APPENDIX 29-17. TERRESTRIAL ENVIRONMENT MANAGEMENT AND MONITORING PLAN (TEMMP)

March 31th, 2025

Tara Arko
Director of Operations
Keith Morrison
Manager of Project Monitoring
Nunavut Impact Review Board
P.O. Box 1360 Cambridge Bay
Nunavut NU X0B 0C0

RE: TERRESTRIAL ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN VERSION 5

Dear Tara and Keith,

Agnico Eagle Mining Limited (Agnico Eagle) is submitting an updated Terrestrial Environment Management and Monitoring Plan Version 5 (TEMMP V5) for the Meliadine Gold Mine (the Project), prepared for the Project Final Environmental Impact Statement (FEIS; Golder 2015), and updated per Project Certificate No. 006 (Amendment 001; February 2019; Amendment 002; March 2022). The TEMMP will be reviewed and updated on a regular basis as the Project proceeds through operations, and later into closure and post-closure.

The Meliadine Terrestrial Advisory Group (TAG) was initiated in 2022 and officialized in 2023 with the adoption of Terms of Reference to integrate Inuit Qaujimajatuqangit (IQ) with scientific data and review and recommend monitoring and mitigation activities. Thirteen TAG meetings have taken place to date, with eleven of those meetings devoted to discussing the TEMMP V5 and its update (Table 1).

Table 1. Meliadine Terrestrial Advisory Group Meetings

Year	**Number of Meetings (in person + virtual)**	**Participants[a]**
2022	2 in person	Kivalliq Inuit Association Baker Lake Hunters' and Trappers' Organization Kaniqliniq Hunters' and Trappers' Organization *Kivalliq Wildilfe Board* Sayisi Dene First Nation Northlands Denesuliné First Nation *Nunavut Tunngavik Incorporated*

		Government of Nunavut Agnico Eagle Mines Limited
2023	4 (3 in person, 1 virtual))	Kivalliq Inuit Association Baker Lake Hunters' and Trappers' Organization Kaniqliniq Hunters' and Trappers' Organization *Kivalliq Wildlife Board* *Kivalliq Elders Advisory Committee* Sayisi Dene First Nation Northlands Denesuliné First Nation *Nunavut Tunngavik Incorporated* Government of Nunavut Agnico Eagle Mines Limited
2024	6 (2 in person, 4 virtual))	Kivalliq Inuit Association Baker Lake Hunters' and Trappers' Organization Kaniqliniq Hunters' and Trappers' Organization *Kivalliq Wildlife Board* Sayisi Dene First Nation Northlands Denesuliné First Nation *Athabasca Denesuline First Nation* *Nunavut Tunngavik Incorporated* Government of Nunavut *Crown-Indigenous Relations and Northern Affairs Canada* Agnico Eagle Mines Limited
2025	1 in person	Kivalliq Inuit Association Baker Lake Hunters' and Trappers' Organization Kangiqliniq Hunters' and Trappers' Organization *Kivalliq Wildlife Board* Sayisi Dene First Nation Northlands Denesuliné First Nation

		Athabasca Denesuline First Nation *Nunavut Tunngavik Incorporated* Government of Nunavut Crown-Indigenous Relations and Northern Affairs Canada Agnico Eagle Mines Limited

[a] Not the same representatives from the different organization could attended all meetings. NIRB has also been invited to attend the TAG meetings as observers but haven't yet attended a TAG meeting.

TEMMP V5 update was a focus of TAG meetings throughout 2023, 2024 and early 2025. Amongst the key steps in the TEMMP V5 revision are:

- The table of Contents of the revised draft TEMMP V5 was presented and discussed in detail during the October 24th and 25th, 2023 TAG meeting and the draft TEMMP V5 was distributed to TAG members for comments on December 20th, 2023.
- TAG members were invited to review the draft TEMMP V5 to provide comments in preparation for the January 24th and 25th, 2024 TAG meeting, which had amongst its main agenda items the review of the draft TEMMP V5.
- The draft TEMMP V5 was presented and discussed in detail during the January 24th and 25th, 2024 in person meeting. Parties were asked at the time to provide written comments on the draft TEMMP V5 prior to the next TAG meeting.
- TAG recommended delaying submission of the revised TEMMP V5 with the 2023 annual report to facilitate on-going discussions of revisions to calving protection measures during the March 1st, 2024 virtual meeting.
- On March 8th, 2024 three organization-members (KivIA, SDFN and GN) of the TAG for Meliadine Mine issued a technical memorandum (Gunn et al. 2024) of caribou calving monitoring and mitigation recommendations for the revision of the TEMMP V5. Agnico Eagle considered the recommendations even though two of the three parties endorsing the document were organization consultants and not organization officers.
- TAG members requested updates to the draft TEMMP V5 wording based on comments received during the May 3rd, 2024 virtual meeting and to provide a revised draft to the TAG for review.
- The revised draft TEMMP V5 was provided by email to parties on May 16th and 31st, 2024. Agnico Eagle presented revisions to TAG during the May 30th, 2024 in a virtual meeting, and all parties were asked to provide additional written comments on the most recent draft TEMMP V5.
- Agnico Eagle was asked again to revise the draft TEMMP V5 as discussed during the December 6th, 2024 virtual meeting and distribute for review ahead of the next scheduled meeting.

Through this multi-year process, two draft versions of TEMMP V5 were distributed to the TAG and numerous revisions were made to accommodate comments and discussions during TAG meetings. Revisions were reviewed seven times with TAG members at meetings. Agnico Eagle received 33 comments, on 10 main topics:

- daily rate of movement,
- 10 km triggers,
- 300 m AWAR closure trigger,
- caribou satellite-collaring program support,
- incorporate TAG advice in TEMMP,
- level 5 mitigation,
- caribou effects study area (CESA),
- 2022 abundance study,
- camera study, and
- caribou mitigation (Table 2).

TEMMP V5 that has accounted for most of the 33 comments and provided rationale for the ones that weren't added.

Table 2: Comments Received on TEMMP V5

Comment Number	**Topic**	**AEM Response**
KivIA - 1	Daily rate of movement	Accounted for pending GN information
KivIA - 2	10 km triggers	Accounted for
KivIA - 3	300 m AWAR closure trigger	Accounted for
KivIA - 4	20% activity reduction during level 4	Rationale provided
GN - 1	TC44, 45, 180	Accounted for and rationale provided
GN - 2	Caribou satellite-collaring program support	Accounted for
GN - 3	Incorporate TAG advice in TEMMP	Accounted for
GN - 4	TC44	Accounted for and rationale provided
GN - 5	Caribou Effects Study Area (CESA)	Accounted for
GN - 6	2022 Abundance Study	Accounted for
GN - 7	Muskox information	Accounted for pending GN information

GN - 8	Level 5, daily rate of movement, reduction monitoring, and collars map information as trigger	Accounted for and rationale provided
GN - 9	Caribou satellite-collaring program support	Accounted for
GN - 10	Caribou migration	Accounted for
GN - 11	Camera study	Accounted for
GN - 12	Planned shutdown, level 4 increase in production	Rationale provided
GN - 13	Collars map information as trigger, using demographic information as trigger level	Accounted for
GN - 14	Drilling operation and Helicopter flight	Rationale provided
GN - 15	Table 7 addition	Rationale provided
GN - 16	Light duty activities definition	Accounted for
GN - 17	AWAR closure Trigger	Rationale provided
GN - 18	Underground activities during Level 3	Accounted for
GN - 19	Deflection Definition	Accounted for
GN - 20	Invasive Species section	Accounted for
GN - 21	Project-related mortality for arctic fox	Accounted for
GN - 22	AWAR closure Trigger	Accounted for
GN - 23	Deterring Caribou	Rationale provided
SDFN/NDFN - 2	Behaviour Monitoring	Rationale provided
SDFN/NDFN - 3	Reduce caribou number trigger	Rationale provided
SDFN/NDFN - 4	300 m AWAR closure trigger	Accounted for
SDFN/NDFN - 5	10 km triggers	Accounted for
SDFN/NDFN - 6	Level 5	Rationale provided
SDFN/NDFN - 7	Deterring Caribou	Accounted for

During the March 12th, 2025, TAG meeting in Rankin Inlet, Agnico Eagle asked TAG members about their preference to submit TEMMP V5 with the new monitoring and mitigations and members either did not answer or indicated that they would comment on the annual report. Agnico

Eagle communicated its preference to submit TEMMP V5 that includes new key monitoring and mitigations for caribou including:

- Reorganization of TEMMP
- Use of infographics in Inuktitut and English
- Annual tracking and reporting of Qamanirjuaq caribou calving grounds
- Calving ground mapping
- Level 4 mitigation for the calving season
- Increasing the All-Weather Access Road closure trigger to 300m

Agnico Eagle also communicated that further discussion on outstanding issues will continue and that future TEMMP revisions through adaptive management are anticipated.

Agnico Eagle appreciates the discussions and comments submitted by TAG members on the draft versions of the TEMMP V5. Agnico Eagle thanks the members of the TAG for their ongoing engagement in the success of the Project and the TEMMP's update and continuous improvements towards protection of the caribou and environment.

AGNICO EAGLE

MELIADINE GOLD MINE

Terrestrial Environment Management and Monitoring Plan

MARCH 2025
VERSION 5

EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Mine (the Mine), located approximately 25 kilometres (km) north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson's Bay, the Mine 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 land.

This document presents the Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Mine (Version 5), prepared for the Mine Final Environmental Impact Statement (FEIS; Golder 2014), and updated per Project Certificate No. 006 (Amendment 001, February 2019; Amendment 002, March 2022). The TEMMP will be reviewed and updated on a regular basis as the Mine proceeds through operations, and later into closure and post-closure.

