM15
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM17
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM12
9-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM17
9-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
9-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM16
9-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM19
9-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM24
9-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
9-Jun-24	6:00:00 PM	N	0	-	-	TSF
10-Jun-24	6:00:00 AM	N	0	-	-	TSF
10-Jun-24	6:00:00 AM	N	0	-	-	TSF
10-Jun-24	6:00:00 AM	N	0	-	-	TSF
10-Jun-24	6:00:00 AM	N	0	-	-	TSF
10-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM27
10-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM24
10-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM20
10-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM18
10-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM16
10-Jun-24	6:00:00 PM	N	0	-	-	RIBR
10-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
10-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM18
10-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM24
10-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM27
10-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
10-Jun-24	6:00:00 PM	N	0	-	-	TSF

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
10-Jun-24	4:30:00 PM	N	1	-	Unknown	AWAR KM17
11-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
11-Jun-24	6:00:00 AM	N	0	-	-	TSF
11-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM12
11-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM14
11-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM16
11-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM18
11-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM24
11-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM27
11-Jun-24	2:00:00 PM	N	1	-	3000	AWAR KM20
11-Jun-24	2:30:00 PM	N	1	-	1000	AWAR KM23
11-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM27
11-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM20
11-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM16
11-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
11-Jun-24	6:00:00 PM	N	0	-	-	WRSF3
11-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
11-Jun-24	6:00:00 PM	N	0	-	-	TSF
12-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 AM	N	0	-	-	Weather Station
12-Jun-24	6:00:00 AM	N	0	-	-	AWAR
12-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 PM	N	0	-	-	WRSF1
12-Jun-24	6:00:00 PM	N	0	-	-	Weather Station
13-Jun-24	6:00:00 AM	N	0	-	-	TSF
13-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
13-Jun-24	6:00:00 AM	N	0	-	-	WRSF3
13-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM30
13-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM27
13-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM16
13-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM12
13-Jun-24	6:00:00 PM	N	0	-	-	TSF
13-Jun-24	6:00:00 PM	N	0	-	-	TSF
13-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM29
14-Jun-24	8:00:00 AM	N	0	-	-	WRSF1
15-Jun-24	6:00:00 AM	N	0	-	-	TSF
15-Jun-24	6:00:00 AM	N	0	-	-	WRSF1
15-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM27
15-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM16
15-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM12
16-Jun-24	6:00:00 PM	N	3000	-	8000	WRSF1
17-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM20
17-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM20
18-Jun-24	6:00:00 AM	N	0	-	-	AWAR KM12
17-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM24
18-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM27
17-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM16
18-Jun-24	6:00:00 PM	N	0	-	-	AWAR KM12
19-Jun-24	6:00:00 PM	N	0	Level 1	-	Pump road
19-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
19-Jun-24	6:00:00 AM	N	0	Level 1	-	AWAR KM30
19-Jun-24	6:00:00 AM	N	0	Level 1	-	WRSF1
19-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM27
19-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM22
19-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM16
20-Jun-24	6:00:00 AM	N	3000	Level 1	3200	AWAR KM27
20-Jun-24	6:00:00 AM	N	3	Level 1	1800	WRSF1
20-Jun-24	6:00:00 PM	N	3000	Level 1	8000	AWAR KM12
20-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM27
20-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM16
20-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM19
20-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM12
20-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
21-Jun-24	6:00:00 AM	N	3000	Level 1	8000	AWAR KM27
21-Jun-24	6:00:00 AM	N	3500	Level 1	9500	AWAR KM20
21-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM26
21-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM24
21-Jun-24	6:00:00 PM	N	3000	Level 1	5000	AWAR KM20

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
21-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM17
21-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM5
21-Jun-24	6:00:00 PM	N	0	Level 1	-	WRSF1
21-Jun-24	6:00:00 PM	N	0	Level 1	-	AWAR KM12
21-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF1
21-Jun-24	6:00:00 AM	N	0	Level 2	-	AWAR KM20
21-Jun-24	6:00:00 PM	N	2	Level 2	30	AWAR KM27
21-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM20
21-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM12
21-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF1
23-Jun-24	6:00:00 AM	N	3	Level 2	300	AWAR KM22
23-Jun-24	6:00:00 AM	N	2	Level 2	500	AWAR KM20
23-Jun-24	6:00:00 AM	N	3000	Level 2	9500	AWAR KM20
23-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF1
23-Jun-24	6:00:00 AM	N	2	Level 2	100	EXPLO
23-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM27
23-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM12
23-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM20
23-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF1
24-Jun-24	6:00:00 AM	N	3000	Level 2	10000	AWAR KM20
24-Jun-24	6:00:00 AM	N	5000	Level 2	6000	AWAR KM20
24-Jun-24	6:00:00 AM	N	500	Level 2	10000	WRSF1
24-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM27
24-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM20
24-Jun-24	6:00:00 PM	N	2	Level 2	4000	AWAR KM12
24-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM20
24-Jun-24	6:00:00 PM	N	20	Level 2	3000	AWAR KM25
24-Jun-24	6:00:00 PM	N	16	Level 2	2100	AWAR KM27
24-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF1
25-Jun-24	6:00:00 AM	N	1	Level 2	700	AWAR KM27
25-Jun-24	6:00:00 AM	N	500	Level 2	6200	WRSF1
25-Jun-24	6:00:00 AM	N	4	Level 2	1000	AWAR KM20
25-Jun-24	12:00:00 PM	N	1	Level 2	2000	AWAR KM19
25-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM5
25-Jun-24	12:00:00 PM	N	4	Level 2	750	EXPLO
25-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM12
25-Jun-24	12:00:00 PM	N	200	Level 2	8000	AWAR KM25
25-Jun-24	12:00:00 PM	N	8	Level 2	1200	WRSF1
25-Jun-24	6:00:00 PM	N	800	Level 2	6000	WRSF1
25-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM16
25-Jun-24	6:00:00 PM	N	8	Level 2	100	AWAR KM25
25-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF1
25-Jun-24	6:00:00 PM	N	1	Level 2	75	AWAR KM19
25-Jun-24	6:00:00 PM	N	7	Level 2	100	AWAR KM24
26-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF1
26-Jun-24	6:00:00 AM	N	6000	Level 2	6500	AWAR KM20
26-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF3
26-Jun-24	6:00:00 AM	N	1	Level 2	200	AWAR KM19
26-Jun-24	6:00:00 AM	N	0	Level 2	-	EXPLO
26-Jun-24	6:00:00 AM	N	5000	Level 2	6500	AWAR KM20
26-Jun-24	6:00:00 AM	N	150	Level 2	3500	AWAR KM15
26-Jun-24	12:00:00 PM	N	1	Level 2	1500	WRSF1
26-Jun-24	12:00:00 PM	N	2	Level 2	200	WRSF1
26-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM12
26-Jun-24	12:00:00 PM	N	20	Level 2	3000	WRSF1
26-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM27
26-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF3
27-Jun-24	6:00:00 AM	N	3	Level 2	4500	WRSF1
27-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF3
27-Jun-24	6:00:00 AM	N	5	Level 2	1500	AWAR KM27
27-Jun-24	6:00:00 AM	N	1	Level 2	200	AWAR KM22
27-Jun-24	6:00:00 AM	N	0	Level 2	-	EXPLO
27-Jun-24	12:00:00 PM	N	0	Level 2	-	WRSF1
27-Jun-24	12:00:00 PM	N	0	Level 2	-	WRSF3
27-Jun-24	12:00:00 PM	N	0	Level 2	-	EXPLO
27-Jun-24	12:00:00 PM	N	0	Level 2	-	Weather Station
27-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM27
27-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM10
27-Jun-24	6:00:00 PM	N	0	Level 2	-	EXPLO
28-Jun-24	6:00:00 AM	N	0	Level 2	-	TSF
28-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF3
28-Jun-24	6:00:00 AM	N	0	Level 2	-	EXPLO

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
28-Jun-24	12:00:00 PM	N	0	Level 2	-	WRSF1
28-Jun-24	12:00:00 PM	N	0	Level 2	-	WRSF3
28-Jun-24	12:00:00 PM	N	0	Level 2	-	EXPLO
28-Jun-24	12:00:00 PM	N	5	Level 2	1000	AWAR KM16
28-Jun-24	12:00:00 PM	N	0	Level 2	-	Weather Station
28-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM10
28-Jun-24	6:00:00 PM	N	0	Level 2	-	TSF
29-Jun-24	6:00:00 AM	N	0	Level 2	-	TSF
29-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF3
29-Jun-24	6:00:00 AM	N	0	Level 2	-	EXPLO
29-Jun-24	12:00:00 PM	N	2	Level 2	50	AWAR KM28
29-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM12
29-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM16
29-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM20
29-Jun-24	12:00:00 PM	N	0	Level 2	-	EXPLO
29-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF1
29-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF1
29-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF3
29-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF3
29-Jun-24	6:00:00 PM	N	0	Level 2	-	WRSF3
29-Jun-24	6:00:00 PM	N	0	Level 2	-	Weather Station
29-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM12
29-Jun-24	6:00:00 PM	N	0	Level 2	-	TSF
30-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF1
30-Jun-24	6:00:00 AM	N	0	Level 2	-	WRSF3
30-Jun-24	6:00:00 AM	N	0	Level 2	-	EXPLO
30-Jun-24	12:00:00 PM	N	8	Level 2	1	AWAR KM25
30-Jun-24	12:00:00 PM	N	10	Level 2	200	AWAR KM23
30-Jun-24	12:00:00 PM	N	0	Level 2	-	TSF
30-Jun-24	12:00:00 PM	N	0	Level 2	-	WRSF3
30-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM18
30-Jun-24	12:00:00 PM	N	0	Level 2	-	EXPLO
30-Jun-24	12:00:00 PM	N	0	Level 2	-	AWAR KM22
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM28
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM25
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM20
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM19
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM15
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM12
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM16
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM19
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM24
30-Jun-24	6:00:00 PM	N	0	Level 2	-	AWAR KM29
1-Jul-24	6:00:00 AM	N	0	Level 2	-	WRSF1
1-Jul-24	6:00:00 AM	N	0	Level 2	-	WRSF3
1-Jul-24	6:00:00 AM	N	0	Level 2	-	EXPLO
1-Jul-24	12:00:00 PM	N	0	Level 2	-	AWAR KM29
2-Jul-24	6:00:00 AM	N	0	Level 2	-	WRSF1
2-Jul-24	6:00:00 AM	N	0	Level 2	-	WRSF3
2-Jul-24	6:00:00 AM	N	0	Level 2	-	EXPLO
2-Jul-24	12:00:00 PM	N	1	Level 2	0	AWAR KM7
2-Jul-24	12:00:00 PM	N	0	Level 2	-	EXPLO
2-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
2-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
2-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF1
2-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF1
2-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF3
2-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF3
2-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF3
2-Jul-24	6:00:00 PM	N	0	Level 2	-	RIBR KM4
2-Jul-24	6:00:00 PM	N	0	Level 2	-	Weather Station
3-Jul-24	6:00:00 AM	N	0	Level 1	-	WRSF1
3-Jul-24	6:00:00 AM	N	0	Level 1	-	WRSF3
3-Jul-24	6:00:00 AM	N	0	Level 1	-	EXPLO
3-Jul-24	12:00:00 PM	N	3	Level 1	800	AWAR KM14
3-Jul-24	12:00:00 PM	N	0	Level 1	-	EXPLO
3-Jul-24	6:00:00 PM	N	0	Level 1	-	RIBR KM3
3-Jul-24	6:00:00 PM	N	0	Level 1	-	TSF
4-Jul-24	6:00:00 AM	N	0	Level 1	-	EXPLO
4-Jul-24	12:00:00 PM	N	0	Level 1	-	EXPLO
4-Jul-24	6:00:00 PM	N	1	Level 1	35	AWAR KM28
4-Jul-24	6:00:00 PM	N	0	Level 1	-	EXPLO

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
5-Jul-24	6:00:00 AM	N	0	Level 1	-	TSF
5-Jul-24	6:00:00 AM	N	0	Level 1	-	TSF
5-Jul-24	6:00:00 AM	N	0	Level 1	-	TSF
5-Jul-24	6:00:00 AM	N	1	Level 1	20	AWAR KM23
5-Jul-24	6:00:00 PM	N	0	Level 1	-	TSF
6-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
6-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
6-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
6-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
6-Jul-24	6:00:00 AM	N	0	Level 2	-	EXPLO
6-Jul-24	6:00:00 PM	N	1	Level 2	50	Dyno Road
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	12:00:00 PM	N	0	Level 2	-	AWAR KM10
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
7-Jul-24	6:00:00 PM	N	0	Level 2	-	Weather Station
8-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 AM	N	0	Level 2	-	Weather Station
8-Jul-24	12:00:00 PM	N	0	Level 2	-	Weather Station
8-Jul-24	12:00:00 PM	N	0	Level 2	-	TSF
8-Jul-24	12:00:00 PM	N	0	Level 2	-	TSF
8-Jul-24	12:00:00 PM	N	0	Level 2	-	TSF
8-Jul-24	12:00:00 PM	N	0	Level 2	-	WRSF1
8-Jul-24	12:00:00 PM	N	0	Level 2	-	WRSF1
8-Jul-24	12:00:00 PM	N	0	Level 2	-	WRSF3
8-Jul-24	12:00:00 PM	N	0	Level 2	-	WRSF3
8-Jul-24	12:00:00 PM	N	0	Level 2	-	WRSF3
8-Jul-24	12:00:00 PM	N	0	Level 2	-	AWAR KM29
8-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
8-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF1
8-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF1
8-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF3
8-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF3
8-Jul-24	6:00:00 PM	N	0	Level 2	-	WRSF3
8-Jul-24	6:00:00 PM	N	0	Level 2	-	Weather Station
8-Jul-24	6:00:00 PM	N	0	Level 2	-	AWAR KM29
9-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
9-Jul-24	6:00:00 AM	N	0	Level 2	-	AWAR KM27
9-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
9-Jul-24	6:00:00 AM	N	0	Level 2	-	AWAR KM25
9-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
9-Jul-24	6:00:00 AM	N	0	Level 2	-	TSF
9-Jul-24	6:00:00 AM	N	0	Level 2	-	AWAR KM20
9-Jul-24	6:00:00 AM	N	0	Level 2	-	Weather Station
9-Jul-24	6:00:00 AM	N	0	Level 2	-	AWAR KM14
9-Jul-24	6:00:00 AM	N	0	Level 2	-	AWAR KM12
9-Jul-24	6:00:00 AM	N	0	Level 2	-	AWAR KM10
9-Jul-24	12:00:00 PM	N	1	Level 2	750	TSF
9-Jul-24	12:00:00 PM	N	0	Level 2	-	TSF
9-Jul-24	12:00:00 PM	N	0	Level 2	-	AWAR KM29
9-Jul-24	6:00:00 PM	N	1	Level 2	50	TSF
9-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
9-Jul-24	6:00:00 PM	N	0	Level 2	-	TSF
9-Jul-24	6:00:00 PM	N	0	Level 2	-	AWAR KM29
9-Jul-24	6:00:00 PM	N	0	Level 2	-	Weather Station
10-Jul-24	6:00:00 AM	N	0	-	-	AWAR KM12
10-Jul-24	6:00:00 AM	N	0	-	-	TSF
10-Jul-24	12:00:00 PM	N	0	-	-	WRSF1
10-Jul-24	12:00:00 PM	N	0	-	-	AWAR KM12
10-Jul-24	12:00:00 PM	N	0	-	-	WRSF1
10-Jul-24	12:00:00 PM	N	0	-	-	Weather Station
10-Jul-24	6:00:00 PM	N	0	-	-	TSF
10-Jul-24	6:00:00 PM	N	0	-	-	TSF

Date	Time of Survey	Road Closure in Effect (Y/N)	Estimated Number of Caribou per Herd	Alert Level	Closest Estimated Distance from Site/AWAR (m)	Location
10-Jul-24	6:00:00 PM	N	0	-	-	TSF
10-Jul-24	6:00:00 PM	N	0	-	-	TSF
10-Jul-24	6:00:00 PM	N	0	-	-	AWAR KM27
10-Jul-24	6:00:00 PM	N	0	-	-	TSF
10-Jul-24	6:00:00 PM	N	0	-	-	AWAR KM20
10-Jul-24	6:00:00 PM	N	0	-	-	AWAR KM12
11-Jul-24	6:00:00 AM	N	0	-	-	TSF
11-Jul-24	6:00:00 AM	N	0	-	-	TSF
11-Jul-24	6:00:00 AM	N	0	-	-	TSF
11-Jul-24	6:00:00 AM	N	0	-	-	TSF
11-Jul-24	6:00:00 AM	N	0	-	-	TSF
11-Jul-24	6:00:00 AM	N	0	-	-	TSF
11-Jul-24	6:00:00 AM	N	0	-	-	AWAR KM12
11-Jul-24	12:00:00 PM	N	0	-	-	WRSF1
11-Jul-24	12:00:00 PM	N	0	-	-	WRSF1
11-Jul-24	12:00:00 PM	N	0	-	-	Weather Station
11-Jul-24	12:00:00 PM	N	0	-	-	AWAR KM8

APPENDIX K

2024 Calving Range

TECHNICAL MEMORANDUM

DATE 20 March 2025 **Project No.** CA0037600.7607-MEL2025_007-TM-Rev0

TO Sara Savoie
Agnico Eagle Mines Ltd.

FROM Dan Coulton, Corey De La Mare **EMAIL daniel.coulton@wsp.com**

2024 CALVING RANGE

1.0 BACKGROUND

During 2024, the Terrestrial Advisory Group (TAG) requested that Agnico Eagle Mines Limited present Qamanirjuaq caribou calving range maps based on caribou telemetry as part of annual TEMMP reporting. Specifically, the Kivalliq Inuit Association (KivIA) requested that 50%, 80%, and 95% kernel density contours of the calving range be mapped. This technical memorandum summarizes the development of these 2024 calving range kernel density maps.

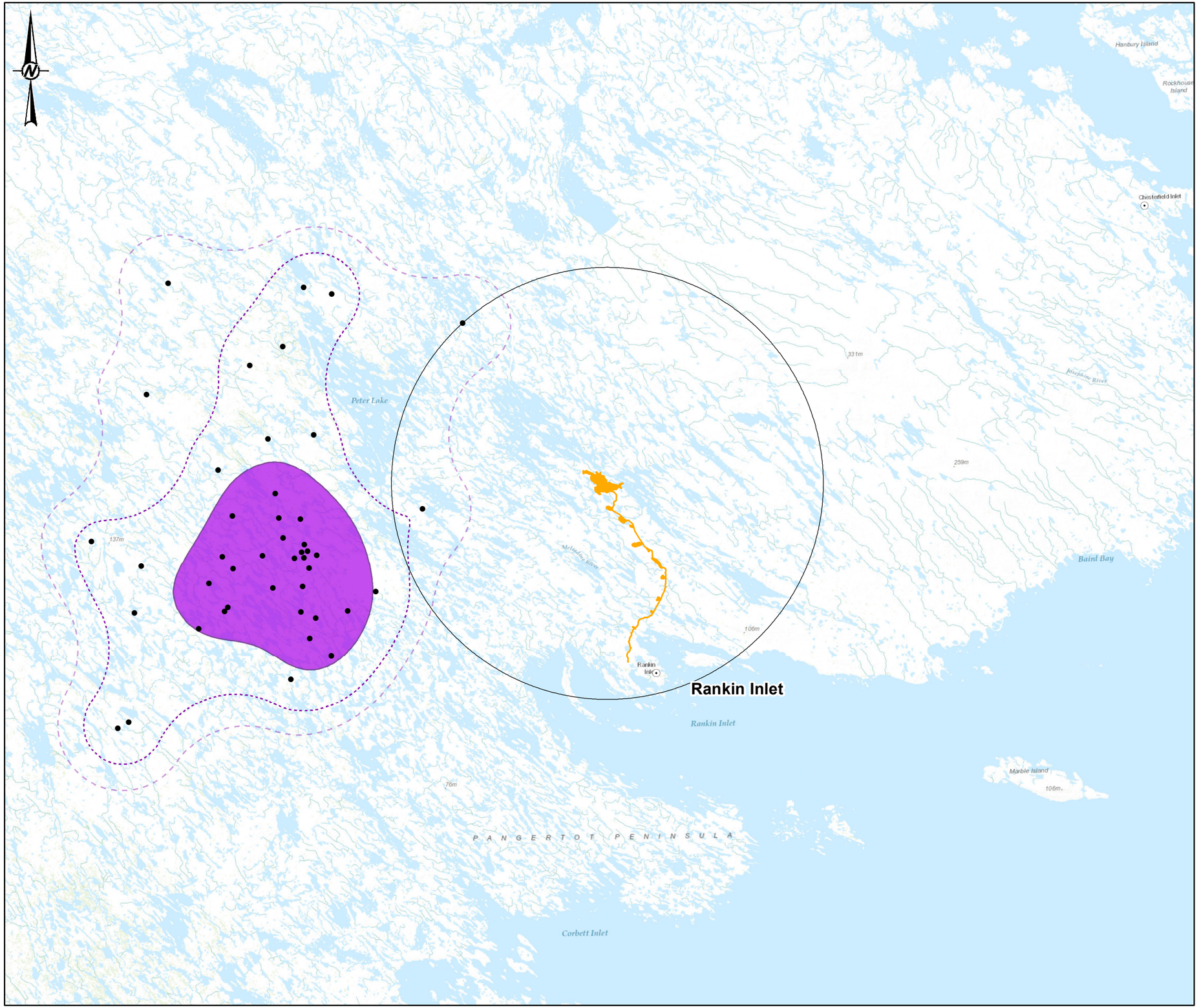
2.0 METHODS

Qamanirjuaq (QAM) caribou telemetry data were provided by the Government of Nunavut. Telemetry data were first constrained to those collected from the QAM herd in 2024, then resampled with the *amt* package (Signer et al. 2019) in *R* (R Core Team 2023), which cleans the telemetry data such that only one relocation is available per fix interval (i.e., four-hour period) and removes any duplicate locations. Movement trajectories for each QAM caribou were visualized to screen for potential mortality events. No mortality events were identified. The 'Individual-Based Method', or IBM was applied to predict calving dates for QAM females in 2024 (DeMars et al. 2013; Cameron et al. 2018). Consistent with Cameron et al. (2018), caribou movements from 19 May 2024 to 15 July 2024 were used for estimating an IBM model. Two sets of constraints were stipulated when executing the IBM. First, an *int* = three days, minimum *kcon* = five days, and maximum *kcon* = 21 days were applied. Second, the telemetry data used as input in the IBM were constrained to 19 May 2024 to 15 July 2024. Finally, Akaike's Information Criterion (AIC; Burnham and Anderson 2002) values for each fitted IBM model were used to determine which caribou calved in 2024.

Calving ranges for 2024 were developed using 'Calving Site Method', which was the method applied to derive a 2023 calving range (WSP 2024). Using the *adehabitatHR* (Calenge 2006) package in *R* (R Core Team 2023) and a smoothing parameter of 4,773 m, a KDE was developed per spatial dataset. The 4,773 m smoothing parameter was selected because it was the average of the 'href' and 'lscv' smoothing parameters. If collar locations are clumped, the 'href' method tends to over-smooth the data, resulting in a positively biased (i.e., larger) range (Kie 2013). The 'lscv' method tends to under-smooth the data, resulting in a negatively biased (i.e., smaller) range, often with several disjunct polygons (Kie 2013). Thus, the average of 6,567 m and 2,978 m, which were determined by the 'href' and 'lscv' methods, respectively, was used. Three utilization distributions (i.e., 50%, 80%, and 95%, as recommended by the TAG) were calculated and mapped.

3.0 RESULTS

A total of 53 caribou from the QAM herd available in 2024 to test for calving events. Of these caribou, three had data of insufficient quality to fit an IBM model (e.g., too many missing fixes or inconclusive results). Of the remaining 50 caribou with IBM models, 44 females (86%) had calves, and six females (13%) did not have calves. All 44 calving events were used to inform the 95%, 80%, and 50% utilization distribution (UD) calving ranges for 2024 (Figure 1). The 50% UD for the 2024 QAM calving range overlapped the southern edge of the equivalent calving ranges for 2020 and 2022 (Figure 2).