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ᑎᑎᕐᖃᖅ ᑐᓂᓯᔪᖅ ᓄᓇᒥᐅᑕᐃᑦ ᐊᐸᑎᖓᓂᒃ ᐊᐅᓪᓚᑎᓂᕐᒪᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᐃᓂᕐᒪᑦ ᐸᕐᓇᐅᑎᒥᑦ (TEMMP) ᐅᓴᖅᑕᕆᐊᕐᒪᑦ (ᐅᖃᓕᒫᖅ 5-ᒥᔪᖓ), ᐱᓕᕆᐊᖓᔪᖅ ᐅᓴᖅᑕᕆᐊᕐᒪᑦ ᑭᖓᓕᓪᕿᓂᖅᑐᑦ ᐊᐸᑎᒥᐅ ᐊᐅᑐᖅᓯᓂᕐᒪᑦ ᑎᑎᕐᖃᖅᒪᑦ (FEIS), ᐊᒻᒪᓗ ᓄᑖᖓᔪᖅᑎᖅᑕᐅᓯᒪᔪᖅ ᒪᓕᓚᐅᔭᒍ ᐱᓕᕆᐊᕐᒪᑦ ᓇᓗᓇᐃᓚᑦᓯᑕᖅ ᓱᐋᐅᑎᖓ 006 (ᐊᑦᖁᑭᐊᖅᓯᓂᖅ 001, ᐊᐳᓵᓂᕕᐅ 2019; ᐊᑦᖁᑭᐊᖅᓯᓂᖅ 002, ᓇᕆᑎᐊᕐ 2022). TEMMP ᖁᑎᕐᕈᐅᐅᖃᕆᕐᓂᐅᐊᖅᑐᖅ ᐊᒻᒪᓗ ᓄᑖᖓᔪᖅᑎᑕᐅᖃᖅᕆᕐᓗᓂ ᐅᓴᖅᑕᕆᐊᖅ ᐊᐅᓪᓗᖅᑎᑕᐅᑎᓪᓗᒍ, ᑭᖓᓂᐅᐊᔪᓪᓗ ᐅᐱᓯᐊᖅᓵᓪᓗᐊᓂᕐᒪᑦ ᐊᒻᒪᓗ ᐅᐱᓯᐊᖅᓯᒪᓕᖅᑎᓪᓗᒍ.

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DOCUMENT CONTROL

Version	Date	Revision	Project Certificate Condition	Section	Page	Author
1	Apr 2014	First draft (conceptual plan) submitted in support of the Final Environmental Impact Statement	N/A	N/A	N/A	Golder Associates Ltd.
2	Nov 2015	Second draft revised to meet Project Certificate Conditions 38, 39, 53 and 72, and updated Project description.	53 38 and 39 72 N/A	2.3 Appendix II and 4.6.2 4.9 to 4.11 2.0	8 31 37 to 40 5	Golder Associates Ltd.
3	Jun 2020	TEMMP updated per Project Certificate No. 006 (Amendment No. 001) and the 2020 Saline Discharge Strategy	See Appendix I	All	All	Golder Associates Ltd.
4	Apr 2022	TEMMP updated per Project Certificate No. 006 (Amendment No. 002) and the 2020 Saline Discharge Strategy	See Appendix I	All	All	Agnico Eagle Environment Department
5	March 2025	TEMMP updated following TAG inputs and annual report comments; - Update of baseline information - Addition on caribou calving ground baseline information - Addition on level 4 for calving season - Change road closure trigger to 300m	See Appendix I	All	All	ERM Agnico Eagle Environment Department

ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited
ATV	All Terrain Vehicle
AWAR	All-Weather Access Road
BMP	Best Management Practices
BQCMB	Beverly and Qamanirjuaq Caribou Management Board
CESA	Caribou Effects Study Area
CK	Community Knowledge
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DSSA	Data Sample and Sharing Agreement
ECCC	Environment and Climate Change Canada
FEIS	Final Environmental Impact Statement
GIS	Geographic Information System
GN	Government of Nunavut Department of Environment
GPS	Global Positioning System
HHS	Hunter Harvest Survey
HTO	Hunters and Trappers Organization
IAPP	Invasive Alien Plan Program
InK	Indigenous Knowledge
IOL	Inuit Owned Lands
IQ	Inuit Qaujimajatuqangit
IQn	Inuit Qaujimaningit
IUCN	International Union for the Conservation of Nature
KEAC	Kivalliq Elders' Advisory Committee
KHTO	Kangiqliniq Hunters and Trappers Organization
KivIA	Kivalliq Inuit Association
KWB	Kivalliq Wildlife Board

LSA	Local Study Area
MOU	Memorandum Of Understanding
NDFN	Northlands Denesuline First Nations
NIRB	Nunavut Impact Review Board
PC	Project Certificate
PRISM	Program for Regional and International Shorebird Monitoring
RIBR	Rankin Inlet Bypass Road
RMMS	Responsible Mining Management System
RSA	Regional Study Area
SAR	Species at Risk
SARA	*Species at Risk Act*
SDFN	Sayisi Dene First Nations
SLRA	Screening Level Risk Assessment
TAG	Terrestrial Advisory Group
TBD	To be Determined
TC	Terms and Conditions
TEMMP	Terrestrial Environment Management and Monitoring Plan
TEMMP Annual Report	Terrestrial Environment Mitigation and Monitoring Plan Annual Report
the Mine	Meliadine Gold Mine
TK	Traditional Knowledge
TSF	Tailings Storage Facility
UAS	Unmanned Aircraft System
VEC	Valued Ecosystem Component
ZOI	Zone of Influence

UNITS

ha	hectares(s)
km^2	square kilometre(s)
km/h	kilometre(s) per hour
m^2	square metre(s)

SECTION 1 • INTRODUCTION

1.1 Overview

The Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Mine (the Mine) is located in the Kivalliq Region of Nunavut and received a Project Certificate (PC No. 006) from the Nunavut Impact Review Board (NIRB) in February 2015. Amendment 001 to PC No. 006 was received in February 2019 for saline discharge and Amendment 002 was received in March 2022 for saline discharge and the Waterlines Proposal. The Project Certificate, along with the Nunavut Water Board (NWB) Type A Water License and mine leases authorized the construction of a gold mine and ancillary facilities including an All-weather Access Road (AWAR), Rankin Inlet Bypass Road (RIBR), waterlines with associated infrastructures, barge unloading facilities, lay-down area, and a Fuel Storage Facility in Rankin Inlet. Mine operations commenced in 2019 and the Mine is anticipated to be operational through to 2027, followed by closure and post-closure activities to 2037.

Agnico Eagle has prepared this Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Meliadine Gold Mine, as required by the NIRB Project Certificate. This document provides details of the Mine-specific wildlife monitoring, management, and mitigation components, and describes contributions to other regional monitoring programs, consistent with the Final Environmental Impacts Statement (FEIS; Golder 2014) and FEIS Addenda (Agnico Eagle 2018, 2020).

1.2 Regulatory Background

The TEMMP addresses several regulatory requirements and commitments made by Agnico Eagle. This includes the NIRB Terms and Conditions from the NIRB Project Certificate No. 006, (and Amendments 1 and 2) and the commitments made by Agnico Eagle during the regulatory processes.

1.2.1 NIRB Project Certificate Terms and Conditions

The NIRB Project Certificate No. 006 (Amendment 002) for the Meliadine Mine includes Terms and Conditions related to wildlife, wildlife habitat, and vegetation. Terms and Conditions (TC) specific to the TEMMP are summarized below and listed in full with reference to the relevant TEMMP section in Appendix A.

- **TEMMP** – Develop a TEMMP that describes monitoring, mitigation and has clear thresholds to assess trends (TC-43);
- **TAG** – Establish a Technical Advisory Group (TAG), with a central mandate to continually review and refine impact management, mitigation, and monitoring details of the TEMMP (TC-132);
- **Caribou and Muskox** – Include increased monitoring for caribou in the Regional Study Area (RSA) (TC-44), consider to support regional monitoring of caribou herd (TC-45), share information with the Government of Nunavut (TC-47), allow safe passage of caribou across

roads (TC-54), conduct winter and summer monitoring for caribou (TC-118), plan to deter caribou attracted to roads (TC-119) and monitor for muskox (TC-52);

- **Hunter Harvest Survey** – Establish a hunter harvest survey (HHS) program with the Hunters and Trappers Organization (HTO; TC-46) and liaise with local outfitters and guides (TC-105);
- **Furbearers** – Survey for furbearer dens before clearing (TC-53) and set thresholds for direct mortality of furbearers (TC-55);
- **Birds** – Avoid ground disturbance during the bird breeding season; if not possible conduct pre-clearing surveys (TC-61) and maintain setbacks from nests (TC-59, 62). Develop a monitoring program for birds (TC-71) and key indicators of their populations (TC-72);
- **Vegetation** – Monitor for invasive species (TC-37), baseline metals in soils (TC-38), caribou forage such as lichens (TC-39) and include mitigation to reduce effects on vegetation (TC-40); and
- **Reporting** – Report habitat loss (TC-73), wildlife data (TC-56), and trends in Valued Ecosystem Components (VECs) relative to baseline and predictions (TC-57).

1.2.2 NIRB Commitments

Agnico Eagle made commitments during the regulatory review process and at the final hearings for the 2014 FEIS, Amendment 1 for the saline effluent discharge (2019), and Amendment 2 for the waterline construction (2022). These commitments are summarized below and listed in full with reference to the relevant TEMMP section in Appendix B.

Terrestrial commitments from the 2014 FEIS consisted of:

- Additional commitments included avoiding overflights of Iqalugaarjuup Nunanga Territorial Park (Government of Nunavut; GN-5);
- Monitoring and mitigating harvest on the AWAR (GN-09); and
- Obtaining authorization from the GN prior to destroying a raptor nest, if required (GN-15).

Terrestrial commitments from Amendment 1 (Saline Effluent Discharge) consisted of:

- Maintain caribou thresholds of no more than 1 vehicle collision per year and no more than 10% deflections on AWAR (C-11). As established within the TAG, deflection is defined as a turning angle ≥ 60° between the heading of the step and the average heading of the individual caribou's movement.