LEGEND

- 2024 CALVING LOCATION
- COMMUNITY
- MELIADINE DEVELOPED PROJECT FOOTPRINT
- MELIADINE REGIONAL STUDY AREA
- 2024 CALVING RANGE - 95% KDE
- 2024 CALVING RANGE - 80% KDE
- 2024 CALVING RANGE - 50% KDE



0 10 20

1:500,000 KILOMETRES

REFERENCE(S)

1. TOPOGRAPHIC MAP © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
2. DATUM: NAD83 PROJECTION UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

QAMANIRJUAQ CARIBOU CALVING RANGES FOR 2024

CONSULTANT

wsp

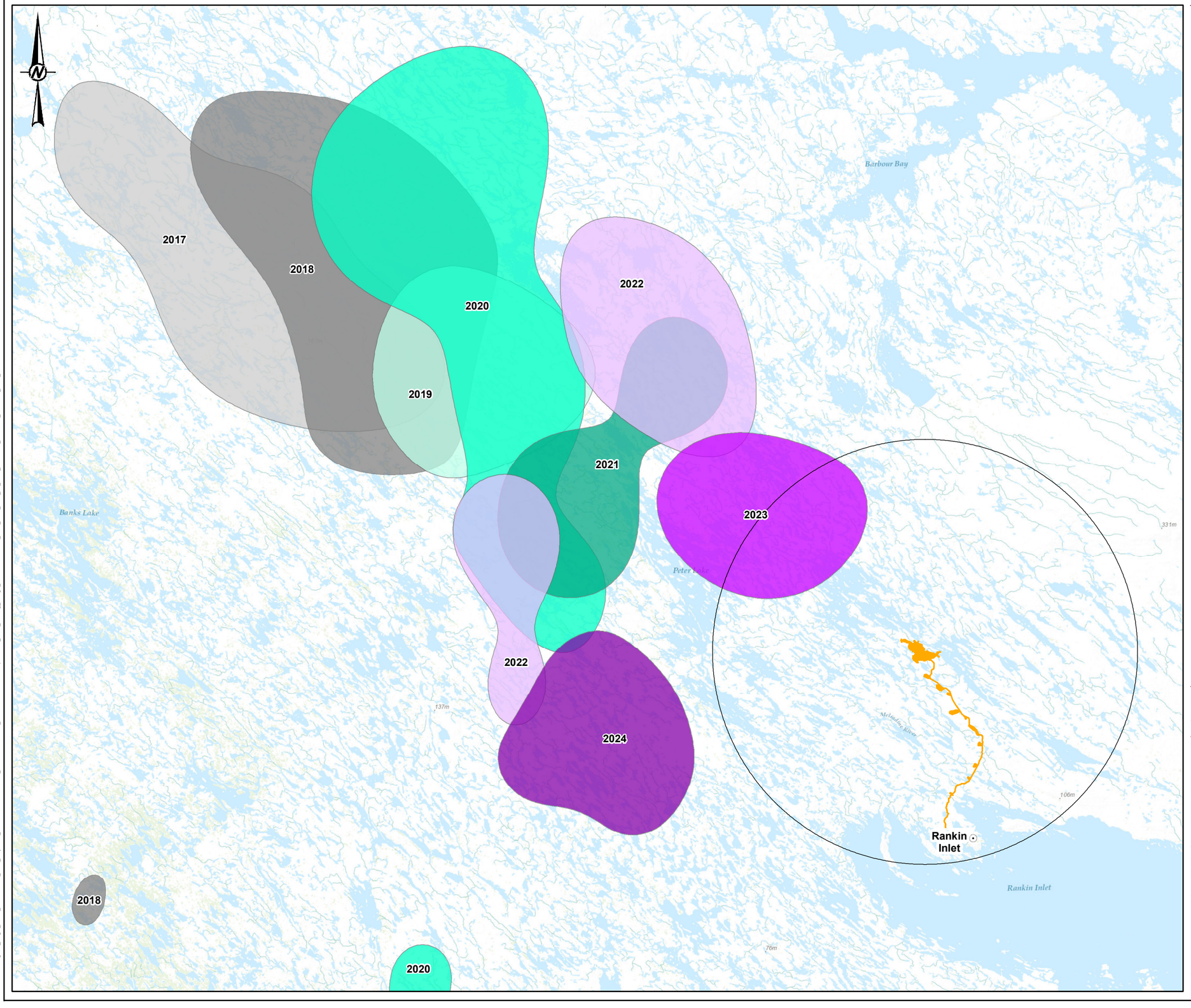
YYYY-MM-DD	2025-03-19
DESIGNED	DC
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0037600.7607	2000/2200	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

0 25mm

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LEGEND

- COMMUNITY
- MELIADINE DEVELOPED PROJECT FOOTPRINT
- MELIADINE REGIONAL STUDY AREA
- 2024 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2023 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2022 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2021 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2020 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2019 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2018 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES
- 2017 CALVING RANGE - 50% KERNEL DENSITY ESTIMATES



0 10 20
1:500,000 KILOMETRES

REFERENCE(S)
1. TOPOGRAPHIC MAP © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
2. DATUM: NAD83 PROJECTION UTM ZONE 15

CLIENT
AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
QAMANIRJUAQ CARIBOU CALVING RANGE 2017 TO 2024 (50% KERNEL DENSITY ESTIMATES)

CONSULTANT

wsp

YYYY-MM-DD	2025-03-19
DESIGNED	NM
PREPARED	CDB
REVIEWED	NM
APPROVED	CDLM

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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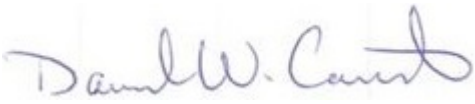
4.0 CONCLUSIONS

Most predicted calving events occurred west of Peter Lake and were clustered, resulting in a smaller 95% UD than observed in 2023 (WSP 2024). The percent of area overlap of the calving range with the Regional Study Area (RSA) was 8%. The centroid of the 50% KDE range was 41.5 km from the nearest Mine feature and further away from the Mine than in 2023 (WSP 2024). All but one predicted calving events were located outside the Mine RSA. The lone calving event within the RSA was 21.4 km from the nearest Mine feature, which is a shorter distance than during 2023. There were seven predicted calving events within the RSA during 2023 (WSP 2024).

5.0 CLOSURE

We trust the above meets your present requirements. If you have any questions, please contact the undersigned.

WSP Canada Inc.





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DC/CDLM/ef

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APPENDIX L

Hunter Harvest Study, 2024



MELIADINE MINE

2024 Hunter Harvest Study and Creel Survey Summary Report

March 2025 FINAL

Prepared by Martin Gebauer
Nunavut Environmental Consulting Ltd.

Table of Contents

EXECUTIVE SUMMARY **7**

SECTION 1 • OVERVIEW **9**

SECTION 2 • OBJECTIVES **10**

SECTION 3 • METHODOLOGY **11**

SECTION 4 • HISTORICAL RESULTS **12**

SECTION 5 • 2024 HUNTER HARVEST STUDY RESULTS **13**

5.1 Barren-land Caribou 13
5.1.1 Number of Hunters 13
5.1.2 Distribution of Hunting 13
5.1.3 Magnitude of Hunting 20
5.1.4 Seasonal Distribution & Timing of Hunting 28
5.1.5 Caribou Health 35
5.2 Other Terrestrial Mammals 35
5.2.1 Muskox 35
5.2.2 Wolverine, Wolf, Grizzly Bear, & Polar Bear 36
5.2.3 Arctic Fox & Arctic Hare 39
5.3 Birds 39
5.4 Marine Mammal 43
5.4.1 Seals & Walrus 43
5.4.2 Beluga & Narwhal 43
5.5 Shellfish 43

SECTION 6 • CREEL SURVEY RESULTS **45**

6.1 Number of Fishermen 45
6.2 Composition of Catch 45
6.3 Distribution of Fishing 46
6.4 Magnitude of Fishing 46
6.5 Seasonal Timing of Fishing 46

SECTION 7 • ACCURACY OF IMPACT PREDICTIONS **49**

SECTION 8 • MANAGEMENT RECOMMENDATIONS **50**

SECTION 9 • REFERENCES **51**

List of Tables

Table 5.1:	Caribou Harvest Distribution along the Meliadine All-Weather Access Road (AWAR) and within the Rankin Inlet Local Study Area (LSA) and Regional Study Area (RSA) from 1996 to 2001 (Nunavut Wildlife Management Board [NWMB] Hunter Harvest Study [HHS] 2004), and 2021 to 2024 (Rankin Inlet HHS)	15
Table 5.2a:	Hunter Caribou Harvest Statistics from the Rankin Inlet Hunter Harvest Study (2021 to 2024). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries	21
Table 5.2b:	Hunter Caribou Harvest Statistics for the Community of Rankin Inlet from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries	21
Table 5.2c:	Hunter Caribou Harvest Statistics for the Community of Arviat from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries	22
Table 5.2d:	Hunter Caribou Harvest Statistics for the Community of Chesterfield Inlet from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries	22
Table 5.2e:	Hunter Caribou Harvest Statistics for the Community of Whale Cove from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries	23
Table 5.3	Difference in the Average Number of Caribou Harvested per Participant in the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2004) within the HHS Boundaries and the Meliadine Regional Study Area	24
Table 5.4:	Difference in the Average Number of Caribou Harvested per Month in the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (Rankin Inlet only; 1996 to 2001; NWMB 2004)	25
Table 5.5:	Total Number of Terrestrial Mammal Harvests Reported from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study	35
Table 5.6:	Total Number of Bird Harvests Reported from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study	40
Table 5.7:	Total Number of Marine Mammal Harvests Reported from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study	43

List of Tables

Table 6.1:	Number of Fisherman in Rankin Inlet who Recorded Fishing Success by Year and Month in the Rankin Inlet Hunter Harvest Study	45
Table 6.2:	Total Number of Fish Caught from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study	46

List of Figures

Figure 5.1:	Total Number of Caribou Harvested in the Rankin Inlet Hunter Harvest Study in 2024	14
Figure 5.2:	Distribution of Nunavut Wildlife Management Board Hunter Harvest Study Caribou Harvest by Community (1996 to 2001; NWMB 2004)	16
Figure 5.3:	Distribution of the Average # of Caribou per Participant for the Rankin Inlet Component of the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004)	17
Figure 5.4:	Distribution of the Average # of Caribou per Participant for the Current Rankin Inlet Hunter Harvest Study (2021 to 2024)	18
Figure 5.5:	Distribution of the Average # of Caribou Harvested per Participant for the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2004)	19
Figure 5.6:	Minimum, Maximum, and Median Number of Caribou Harvested per Participant per Month for the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2004) within the HHS Boundaries	26
Figure 5.7:	Minimum, Maximum, and Median Average Number of Caribou Harvested per Participant per Month for the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board Study (1996 to 2001; NWMB 2004) within the Regional Study Area	27
Figure 5.8:	Seasonal Trends in Caribou Harvest from the Rankin Inlet Hunter Harvest Study (HHS) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2004)	29
Figure 5.9:	Number of Caribou Harvested in each Caribou Season and Proximity to the Meliadine All-Weather Access Road in the 2024 Rankin Inlet Hunter Harvest Study. Seasons are winter (January 01 to March 31, and December 16 to 31), spring (April 01 to May 25), summer (May 26 to September 21), and fall (September 22 to December 15)	30

List of Figures

Figure 5.10a:	Total Number of Caribou Harvests Reported in Spring 2024 (Apr 01 - May 25) in the Rankin Inlet Hunter Harvest Study	31
Figure 5.10b:	Total Number of Caribou Harvests Reported in Summer 2024 (May 26 - Sep 21) in the Rankin Inlet Hunter Harvest Study	32
Figure 5.10c:	Total Number of Caribou Harvests Reported in Fall 2024 (Sep 22 - Dec 15) in the Rankin Inlet Hunter Harvest Study	33
Figure 5.10d:	Total Number of Caribou Harvests Reported in Winter 2024 (Dec 16 - Mar 31) in the Rankin Inlet Hunter Harvest Study	34
Figure 5.11:	Total Number of Arctic Hare, Muskox, and Polar Bear Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study	37
Figure 5.12:	Total Number of Arctic Wolf and Wolverine Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study	38
Figure 5.13:	Total Number of Bird Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study	41
Figure 5.14:	Seasonal Distribution and Individual Birds Harvested by Species in the 2024 Rankin Inlet Hunter Harvest Study	42
Figure 5.15:	Total Number of Beluga, Walrus, and Seal Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study	44
Figure 6.1:	Total Number of Fish Caught and Average Number of Fish per Trip in the 2024 Rankin Inlet Hunter Harvest Study	47
Figure 6.2:	Total Number of Fish Caught by Month from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study	48

List of Appendices

Appendix A:	2024 Rankin Inlet Hunter Harvest Study Calendar	52

List of Acronyms

AWAR	All-Weather Access Road
GN DoE	Government of Nunavut, Department of Environment
HHS	Hunter Harvest Study
IQ	Inuit Qaujimajatuqangit
KHTO	Kangiqliniq Hunters and Trappers Organization
LSA	Local Study Area
NWMB	Nunavut Wildlife Management Board
NIRB	Nunavut Impact Review Board
RSA	Regional Study Area
TEMMP	Terrestrial Environment Management and Monitoring Program
TK	Traditional Knowledge

EXECUTIVE SUMMARY

A Rankin Inlet Hunter Harvest Study (HHS) was initiated by Agnico Eagle Mines Ltd. (Agnico Eagle), in conjunction with the Kangiqliniq Hunters and Trappers Organization (KHTO), in 2020 and continued through 2024. The 2024 study included 61 participants of which 41 reported harvesting Caribou (*Rangifer tarandus*). Most guide outfitters operating out of the community of Rankin Inlet continued as participants in 2024 and reported harvest data. The number of participants in 2024 (i.e., 61) was higher than the 56, 44, and 40 participants in 2023, 2022, and 2021, respectively. Given an estimated 300 to 350 active hunters in the community of Rankin Inlet, the 41 hunters reporting Caribou harvest in 2024 represent from 12 to 14% of hunters in the community. With a total reported Caribou harvest of 709 animals in 2024, the total estimated number of Caribou harvested in 2024 was between 5,064 to 5,908 animals, which is higher than estimates in 2023 (i.e., 4,025 to 4,390 animals), comparable to 2022 (i.e., 5,470 to 6,077 animals), and lower than in 2021 (i.e., 6,700 to 7,444). These estimates are likely very conservative (i.e., high) since participants are expected to represent a higher proportion of successful hunters in the community; therefore, the actual effects of the Meliadine Mine and All-Weather Access Road (AWAR) may be less than predicted.

The 2024 HHS Caribou harvest data indicated that 6.1% of reported harvest occurred within 5 km of the Meliadine AWAR, which is higher than in 2023 (5.0%) and 2022 (4.8%), and 25.2% occurred within the Meliadine Regional Study Area (RSA), which is lower than in 2023 (26.9%) and 2022 (29.4%). During the Nunavut Wildlife Management Board (NWMB 2004) study from 1996 to 2001, 24.8% of reported harvest was within the Meliadine RSA, which is comparable to results for 2024.

As per the Meliadine Terrestrial Environment Management and Monitoring Plan (TEMMP), due to limited baseline data, no official thresholds related to Caribou harvesting in the Mine area have been set to date. However, results described in this report suggest that the presence of the AWAR and the Meliadine Mine has not greatly changed the relative amount of hunting within the RSA (i.e., % of total harvest). Provided the data and collaboration with local harvesters is suitable, Agnico Eagle, in collaboration with the Government of Nunavut, Department of Environment and the Terrestrial Advisory Group (TAG), will review results presented in this report and discuss next steps in establishing a Caribou harvest threshold.

A comprehensive comparison of Caribou harvest in the current study (2021 to 2024) and the NWMB study (1996 to 2001; NWMB 2004) determined that the average number of Caribou harvested per participant was higher within the HHS study area between 2021 and 2024 than between 1996 to 2001 for each month except November. This outcome is less pronounced when analysing harvest rates within the Meliadine RSA. Comparisons in the total number of Caribou harvested between the two studies is difficult to determine because of changing Caribou distribution, differences in hunter numbers, varied hunter success, and differences in study design.

Twenty-four (24) Muskox (*Ovibos moschatus*), five (5) Wolverine (*Gulo gulo*), and five (5) Arctic Wolf (*Canis lupus*) were harvested in 2024. Other harvested terrestrial mammal in 2024 included Arctic Hare (*Lepus arcticus*; 5 individuals), Ermine (*Mustela richardsonii*; 1), Moose (*Alces alces*; 1), Muskrat (*Ondatra zibethicus*; 1), Polar Bear (*Ursus maritimus*; 3), and Red Fox (*Vulpes vulpes*; 1). In the marine environment, Ringed Seal (*Pusa hispida*; 47 individuals) was the most common species reported as harvested followed by Beluga (*Delphinapterus leucas*; 29 individuals), Harp Seal (*Pagophilus groenlandicus*; 5), Walrus (*Odobenus rosmarus*; 4), Bearded Seal (*Erignathus barbatus*; 3), Harbour Seal (*Phoca vitulina*; 2), and Narwhal (*Monodon monoceros*; 2).

Moderate numbers of bird species were harvested by Rankin Inlet participants in 2024 with Canada Goose (*Branta canadensis*; 222 individuals), Snow Goose (*Anser caerulescens*; 72), and ptarmigan (*Lagopus* sp.; 73) harvested at the highest level. Greater White-fronted Goose (*Answer albifrons*; 14 individuals), Common Eider (*Somateria mollissima*; 13), gull sp. (*Larus* sp.; 13), and several other bird species were also harvested.

The most common fish species captured, Arctic Char (*Salvelinus alpinus*), represented 92% of the total catch in 2024, compared to 93% in 2023, 77% in 2022, and 72% in 2021. Lake Trout (*Salvelinus namaycush*; 6.7%) was also captured at reasonably high numbers. The other two species that were the focus of the HHS, Arctic Grayling (*Thymallus arcticus*) and Lake Whitefish (*Coregonus clupeaformis*), were caught at very low numbers.

SECTION 1 • OVERVIEW

As outlined in the Terrestrial Environment Management and Monitoring Program (TEMMP; Agnico Eagle Mines 2022) and as a requirement of the Nunavut Impact Review Board (NIRB) Project Certificate No. 006 Terms and Conditions 46, 104, and 105, the Rankin Inlet Hunter Harvest Study (HHS) was initiated in 2020 by Agnico Eagle Mines Ltd. (Agnico Eagle). The HHS is being conducted in conjunction with the Kangiqliniq Hunters and Trappers Organization (KHTO) to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches within the Meliadine Regional Study Area (RSA).

Nunavut Environmental Consulting was contracted to work alongside the KHTO to conduct the study and increase hunter participation (i.e., 2021 to 2024). The 2024 HHS, through regular visits, contributed to developing relationships with local harvesters, expanding contacts with outfitting and guiding businesses, and providing valuable harvest information to the KHTO and the Government of Nunavut, Department of Environment (GN DoE).

Preliminary detailed analyses of the differences in Caribou harvest rates between the current study (2021 to 2024) and the Nunavut Wildlife Management Board (NWMB) study (1996 to 2001; NWMB 2004) are included in this report. Analytical confidence in outcomes will increase as the HHS database becomes increasingly robust.

SECTION 2 • OBJECTIVES

The primary objective of the HHS is to monitor potential project-related effects on harvesting of wildlife by residents of Rankin Inlet. This objective is achieved by estimating the following key metrics:

1. Determining the distribution of Caribou (*Rangifer tarandus*), Muskox (*Ovibos moschatus),* Grizzly Bear (*Ursus arctos*), Polar Bear (*Ursus maritimus*), Arctic Wolf (*Canis lupus*), Wolverine (*Gulo gulo*), Arctic Fox (*Vulpes lagopus*), goose, ptarmigan, and seal harvest by residents of Rankin Inlet; and
2. Estimating the total level (or an index) of harvest by residents of Rankin Inlet.

Other objectives of the HHS include:

1. Supporting creel surveys by gathering information on Arctic Char (*Salvelinus alpinus*), Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*), and Arctic Grayling (*Thymallus arcticus*) catch rates and Inuit-use patterns in the Rankin Inlet area;
2. Understanding regional distribution of hunting and fishing activity;
3. Investigating seasonal timing of hunting and fishing activity; and
4. Determining whether increased harvest and catch rates are associated with the Meliadine All-Weather Access Road (AWAR). For Caribou, determining how current harvest rates compare to historical levels (i.e., 1996 to 2001; NWMB 2004).

As discussed during consultation with stakeholders, including the KHTO, the HHS will further seek to:

- increase and maintain the hunter and fisherman participant rate in the future of the program;
- continue efforts to include guide outfitters as participants in the HHS;
- improve resource protection;
- improve hunter and fisherman awareness and education;
- increase the integration of Inuit Qaujimajatuqangit (IQ) and Traditional Knowledge (TK);
- increase availability of data to support a collective approach to understanding harvest; and
- assist Agnico Eagle in mitigative actions and the GN DoE in management decisions.

SECTION 3 • METHODOLOGY

The wildlife species that are the focus of the HHS are Caribou, Muskox, Grizzly Bear, Polar Bear, Wolf, Wolverine, Arctic Fox, goose, ptarmigan, and seal; however, harvest data on other species, such as Beluga (*Delphinapterus leucas*), Common Eider (*Somateria mollissima*), and Sandhill Crane (*Grus canadensis*) are also collected. The species in the study were chosen to reflect important harvest species and to make data entry and collection as simple as possible. To support creel surveys, data on fish harvest (priority species = Arctic Char, Lake Trout, Lake Whitefish, and Arctic Grayling) were also collected.

Inuit and non-Inuit residents, at least 16 years of age, are eligible to participate in the harvest survey. Harvest calendars are provided on a household basis, rather than an individual basis, to simplify data entry and collection, and reflect household hunting patterns. The harvest calendar is attractive and consists of local photographs of wildlife and Nunavut residents (see Appendix A for the 2024 Rankin Inlet calendar). Space is provided for each calendar day where harvest details can be documented.

A map is provided at the end of the 2024 Rankin Inlet HHS calendar that delineates a 5 km^2 UTM grid around the community of Rankin Inlet and Meliadine mine areas, and regions indicated as important for hunting during discussions with KHTO members. Each grid has a unique code to facilitate recording of information. When calendars are issued, participants or participating households are encouraged to write harvest details (e.g., number of animals, sex, age, and location [i.e., grid code]) for the appropriate date on the calendar (Appendix A).

Participants were interviewed in person by the harvest study coordinator two times in 2024 and once in early 2025 (i.e., June 2024, November 2024, and January 2025). During the January 2025 interviews, remaining data from 2024 were collected, a new 2025 HHS calendar was distributed, and prizes were given. The purpose of the interviews is to ensure all harvest data are recorded on the calendars and to collect incidental information to compliment calendar data, including notable Caribou movements, aggregations, and unique observations. Between interview periods, participants were occasionally contacted by phone or social media to encourage recording of harvest data.

Features of the 2024 HHS included:

1) adding new participants, including most (i.e., 5) outfitters and guides operating out of the community of Rankin Inlet;
2) building long-term relationships between participants and study facilitators;
3) increasing engagement with participants on social media platforms such as Facebook and Instagram; and
4) increasing incentives for participating in the study (e.g., gas vouchers and prizes).

SECTION 4 • HISTORICAL RESULTS

The number of hunters interviewed in the community of Rankin Inlet during the comprehensive 5-year Nunavut Wildlife Harvest Study (NWMB 2004) was 327, which according to the study represented 97% of all hunters in Rankin Inlet (NWMB 2004). For the purposes of this annual report, and in the absence of more concrete estimates of current hunter numbers, the total number of active hunters in Rankin Inlet was estimated to be 300 to 350. Ongoing discussions with HHS participants, KHTO members, and other community groups will focus on obtaining a better estimate of active hunters in the community of Rankin Inlet.

Between 1996 and 2001, 4.5% of reported Caribou harvests were within 5 km of the Meliadine AWAR (prior to construction) and 24.8% of harvests occurred within the RSA (NWMB 2004). According to the NWMB harvest study, an average of 535 Caribou were harvested per year over the five-years between June 1996 and May 2001 (NWMB 2004).

Based on the NWMB (2004) results, the highest Caribou harvests occurred from March to May and from September to November.

A detailed analysis of the average number of Caribou harvested per participant during the NWMB (2004) study is provided in Section 5.1.3 of this report.

SECTION 5 • 2024 HUNTER HARVEST STUDY RESULTS

5.1 BARREN-LAND CARIBOU

5.1.1 Number of Hunters

The HHS included 61 participants by the end of 2024, which was an increase from 56, 44, and 40 participants in the 2023, 2022, and 2021 studies, respectively. Recruitment efforts in the community of Rankin Inlet during community visits and on social media platforms resulted in the new participants in 2024. Of the 61 participants in 2024, Caribou harvest data were collected from 41 participants, which was higher than the 37 and 31 participants reporting Caribou harvest in 2023 and 2022, respectively.

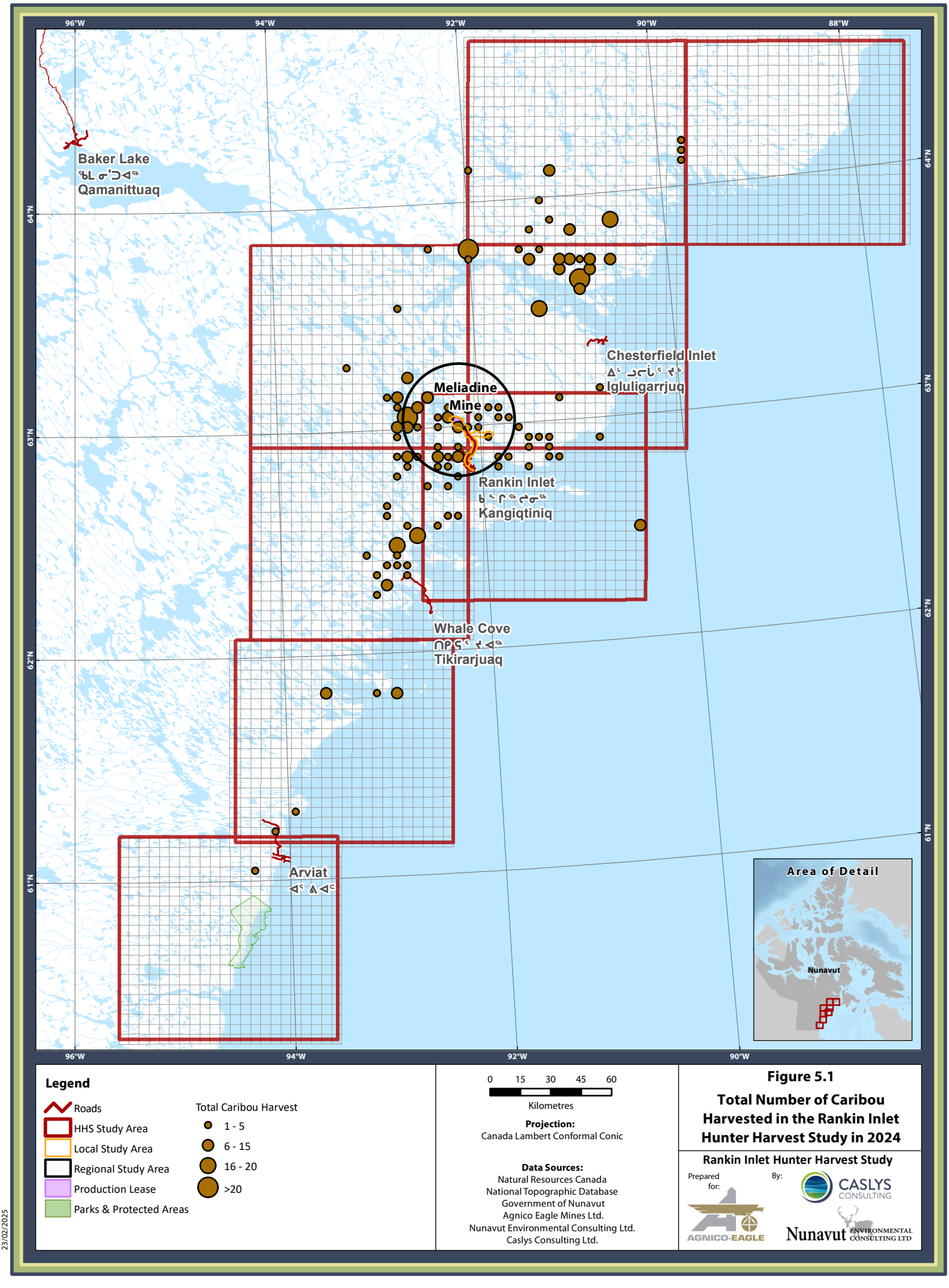
Based on the previous discussion of total numbers of hunters in Rankin Inlet (Section 4 Historical Results), an estimated 300 to 350 active hunters live within the Rankin Inlet community. Discussions with KHTO members in 2019 through 2024 suggest the total number of hunters is over 300 but ongoing discussions with HHS participants and KHTO members will help refine hunter numbers. Based on these numbers, the 41 hunters reporting Caribou harvest in 2024 conservatively represent from 12 to 14% of total hunters in the community.