Terrestrial commitments from Amendment 2 (Waterline), consisted of:

- Work with the TAG to update the TEMMP with monitoring and analysis of caribou movement and update mitigation accordingly (C-4);

- Work with the GN to measure traffic on the AWAR (C-7)
- Include HTO and Northlands Denesuline (NDFN) and Sayisi Dene First Nations (SDFN) in TAG (C-8);
- No open trenches during caribou migration (C-9);
- Provide the camera study report as part of the annual report (C-10);
- Revise the TEMMP with the TAG (C-12) and provide a list of TEMMP documents (C-13);
- Discuss a no hunting zone near the AWAR with HTOs, Kivalliq Inuit Association (KivIA), GN and Kivalliq Wildlife Board (KWB; C-14);
- Discuss collaboration with GN on shared data needs and develop a data sharing agreement for collar data (C-17);
- Provide camera data to Kangiqliniq Hunters and Trappers Organization (KHTO), subject to a data sharing agreement (C-18), and discuss side slopes on the waterline (C-21);
- Update the TEMMP to include information on road survey, collaring, and behavioural monitoring before the 2021 annual report (C-24), update the decision tree for road surveys (C-25), define the Local Study Area and definition of caribou deflection (C-38); and
- Use a regional approach that integrates Inuit Qaujimajatuqangit (IQ) and Science in the TAG (C-27) and develop a memorandum of understanding (MOU) with the TAG (C-42).

1.2.3 Collaborative Initiatives

According to TC 44 and 45 of the PC No. 006 (Appendix A), Agnico Eagle has established several programs that involve collaborations with regional initiatives and contribute to monitoring cumulative effects (Table 1).

Table 1: List of Regional Initiatives

Programs	Regional Initiatives
Caribou Collar Program	Supporting the Government of Nunavut's 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.
Regional Muskox Surveys	Agnico Eagle has provided the GN Department of Environment with in-kind contributions and support for previous muskox surveys and will continue to do so.
Hunter Harvest Survey Program	Agnico Eagle renewed its Collaboration Agreement with the Kangiqliniq Hunters and Trappers Organization to develop and implement a methodology to document caribou harvesting around the Meliadine Mine and to participate in Mine site studies and monitoring. This Collaborative Agreement has been in place since 2019. Information from these surveys will contribute to an understanding of cumulative effects by increasing understanding of the regional distribution and seasonality of hunting.

Programs	Regional Initiatives
Raptor Monitoring Program	Agnico Eagle collaborates with the Arctic Raptor Research Project to develop and implement the raptor monitoring program. This program directly aligns monitoring efforts at Meliadine with this long-term regional research program which already involves government, non- government, First Nations and academic partnerships.
Waterfowl and Shorebird Monitoring	Agnico Eagle, in collaboration with Environment and Climate Change Canada (ECCC), have agreed to implement the Program for Regional and International Shorebird Monitoring (PRISM). This will directly align monitoring efforts at Meliadine with other Agnico Eagle properties for waterfowl and shorebirds.
Wildlife Road and Site Surveys	Agnico Eagle in collaboration with the KHTO will conduct wildlife surveys along the AWAR and the waterlines around the Mine site, along with environment technicians. This will contribute to an understanding of cumulative effects by collecting routine wildlife survey data (including caribou) and assist in anticipating large herd migrations, communicating with the KHTO and managing mine activities during migration events.

1.2.4 Terrestrial Advisory Group

The TAG is an advisory group that provides technical oversight on the Project's impact management, mitigation, and monitoring measures related to the protection of terrestrial wildlife and wildlife habitat based on Inuit Qaujimaningit (IQn), Inuit Qaujimajatuqangit (IQ), Traditional Knowledge (TK), Community Knowledge (CK), Indigenous Knowledge (InK) and knowledge from the western science perspective. It is a forum for the ongoing cooperation and communication among the Parties in the review and refinement of impact management, environmental effects monitoring, mitigation measures and fulfillment, by Agnico Eagle, of the Project Certificate TC, the NIRB commitments, the TEMMP and any other Plan, relating to the interactions between the Project and terrestrial wildlife and wildlife habitat. The TAG operates following the framework contained in the TAG Terms of Reference as per TC-132 of Project Certificate No. 006 (Amendment 002). The main functions of the TAG are to:

- Continually review and refine impact management, mitigation, and monitoring details within the TEMMP; and
- Review the effectiveness of measures implemented during the construction, operations, closure and reclamation of the Mine Site, following the adaptive management principles described in Section 1.5.

The TAG Members collaborate to share and consider methods, results, and analyses from caribou and terrestrial environment studies and monitoring, IQn, IQ, TK, CK, InK shared by knowledge holders, and other terrestrial environment monitoring data as it becomes available.

The TAG also provides input which, at AEM's discretion, may be incorporated into the TEMMP during its revisions. The TAG's recommendations and advice are tracked and summarized in the TAG annual report. In addition, where the TEMMP incorporates specific TAG recommendations or advice for monitoring or mitigation, the most relevant TAG meeting date is referenced, as feasible, to facilitate review of meeting minutes (available in annual TAG Reports).

1.3 Inuit Qaujimajatuqangit and Community Involvement

Incorporating IQn, IQ, TK, CK, InK and involving communities in wildlife mitigation and monitoring is important to allow community members to see how Agnico Eagle is performing at reducing effects to wildlife and contribute to additional mitigation as needed. 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.

Nanuk Enterprises completed initial IQ studies for the Mine in 1997 and 1998 and carried out additional studies in 2010, 2011 and 2014 with participants from Whale Cove, Rankin Inlet, and Chesterfield Inlet and included elder and younger men and women (Burt and Hickes 2012; Nanuk Enterprise 2011).

Since 2020, Agnico Eagle has a dedicated IQ and Wildlife Advisor position staffed by an Inuit Elder who works in the communities to gather IQ and wildlife data. Agnico Eagle and the Kangiqliniq Hunters and Trappers Organization (KHTO) collaborate to complete some aspects of the wildlife monitoring at the Meliadine site, as feasible, and Agnico Eagle will continue to provide opportunities for communities to share their knowledge. In 2021, Agnico Eagle also established a Kivalliq Elders' Advisory Committee (KEAC) in recognition of the important role of Kivalliq Elders' knowledge of IQ and the process of how such knowledge is documented and shared back to the Inuit community and Agnico Eagle. The purpose of the KEAC is to provide independent insights, knowledge, and experience to guide Agnico Eagle in conducting its activities in a respectful and socially responsible manner.

Agnico Eagle has continued to include IQn, IQ, TK, CK, and InK in wildlife mitigation and monitoring plans. Below are some examples:

- Gathering input from communities to reflect their priorities in the TEMMP as indicated in the Valued Ecosystem Component (Section 3);
- Collaborating with the community members participating in wildlife monitoring (e.g., key involvement of KHTO and KivIA during the caribou migration);
- Involving community representatives in adaptive management such as the TAG meetings;
- Providing opportunities for ongoing visits to the Mine by community representatives; and
- Providing updates to communities as the Meliadine Mine progresses.

1.4 Purpose and Objectives

The purpose and objectives of the TEMMP have been developed using IQ and community involvement, as well as regulatory background.

1.4.1 Purpose

The purpose of the TEMMP is to reflect the values of Kivalliq communities in managing potential impacts to wildlife and wildlife habitat and meeting federal and territorial regulatory requirements. The regulatory requirements include the NIRB Project Certificate No. 006 (Amendment 002) Terms and Conditions for the Meliadine Mine and commitments made by Agnico Eagle (Appendices A and B).

The TEMMP outlines the policies, practices, designs, and procedures that Agnico Eagle will implement to avoid or reduce Project-related effects on the terrestrial environment.

The TEMMP is part of a continually evolving process that relies not only on the efficacy of data collection and analytical results, but is also dependent on feedback from the communities, government, Indigenous groups and the public. Having an adaptive and flexible program allows for appropriate and necessary changes to the design of monitoring studies, and the mitigation and monitoring plans.

1.4.2 Objectives

While specific monitoring and management objectives are provided in later sections, the TEMMP aims to meet the following general objectives:

- Provide information to test the predicted wildlife-related effects of the Project (as specified in the 2014 FEIS, and Amendments 1 & 2) and estimate the effectiveness of existing environmental design and mitigation measures (e.g. if monitoring demonstrates that impacts are within predictions or established thresholds, existing mitigation is considered effective);
- Monitor for established action levels or thresholds
- Incorporate IQn, IQ, TK, CK, and InK into the TEMMP as possible;;
- Avoid or reduce any mine-related effects on wildlife species and their habitat predicted in the FEIS;
- Reduce uncertainties and provide information that increases confidence in environmental assessment predictions of future developments;
- Ensure monitoring is based on current methods that are consistent with other monitoring programs in the Arctic;
- Identify and contribute to opportunities for regional, collaborative monitoring with government agencies where a need has been identified;
- Guide on-site adaptive management (both monitoring and mitigation activities) at the Mine site using results from the monitoring programs; and

- Provide a clear and definitive description of management actions that are to be followed by on-site environmental managers.

1.4.3 Links to Other Management Plans

The TEMMP overlaps with other environmental management plans for the Meliadine Mine, which contain elements of mitigation and monitoring that are relevant to the terrestrial environment, including the following:

- Risk Management and Emergency Response Plan;
- Spill Contingency Plan;
- Hazardous Materials Management Plan;
- Roads Management Plan;
- Waste Management Plan;
- Dust Management Plan; and
- Wildlife Protection and Response Plan.

1.5 Adaptative Management

It is recognized that some management actions may not be identified ahead of time but are realized in response to the outcome of monitoring programs. Therefore, adaptive management can be considered as the process of 'learning by doing'. Importantly, the process of adaptive management is collaborative and requires input from IQn, IQ, TK, CK, and InK, communities, government, TAG members, and other stakeholders. The components of the adaptive management framework include the following (Figure 1) and is consistent with Agnico Eagle's Risk Management and Monitoring System (RMMS):

- PLAN – The TEMMP includes planned mitigation measures and monitoring programs to meet the needs of Agnico Eagle, community members, regulators, and Mine permits;
- DO – Implement the mitigation measures as described in Sections 4.5 and 6 of the TEMMP;
- CHECK – The TEMMP includes monitoring programs in Sections 4 and 5 to detect potential effects on the terrestrial environment; and
- ACT – The TEMMP includes mechanisms for improvement and revision of the plan as necessary, supported by outcomes from the monitoring programs described within the plan.