Participants noted that there is a growing demand for their skills as professional hunters, especially for taking sport hunters out for Caribou and Muskox, and that the prominence of guide outfitters has increased since the start of the HHS. Some participants consider this increased demand as a positive thing for their livelihood and for Rankin Inlet, while others are concerned that the demand for sport hunting is at odds with local and subsistence harvesting.

5.1.2 Distribution of Hunting

Figure 5.1 depicts the distribution of 2024 Caribou harvest within the HHS study area. Hunting was concentrated in the vicinity of the community of Rankin Inlet, north of Chesterfield Inlet, and in the Whale Cove area. A small number of harvests were recorded near the communities of Arviat and Chesterfield Inlet. In 2024, hunting near Rankin Inlet was consistently described by participants as very challenging and very low numbers of animals with many harvesters travelling great distances north of Chesterfield Inlet and west of Baker Lake to harvest caribou. According to participants and the KHTO, the spring migration did not pass very close to Rankin Inlet in 2024 but remained further south and inland.

A considerable amount of hunting occurred within the Meliadine Local Study Area (LSA) and some hunting may have been associated with the Meliadine AWAR. Variation in harvest location and intensity is attributable to numerous factors. For instance, hunters may have a ‘favorite’ hunting area that they frequent each year while others prefer hunting in ‘convenient’ locations. Some hunters prefer remote locations well away from frequented areas. The primary factor determining location of successful harvests each year is the availability and distribution of Caribou herds in the area.



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

Total Caribou Harvest

- 1 - 5
- 6 - 15
- 16 - 20
- >20

0 15 30 45 60

Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 5.1

Total Number of Caribou Harvested in the Rankin Inlet Hunter Harvest Study in 2024

Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

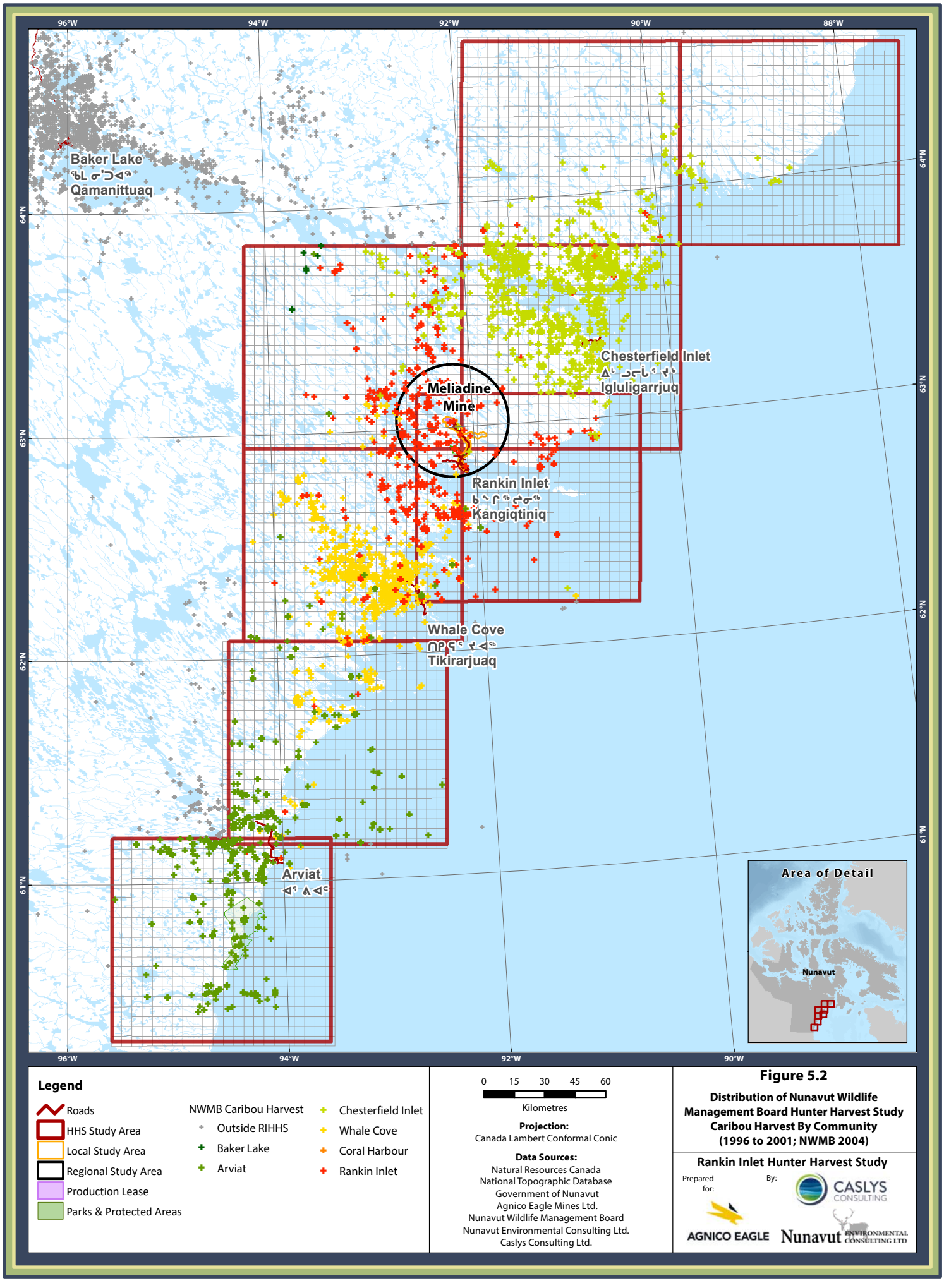
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Figure 5.2 shows hunting distribution by community from the five-year NWMB study for the Rankin Inlet HHS study area. Most Caribou hunting occurred around the four communities in the study area. Figures 5.3 to 5.5 depict the Caribou harvest distribution (i.e., average number of Caribou per participant) for the Rankin Inlet component of the NWMB (2004) study (1996 to 2001; 6 years), the current study (2021 to 2024; 4 years), and both studies combined, respectively. Distribution of harvest is similar in the two studies.

The 2024 HHS data indicated that 6.1% of reported harvest occurred within 5 km of the Meliadine AWAR (5.0% and 4.8% in 2023 and 2022, respectively), and 25.2% occurred within the Meliadine RSA (26.9% and 29.4% in 2023 and 2022, respectively; Table 5.1). During the NWMB study from 1996 to 2001 (NWMB 2004), 24.8% of reported harvest was within the Meliadine RSA, which is very similar to the reported harvest in 2024 and the average between 2021 and 2023 (i.e., 25.3%).

Table 5.1: Caribou Harvest Distribution along the Meliadine All-Weather Access Road (AWAR) and within the Rankin Inlet Local Study Area (LSA) and Regional Study Area (RSA) from 1996 to 2001 (Nunavut Wildlife Management Board [NWMB] Hunter Harvest Study [HHS] 2004), and 2021 to 2024 (Rankin Inlet HHS).

Study	Participation Rate within 5 km of AWAR (% of total hunters)	Average Caribou Harvest within 5 km of AWAR per Participant	% of Annual Harvest within 5 km of AWAR	% of Annual Harvest within Meliadine LSA	% of Annual Harvest within Meliadine RSA
NWMB HHS 1996 to 2001 (Rankin Inlet)	NA	4.1	4.5%	0.3%	24.8%
Rankin Inlet HHS 2021	16.7%	5.0	3.7%	3.3%	19.7%
Rankin Inlet HHS 2022	25.8%	3.3	4.8%	4.0%	29.4%
Rankin Inlet HHS 2023	16.2%	4.0	5.0%	2.9%	26.9%
Rankin Inlet HHS 2024	29.3%	3.6	6.1%	2.8%	25.2%
Average (2021 to 2024)	22.0%	4.0	4.9%	3.3%	25.3%



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

NWMB Caribou Harvest

- Outside RIHHS
- Baker Lake
- Arviat
- Chesterfield Inlet
- Whale Cove
- Coral Harbour
- Rankin Inlet

0 15 30 45 60

Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Wildlife Management Board
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 5.2

Distribution of Nunavut Wildlife Management Board Hunter Harvest Study Caribou Harvest By Community (1996 to 2001; NWMB 2004)

Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

2022-03-09

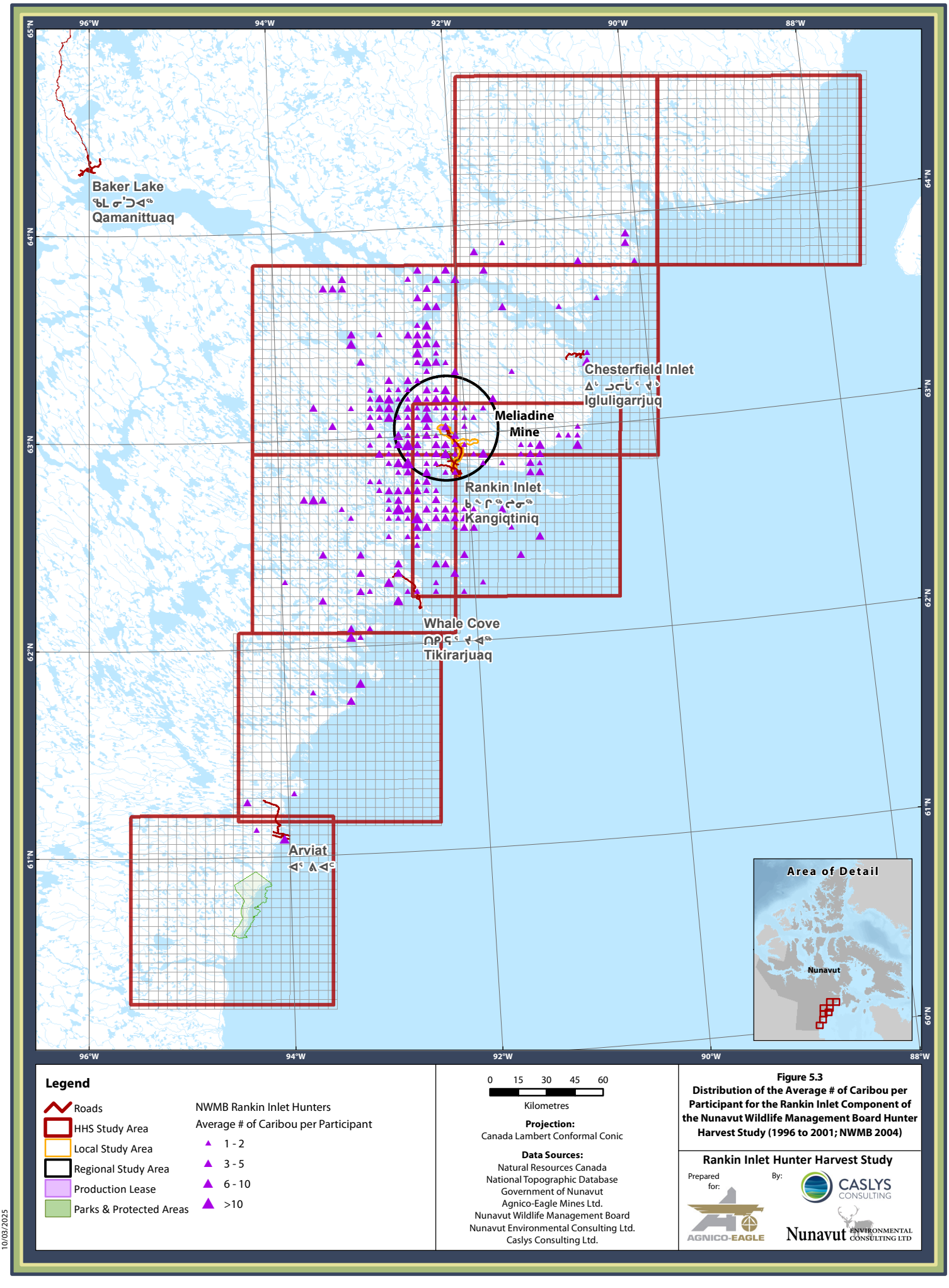


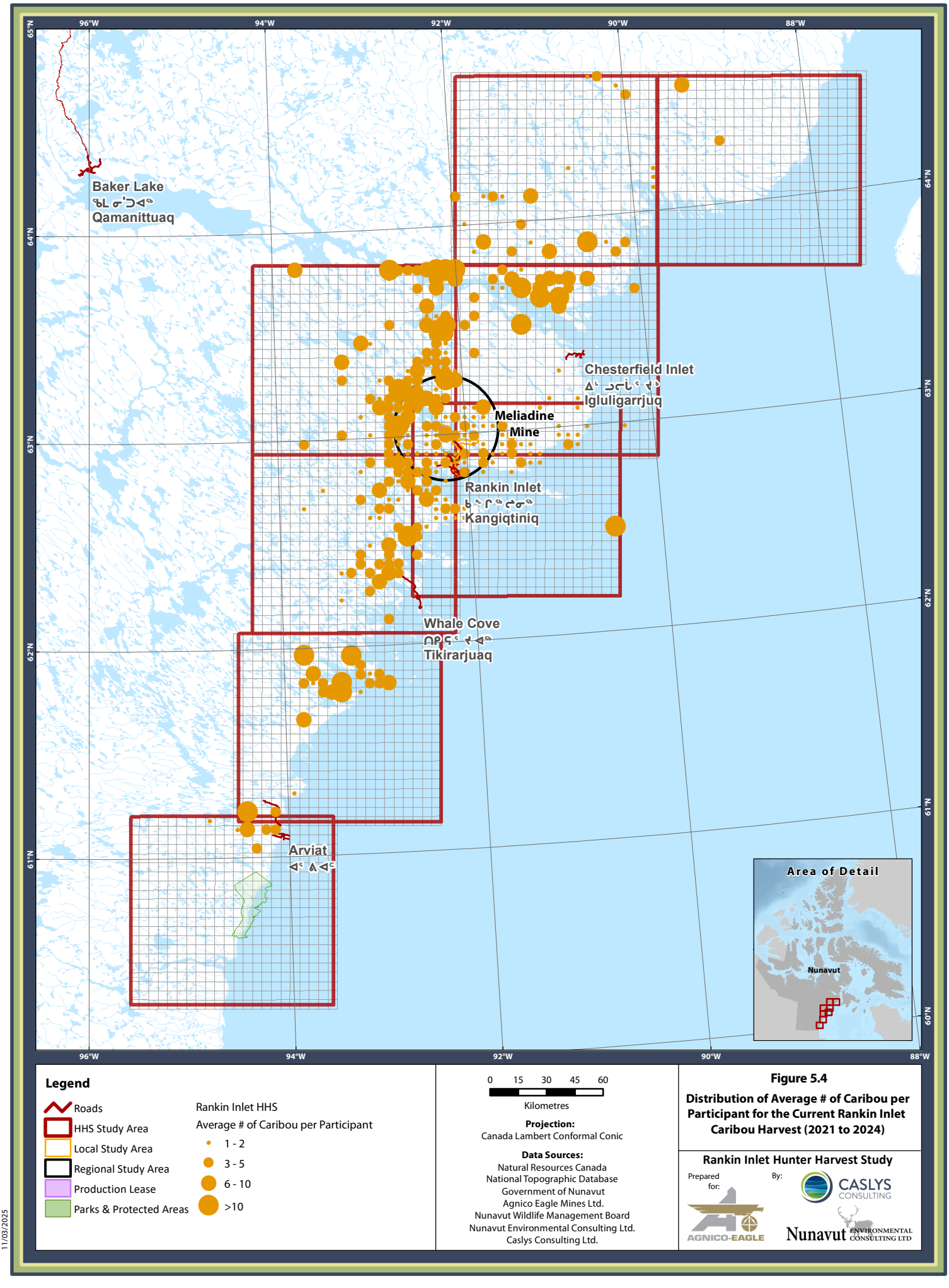
Figure 5.3
Distribution of the Average # of Caribou per Participant for the Rankin Inlet Component of the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004)

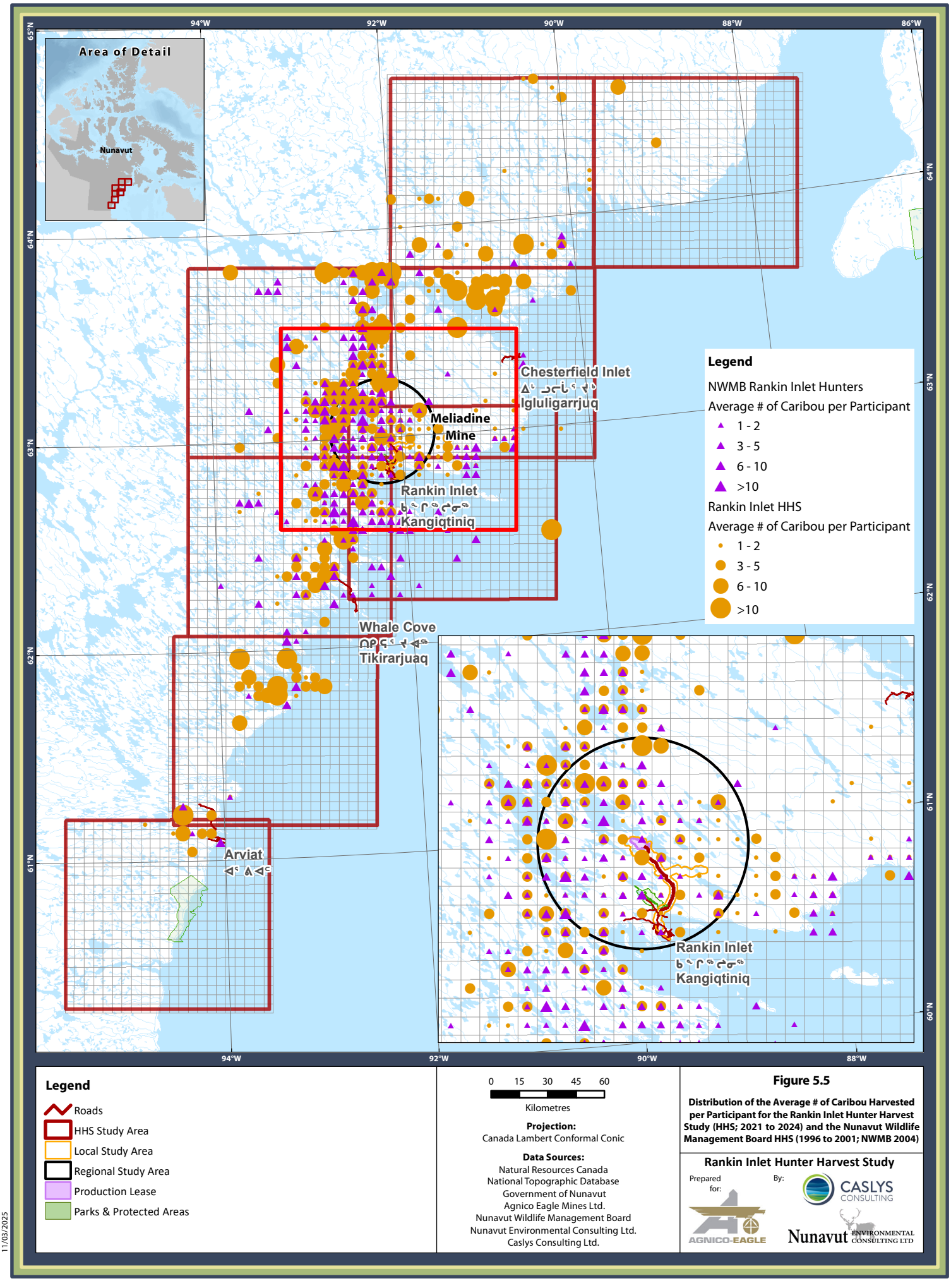
Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

10/03/2025


96°W
94°W
92°W
90°W
88°W
65°N
64°N
63°N
62°N
61°N
60°N
Baker Lake
ᖃᒪᓂᑐᖅ
Qamanittuaq
Chesterfield Inlet
ᐃᒡᓗᓕᕆᔨᖅ
Igluligarrjuq
Meliadine
Mine
Rankin Inlet
ᑲᙵᕈᒃᓂᖅ
Kangiqtiniq
Whale Cove
ᑎᐳᕆᔨᒃ
Tikirarjuaq
Arviat
ᐊᕕᐊᑦ
Area of Detail
Nunavut
Legend
Roads
HHS Study Area
Local Study Area
Regional Study Area
Production Lease
Parks & Protected Areas
Rankin Inlet HHS
Average # of Caribou per Participant
1 - 2
3 - 5
6 - 10
>10
0 15 30 45 60
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Wildlife Management Board
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.
Figure 5.4
Distribution of Average # of Caribou per Participant for the Current Rankin Inlet Caribou Harvest (2021 to 2024)
Rankin Inlet Hunter Harvest Study
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING
Nunavut ENVIRONMENTAL CONSULTING LTD
11/03/2025


Area of Detail
Nunavut
94°W
92°W
90°W
88°W
86°W
65°N
64°N
63°N
62°N
61°N
60°N
Chesterfield Inlet
ᐃᓕ ᓯᕆᓕᖅ ᐊᒃ
Igluligarrjuq
Meliadine
Mine
Rankin Inlet
ᖃᓂᒋᔭᖏᓂᖅ
Kangiqtiniq
Whale Cove
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Tikirarjuaq
Arviat
ᐊᕐᕕᐊᑦ
Rankin Inlet
ᖃᓂᒋᔭᖏᓂᖅ
Kangiqtiniq
Legend
NWMB Rankin Inlet Hunters
Average # of Caribou per Participant
1 - 2
3 - 5
6 - 10
>10
Rankin Inlet HHS
Average # of Caribou per Participant
1 - 2
3 - 5
6 - 10
>10
Legend
Roads
HHS Study Area
Local Study Area
Regional Study Area
Production Lease
Parks & Protected Areas
0 15 30 45 60
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Wildlife Management Board
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.
Figure 5.5
Distribution of the Average # of Caribou Harvested per Participant for the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2004)
Rankin Inlet Hunter Harvest Study
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING
Nunavut ENVIRONMENTAL CONSULTING LTD
11/03/2025

5.1.3 Magnitude of Hunting

In 2024, a total of 709 Caribou were reported as being harvested by 41 participants in the Rankin Inlet HHS (Table 5.2a). Caribou harvest numbers during the five-year NWMB study for the communities of Rankin Inlet, Arviat, Chesterfield Inlet, and Whale Cove are also provided (NWMB 2004) (Tables 5.2b to 5.2e).

Given that the 41 hunters reporting Caribou harvest in 2024 represent from 12 to 14% of hunters in the community, the total estimated number of Caribou harvested was between 5,064 to 5,908 animals, which is higher than estimates in 2023 (i.e., 4,025 to 4,390 animals), comparable to 2022 (i.e., 5,470 to 6,077 animals), and lower than in 2021 (i.e., 6,700 to 7,444). This estimate is likely very conservative (i.e., high) since participants are thought to represent a higher proportion of successful hunters in the community.

A detailed analysis of the difference in Caribou harvest rates between the current study and the NWMB (2004) study (1996 to 2001) found that the average number of Caribou harvested per participant within the HHS study area was higher during the current study for all months except November (Table 5.3; Figure 5.6). Similar results, although not as compelling, were found in the RSA (Table 5.3; Figure 5.7). The highest months (e.g., 2022) were because one or two hunters harvested a high number of Caribou (i.e., one participant reporting 14 Caribou harvests in February 2022 and one reporting 14 in March 2022). When analyzing overall Caribou harvest (i.e., average # of Caribou harvested per month) between the two studies, current harvest appears to be lower than historical levels (Table 5.4); however, the data table does not consider the number of hunters participating in the two studies.

Table 5.2a: Hunter Caribou Harvest Statistics from the Rankin Inlet Hunter Harvest Study (2021 to 2024). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
2021	283	36	37	78	96	0	13	14	51	27	8	27	670
2022	94	95	51	27	75	6	14	49	73	20	15	28	547
2023	61	39	26	64	29	12	23	32	84	76	8	29	483
2024	93	103	45	68	96	22	2	33	151	56	9	31	709
Total #	531	273	159	237	296	40	52	128	359	179	40	115	2409
Average	132.8	68.3	39.8	59.3	74.0	10.0	13.0	32.0	89.8	44.8	10.0	28.8	481.8
% of Total	22.0%	11.3%	6.6%	9.8%	12.3%	1.7%	2.2%	5.3%	14.9%	7.4%	1.7%	4.8%	100.0%

Table 5.2b: Hunter Caribou Harvest Statistics for the Community of Rankin Inlet from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
1996							35	67	67	87	138	116	510
1997	95	105	118	89	50	1	4						462
1998			117	33	6	7	15	12	72	15	15	28	320
1999	108	80	108	80	33	20	75	86	52	38	63	41	784
2000	34	35	68	111	69	29	17	40	78		30		511
2001		19	27	37	3								86
Total #	237	239	438	350	161	57	146	205	269	140	246	185	2673
Average	79.0	59.8	87.6	70.0	32.2	14.3	29.2	51.3	67.3	46.7	61.5	61.7	445.5
% of Total	8.9	8.9	16.4	13.1	6.0	2.1	5.5	7.7	10.1	5.2	9.2	6.9	100.0

Table 5.2c: Hunter Caribou Harvest Statistics for the Community of Rankin Inlet from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
1996						56	52	53	317	349	260	122	1209
1997	133	102	112	190	48	62	116	122	245	230	89	59	1508
1998	99	121	169	147	138	88	156	68	207	74	15	15	1297
1999	168	91	79	128	25	49	70	51	271	275	19	22	1248
2000	49	17	13	62	35	32	54	68	211	79	118	93	831
2001	44	181	6	211	159								601
Total #	493	512	379	738	405	287	448	362	1251	1007	501	311	6694
Average	98.6	102.4	75.8	147.6	81.0	57.4	89.6	72.4	250.2	201.4	100.2	62.2	1115.7
% of Total	7.4	7.6	5.7	11.0	6.1	4.3	6.7	5.4	18.7	15.0	7.5	4.6	100.0

Table 5.2d: Hunter Caribou Harvest Statistics for the Community of Chesterfield Inlet from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
1996						27	45	98	77	29	30	46	352
1997	112	51	89	24	17	31	31	30	71	33	150	29	668
1998	54	42	28	39	53	18	40	41	90	12	16	8	441
1999	88	40	47	16	33	21	23	37	35	18	34	27	419
2000	22	16	10	17	18	8	43	45	33	25	32	30	299
2001	17	24	37	26	24								128
Total #	293	173	211	122	145	105	182	251	306	117	262	140	2307
Average	58.6	34.6	42.2	24.4	29.0	21.0	36.4	50.2	61.2	23.4	52.4	28.0	384.5
% of Total	11.0	6.5	7.9	4.6	5.4	3.9	6.8	9.4	11.4	4.4	9.8	5.2	100.0

Table 5.2e: Hunter Caribou Harvest Statistics for the Community of Whale Cove from the Nunavut Wildlife Management Board Hunter Harvest Study (1996 to 2001; NWMB 2004). Results are only within the Rankin Inlet Hunter Harvest Study Area Boundaries.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
1996						13	25	43	58	50	82	40	311
1997	68	9	13	35	9	14	8	25	22	16	14	14	247
1998	21	11	21	22	65	21	39	31	43	19	31	19	343
1999	35	38	53	49	30	28	42	51	48	46	40	23	483
2000	27	29	15	23	20	11	42	37	42	55	56	18	375
2001	37	46	42	47	24								196
Total #	188	133	144	176	148	87	156	187	213	186	223	114	1955
Average	37.6	26.6	28.8	35.2	29.6	17.4	31.2	37.4	42.6	37.2	44.6	22.8	325.8
% of Total	7.0	5.0	5.4	6.6	5.5	3.3	5.8	7.0	8.0	7.0	8.3	4.3	100.0

Table 5.3: Difference in the Average Number of Caribou Harvested per Participant in the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS Study (1996 to 2001; NWMB 2004) within the HHS Boundaries and the Meliadine Regional Study Area.

	Average # of Caribou Harvested per Participant			
	Rankin Inlet HHS Boundaries		Meliadine Regional Study Area	
Month	**+/- Median Change**	**Result**	**+/- Median Change**	**Result**
January	6.3	HHS > NWMB	1.2	HHS > NWMB
February	4.0	HHS > NWMB	0.6	HHS > NWMB
March	2.2	HHS > NWMB	2.5	HHS > NWMB
April	1.9	HHS > NWMB	-2.0	HHS < NWMB
May	4.2	HHS > NWMB	1.9	HHS > NWMB
June	1.5	HHS > NWMB	1.8	HHS > NWMB
July	0.8	HHS > NWMB	1.4	HHS > NWMB
August	1.6	HHS > NWMB	0.2	HHS < NWMB
September	1.6	HHS > NWMB	0.8	HHS > NWMB
October	1.4	HHS > NWMB	2.0	HHS > NWMB
November	-1.0	HHS < NWMB	-0.7	HHS < NWMB
December	1.7	HHS > NWMB	-0.6	HHS < NWMB

Table 5.4: Difference in the Average Number of Caribou Harvested per Month over All Years in the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (Rankin Inlet only; 1996 to 2001; NWMB 2004) within the HHS Boundaries.

Average # of Caribou Harvested per Month over All Years per Study				
Month	**HHS**	**NWMB**	**+/- Median Change**	**Result**
January	132.8	79.0	53.8	HHS > NWMB
February	68.3	59.8	8.5	HHS > NWMB
March	39.8	87.6	-47.8	HHS < NWMB
April	59.3	70.0	-10.7	HHS < NWMB
May	74.0	32.2	41.8	HHS > NWMB
June	10.0	14.3	-4.3	HHS < NWMB
July	13.0	29.2	-16.2	HHS < NWMB
August	32.0	51.3	-19.3	HHS < NWMB
September	89.8	67.3	22.5	HHS > NWMB
October	44.8	46.7	-1.9	HHS < NWMB
November	10.0	61.5	-51.5	HHS < NWMB
December	28.8	61.7	-32.9	HHS < NWMB

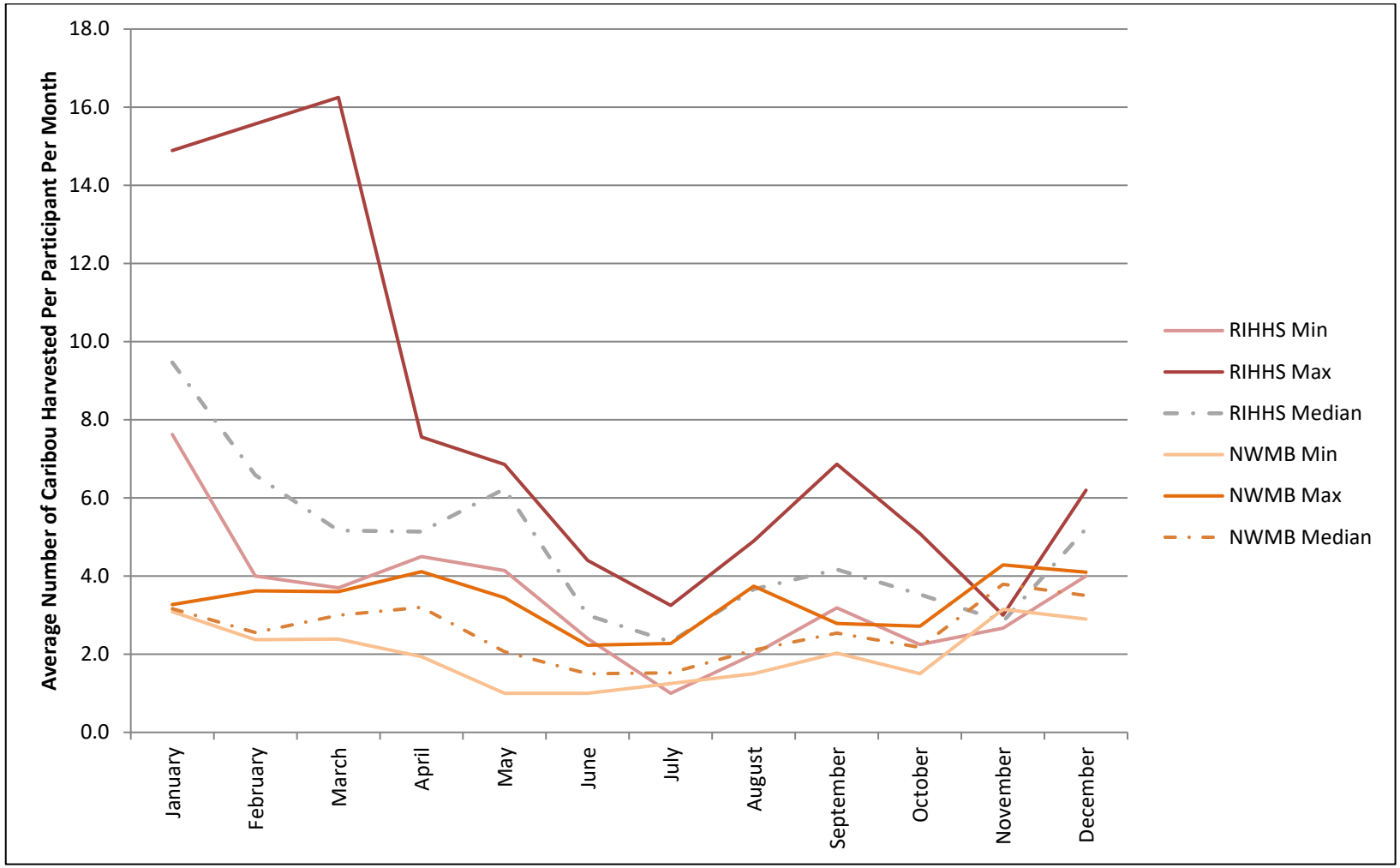


Figure 5.6: Minimum, Maximum, and Median Number of Caribou Harvested per Participant per Month for the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2004) within the HHS Boundaries.

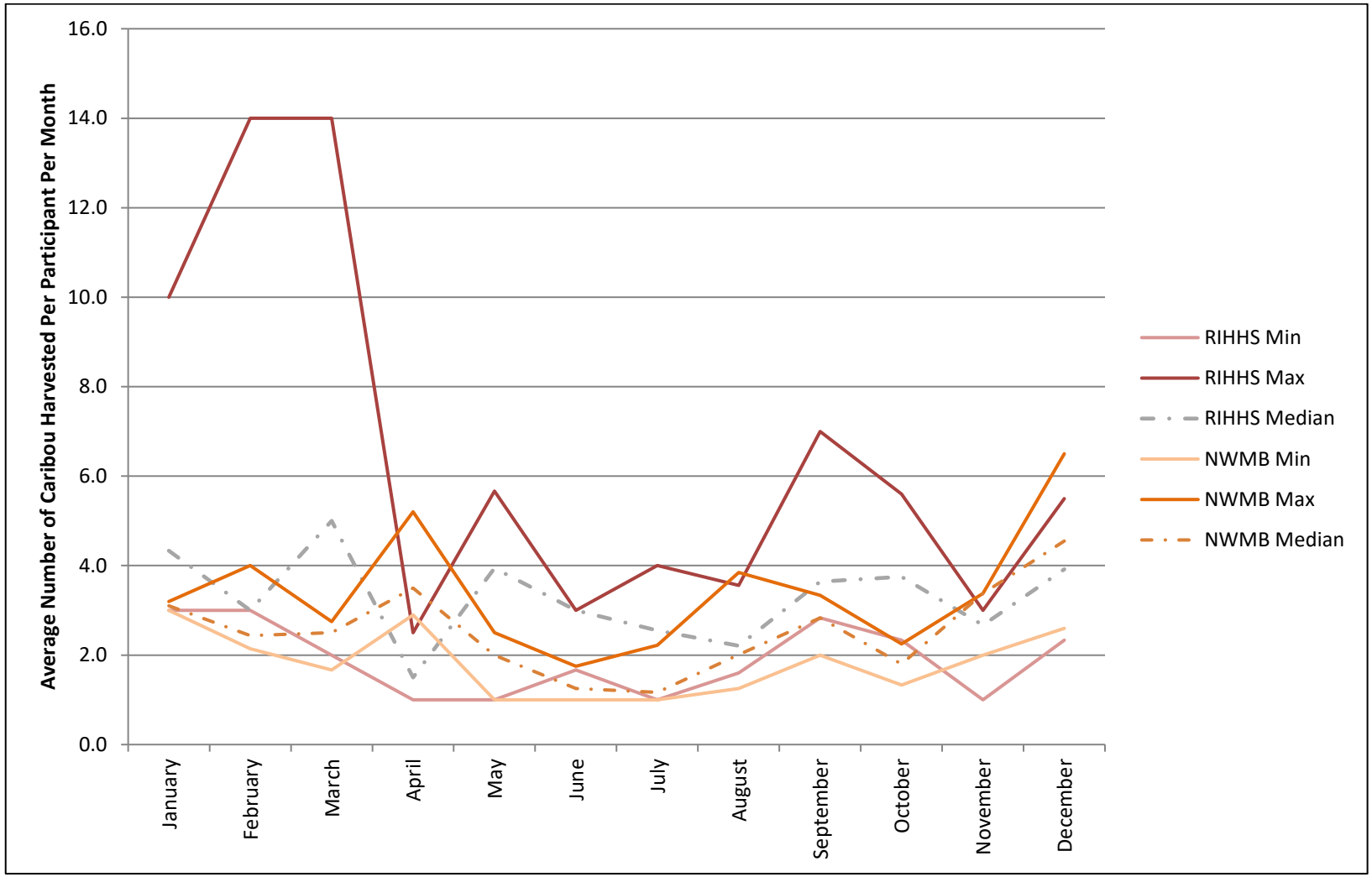


Figure 5.7: Minimum, Maximum, and Median Average Number of Caribou Harvested per Participant per Month for the Rankin Inlet Hunter Harvest Study (HHS; 2021 to 2024) and the Nunavut Wildlife Management Board Study (1996 to 2001; NWMB 2004) within the Regional Study Area.

5.1.4 Seasonal Distribution & Timing of Hunting

The Rankin Inlet HHS results to date indicate that the highest Caribou harvests occurred in winter (January and February), spring (April and May), and fall (September and October; Figure 5.8). Similarly, during the five-year NWMB harvest study (Rankin Inlet), the highest Caribou harvests occurred between February and May, and between September and November. The pattern between the studies indicates that seasonal hunting preferences are similar.

As can be seen from Figure 5.9 (i.e., Caribou harvest numbers by season and proximity to the Meliadine AWAR), relatively few Caribou were harvested within 5 km of the AWAR. The distribution of hunting in the Rankin Inlet HHS study area is illustrated in Figure 5.1, which includes all 2024 results, and Figures 5.10a to 5.10d, representing the spring (April 01 to May 25), summer (May 26 to September 21), fall (September 22 to December 15), and winter (January 01 to March 31, and December 16 to 31) Caribou seasons, as have been defined by the GN DoE.

In spring, Caribou hunting occurred primarily northwest of the community of Rankin Inlet to Peter Lake, within the Meliadine RSA, and north of the community of Whale Cove (Figure 5.10a). Very few or no harvests were reported near the communities of Chesterfield Inlet and Arviat (Figure 5.10a).

During the summer, most Caribou were harvested in the vicinity of the community of Rankin Inlet and within the Meliadine Mine RSA, particularly along the western boundary (Figure 5.10b). A small number of Caribou were reported as being harvested along Chesterfield Inlet, but none were reported near the communities of Whale Cove and Arviat (Figure 5.10b).

In the fall, hunting was concentrated near the community of Rankin Inlet, within and outside the Meliadine Mine RSA, between the communities of Rankin Inlet and Whale Cove, and north of Chesterfield Inlet (Figure 5.10c). Some hunting may have been associated with the Meliadine Mine AWAR. Limited harvesting was reported near the communities of Chesterfield Inlet and Arviat (Figure 5.10c).

Most reported Caribou harvests in winter were north of Chesterfield Inlet (Figure 5.10d). A smaller number of harvests were reported around the communities of Chesterfield Inlet, Rankin Inlet and Whale Cove, while none were reported near Arviat (Figure 5.10d). Successful hunters during winter appeared to be those that travelled further afield by snowmobile.

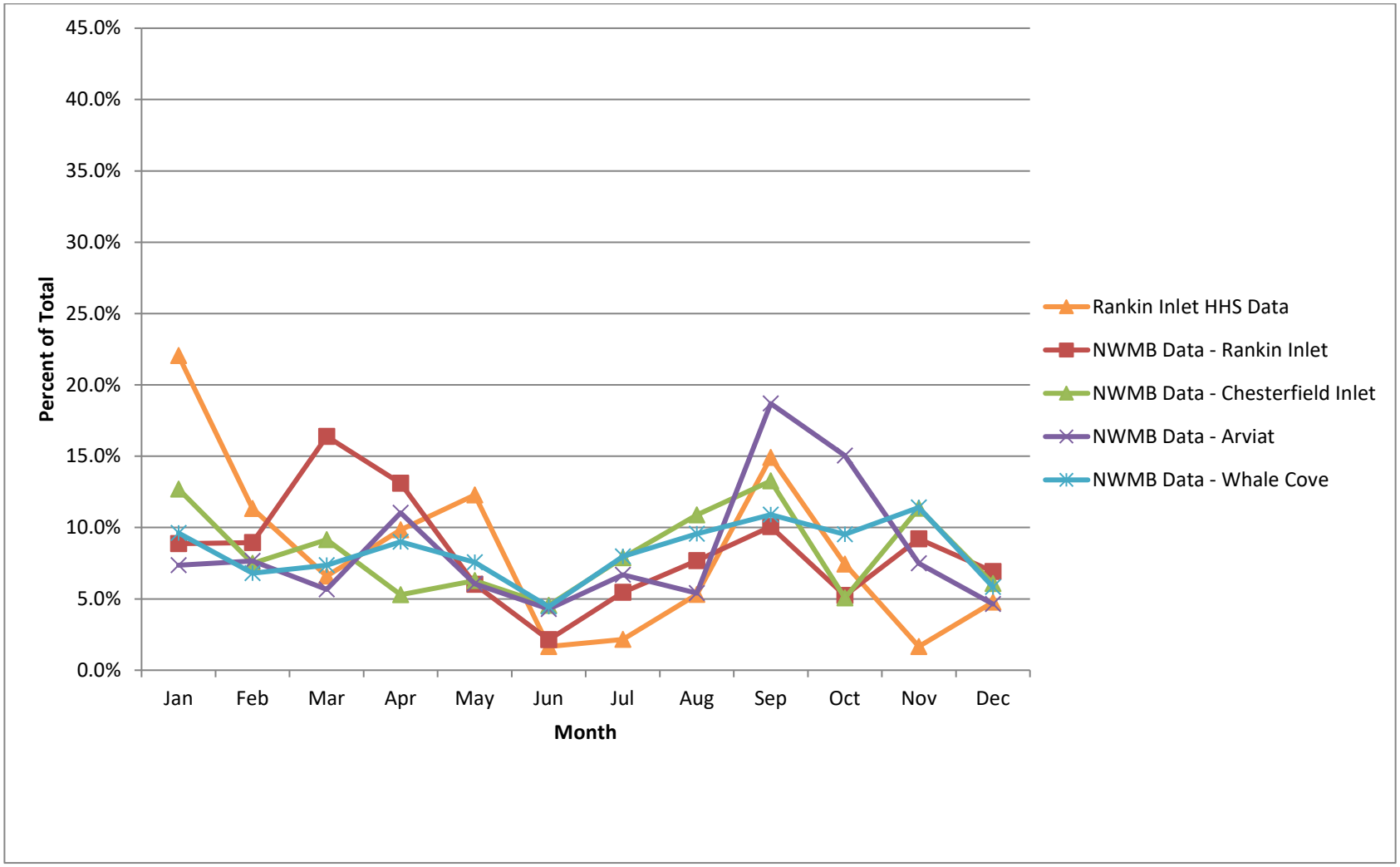


Figure 5.8: Seasonal Trends in Caribou Harvest from the 2024 Rankin Inlet Hunter Harvest Study (HHS) and the Nunavut Wildlife Management Board HHS (1996 to 2001; NWMB 2024;)

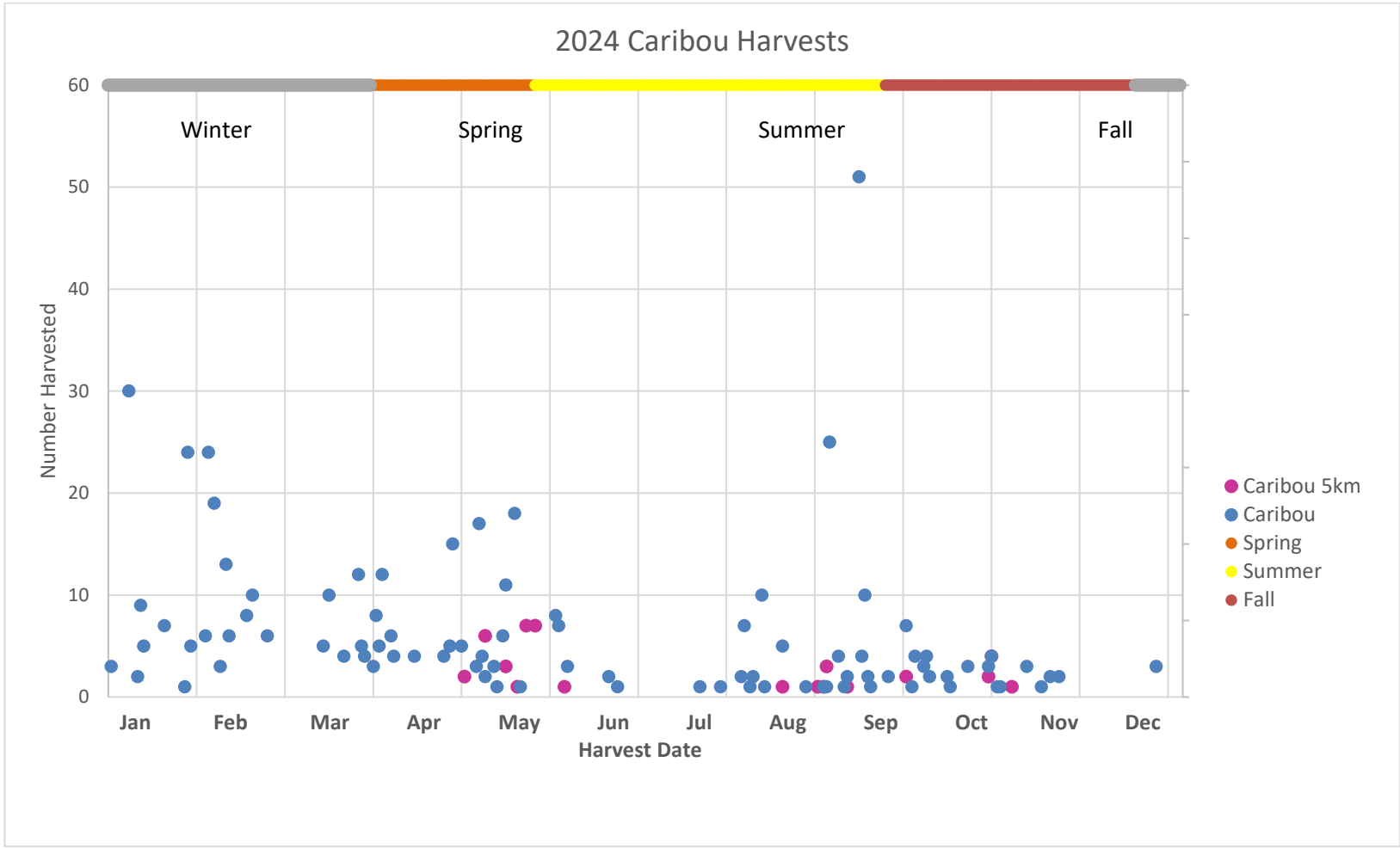
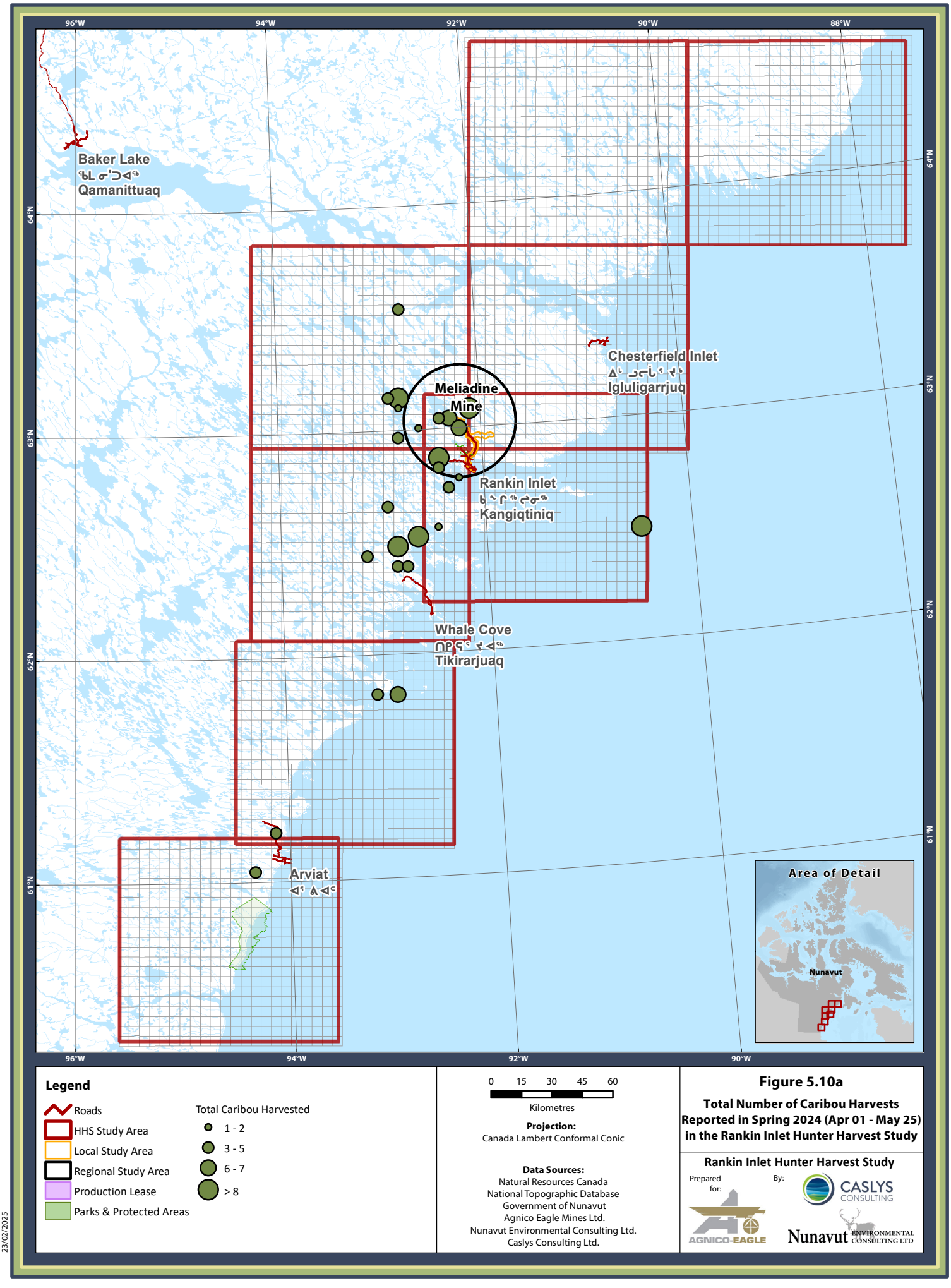


Figure 5.9: Number of Caribou Harvested in each Caribou Season and Proximity to the Meliadine All-Weather Access Road in the 2024 Rankin Inlet Hunter Harvest Study. Seasons are winter (January 01 to March 31, and December 16 to 31), spring (April 01 to May 25), summer (May 26 to September 21), and fall (September 22 to December 15).