Figure 1: Adaptive Management Framework

Agnico Eagle will review and update the TEMMP, as needed, during the life of the Mine, including for the incorporation of recommendations provided by the TAG for changes to mitigation measures and the monitoring plans, objectives, frequency, methods, or timing.

1.6 Reporting Requirements

The TEMMP Annual Report is provided to the NIRB annually on March 31 to comply with the reporting requirements for wildlife and terrestrial Terms and Conditions listed in Appendix A. The purpose of the TEMMP Annual Report is to:

- Summarize the annual data collected from the various terrestrial mitigation and monitoring programs;
- Identify and communicate natural variation and potential mine-related changes in terrestrial populations within and adjacent to the Meliadine Mine area through the interpretation of accumulative monitoring datasets;
- Provide the objectives, methods, schedule and frequency implemented, historical and current year results, a comparison to impact predictions and/or monitoring thresholds, and the mitigation and management recommendations of each monitoring program; and
- Include information about when mitigation was intensified and/or reduced (e.g., work stoppages, supplemental training) in accordance with monitoring triggers (adaptive management).

SECTION 2 • MINE SITE DESCRIPTION AND SETTING

2.1 Overview of the Mine Site

The Meliadine Mine is located approximately 25 km north of the Hamlet of Rankin Inlet, Nunavut. The Mine is largely on Inuit Owned Lands (IOL) with some supporting infrastructure located within the municipal boundaries of the Hamlet.

The following sections provide an overview of the Mine infrastructure and the environment and habitat surrounding the Mine.

2.1.1 Mine Site

The Mine is composed of five known gold deposits: Tiriganiaq, F Zone, Pump, Wesmeg, and Discovery. The current mine plan consists of development of the Tiriganiaq gold deposit (Tiriganiaq Pit 1 and Tiriganiaq Pit 2) and one underground mine (Tiriganiaq Underground). A conventional gold milling circuit is used to extract and recover the gold with tailings reporting to a tailings storage facility (TSF). Besides other normal mine infrastructure, the Mine site has a power plant, fuel tank farm, accommodation complex, water management ponds and a sewage treatment plant – all common features of Arctic mines.

2.1.2 Access Roads

The Mine operates on two single lane access roads: the 6.5 kilometres (km) long RIBR connecting the Itivia Harbour in Rankin Inlet to the AWAR at kilometre marker 4, and the 30 km long AWAR providing access between Rankin Inlet and the Mine. The AWAR is operated with controlled and limited public access from a gatehouse located at kilometre marker 12.

2.1.3 Waterline

The construction of a waterline associated with saline water management infrastructures was approved in March 2022 through Amendment 002 of the NIRB Project Certificate, due to the continued need to manage an increased volume of saline effluent from underground mines. Once completed, the waterline will convey treated saline effluent from the Meliadine Mine to Itivia Harbour in Rankin Inlet along the AWAR and the RIBR, instead of transporting the saline water by trucks (as is current practice, authorized by Amendment 001 of the PC).

2.2 Environment and Habitat Description

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.

2.3 Study Area Boundaries

Study area boundaries were delineated based on the predicted spatial extent of the Mine-related effects and the life history attributes of terrestrial VECs potentially influenced by the Mine. The following three spatial boundaries were used to assess effects on the terrestrial environment and are used in the TEMMP:

- Local Study Area (LSA) was used for small-scale direct and indirect effects from the Mine, which consists of the Mine site, Mine roads, Rankin Inlet infrastructure, and the AWAR;
- Regional Study Area (RSA) was used to assess the combined direct and indirect effects from the Mine on permafrost, soils and terrain, plant and plant communities, and wildlife; and
- Caribou Effects Study Area (CESA) was used to assess the incremental and cumulative effects on caribou from the Mine and other developments.

The Meliadine Mine site layout, location, LSA, RSA, and CESA boundaries are depicted in Figure 2 and Figure 3 and described in the following sections. Most monitoring programs described in the TEMMP focus on the local scale; however, Agnico Eagle may also participate in larger scale monitoring through collaborative programs and financial contributions.

2.3.1 Local Study Area

The terrestrial LSA boundary is presented in the 2014 FEIS (Volume 6; Golder 2014) and includes three Mine components that cover three distinct geographical locations covering a total of 10,598 hectares (ha):

- The Mine site and associated infrastructure, which includes a 500 m buffer;
- The AWAR with a 1,000 m buffer on either side of road; and
- The footprint of the Hamlet of Rankin Inlet (no buffer applied).

Boundaries Rational

The LSA boundary (Figure 2) was defined based on the anticipated spatial extent of the immediate direct (e.g., Mine footprint) and indirect effects from the Mine on the surrounding terrestrial environment, including wildlife, vegetation, and soils (FEIS Volume 6; Golder 2014).

2.3.2 Regional Study Area

Monitoring at the regional scale occurs within the RSA. The RSA encompasses the entire Mine footprint, including the AWAR and Rankin Inlet infrastructure (Figure 3).

During baseline data collection activities between 1998 and 2011, the Mine RSA was 520,000 ha in size to encompass the potential zone of influence (ZOI) on caribou from mining activities as described by Johnson et al. (2005). In 2012, the RSA was reduced to 280,000 ha (i.e., radius of 28 km centered on the Mine site) due to a better understanding of the effects of disturbance on barren-ground caribou (Boulanger et al. 2009; Boulanger et al. 2012), and based on an estimated 14 km ZOI. The RSA extends an additional 14 km beyond the ZOI so that effects from the Mine can be assessed through wildlife monitoring.

Boundaries Rational

The populations of species that have small to moderate breeding home ranges such as waterbirds, songbirds, and raptors can be assessed at the RSA scale. The RSA is also used to capture the maximum predicted extent of the combined direct and indirect effects from the Mine on wildlife, vegetation, and soils (FEIS Volume 6; Golder 2014). This RSA intends to capture effects that could extend beyond the immediate Mine footprint that can indirectly affect the environment at a distance. Cumulative effects from the Mine and other developments within the RSA, if present, can be assessed at this scale for VECs that exhibit little to no movement within the RSA, such as soil and plant communities.

2.3.3 Caribou Effects Study Area

As part of the RSA, Agnico Eagle has also established a Caribou Effects Study Area (CESA; Figure 3). The CESA assesses the potential interaction of barren-ground caribou (Qamanirjuaq herd) and wolf with the Mine. The study area boundaries for the CESA were determined using caribou collar data to determine direction and rate of movement, particularly if the herd moves towards the Mine.

Boundaries Rational

The post-calving range of the Qamanirjuaq Caribou Herd was delineated using collar data from 1998 to July 2011 to produce a 95% kernel density estimate. This was modified using an 85% volume contour to create the CESA for caribou (FEIS Volume 6, Golder 2014). The contour would contain 85% of caribou collar locations recorded during the post-calving season. The CESA encompasses the entire spring migration, calving, post-calving, and summer ranges, as well as part of the rut, fall migration, and winter ranges (M. Campbell, GN, 2014, pers. comm.).

2.3.4 Temporal Scale

Temporal scales for monitoring consider the four phases of mine development, from construction, operation, final closure and through to post-closure decommissioning (Table 2).

Table 2:Timeline of the phase of the mine development

Stage	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032-2038	2039-2048
Construction																			
Operation																			
Closure																			
Post-Closure																			