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

Total Caribou Harvested

- 1 - 2
- 3 - 5
- 6 - 7
- > 8

0 15 30 45 60

Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 5.10a

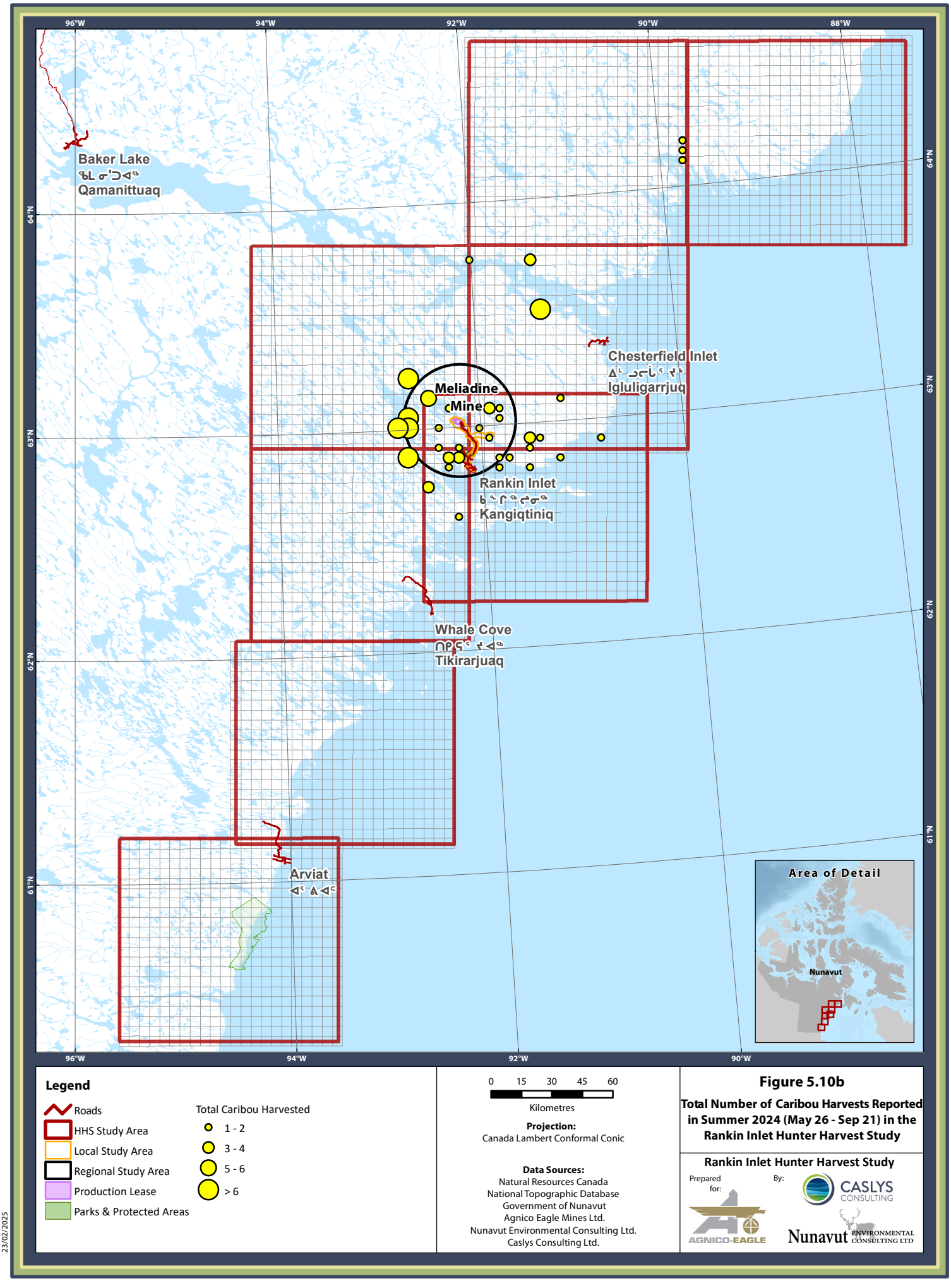
Total Number of Caribou Harvests Reported in Spring 2024 (Apr 01 - May 25) in the Rankin Inlet Hunter Harvest Study

Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd

23/02/2025



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

Total Caribou Harvested

- 1 - 2
- 3 - 4
- 5 - 6
- > 6

0 15 30 45 60

Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 5.10b

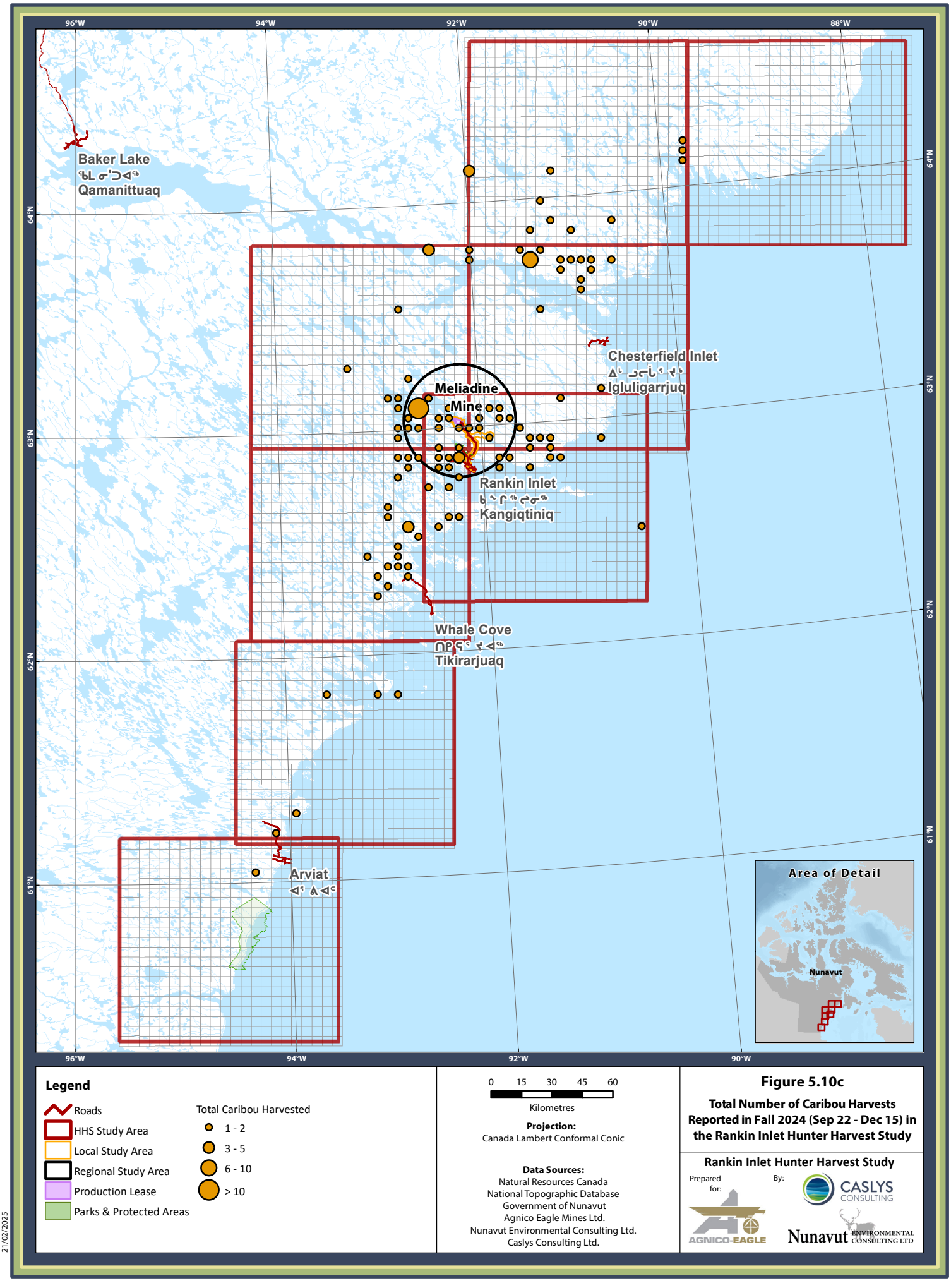
Total Number of Caribou Harvests Reported in Summer 2024 (May 26 - Sep 21) in the Rankin Inlet Hunter Harvest Study

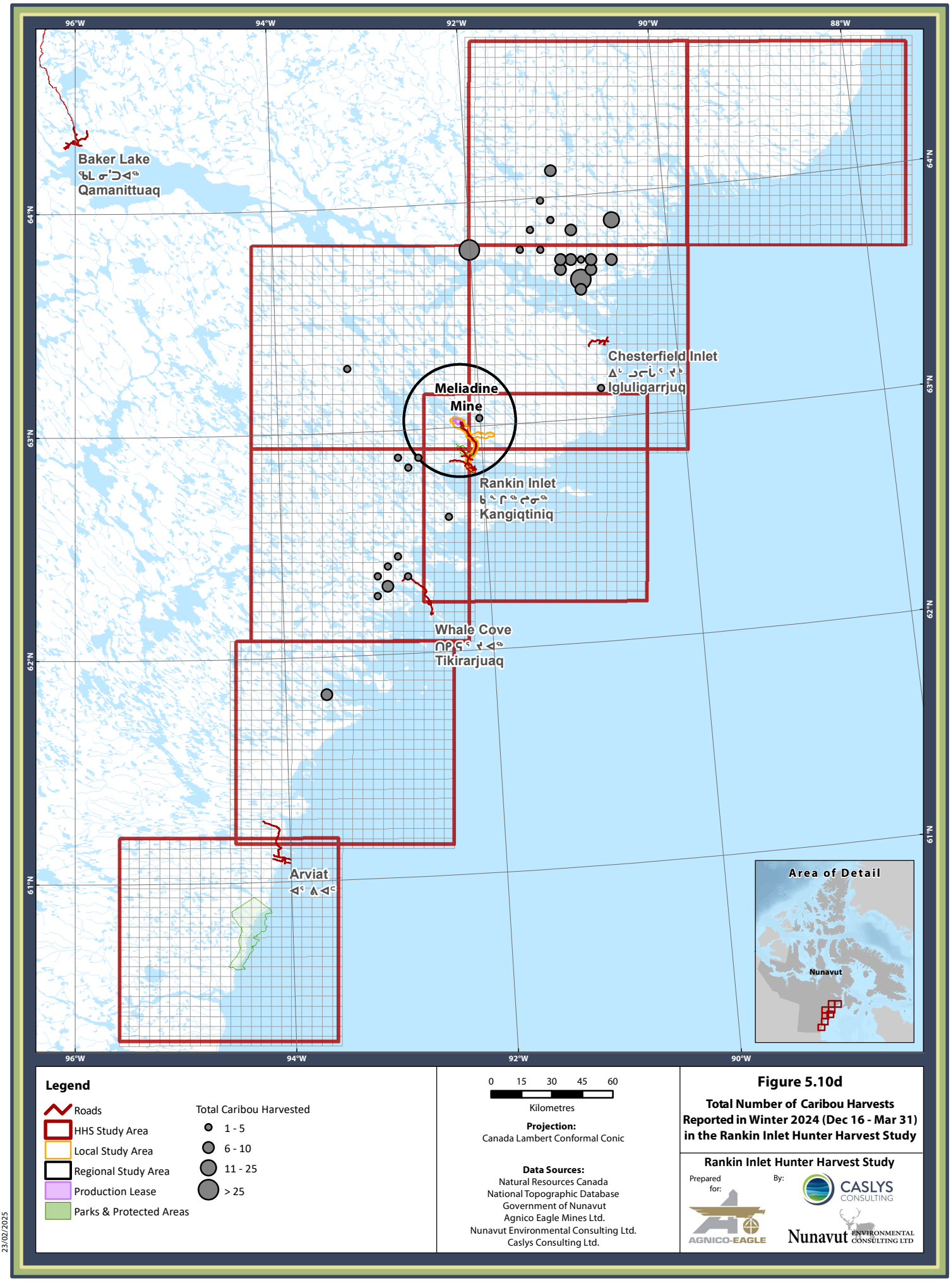
Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

23/02/2025


96°W
94°W
92°W
90°W
88°W
64°N
63°N
62°N
61°N
Baker Lake
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Qamanittuaq
Chesterfield Inlet
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Igluligarrjuq
Meliadine
Mine
Rankin Inlet
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Kangiqtiniq
Whale Cove
ᑎᑭᕋᖅ
Tikirarjuaq
Arviat
ᐊᕐᕕᐊᑦ
Area of Detail
Nunavut
Legend
Roads
HHS Study Area
Local Study Area
Regional Study Area
Production Lease
Parks & Protected Areas
Total Caribou Harvested
1 - 2
3 - 5
6 - 10
> 10
0 15 30 45 60
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.
Figure 5.10c
Total Number of Caribou Harvests Reported in Fall 2024 (Sep 22 - Dec 15) in the Rankin Inlet Hunter Harvest Study
Rankin Inlet Hunter Harvest Study
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING
Nunavut ENVIRONMENTAL CONSULTING LTD
21/02/2025



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

Total Caribou Harvested

- 1 - 5
- 6 - 10
- 11 - 25
- > 25

0 15 30 45 60

Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 5.10d

Total Number of Caribou Harvests Reported in Winter 2024 (Dec 16 - Mar 31) in the Rankin Inlet Hunter Harvest Study

Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

23/02/2025

5.1.5 Caribou Health

Study participants reported many incidences of sick Caribou in 2023 but not in other years of the HHS, suggesting that disease was particularly evident in 2023. In 2023, most incidences were reported by harvesters in Rankin Inlet from animals in the eastern Kivalliq. Brucellosis, roundworms, eye diseases, and symptoms such as 'sand-papery' lining to organs, cysts, and nodules in the meat were commonly reported. Harvesters reported leaving the sick animals on the land for scavengers. One group of harvesters, which was reported by several of the hunters involved and adjacent friends and family, harvested 15 Caribou, of which 14 were significantly ill. Wildlife Officers and other individuals who were informed about meat testing results, indicated high prevalence of the diseases listed above. Some participants commented that low wolf numbers in the Rankin Inlet area was preventing the natural removal of sick, old, and weakened Caribou and thus contributing to disease transmission.

5.2 OTHER TERRESTRIAL MAMMALS

5.2.1 Muskox

A total of 24 Muskox harvests were reported on the Rankin Inlet HHS in 2024, which is considerably higher than the Muskox harvests reported in 2023 (14 individuals), 2022 (10), and 2021 (14) (Table 5.5). With hunting for Caribou in the Rankin Inlet area considered by several participants to be challenging in 2024 due to low numbers near the community, more Rankin Inlet hunters reported a switch over to Muskox hunting to compensate for the limited Caribou numbers. Muskox is often avoided (especially large bulls) because they are considerably more work to process than Caribou, which is the preferred terrestrial protein in the community.

Table 5.5: Total Number of Terrestrial Mammal Harvests Reported from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study.

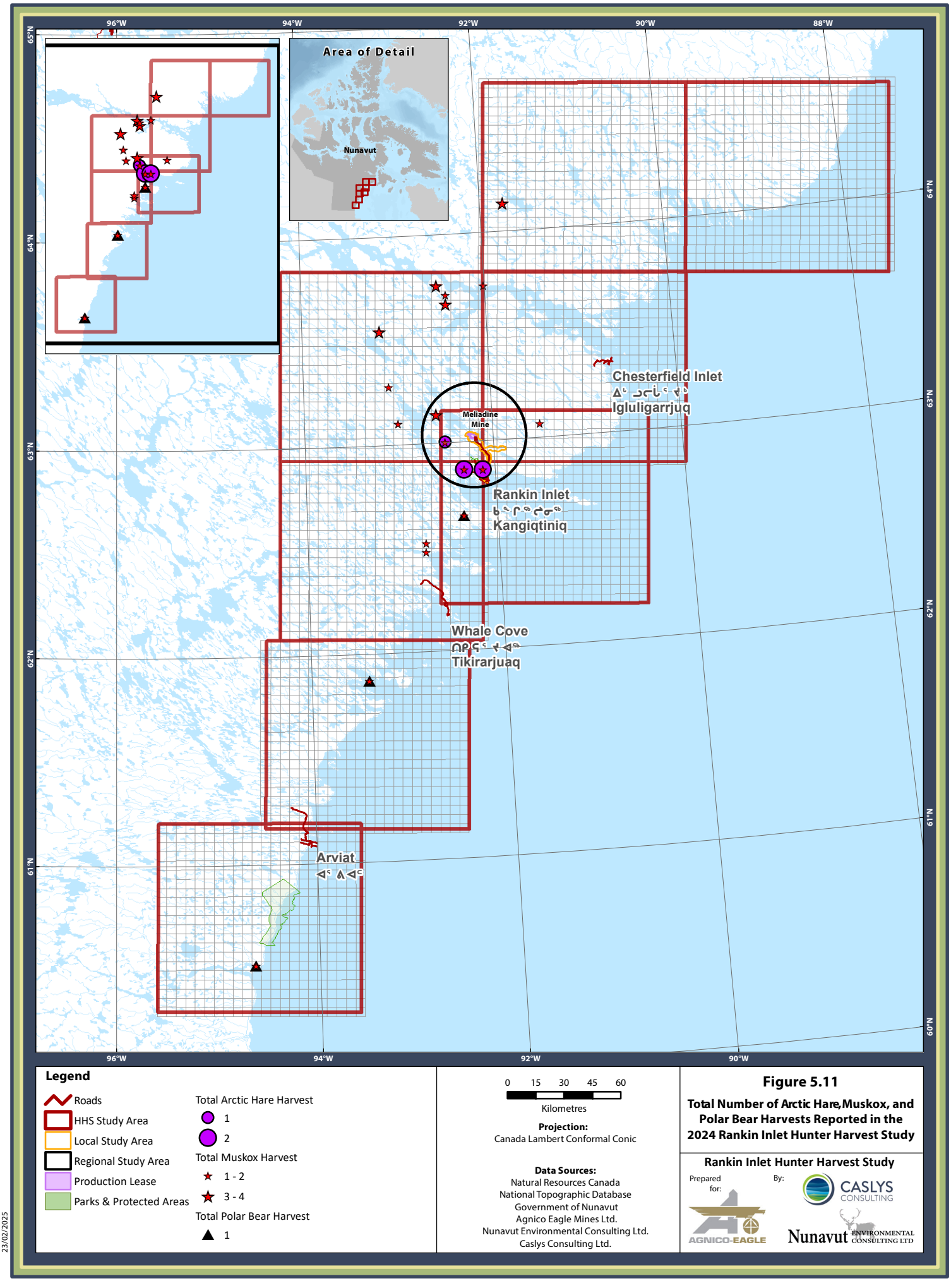
Species	2021	2022	2023	2024	Total
Arctic Fox (*Vulpes lagopus*)	1				1
Arctic Hare (*Lepus arcticus)*	7	7	1	5	20
Arctic Wolf (*Canis lupus*)	18	14	4	5	41
Barren-ground Caribou (*Rangifer tarandus*)	672	547	483	709	2,411
Ermine (*Mustela richardsonii*)				1	1
Lemming sp.	1				1
Moose (*Alces alces*)	1			1	2
Muskox (*Ovibos moschatus*)	14	10	14	24	62
Muskrat (*Ondatra zibethicus*)				1	1
Polar Bear (*Ursus maritimus*)			4	3	7
Red Fox (*Vulpes vulpes*)				1	1
Wolverine (*Gulo gulo*)	2	8	3	5	18
Totals	**716**	**586**	**509**	**755**	**2,566**

Muskox were generally harvested north-northwest of the community of Rankin Inlet up to Chesterfield Inlet (see Figure 5.11).

5.2.2 Wolverine, Wolf, Grizzly Bear, & Polar Bear

Five (5) Wolverine were reported as being harvested in 2024 compared to three (3) in 2023, eight (8) in 2022, and two (2) in 2021 (Table 5.5). All Wolverine harvests within the study area were northwest of Peter Lake, which is a considerable distance from the community of Rankin Inlet (Figure 5.12). Five (5) Arctic Wolf were reported as harvested in 2024 compared to four (4) in 2023, 14 in 2022, and 18 in 2021) (Table 5.5). Wolves were harvested north of Peter Lake and north of Chesterfield Inlet, well away from the community of Rankin Inlet (Figure 5.12). In general, relatively low densities of Wolverine and Arctic Wolf, and their general aversion to humans, requires hunters to hunt well away from the AWAR. As was the case between 2021 and 2023, there were no reported Grizzly Bear harvests by HHS participants in 2024.

For the second year, Polar Bear harvests were reported (i.e., 3 individuals in 2023) (Table 5.5). Individual bears were harvested south of the communities of Rankin Inlet, Arviat, and Whale Cove (Figure 5.11). Polar Bears were reported by some participants as entering the community of Rankin Inlet on a couple of occasions in 2024 and at least one was culled. Additionally, the recreational hunt guiding business appears to have expanded in 2024 with the allocation of new Polar Bear tags.