Figure 2: Meliadine Local Study Area

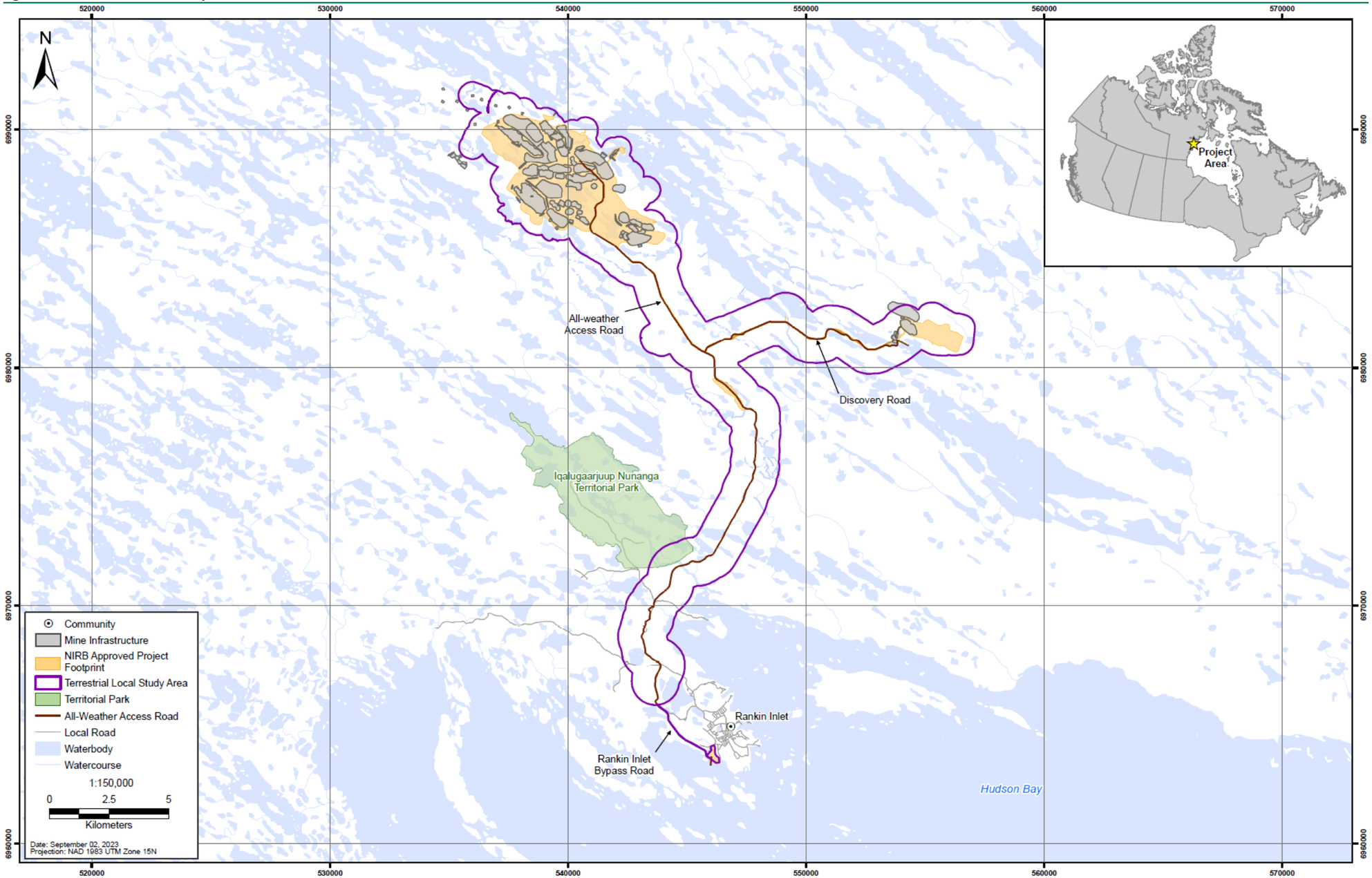
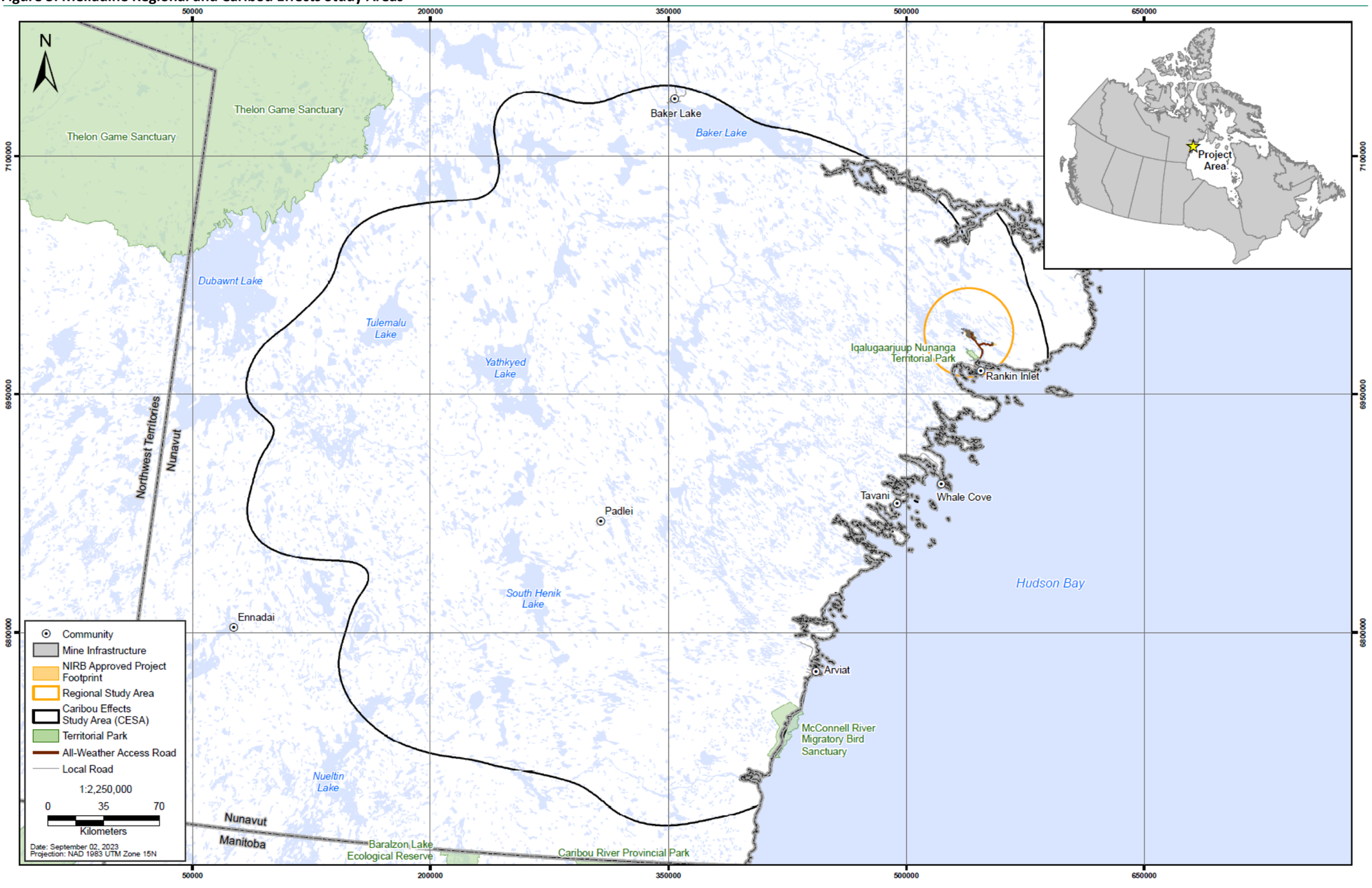


Figure 3: Meliadine Regional and Caribou Effects Study Areas



SECTION 3 • TERRESTRIAL VALUED ECOSYSTEM COMPONENTS

Valued Ecosystem Components (VECs) represent physical, biological, and cultural properties of the environment that are either legally, politically, publicly, or professionally recognized as important to a particular region or community. Several VECs were selected to assess Mine-related effects on terrestrial wildlife and wildlife habitat (FEIS Volume 6; Golder 2014). The caribou was the only wildlife species for which concern was raised during public consultation (FEIS Volume 3; Golder 2014). Wildlife VECs are summarized in Table 2.

The TEMMP considers other regionally important wildlife species on the top of the VECs identified in the FEIS (Golder 2014). The list of wildlife and their rationale for their inclusion in this TEMMP is presented in Table 3.

Table 3: Terrestrial Valued Ecosystem Components from 2014 FEIS (Golder 2014)

Valued Ecosystem Component		Rationale for Selection
Ungulates	Barren-ground Caribou	Important subsistence, cultural, and economic species; migratory species with extensive range requirements; may be affected by disturbance during seasonal movements; primary prey species for large carnivores in northern environments. Designated as "Threatened" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2016) and under consideration for Federal listing.
Furbearers	Gray Wolf	Large home range size linked to caribou migrations; top predator in ecosystem; can be attracted to human disturbance; long generation time means one individual may be affected by disturbance over multiple years resulting in potential regional population effects; important subsistence and cultural species.
	Polar Bear	Large home range size; top predator in ecosystem; can be attracted to human disturbance; long generation time means one individual may be affected by disturbance over multiple years resulting in potential regional population effects; listed as "Vulnerable" in Nunavut (CESCC 2020), and "Special Concern" on Schedule 1 of *Species at Risk Act* (SARA) in Canada (COSEWIC 2018), and listed as "Vulnerable" by the International Union for the Conservation of Nature (IUCN; Schliebe et al. 2008).
Birds	Raptors	Sensitive to noise disturbance and human activity during nesting; include the short-eared owl (listed as "Vulnerable" in Nunavut [CESCC 2020], "Special Concern" under Schedule 1 of SARA.); Note that the tundra peregrine falcon was federally delisted in May 2023. The peregrine falcon is now under Schedule 3 of SARA (Government of Canada 2023).
	Upland birds (including migratory birds)	Upland birds include upland migratory birds (i.e., songbirds and shorebirds) and non-migratory birds (i.e., ptarmigan). Upland birds have a small territory size so may be affected by habitat loss; migratory birds are susceptible to population declines as a result of changing environmental conditions on breeding and overwintering habitats.

Valued Ecosystem Component		Rationale for Selection
	Waterbirds	Includes waterfowl, loons, and swans; waterbirds may be affected by loss of shoreline habitat for breeding; important staging habitat may also be lost; sensitive to noise disturbance and human activity; some species are important for subsistence; a number of species are listed as sensitive in Nunavut.
Vegetation	Plant populations and communities	Characterized within Ecological Landscape Classification types, especially those with restricted distribution that may be disproportionately affected by the Mine; important for support of ecosystem processes and services, ecosystem resiliency, and spiritual and aesthetic values.
	Listed (rare) plant species	Plant species listed as “At Risk”, “May be at Risk” or “Sensitive” in Nunavut or by Committee on the Status of Endangered Wildlife in Canada (COSEWIC); which, therefore, may be disproportionately affected by Project activities.
	Traditional use plant species	Plants used in Nunavut primarily by aboriginal persons, including edible plants, medicinal plants, and plants used for construction or other purposes.

Table 4: Wildlife Considered in the TEMMP but not included in the 2014 FEIS

Wildlife		Rationale for Selection
Ungulates	Muskox	The distribution of muskox is changing in Nunavut; thus, muskox may increase in abundance and distribution during the life of the Mine. Although not included as a VEC, future distribution was considered to guide monitoring and potential mitigation in the future.
Furbearers	Grizzly Bear	Grizzly and Wolverine were not selected as a VEC because the core part of their distributional range does not overlap with the Meliadine Mine (GN 2011); however, monitoring data is collected and recorded as part of the TEMMP.
	Wolverine	
	Arctic fox	Arctic fox was not selected as a VEC because the species is listed as secure or common by governmental agencies and can thrive in and around human developments. however, monitoring data is collected and recorded as part of the TEMMP.

3.1 Caribou Baseline

Barren-ground caribou (Qamanirjuaq herd) are an important species for community residents and a focal species in this TEMMP. Caribou are annual but transient inhabitants of the area surrounding Meliadine Mine during, the spring migration, calving and post-calving periods. The traditional calving grounds of the Qamanirjuaq herd are located west of the RSA and south of Baker Lake (BQCMB 2008). Recent data indicates the calving ground has recently shifted north and northeast. Caribou may transit through the Mine and AWAR seasonally from approximately early June to late July.

Caribou baseline surveys, IQ and monitoring results suggest that caribou can be abundant in the RSA during the post-calving season. However, numbers are highly variable with groups ranging from hundreds to tens of thousands of individuals typically interacting directly with the Mine site for one to two weeks in early July but are not frequently observed outside of this time frame. Larger groups of caribou have interacted with the Mine area in 2022 and 2023 during mid to late June, with observations of mobile calves and directional movement suggesting post-calving behaviour. This may be due to calving occurring earlier in the year, or in locations closer to the Mine site. IQ has suggested that this happens every 10-12 years. The earliest Project-specific data were aerial helicopter surveys for caribou were completed up to 2009 in the RSA. Subsequently, caribou information has been collected through collaboration with the GN and Agnico Eagle contributing to the Caribou Collar Program initiatives. Most of the caribou aerial surveys in the RSA were completed between 1998 and 2009 between March and June during the spring migration/calving season and between July and November during the post-calving through to early winter. Monitoring is ongoing using a variety of monitoring approaches as described in Section 4 .

3.1.1 Caribou Population Estimates

Population estimates were first documented in the 1940s (Figure 4). Population estimates were collected using various survey techniques (Appendix C). These surveys generally report a population of approximately 150,000 caribou in the 1940s, declining to between 30,000 and 50,000 caribou by the 1970s. Community residents have shared that there previously was a lot of caribou in Chesterfield Inlet and Whale Cove, but fewer caribou are now seen, since the North Rankin Nickel Mine was built in Rankin Inlet (operated 1957-1962). Some Elders stated that the caribou population around Rankin Inlet was affected during the early days of the community, saying that the caribou changed their migration routes and were scarce in Arviat, Chesterfield Inlet, and the Rankin area before the nickel mine opened. Another Elder stated that caribou numbers decreased in the area after the Mine opened but believes that changes in weather altered their migration and that they will eventually return.

Based on the most recent available caribou population survey results, conducted by the GN in 2022, the size of the Qamanirjuaq herd is 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; COSEWIC 2016).

3.1.2 Movement Patterns and Distribution

Data from baseline studies, local knowledge, and IQ was used to create a map of historical caribou presence in the region of the Meliadine Mine, including historical migration routes for the Qamanirjuaq herd (Figure 5). This information is used to inform mitigation and monitoring efforts, in conjunction with additional data continuously collected as part of the TEMMP under an adaptive management framework (Section 1.5). Historically, caribou were first observed in the RSA in mid to late April (spring migration; Hubert and Associates 2007; Nuqsana Golder 2020). Spring migration

occurs from mid-March to late May as caribou move north, generally along the coast of Hudson Bay (BQCMB 2008).

The calving area of the Qamanirjuaq herd has traditionally covered a large area inland from Whale Cove and Arviat from the 1960s to 2010s (Figure 6). Since 2010, the calving ground has moved approximately 100 km north from inland west of Whale Cove to where it is now, north-west of Rankin Inlet and by, 2019, within the RSA (Figure 7). During the calving time, cows slow down their movement. Most of the calving will happen within 2 or 3 days. The caribou will then gradually return to their migration patterns (Cameron, M.D., and University of Alaska Fairbanks Department of Biology and Wildlife 2022).

The summer range covers a broad area roughly bounded by Chesterfield Inlet in the north, Hudson Bay in the east, the Manitoba border in the south and the Northwest Territories border to the west, determined using GN collar data (Figure 6). At the time of the FEIS, the herd generally interacted with the RSA in the summer period (Golder 2014). IQ indicated that the caribou were not present in the RSA every year. Analysis of the collared caribou from 1993 to 2019 indicate presence in the RSA in 13 of 27 years (Nuqsana Golder 2020). During post-calving, caribou were historically dispersed inland from the coast, but they have been increasingly using the coast of Chesterfield Inlet and Hudson Bay since 2010 (Figure 8). Prior to2016, caribou collars were largely observed in the RSA during the summer season. Beginning in 2016, caribou collars have also been present in the RSA during other seasons (e.g. calving and post-calving; WSP 2023a).

In addition, Rankin Inlet Elders have identified a change in migration routes. The original migration route used by the caribou herd was through the Ittiqluk and Diana River, but now the herd moves through another unspecified trail. A few herds used the routes along the shore of Rankin Inlet less than 10 years ago and caribou migrated through the Rankin Inlet area in cycles with their numbers fluctuating over time. Elders emphasized that caribou do not follow the same paths from year to year but tend to wander in search of good forage. Many old caribou trails weaved among the lakes and ponds in the area from the Lower Meliadine River to the Meliadine mine camp and beyond, indicating that this was a good migration area in fall. Many of the trails were deeply incised into the land marking the passage of many caribou. However, most trails are now completely revegetated with rooted vegetation and lichens, suggesting lighter use in recent times.

During fall, the herd moves south towards Manitoba. Arviat hunters noted that habitat near Whale Cove and Rankin Inlet provides caribou wintering grounds (Kendrick and Manseau 2008) and reports from the 1960s and 1970s indicate that the herd may have been tundra-wintering inland from Whale Cove at that time (Robertson 1975). Historically, caribou occurred in low numbers through to the fall in October in RSA (Hubert and Associates 2007; Nuqsana Golder 2020).