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

Total Arctic Hare Harvest
- 1
- 2

Total Muskox Harvest
- 1 - 2
- 3 - 4

Total Polar Bear Harvest
- 1

0 15 30 45 60
Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 5.11

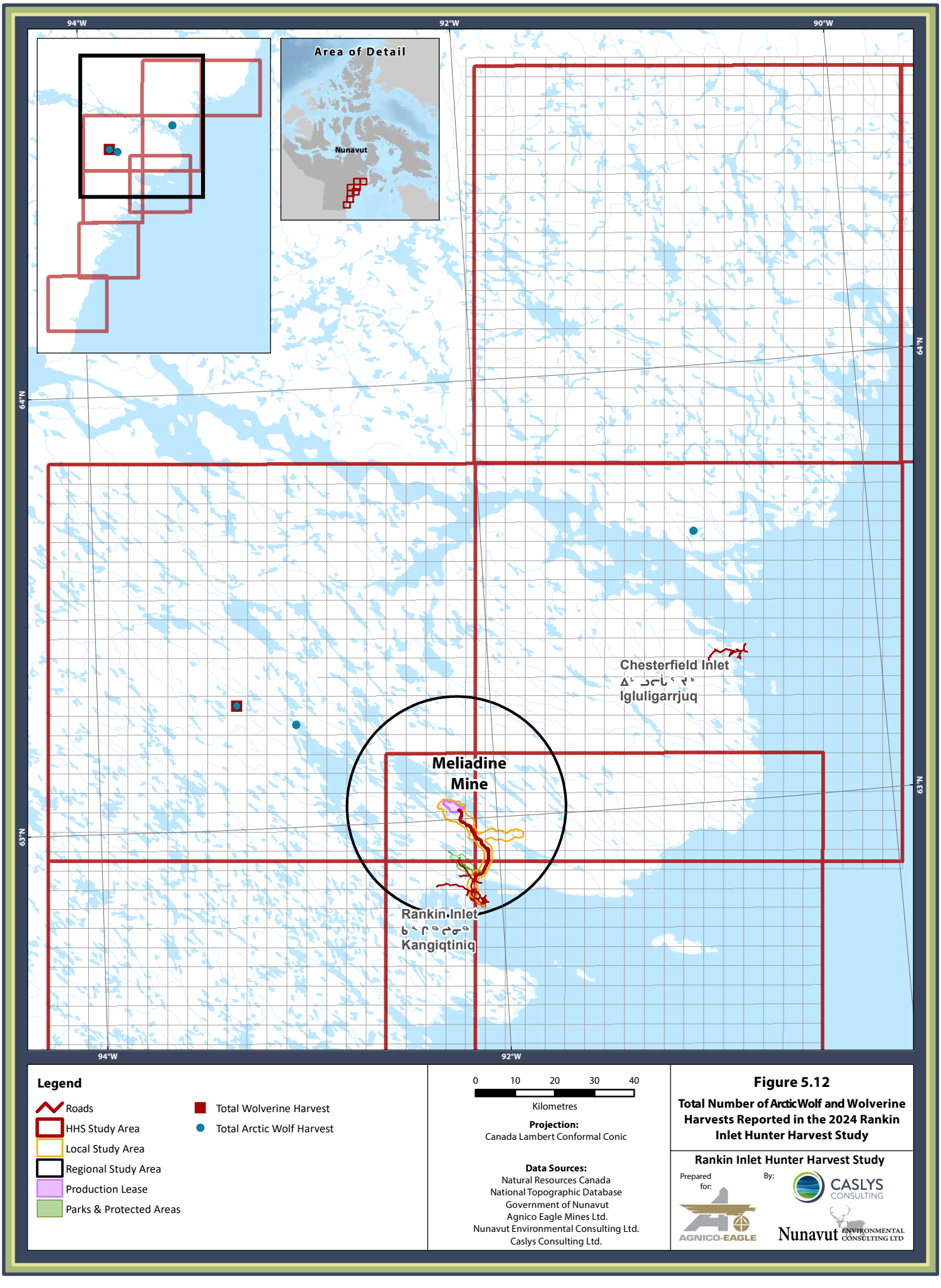
Total Number of Arctic Hare, Muskox, and Polar Bear Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study

Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

23/02/2025


94°W
92°W
90°W
64°N
63°N
Area of Detail
Nunavut
Chesterfield Inlet
ᐃᒡ ᓗᓕᒫᖅᓱᒃ
Igluligarrjuq
Meliadine
Mine
Rankin Inlet
ᑲᙵᒋᑦᑎᓂᖅ
Kangiqtiniq
Legend
Roads
HHS Study Area
Local Study Area
Regional Study Area
Production Lease
Parks & Protected Areas
Total Wolverine Harvest
Total Arctic Wolf Harvest
0 10 20 30 40
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.
Figure 5.12
Total Number of Arctic Wolf and Wolverine Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study
Rankin Inlet Hunter Harvest Study
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING
Nunavut ENVIRONMENTAL CONSULTING LTD
23/02/2025

5.2.3 Arctic Fox & Arctic Hare

As was the case in 2022 and 2023, Arctic Fox was not reported as being harvested in 2024 although one (1) Red Fox was harvested (Table 5.5). Only one (1) Arctic Fox was reported as harvested in 2021. Five (5) Arctic Hare were reported as harvested in 2024 compared to one (1) in 2023 and seven (7) in 2021 and in 2022 (Table 5.5). In 2024, Arctic Hare was harvested primarily in the vicinity of the community of Rankin Inlet (Figure 5.11). One participant in 2021 indicated that hare fur was used primarily for women's mittens.

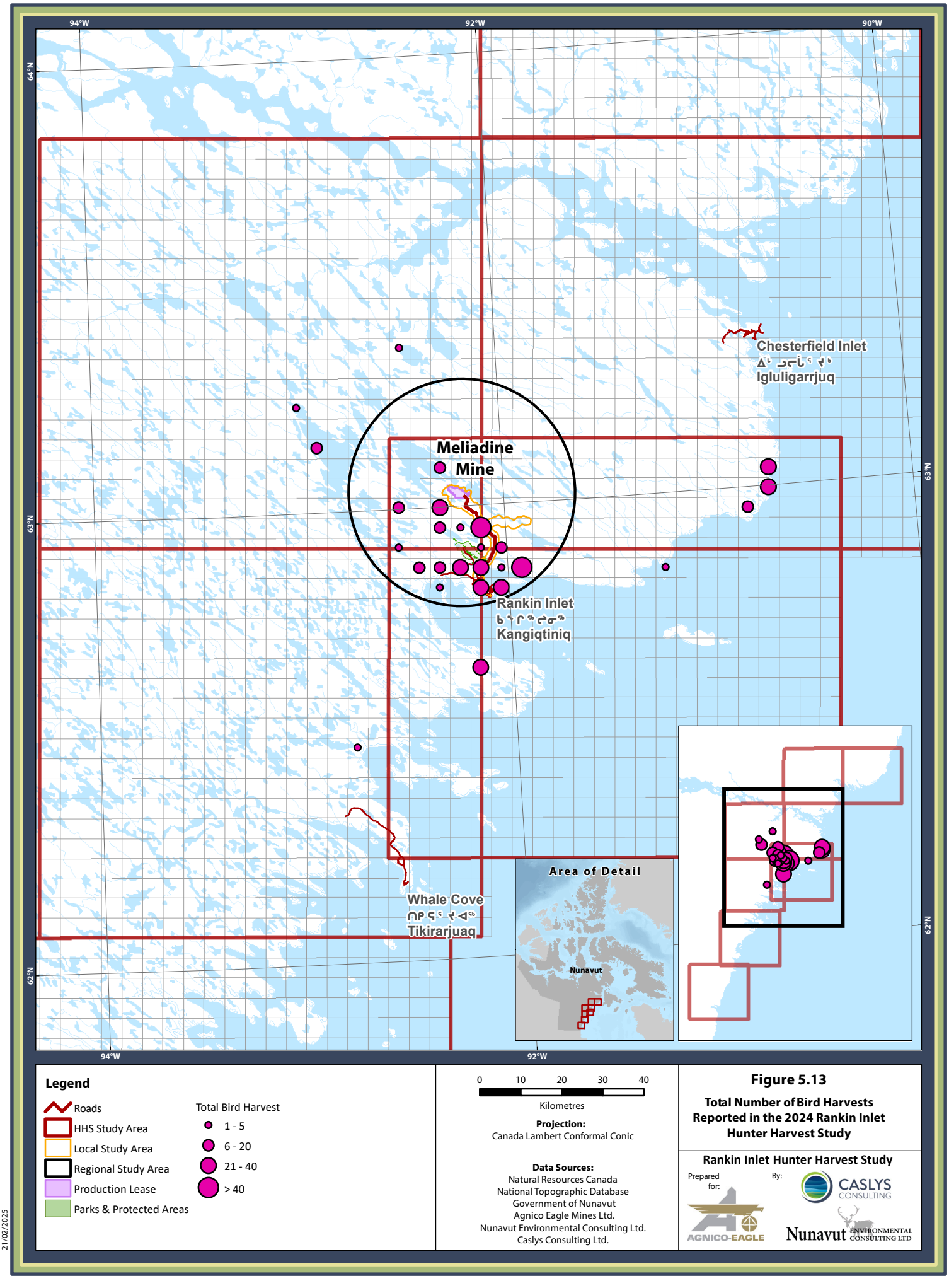
5.3 BIRDS

In 2024, 441 birds were reported as being harvested compared to 202 individuals in 2023, 136 in 2022, and 394 in 2021 (Table 5.6). It is unclear why birds were reported harvested at a higher level in 2024 compared to other years. Canada Goose (*Branta canadensis*) and Snow Goose (*Anser caerulescens*) made up 67% (294 individuals) of total birds harvested compared to 45% in 2023, 65% in 2022, and 66% in 2021. The three most common bird species reported as being harvested by Rankin Inlet HHS participants in 2024 were Canada Goose (*Branta canadensis;* 222 individuals), ptarmigan (*Lagopus* sp.; 73), and Snow Goose (*Anser caerulescens*; 72). In 2024, Black Guillemot (*Cepphus grylle*), loons, and owls were reported as being harvested for the first time.

Most birds were harvested in marine shoreline areas and lakes around the community of Rankin Inlet, along the Meliadine AWAR, up to Peter Lake, and in the Baker Foreland area (Figure 5.13), and primarily during the spring (i.e., May and June) migration (Figure 5.14).

Table 5.6: Total Number of Bird Harvests Reported from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study.

Species	2021	2022	2023	2024	Total
Black Guillemot (*Cepphus grylle*)				8	8
Canada Goose (*Branta canadensis*)	134	45	78	222	479
Common Eider (*Somateria mollissima*)	3	2	65	13	83
Goose sp. (*Anser* sp.)		8			8
Greater White-fronted Goose (*Anser albifrons*)	6			14	20
Gull sp. (*Larus* sp.)	40		1	13	54
Loon sp. (*Gavia* sp.)				2	2
Northern Pintail (*Anas acuta*)	10	10	6	9	35
Owl sp.				8	8
Ptarmigan sp. (*Lagopus* sp.)	58	26	33	70	187
Rock Ptarmigan (*Lagopus muta*)				3	3
Sandhill Crane (*Grus canadensis*)	10	1	6	4	21
Snow Goose (*Anser caerulescens*)	126	44	12	72	254
Snowy Owl (*Bubo scandiacus*)				1	1
Tundra Swan (*Cygnus columbianus*)	7		1	2	10
Totals	**394**	**136**	**202**	**441**	**1,173**


94°W
92°W
90°W
64°N
63°N
62°N
Chesterfield Inlet
ᐃᓗᓚᐃᒋᓐᓂᖅ
Igluligarrjuq
Meliadine
Mine
Rankin Inlet
ᑲᖏᒪᒃᑯᑎᖅ
Kangiqtiniq
Whale Cove
ᑎᑭᕋᕐᔪᐊᖅ
Tikirarjuaq
Area of Detail
Nunavut
Legend
Roads
HHS Study Area
Local Study Area
Regional Study Area
Production Lease
Parks & Protected Areas
Total Bird Harvest
1 - 5
6 - 20
21 - 40
> 40
0 10 20 30 40
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.
Figure 5.13
Total Number of Bird Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study
Rankin Inlet Hunter Harvest Study
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING
Nunavut ENVIRONMENTAL CONSULTING LTD
21/02/2025

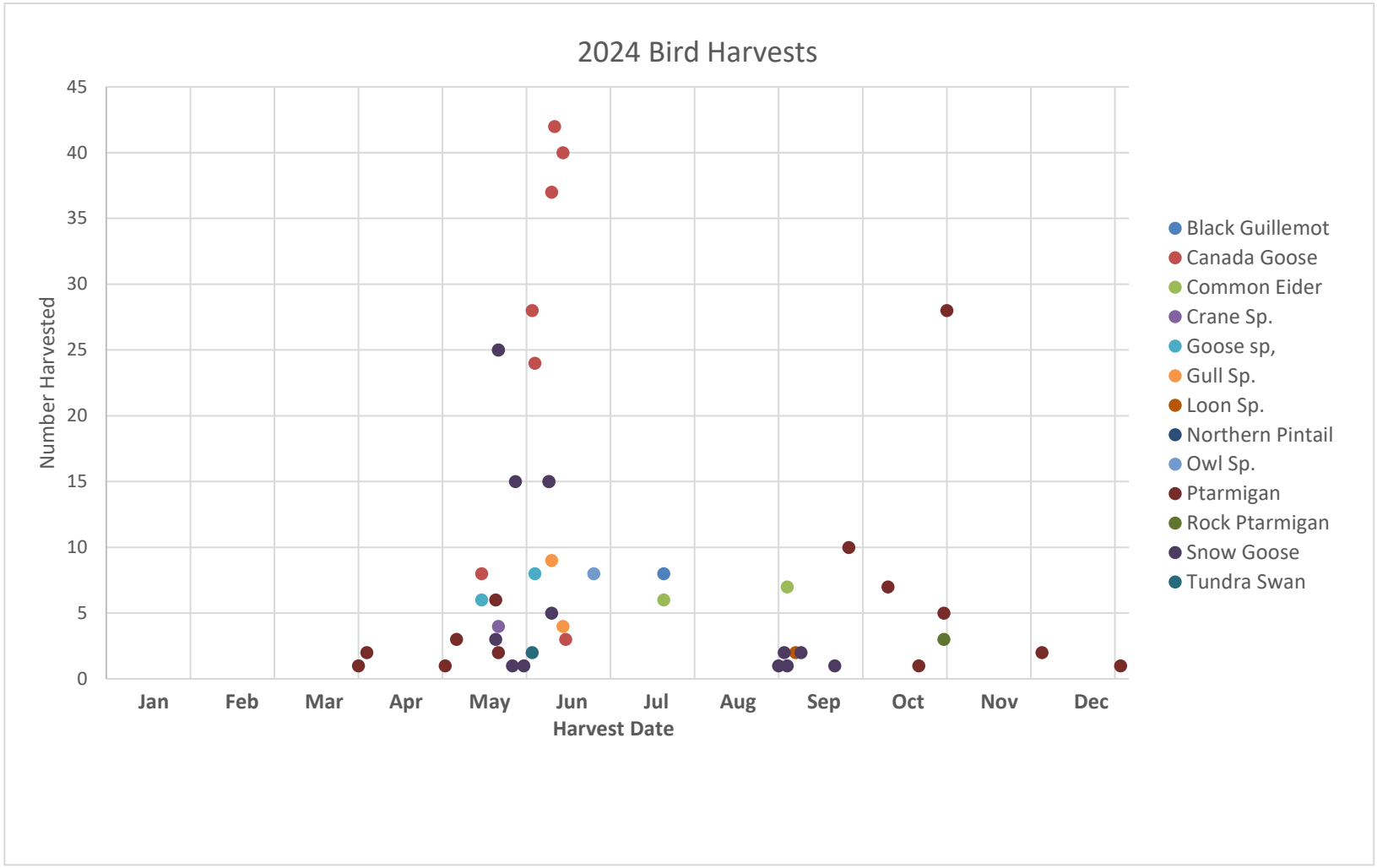


Figure 5.14: Seasonal Distribution and Individual Birds by Species Harvested in the 2024 Rankin Inlet Hunter Harvest Study.

5.4 MARINE MAMMAL

5.4.1 Seals & Walrus

In 2024, four species of seal were reported as being harvested: Bearded Seal (*Erignathus barbatus*), Harbour Seal (*Phoca vitulina*), Harp Seal (*Pagophilus groenlandicus*), and Ringed Seal (*Pusa hispida*) (Table 5.7). As was the case in all other years, Ringed Seal was the most harvested seal species in 2024 (i.e., 47 individuals; Table 5.7). Ringed Seal was generally harvested east and southeast of the community of Rankin Inlet, around Marble Island, and offshore between the community of Rankin Inlet and Baker Foreland (Figure 5.15). Other seal species were harvested at lower numbers and scattered throughout a similar area as the Ringed Seal harvests (Figure 5.15).

Four (4) Walrus (*Odobenus rosmarus*) were harvested in 2024 compared to two (2) in 2023 (Table 5.7).

Table 5.7 Total Number of Marine Mammal Harvests Reported from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study.

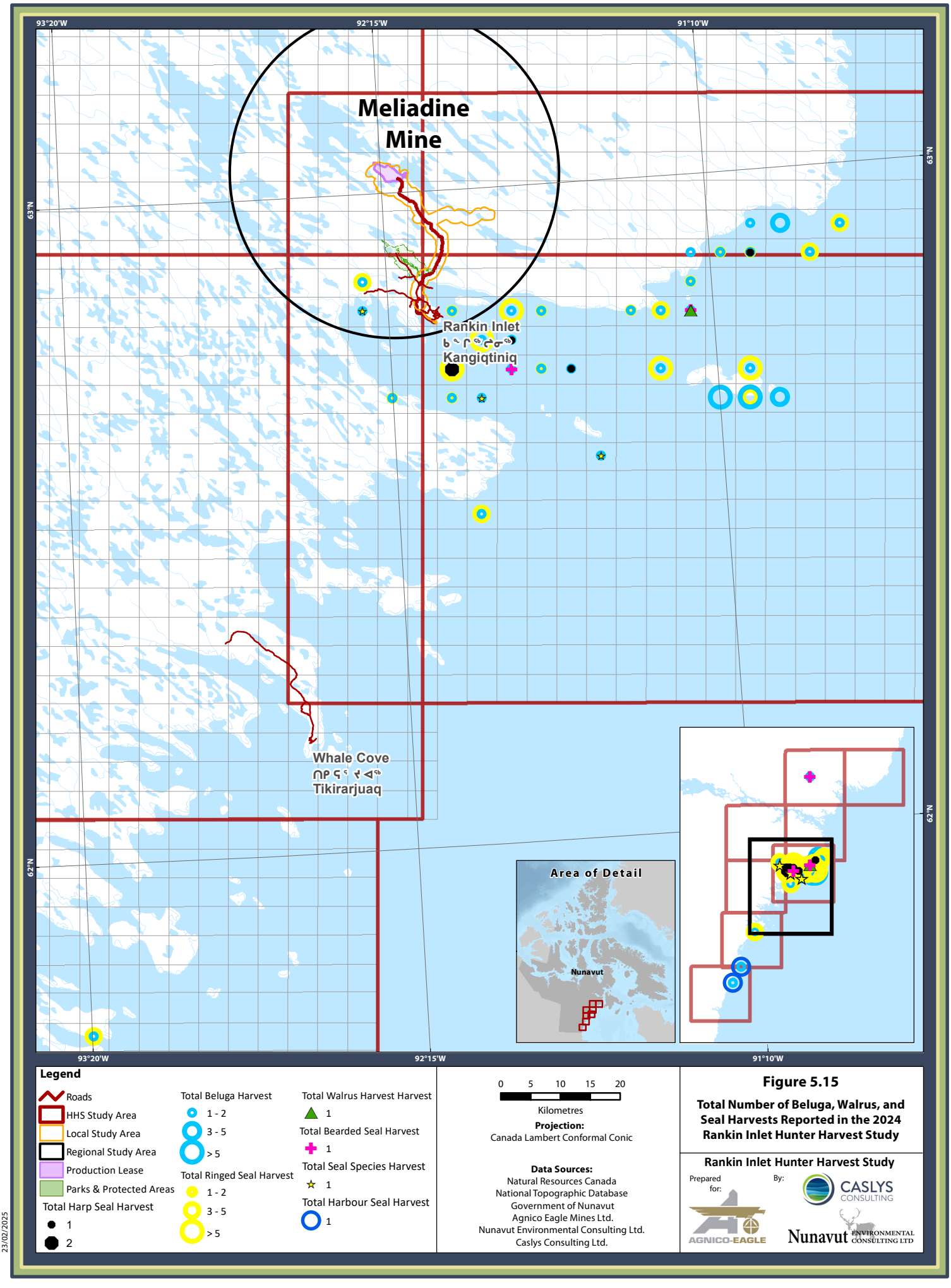
Species	2021	2022	2023	2024	Total
Bearded Seal (*Erignathus barbatus*)	2	1	5	3	11
Beluga (*Delphinapterus leucas*)	11	27	45	29	112
Harbour Seal (*Phoca vitulina*)				2	2
Harp Seal (*Pagophilus groenlandicus*)				5	5
Narwhal (*Monodon monoceros*)		5	2	2	9
Ringed Seal (*Pusa hispida*)	25	22	29	47	123
Seal sp.				3	3
Walrus (*Odobenus rosmarus*)	3		2	4	9
Totals	**41**	**55**	**83**	**95**	**274**

5.4.2 Beluga & Narwhal

Other marine mammal species harvested in 2024 included Beluga (*Delphinapterus leucas*; 29 individuals, compared to 45 in 2023) and Narwhal (*Monodon monoceros*; 2 in both 2023 and 2024) (Table 5.7). Belugas were harvested in Rankin Inlet, in offshore areas in outer areas around Marble Island and off Baker Foreland, and in coastal areas near the community of Arviat (Figure 5.15). Narwhal was not harvested within the Rankin Inlet HHS boundaries.

5.5 SHELLFISH

One participant reported harvesting 816 mussels in 2022, while a harvest of 51 mussels was reported in 2024.


93°20'W
92°15'W
91°10'W
63°N
62°N
Meliadine Mine
Rankin Inlet
ᑲᖏᖅᑎᖅ
Kangiqtiniq
Whale Cove
ᑎᑭᕋᕐᔪᐊᖅ
Tikirarjuaq
Area of Detail
Nunavut
Legend
Roads
HHS Study Area
Local Study Area
Regional Study Area
Production Lease
Parks & Protected Areas
Total Harp Seal Harvest
1
2
Total Beluga Harvest
1 - 2
3 - 5
> 5
Total Ringed Seal Harvest
1 - 2
3 - 5
> 5
Total Walrus Harvest Harvest
1
Total Bearded Seal Harvest
1
Total Seal Species Harvest
1
Total Harbour Seal Harvest
1
0 5 10 15 20
Kilometres
Projection:
Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.
Figure 5.15
Total Number of Beluga, Walrus, and Seal Harvests Reported in the 2024 Rankin Inlet Hunter Harvest Study
Rankin Inlet Hunter Harvest Study
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING
Nunavut ENVIRONMENTAL CONSULTING LTD
23/02/2025

SECTION 6 • CREEL SURVEY RESULTS

6.1 NUMBER OF FISHERMEN

The number of fishermen reporting successful fishing trips in 2024 was 44, which was the highest number to date (i.e., 33, 27, and 24 in 2023, 2022 and 2021, respectively) (Table 6.1). The highest numbers of fisherman reporting success in 2024 were in the May through August period.

Table 6.1: Number of Fisherman in Rankin Inlet who Recorded Fishing Success by Year (2021 to 2024) and Month in the Rankin Inlet Hunter Harvest Study.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	0	0	0	4	19	10	6	4	3	2	3	1
2022	1	1	1	0	12	11	9	10	3	3	0	0
2023	0	0	0	4	7	14	11	14	6	1	5	3
2024	1	1	1	4	13	22	12	16	3	4	8	5
Total	**2**	**2**	**2**	**12**	**51**	**57**	**38**	**44**	**15**	**10**	**16**	**9**

6.2 COMPOSITION OF CATCH

The most common fish species captured, Arctic Char, represented 92% of the total catch in 2024 (Table 6.2; compared to 93% in 2023, 77% in 2022, and 72% in 2021). Lake Trout (6.7%) were also captured at reasonably high numbers. The other two species that were the focus of the HHS, Arctic Grayling and Lake Whitefish, were caught at very low numbers. Additional species that were not the focus of this HHS but were captured in low numbers include Arctic Cod, Burbot (*Lota lota*), and unidentified fish species.

Table 6.2: Total Number of Fish Caught from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study.

Species	2021	2022	2023	2024	Total
Arctic Char (*Salvelinus alpinus*)	628	878	2,525	2,661	6,692
Arctic Cod (*Boreogadus saida*)	12	115	54	19	200
Arctic Grayling (*Thymallus arcticus*)	7	26	3	6	42
Burbot (*Lota lota*)	2		1		3
Fish sp.				4	4
Lake Trout (*Salvelinus namaycush*)	216	124	122	193	655
Lake Whitefish (*Coregonus clupeaformis*)	3	2	6	1	112
Totals	**868**	**1,145**	**2,711**	**2,884**	**7,708**

6.3 DISTRIBUTION OF FISHING

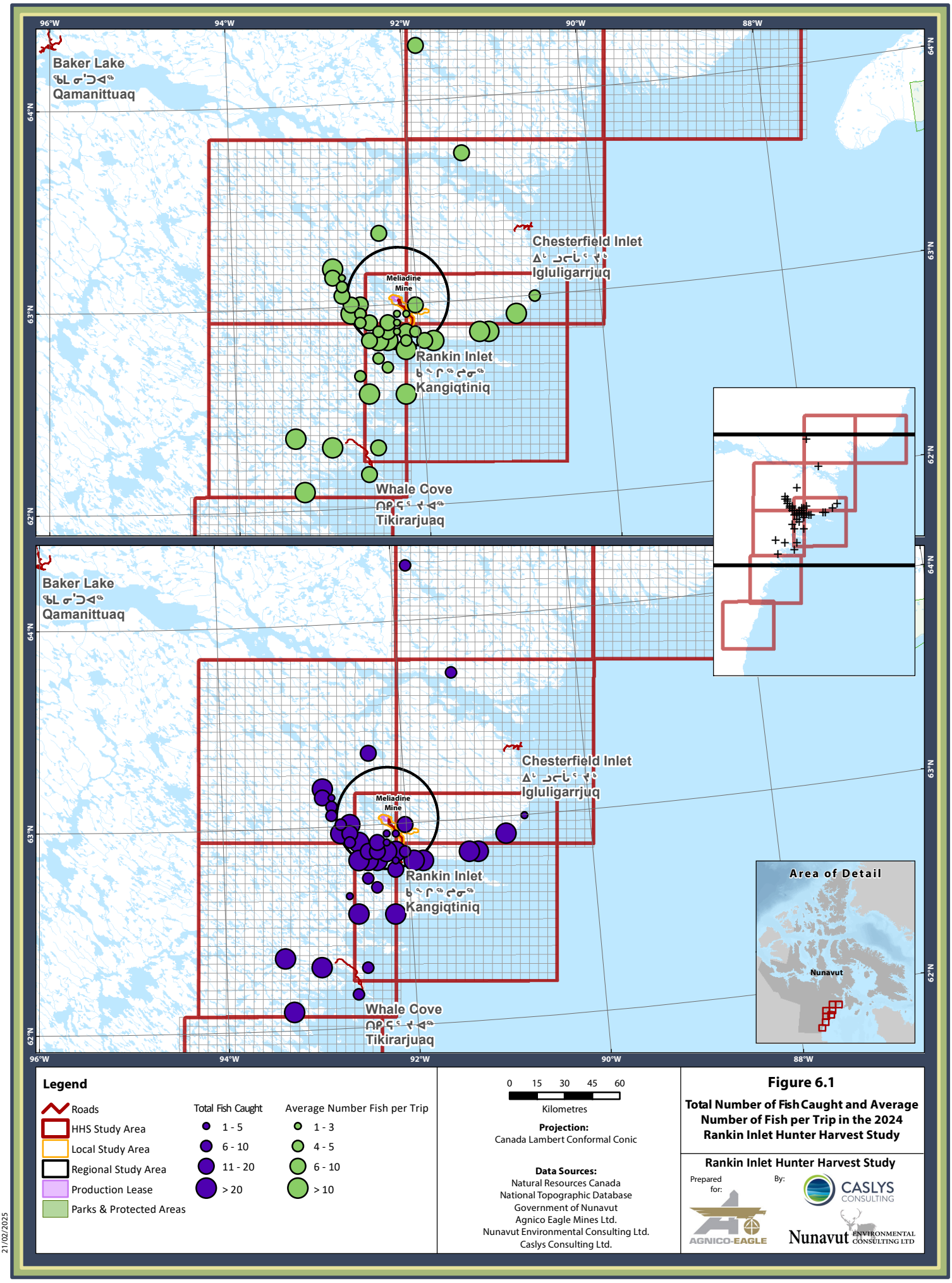
Fishing trips, regardless of success rate, generally occurred close to the community of Rankin Inlet, in lakes and rivers west of the community up to Peter Lake, and in coastal areas between Whale Cove and Chesterfield Inlet (Figure 6.1). Fishing by Rankin Inlet participants occurred to a lesser extent in the Chesterfield Inlet and Whale Cove areas (Figure 6.1). A small number of study participants reported fish harvests close to the Meliadine Mine AWAR (Figure 6.1).