Figure 4: Population Estimates for the Qamanirjuaq Herd, 1940s to 2022

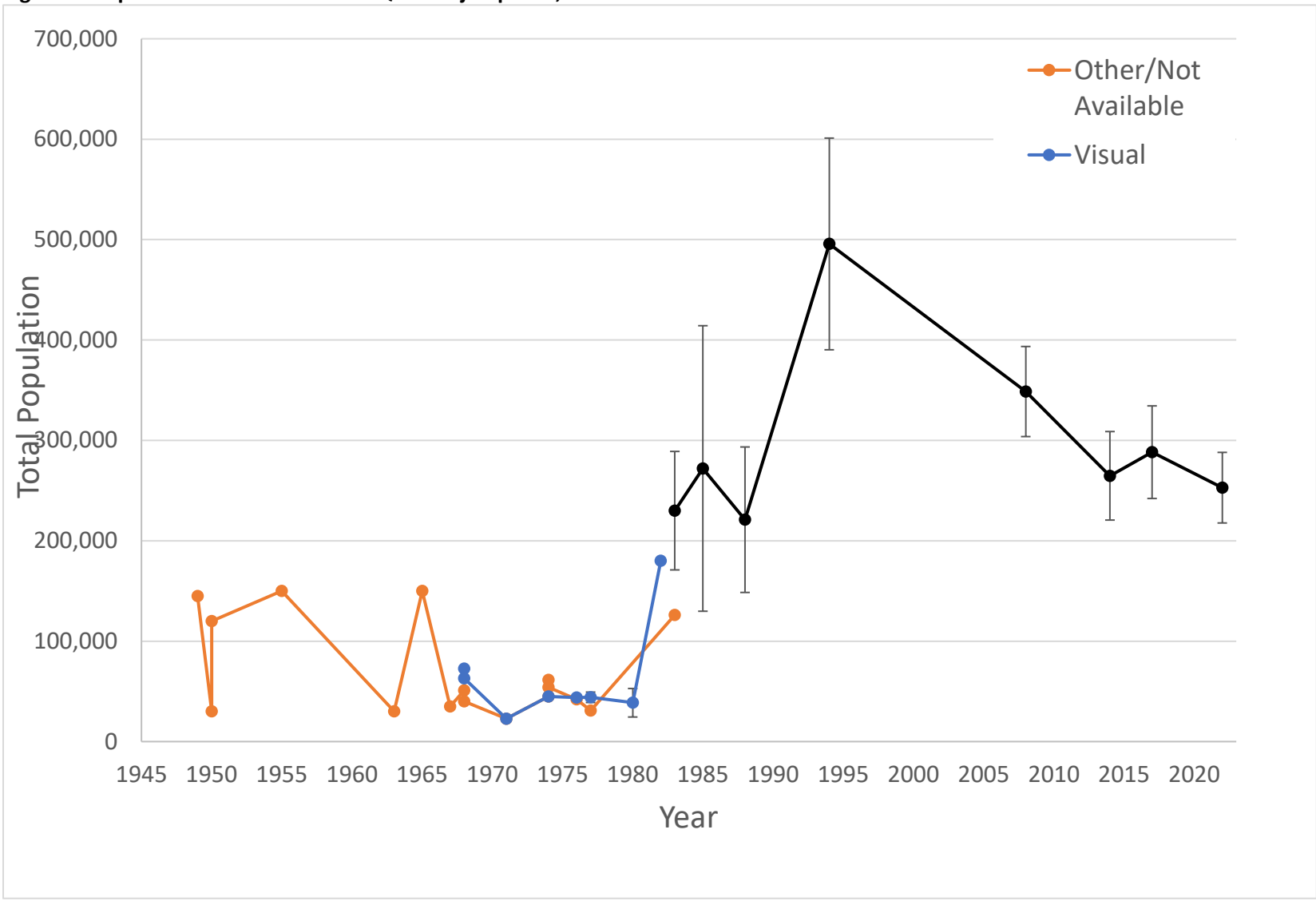


Figure 5: Historic Caribou Movements near the Meliadine Mine

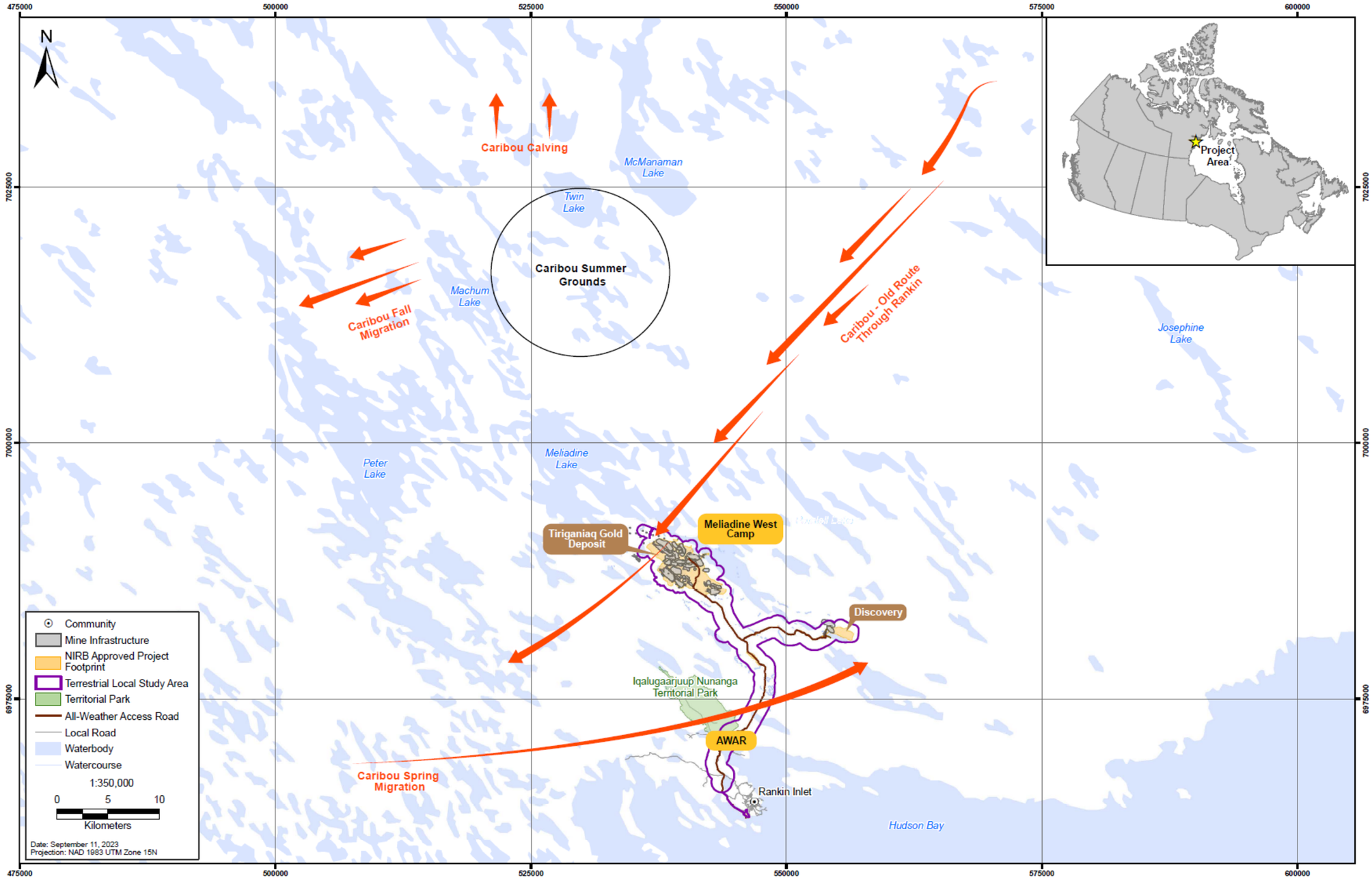


Figure 6: Seasonal Ranges of Qamanirjuaq Caribou

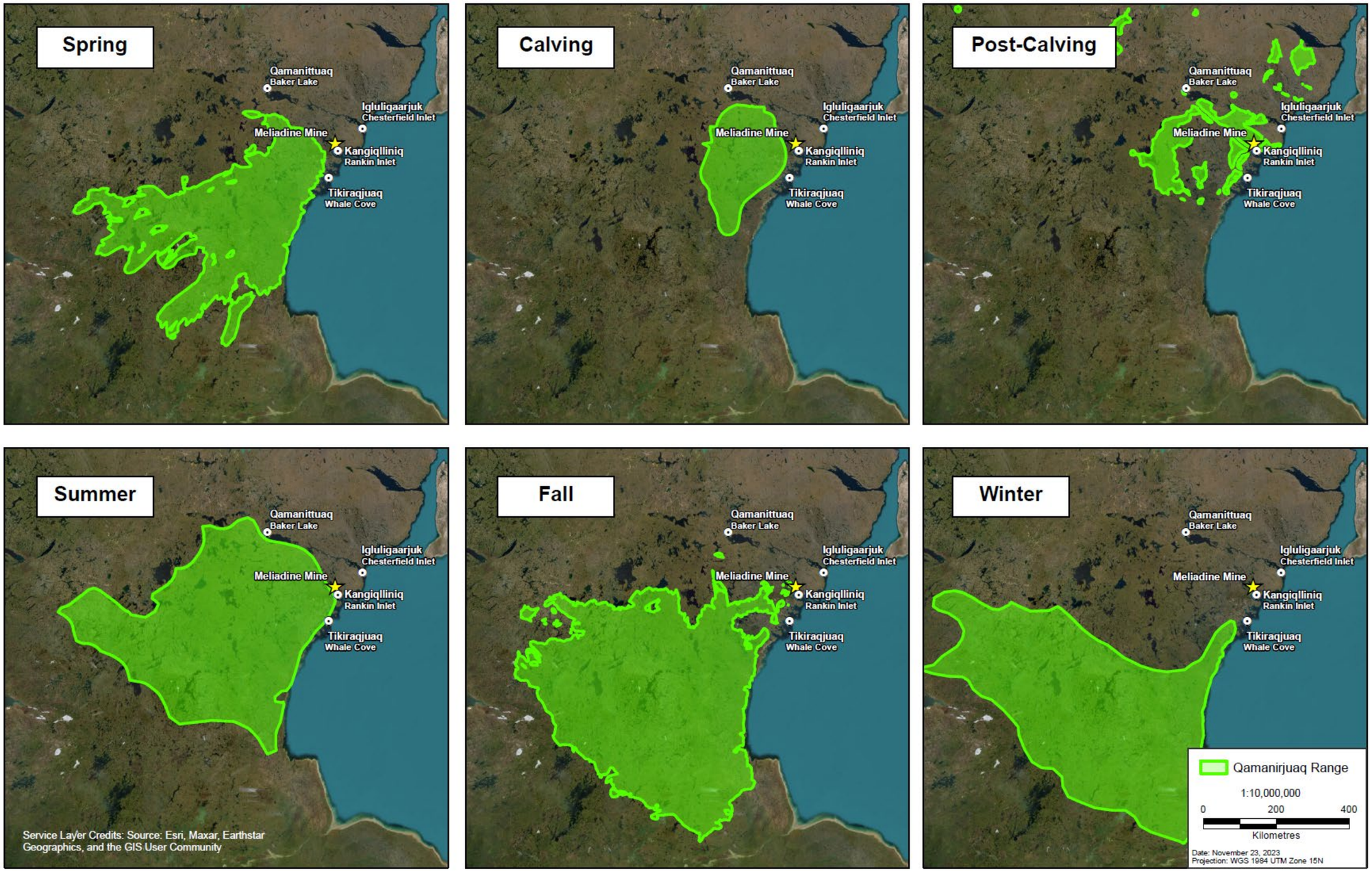


Figure 7: Movement of Qamanirjuaq Caribou Calving Range

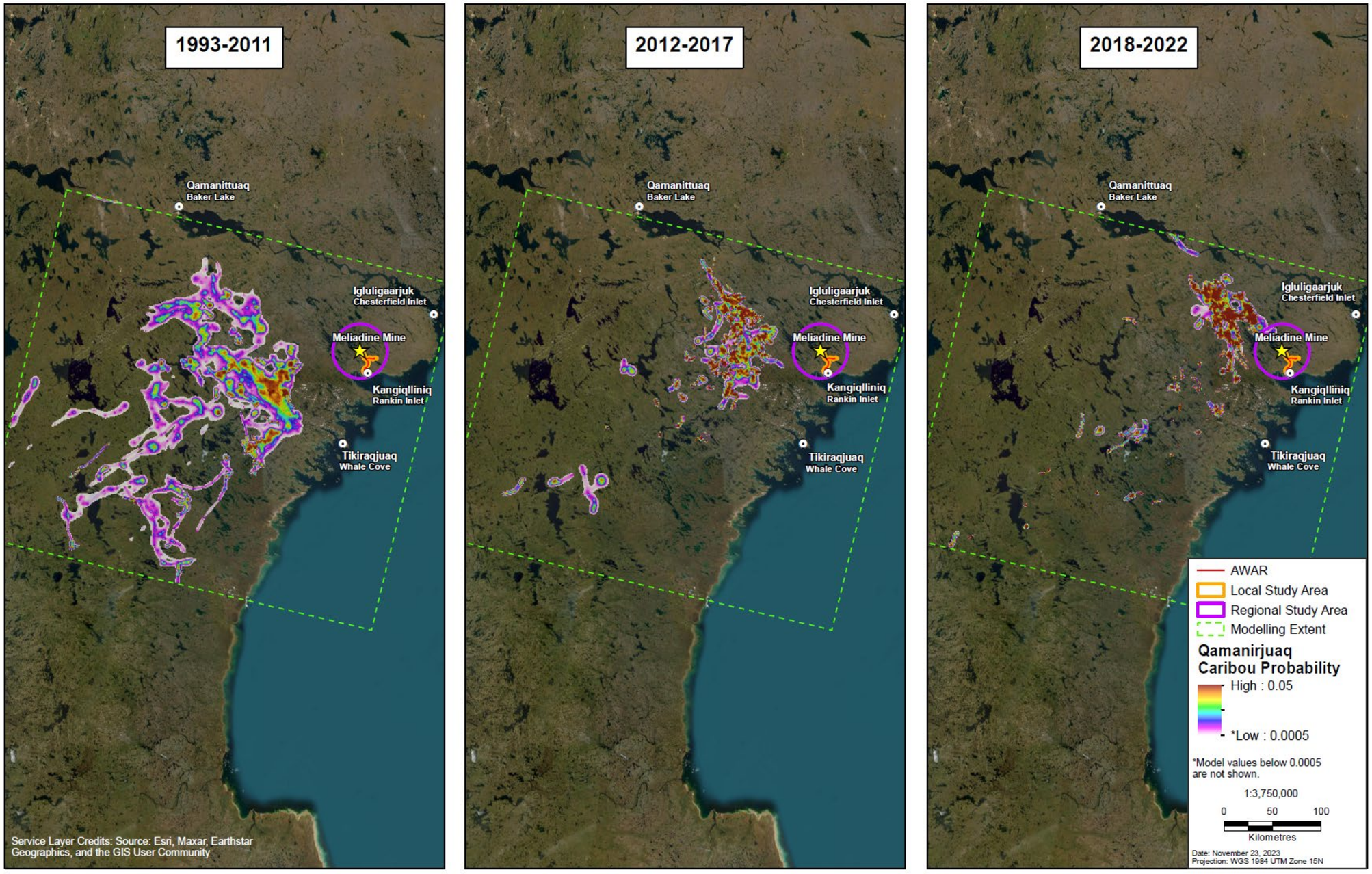
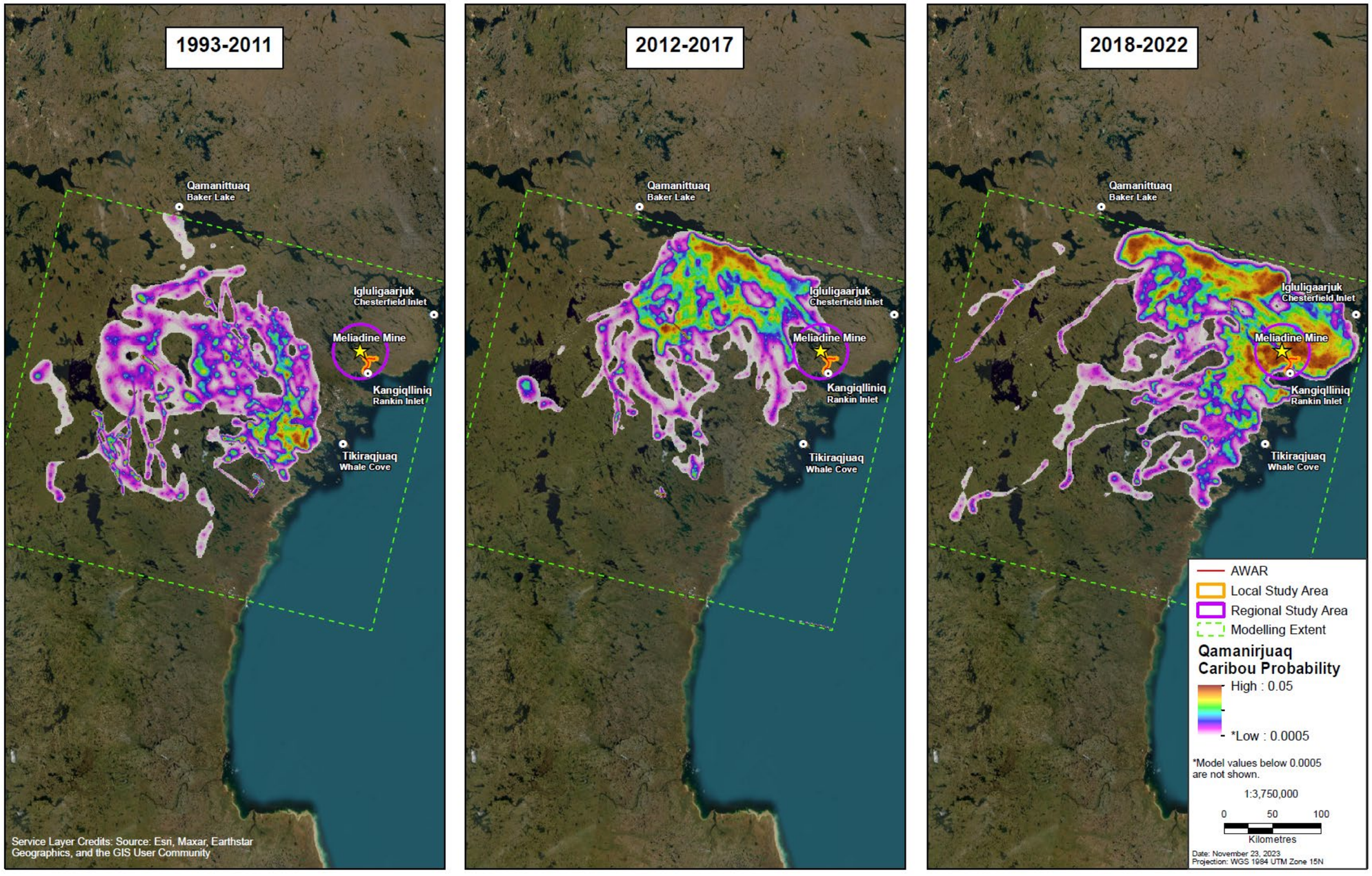


Figure 8: Movement of Qamanirjuaq Caribou Post-Calving Range



3.1.3 Caribou Habitat Use

Baseline studies indicated that the percentage of caribou locations detected in heath tundra was higher than the percentage of heath tundra available on the landscape (FEIS Volume 6, Golder 2014). Heath boulder was also used more than available during the post-calving season and heath lichen – hair lichen was used more during late summer. Bare ground and water were used more than available during spring migration, which may be due to movement across the landscape. Insect harassment can also contribute to the movement of caribou. Heath lichen – Cetraria was used equal to availability in all seasons. Caribou in the Northwest Territories select lichen veneer, heath tundra, and low shrub habitat (Johnson et al. 2005). The main diet for barren-ground caribou is lichen; thus, they are also expected to occur in heath lichen – Cetraria and heath lichen – hair lichen habitat types in the RSA (Larter and Nagy 1997).

3.1.4 Caribou Calving Range

Caribou cows concentrate together to have their calves and most calve within a few days of each other. This concentration of births in time and space increases the vigilance and sensitivity to disturbance – most all a herd's cows are together, and the individual cows are aware of their newborn calf's vulnerability and scan for nearby predators or even if the neighboring cows are alerted to movement. The cows' movement rates are low (<5km/day) just before and for about 7-13 days after birth until the calf is strong enough to keep up with its cow at least over short distances. During the hours and days after birth, the cow and calf bond and learn each other's voice and smell which is essential for recognizing each other and keeping the calf safe (WSP. 2024a; WSP. 2024b). The calf may suckle up to 30 times a day and drink 1-2 liters milk during early rearing. The nursing rate does decline as the calves start to digest more plant food and by 3-5 weeks, the calves are independent foragers although they still suckle the cow as the cow's milk becomes more concentrated during the summer.

An annual calving range is the area occupied by the cows from calf birth through to the initiation of foraging by calves which is about when the calves are about 3 weeks old (Russel et al. 2002). A calving range can be mapped based on a collared cow's satellite or GPS locations and with a maximum extent of a 95% kernel boundary. Individual-based movement models of collared cow data can predict calving events to provide an ecologically defined calving range across multiple collared cows (WSP 2024a; WSP 2024b). The core calving range (i.e., 50% kernel area) has most but not all calving cows and so for planning mine monitoring and mitigation to protect calving cows, a more practical and conservative approach is essential. The early post-calving rearing period when a cow's movement rates are <5km/day following birth (KivIA. 