6.4 MAGNITUDE OF FISHING

The total number of fish harvested per fisherman in each month of 2024 was highest in July and August with moderate numbers in April, May, and June (Figure 6.2). The higher numbers in August were much like what was observed in 2023 (Figure 6.2). In 2024, the most captured fish species, in order of abundance, were Arctic Char, Lake Trout, Arctic Cod (*Boreogadus saida*), and Arctic Grayling (Table 6.2).

6.5 SEASONAL TIMING OF FISHING

In 2024, fishing periods with the most active fisherman was from May through August (Table 6.1) while the greatest number of fish caught was in July and August (Figure 6.2).



Legend

- Roads
- HHS Study Area
- Local Study Area
- Regional Study Area
- Production Lease
- Parks & Protected Areas

Total Fish Caught	Average Number Fish per Trip
1 - 5	1 - 3
6 - 10	4 - 5
11 - 20	6 - 10
> 20	> 10

0 15 30 45 60

Kilometres

Projection:
Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico Eagle Mines Ltd.
Nunavut Environmental Consulting Ltd.
Caslys Consulting Ltd.

Figure 6.1

Total Number of Fish Caught and Average Number of Fish per Trip in the 2024 Rankin Inlet Hunter Harvest Study

Rankin Inlet Hunter Harvest Study

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING; Nunavut Environmental Consulting Ltd.

21/02/2025

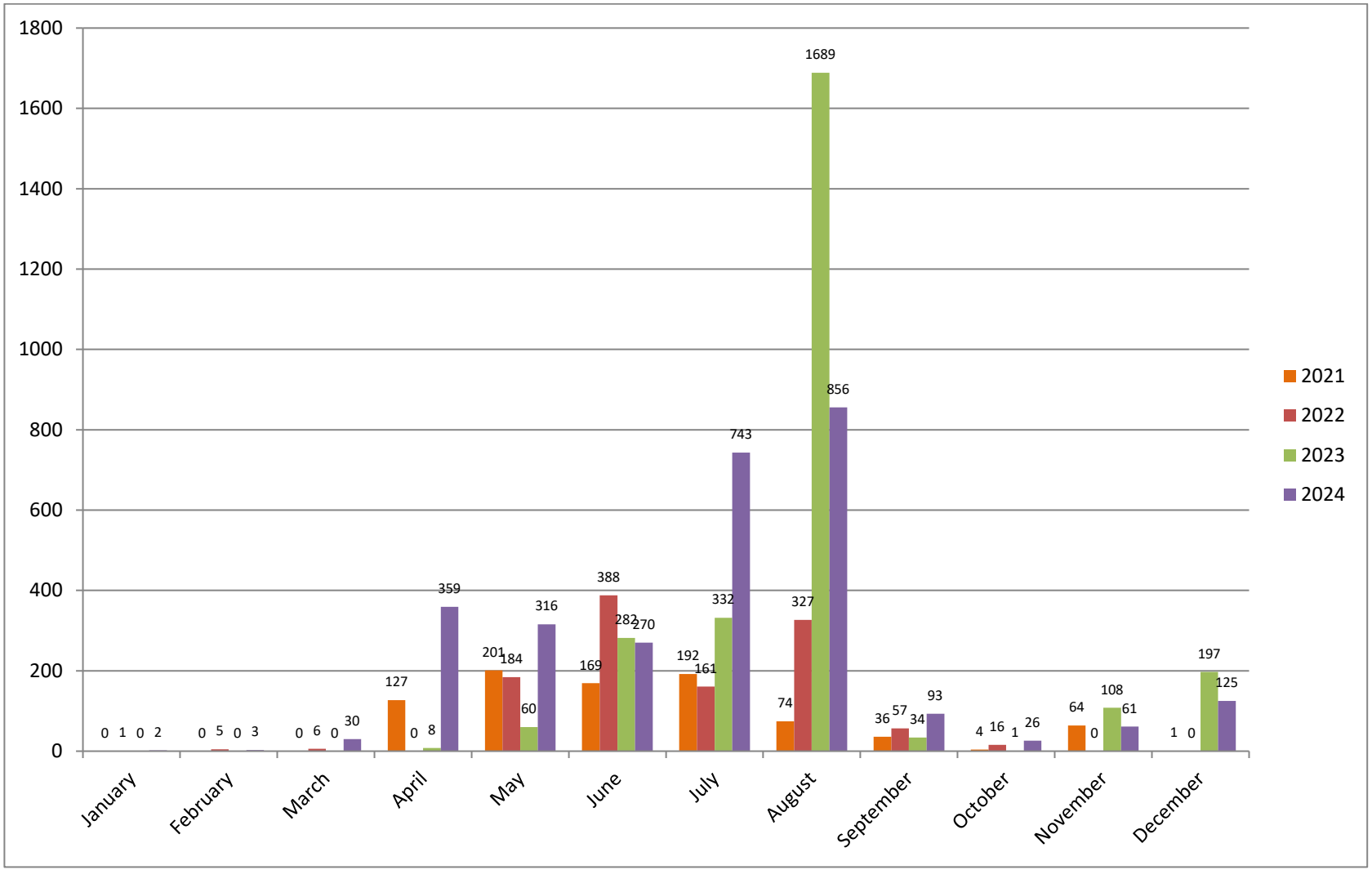


Figure 6.2: Total Number of Fish Caught by Month from 2021 to 2024 in the Rankin Inlet Hunter Harvest Study.

SECTION 7 • ACCURACY OF IMPACT PREDICTIONS

The TEMMP indicates that project effects determinations and threshold levels for Caribou harvest will be set after three full years of data from the Rankin Inlet HHS and following discussions with the Government of Nunavut. A Caribou harvest threshold will be discussed within the TAG prior to including this information in the TEMMP.

A general analysis of current and historical data (NWMB 2004) determined that the average number of Caribou harvested per participant has increased within the HHS boundaries, although this result is less evident within the RSA. The increase in average harvest per participant does not necessarily indicate an increase in overall harvest rates. As a percentage, the total harvest within the RSA has not been more than 5% over baseline levels in any year since the HHS began. The demand for country meat and the increase in guide outfitters in the last few years are also factors that need to be considered when analyzing Caribou harvest rates.

A more detailed description of data and data analysis limitations are included below:

1) Methodologies and participation rates are different between the Rankin Inlet HHS and NWMB HHS, making comparisons of some results difficult as the differences may be due to these factors and not hunting activities;
    - Only data from the Rankin Inlet hunters, and not other community hunters, is being analysed. Because harvesting of Caribou within the RSA from other community hunters is not included, this could affect the total number of Caribou harvested and potentially change the differences in the average number of Caribou/participant statistics.
    - Spatially, the two studies have different specifications on how the location of harvests was reported. The Rankin Inlet HHS is represented by a 5x5 km area, whereas the NWMB is represented by specific locations (points). Although the NWMB data may have been collected using a grid pattern, it is different than the Rankin Inlet HHS specifications, meaning that the results have a minimum accuracy of +/- 5 km.
2) The analysis does not consider seasonality of Caribou occurrence or differences in movement patterns between the two time periods; therefore, changes in harvest rates could be due to availability of Caribou within the study area; and
3) Several other factors that could affect hunting practices and distribution have not been considered in this analysis. Examples include:
    - Climate change – changing landscapes, ice and snow conditions, and weather could be affecting when and where the hunters are able to hunt at certain times of year, and the movement patterns of Caribou; and
    - Hunting motivations – patterns in hunting for profit or providing for family and community may be different between the two time periods.

SECTION 8 • MANAGEMENT RECOMMENDATIONS

The Rankin Inlet HHS should be continued on an annual basis to monitor the hunting and fishing patterns of Rankin Inlet residents, and the potential effects of the mine and AWAR. Meetings with participants in 2025 will be particularly important in maintaining contact, building relationships, expanding the study, collecting good harvest data, and determining a more accurate estimate of total active hunters in the community.

Furthermore, ongoing collaboration with the KHTO will ensure that the HHS program runs smoothly, incorporates local IQ and TK and community concerns, and increases participant rates.

Participation rates can be maintained and enhanced by continuing to use social media platforms such as Facebook and Instagram, expanding connections on these platforms, ensuring that all participants are visited during the three scheduled field visits, and continuing with distribution of the well-received year-end prizes while in the community. In 2024, recruitment efforts resulted in new participants joining the study. Recruitment efforts should be ongoing to bring on other participants in 2025.

SECTION 9 • REFERENCES

Agnico Eagle Mines Ltd. 2022. Terrestrial Environment Management and Monitoring Program (TEMMP)

NWMB, Nunavut Wildlife Management Board. 2004. The Nunavut Wildlife Harvest Study. Prepared by Priest, H., Harvest Study Coordinator, NWMB and Usher, P. J., P.J. Usher Consulting Services.

APPENDIX A

2024 Rankin Inlet Hunter Harvest Study Calendar



2024
Rankin Inlet Harvest Study
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Brenda Tagalik



Alex Pissuk

January | ᑕᖅᑭᓇᖅᓯᐊᕐᖓ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᕐᒥᑦ ᒪᖅᐃᑕᐅᔨᓂᒃ ᖁᐅᐳᓴᐃᓂᕐᖓ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᓴᓂᖅ	Tuesday ᑐᒃᓯᐊᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖏᓴᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
	1 New Year's Day	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

December 2023

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2024

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		


Neil Ammaklak

February | ᐊᕐᓂᓂᕆᑲᒃ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᑕᓂᖅᓯᒪᑦ ᓴᖅᐃᑕᐅᔨᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᓴᓴᖅ	Tuesday ᑐᖅᓯᐊᖅᓯᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖏᓴᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓯᖅ
				1	2 Groundhog Day	3
4	5	6	7	8	9	10
11	12	13	14 Ash Wednesday Valentine's Day	15	16	17
18	19 Family Day	20	21	22	23	24
25	26	27	28	29		

January 2024

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

March 2024

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						


Tommy Makkigak

March | ᓇᓕᑎᐊᓕ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᖅᑎᑦ ᒪᖅᐃᑕᐅᔨᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᑭᓯᐊᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖏᓴᐊᓕ	Thursday ᓯᑕᒪᓕ	Friday ᑕᓕᒪᓕ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
February 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	April 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30				1	2
3	4	5	6	7	8	9
10 Daylight Savings Time Starts	11	12	13	14	15	16
17 St. Patrick's Day	18	19 First Day of Spring	20	21	22	23
24	25	26	27	28	29 Good Friday	30
31 Easter Sunday						



Darla Pilakapsi

April | ᑎᓇᓵᐃᐢ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᖅᑎᑦ ᒪᖁᐃᑕᐅᔪᓂᒃ ᖁᐅᐳᓴᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᑭᓯᐊᖅᓇᖅ ᓯᖃᓕᖅ	Wednesday ᐱᖏᒻᔪᐊᐃᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
	1 Easter Monday	**2**	**3**	**4**	**5**	**6**
7	**8**	**9**	**10**	**11**	**12**	**13**
14	**15**	**16**	**17**	**18**	**19**	**20**
21	**22** Earth Day	**23**	**24**	**25**	**26**	**27**
28	**29**	**30**				

March 2024

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

May 2024

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Nathan Tulugak

May | ᓄᖅᖃᐃᑦ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᖅᑎᑦ ᒪᖅᐃᑕᐅᔨᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᑭᓯᐊᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖏᒻᓴᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
April 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	June 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		1	2	3	4
5	6	7	8	9	10	11
12 Mother's Day	13	14	15	16	17	18
19	20 Victoria Day	21	22	23	24	25
26	27	28	29	30	31	



Tommy Makkigak

June | ᒪᵒᓂᑦ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᖅᑎᑦ ᒪᖁᐃᑕᐅᔪᓂᒃ ᖁᑐᓴᓱᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᑭᓯᐊᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖓᓱᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
May 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	July 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16 Father's Day	17	18	19	20	21	22
23	24	25	26	27	28	29
30						



Neil Ammaklak

July | ᐊᖏᑕᑦ 2024

Rankin Inlet Harvest Study
ᑲᖏᕐᓂᔪᓂᖅᑎᑦ ᒪᖅᐃᑕᐅᔪᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᐱᓯᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖏᓪᓗᓯᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
	1 Canada Day	2	3	4	5	6
7	8	9 Nunavut Day	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June 2024

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

August 2024

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31


Darren Ikakhik

August | ᐊᑯᓕᓗᑎᕆᐃᓚᒃ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᖅᑎᑦ ᒪᖅᐃᑕᐅᔨᓂᒃ ᖃᐅᔨᓴᐃᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᒃᓯᐊᖅᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖏᒍᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
July 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 September 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30				1	2	3
4	5 Civic Holiday	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



Brenda Tagalik

September | ᐊᒥᖏᐃᓴᖏᓐᓄᑦ 2024

Rankin Inlet Harvest Study
ᑲᖏᕐᓂᔪᓂᖏᑦ ᒪᖏᐃᑕᐅᔨᓂᒃ ᖁᐅᐳᓴᐃᓂᖅᖢᑎᒃ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖏᓐᓄᑦ	Tuesday ᑐᑭᓯᐊᖏᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖓᓱᐊᒃ	Thursday ᓯᑕᒪᒃ	Friday ᑕᓕᒪᒃ	Saturday ᓂᖅᐃᑐᖏᓇᖅ
1	2 Labour Day	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22 First Day of Autumn	23	24	25	26	27	28
29	30 National Day for Truth and Reconciliation					

August 2024

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

October 2024

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



Leo Kaludjak

October | ᐅᑭᐅᓪᓕ 2024

Rankin Inlet Harvest Study
ᑲᖏᕆᓂᓂᕆᑦ ᒪᖅᐃᑕᐅᔪᓂᒃ ᖃᐅᔨᓴᐃᓂᕆᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᕆᖅ	Tuesday ᑐᒃᓯᐊᖅᓇᖅ ᓯᓚᓕᖅ	Wednesday ᐱᖏᒪᔪᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᕆᐃᑐᖅᓇᖅ
		1	2	3	4	5
6	7	8	9	10	11	12
13	14 Thanksgiving Day	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31 Halloween		

September 2024

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

November 2024

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



Darren Ikakhik

November | ᑲᑕᐃᓗᓐᓂᕆᑲᒃ 2024

Rankin Inlet Harvest Study
ᑲᖏᖅᓯᓂᖅᑎᑦ ᒪᖅᐃᑕᐅᔪᓂᒃ ᖃᐅᔨᓴᐃᓂᖅᖢᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᓴᖅ	Tuesday ᑐᒃᓯᐊᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖏᓪᓗᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᕐᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
October 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	December 2024 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31				1	2
3 Daylight Savings Time Ends	4	5	6	7	8	9
10	11 Remembrance Day	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30


Darren Ikakhik

December | ᐊᑲᓪᓕᖅ 2024

Rankin Inlet Harvest Study
ᑲᖏᕐᓂᓂᕐᒥᑦ ᒪᕐᑲᐃᑕᐅᔪᓂᑦ ᕿᑲᐅᔾᔨᓂᐊᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᑎᓂᓴᖅ	Tuesday ᑐᑭᓯᐊᓴᖅ ᓯᓚᓕᖅ	Wednesday ᐱᖓᓱᓪᓗᒡᒐ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᓴᖅ
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21 First day of Winter
22	23	24	25 Christmas Day	26 Boxing Day	27	28
29	30	31				

Please return the calendar to the Agnico-Eagle office for entry into the participant draw.

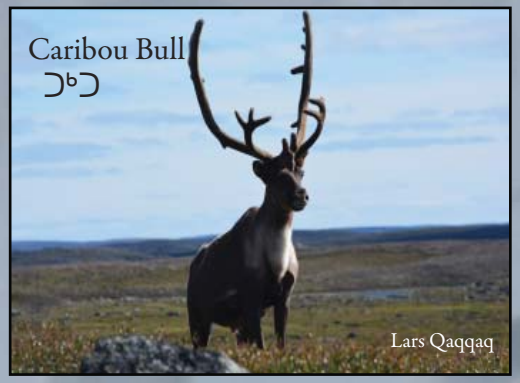
November 2024

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

January 2025

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Wildlife and Fish Species of Interest















Martin Gebauer

Wildlife and Fish Species of Interest









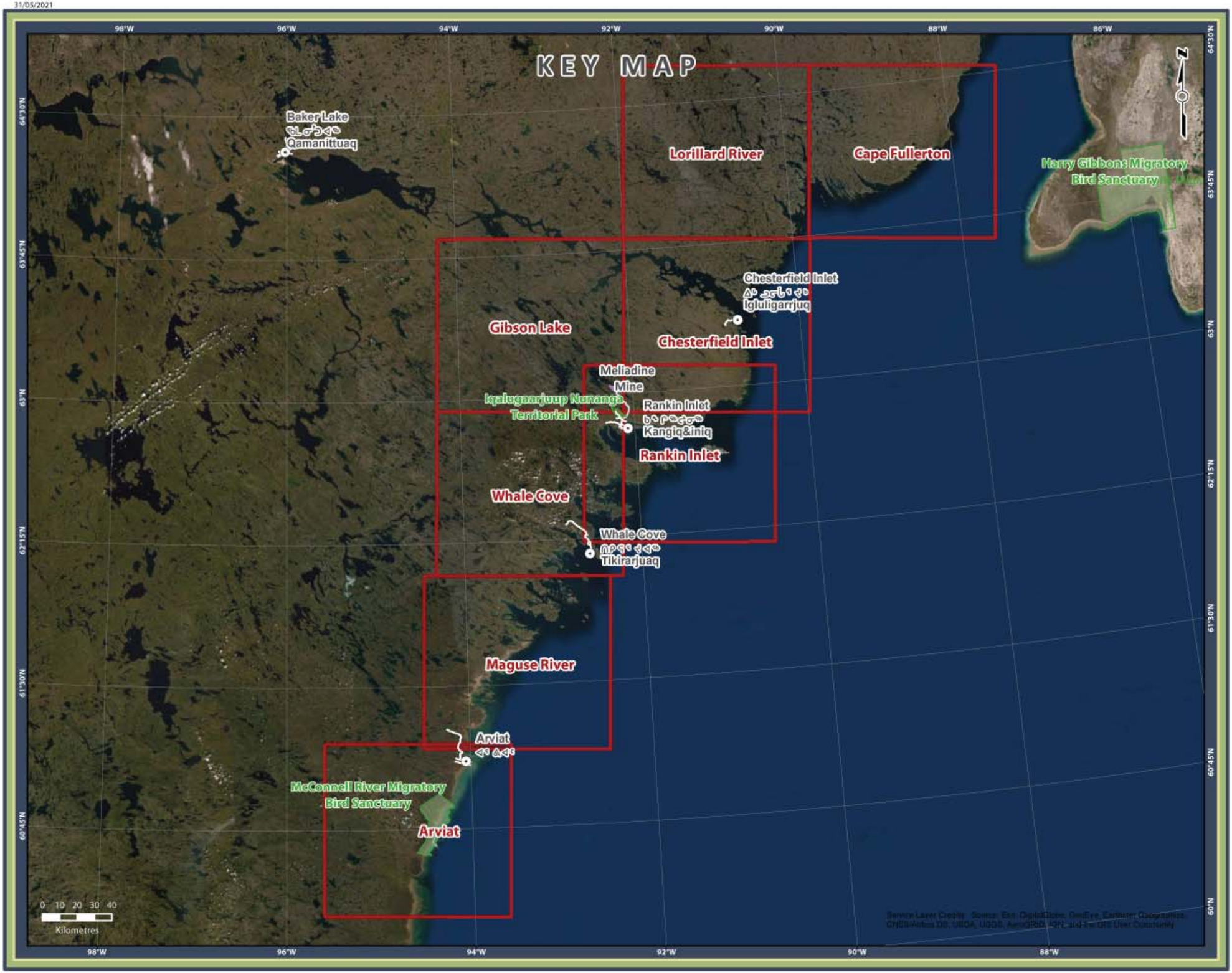




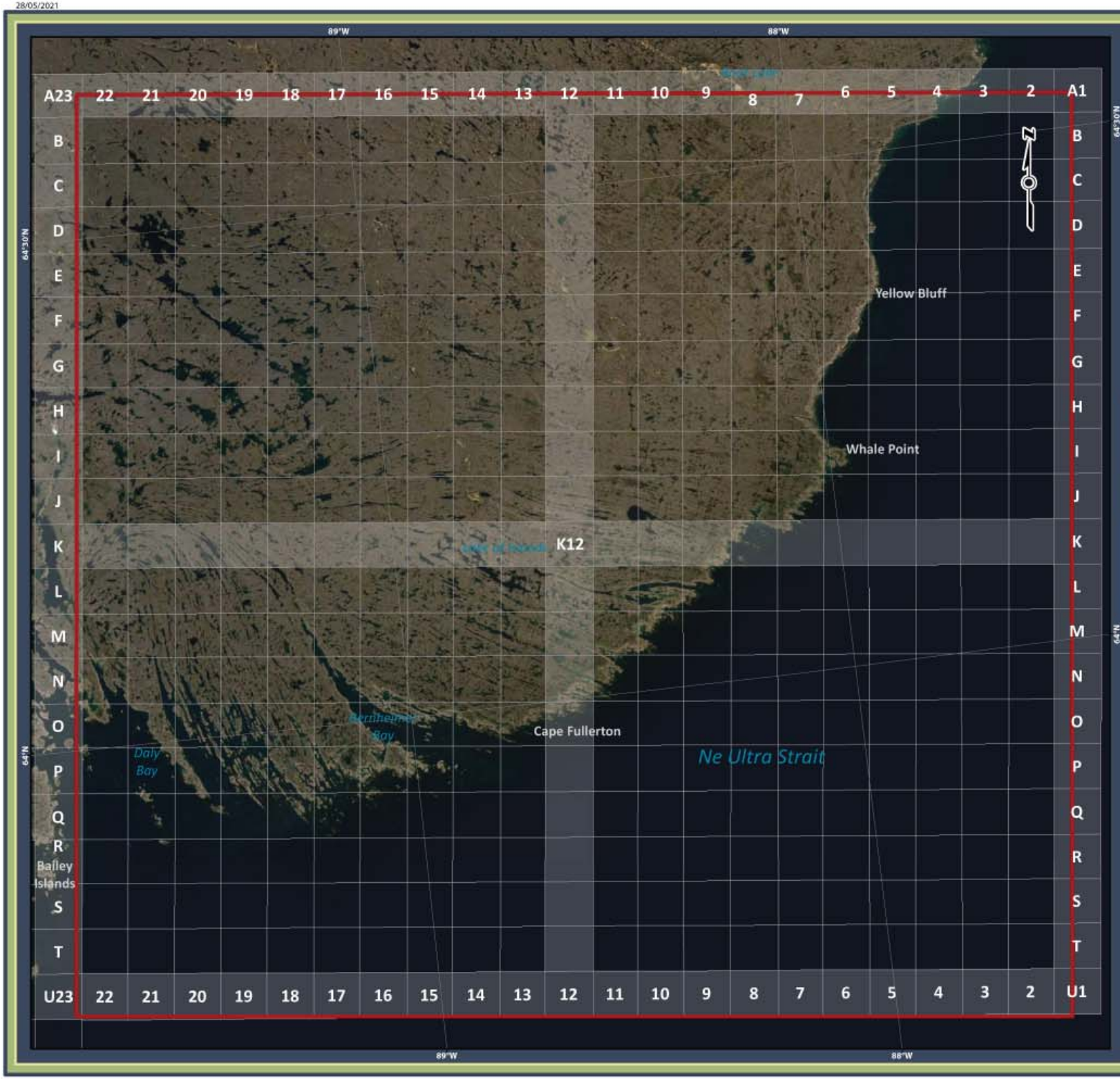


Martin Gebauer

31/05/2021

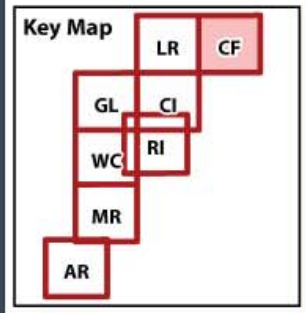

KEY MAP
Baker Lake
ᑲᒪᓂᑐᐊᖅ
Qamanittuaq
Lorillard River
Cape Fullerton
Harry Gibbons Migratory Bird Sanctuary
Chesterfield Inlet
ᐃᒡ ᓯᓚᐃᓪᓗᒃ
Igluligarrjuq
Gibson Lake
Chesterfield Inlet
Meliadine Mine
Iqalugaarjuup Nunanga Territorial Park
Rankin Inlet
ᑲᙵᖅᓯᒪᒃ
Kangiq&iniq
Rankin Inlet
Whale Cove
Whale Cove
ᑎᑭᕐᓯᐊᒃ
Tikirarjuaq
Maguse River
Arviat
ᐊᕐᕕᐊᑦ
McConnell River Migratory Bird Sanctuary
Arviat
0 10 20 30 40
Kilometres
98°W
96°W
94°W
92°W
90°W
88°W
64°30'N
63°45'N
63°N
62°15'N
61°30'N
60°45'N
60°N

28/05/2021



Rankin Inlet Harvest Study

Cape Fullerton





0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:

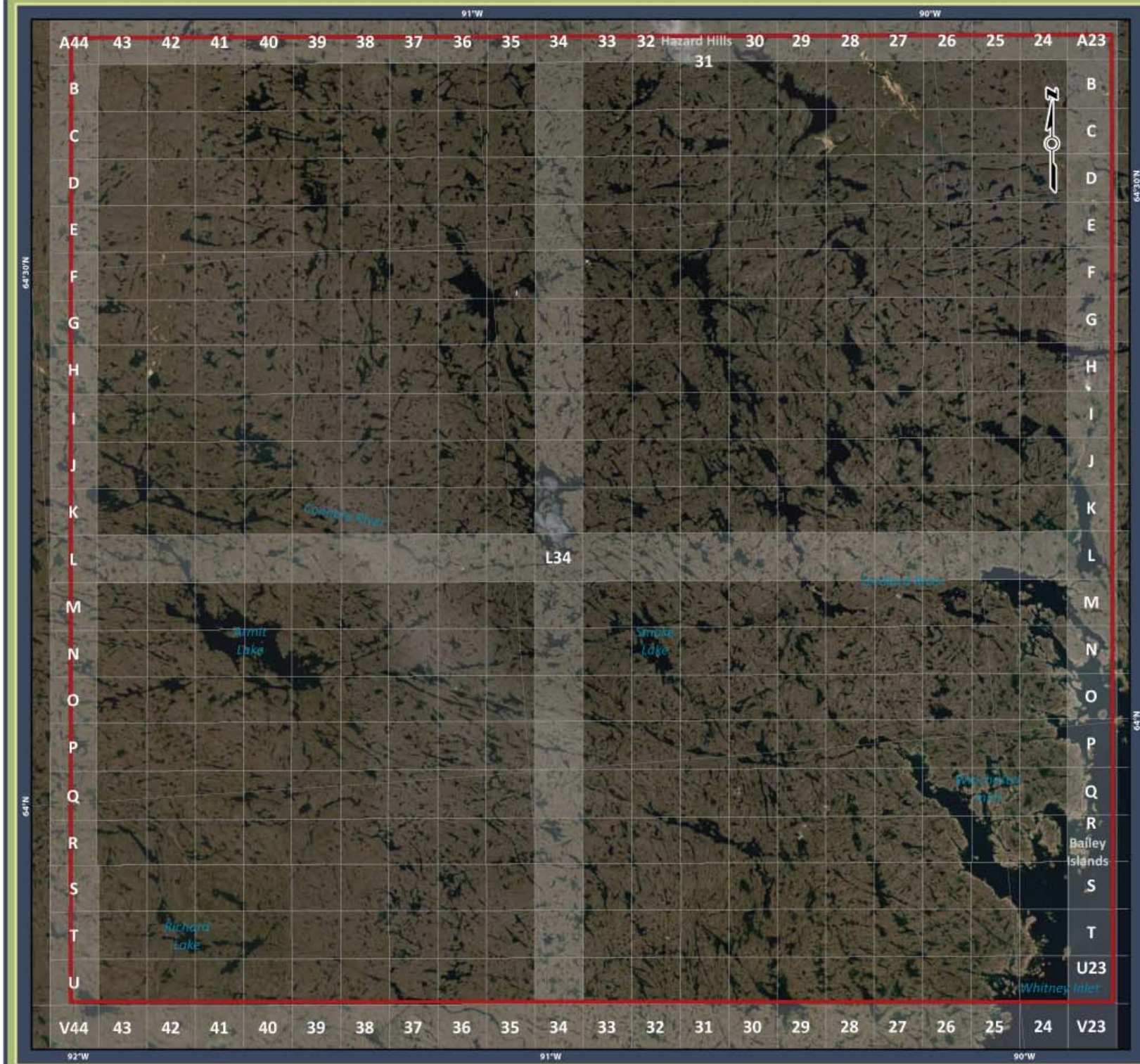
AGNICO-EAGLE

By:

Nunavut Environmental Consulting Ltd

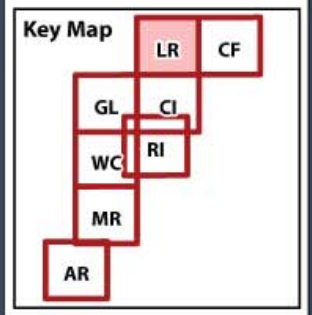
CASLYS CONSULTING

28/05/2021



Rankin Inlet Harvest Study

Lorillard River





0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:

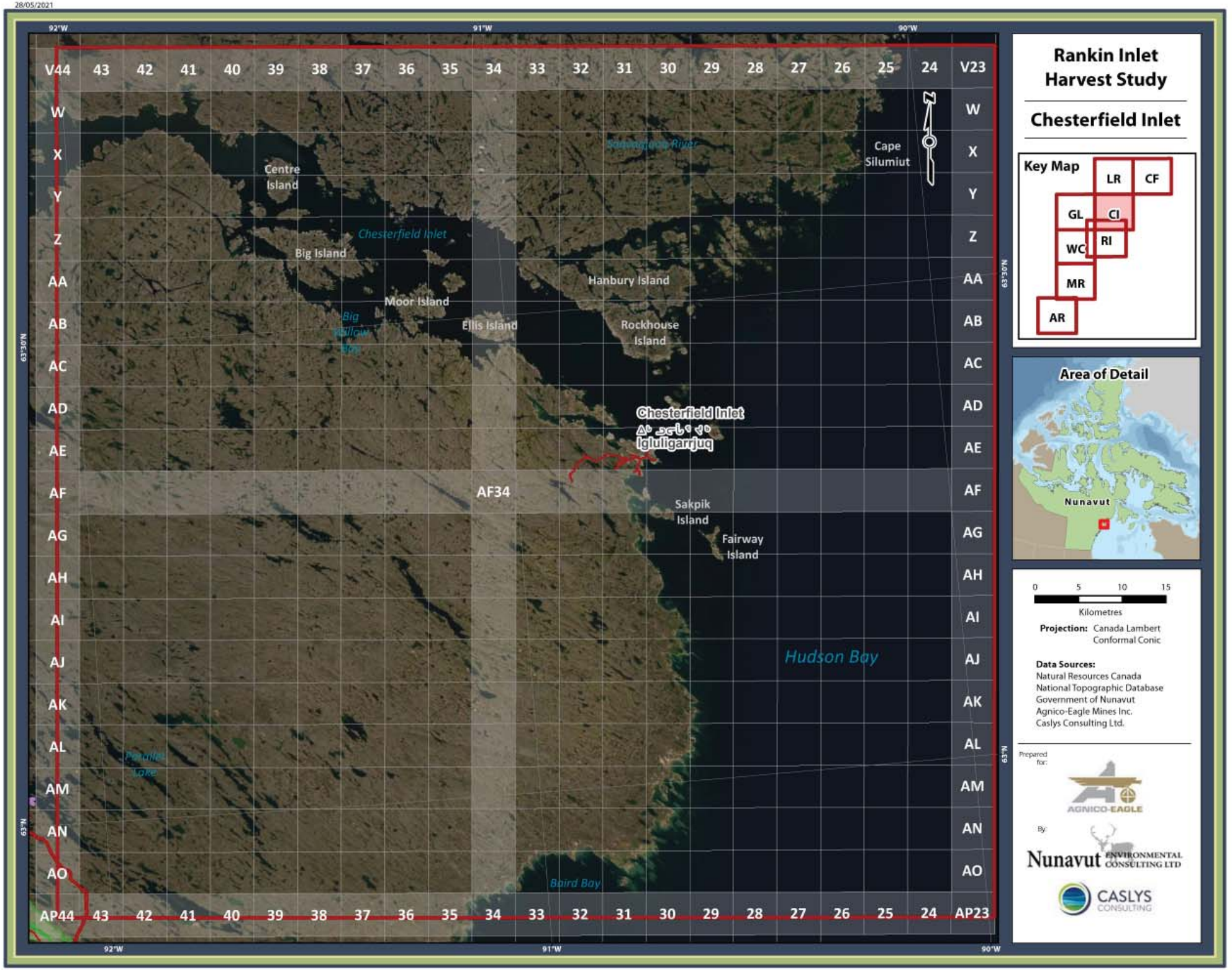
AGNICO-EAGLE

By:

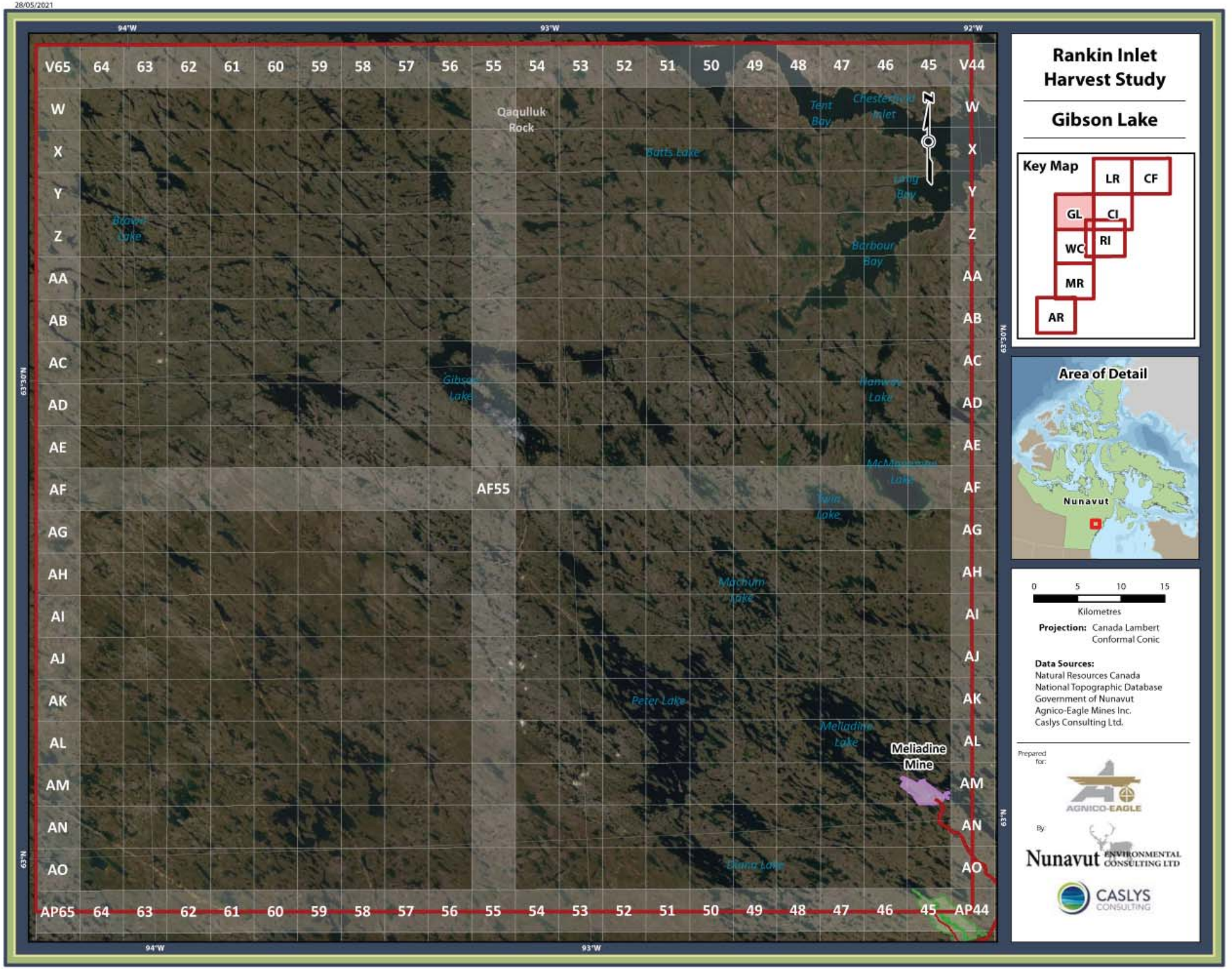
Nunavut Environmental Consulting Ltd

CASLYS CONSULTING

28/05/2021


92°W
91°W
90°W
V44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 V23
W
X
Y
Z
AA
AB
AC
AD
AE
AF
AG
AH
AI
AJ
AK
AL
AM
AN
AO
AP44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 AP23
AF34
63°30'N
63°N
Centre Island
Chesterfield Inlet
Big Island
Cape Silumiut
Hanbury Island
Moor Island
Big Willow Bay
Ellis Island
Rockhouse Island
Chesterfield Inlet
ᐃᓗᓕᒋᐊᕐᒥᐅᖅ
Igluligarrjuq
Sakpik Island
Fairway Island
Hudson Bay
Baird Bay
Rankin Inlet
Harvest Study
Chesterfield Inlet
Key Map
LR
CF
GL
CI
RI
WC
MR
AR
Area of Detail
Nunavut
0 5 10 15
Kilometres
Projection: Canada Lambert Conformal Conic
Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.
Prepared for:
AGNICO-EAGLE
By:
Nunavut Environmental Consulting Ltd
CASLYS CONSULTING

28/05/2021



Rankin Inlet Harvest Study

Gibson Lake

0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:

AGNICO-EAGLE

By:

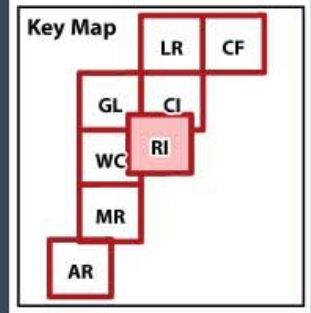
Nunavut Environmental Consulting Ltd

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28/05/2021

Rankin Inlet Harvest Study

Rankin Inlet





0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:

AGNICO-EAGLE

By:

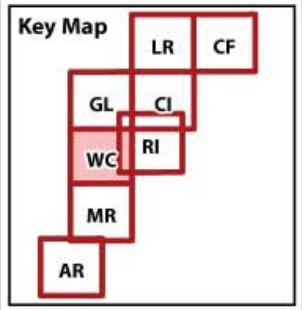
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28/05/2021

Rankin Inlet Harvest Study

Whale Cove





0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:

AGNICO-EAGLE

By:

Nunavut Environmental Consulting Ltd

CASLYS CONSULTING

94°W 93°W 62°55'N 62°30'N 62°5'N

AP65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 AP44

AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH

AY55

BI65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 BI44

Diana Lake

Barrier Islands

Derby Lake

Corbett Inlet

Gill Lake

Pork Peninsula

Munro Lake

Helen Lake

Pistol Bay

Lost Lake

Whale Cove
ᐱᑭᒃᓴᐅᒃ
Tikirarjuaq

Mistake Bay

Term Point

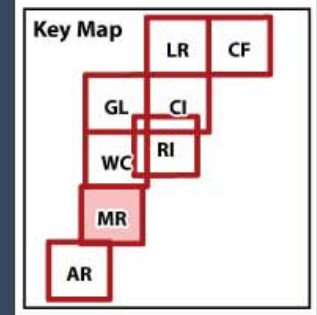
Morso Islands

Hudson Bay

31/05/2021

Rankin Inlet Harvest Study

Maguse River





0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for: AGNICO-EAGLE

By: Nunavut Environmental Consulting Ltd

CASLYS CONSULTING

94°W 93°W 62°N 61°30'N

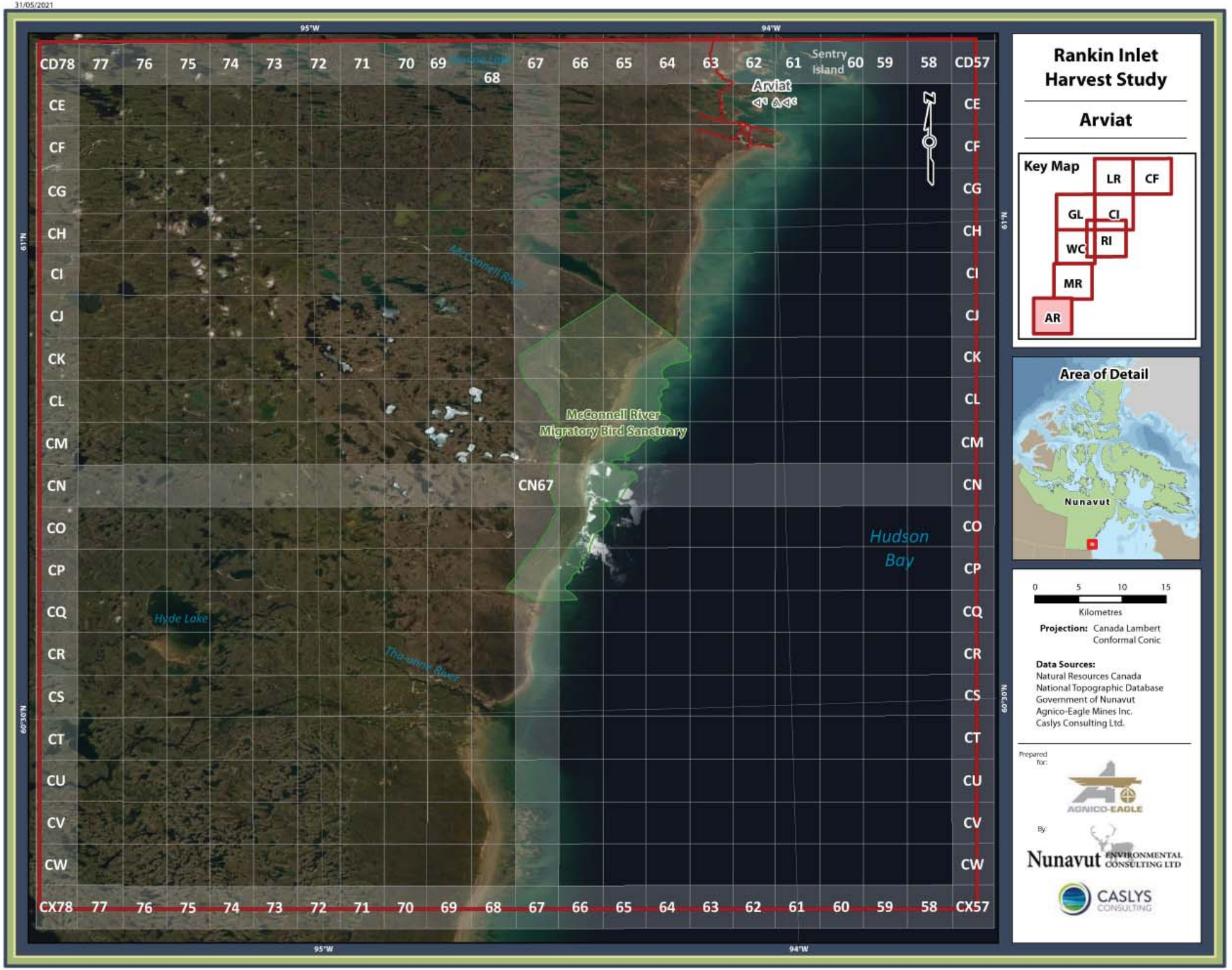
BJ67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 BJ46

BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC

CD67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 CD46

Morso Islands
Flattop Island
Walrus Island
Alder Lake
Nevill Bay
Dawson Inlet
Airartuuq Island
Sandy Point
BS57
Hudson Bay
Maguse River
Austin Island
Maguse Point
Sentry Island

31/05/2021



Rankin Inlet Harvest Study

Arviat

0 5 10 15

Kilometres

Projection: Canada Lambert Conformal Conic

Data Sources:
Natural Resources Canada
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:

AGNICO-EAGLE

By:

Nunavut Environmental Consulting Ltd

CASLYS CONSULTING

How to Use the Rankin Inlet Harvest Calendar

Agnico Eagle Mines Ltd. (Agnico), in cooperation with the Kangiqlinq Hunters and Trappers Organization (KHTO) of Rankin Inlet, want to understand hunting and fishing patterns by Rankin Inlet residents. Specifically, we want to understand how the Meliadine Project and the all-weather access road (AWAR), located north of Rankin Inlet, might influence traditional harvesting patterns. To ensure that traditional hunting and fishing activities are not negatively affected, we have developed this calendar where participants can record harvest information throughout the year.

Near the back of the calendar is a page that shows the animal and fish species that are included in the study. Please write down the species, number, sex, and location of animals or fish that you have harvested on each date on the calendar. When writing down the location, please use the XY coordinate system provided on the maps at the back of the calendar.

You will also be visited or contacted by the hunter harvest consultant or a KHTO member occasionally throughout the year. The consultant's or member's job will be much easier if you write down your harvest information in the calendar as soon as possible.

Please return the calendar to the Agnico or KHTO offices in Rankin Inlet at the end of the year or give the calendar to the consultant on the January 2025 visit.

Each participant will receive a gift (e.g., gas voucher) expressing our thanks, and additional prizes will be provided in January 2025 at the end of the study.

If you have any questions, please contact the Rankin Inlet Harvest Study Consultant, Dylan White at 1-266-500-4202 or dsgwhite@gmail.com. You can also contact a KHTO member in the community or email Martin Gebauer at martin@gebauerassociates.com.

ᖃᓄᖅ ᐊᑐᕆᐊᖃᖅᖁᓂᖅᖃᑦ ᑲᖏᖅᑕᓂᖅᓯᒪᑦ ᓴᖅᑭᖅᓯᓂᖅᑐᑦ ᓯᕗᓪᓕᖅᑎᓪᓗᒍ

ᐊᒡᓗᑯᒃ ᐅᓴᖃᖅᑕᕆᐊᑦ ᓕᒥᑎᑦ (ᐊᒡᓗᑯᒃᑯᑦ), ᐱᓕᕆᖃᕐᑎᑐᓂᑦ ᑲᑭᖅᑕᓂᖅᓯᒪᑦ ᐅᒪᔨᓕᕆᔨᒋᑯᑦ, ᑐᑭᓯᐊᓕᕐᒥᒪᔨᑦ ᑲᑭᖅᑕᓂᖅᓯᒥᐅᑕᓄᑦ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ ᒪᖃᑲᐃᓐᓂᖅᓯᒪᓪᓗᒍ. ᐱᓕᐊᖅᑐᒥᑦ, ᑐᑭᓯᐊᓕᕐᒥᒪᔪᐅᑦ ᑕᓯᔨᐊᒥᑦ ᐱᓕᕆᔨᖅ ᐊᒻᒪᓕᒃ ᐅᑭᐅᓕᒃᑕᑦ ᐊᑦᑯᓂᑎ, ᐅᐊᖏᓐᓇᓂᑦ ᑲᖏᖅᑕᓂᖅᓯᐅᑦ, ᐱᔪᓂᖃᖅᑐᐃᓐᓇᓕᐊᖃᖅᓯᒪᑦ ᐱᖅᑯᓯᒃᑯᑦ ᒪᖃᑲᐃᓐᓂᖅᓯᒪᓪᓗᒍ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ. ᐱᖅᑯᓯᒃᑯᑦ ᒪᖃᑲᐃᓐᓂᖅ ᐊᒻᒪᓕᒃ ᐃᖃᓗᕐᓂᑐᒃᑯᑦ ᐊᐅᖓᑕᑐᒃᑯᑦ, ᐊᖅᑭᒃᑯᓯᓪᓕᐅᕐᓂᖅᑐᑦ ᐅᓪᓗᖅᑭᐅᑦᑐᒃ ᐃᓕᐅᖅᑕᐅᔨᑦ ᑎᑎᕋᕐᑏᓂᕐᒪᑐᒃ ᐃᓕᓴᕐᓂᖅᓯᒪᓪᓗᒍ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ. ᐱᓕᕆᔨᒋᑦ ᐅᓪᓗᖅᑭᐅᑦᑐᒃ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ ᐱᓕᕆᔨᒋᑦ ᐅᓪᓗᖅᑭᐅᑦᑐᒃ ᐃᓕᓴᕐᓂᖅᓯᒪᓪᓗᒍ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ ᐊᑐᖅᑕᐅᖃᖅᑕᖅᑐᓂᒃ ᐱᓕᕆᔨᒋᑦ ᐅᓪᓗᖅᑭᐅᑦᑐᒃ ᐃᓕᓴᕐᓂᖅᓯᒪᓪᓗᒍ

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and



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