2023). Inclusion of this period in calving range delineation will accommodate how individual cows vary in their movements. The timing of calving is associated with plant phenology (Mallory et al. 2020), which is trending earlier in the year. As such, June 1 to 15 covers the likely period of calving and early rearing as measured by movement rates <5km/day (KivIA. 2023).

3.2 Muskox Baseline

Muskox were considered as a VEC for the 2014 FEIS, but not selected because the core part of their distributional range does not overlap with the Mine (GN 2011). There have been either none, or very few, observations of this species near the Mine. Concerns were raised during the review process of the Draft Environmental Impact Statement regarding future impacts to muskox populations. The distribution of muskox is changing in Nunavut; thus, muskox may increase in abundance and distribution during the life of the Mine. Although not included as a VEC for the reasons stated above, future distribution was considered to guide monitoring and potential mitigation in the future.

The historic range of muskox once overlapped the Meliadine Mine; however, hunting pressure resulted in extirpation of muskox from much of its southern range (Jenkins et al 2011). Elders noted that while muskox were present in the time of their ancestors, there were no muskox when they were young. As a result, muskox hunting fell out of common Inuit practice in the Kivalliq Region. During consultation regarding the AWAR, participants noted that muskox are increasing in numbers in the Rankin Inlet area and there is more hunting than before. Participants have also noted that muskox are being hunted near Diana River (FEIS Volume 9, Golder 2014).

The current distribution of muskox lies west of the Meliadine Mine (Campbell et al. 2017). Observations in the RSA are limited to one animal in 2008, a group of 26 in 2009, and a group of 18 in 2010 (J. Witteman, Agnico Eagle 2012 pers. comm.; FEIS Volume 9, Golder 2014). Annual hunting quotas are low and according to community feedback on hunter harvest surveys, muskox are not always taken (Priest and Usher 2004). Hunters report having to travel large distances to harvest muskox and in 2009, when 35 tags were issued by the KHTO for muskox harvest, hunters went north of the RSA (i.e., Peter Lake) to fill their tags (Priest and Usher 2004; N. Ford, Director of the KHTO, 2012, pers. comm.). the region near Diane River, which is southwest of the RSA, was also identified as a muskox hunting region (FEIS Volume 9, Golder 2014). Thus, muskox presence and abundance still appear to be low in the RSA.

Agnico Eagle will continue to communicate with GN biologists and local communities to understand the range expansion of muskox. Considerations will be made to adapt the TEMMP to include surveys for muskox, if deemed necessary.

3.3 Furbearers Baseline

During the period between 1900 and 1950, trapping was a predominant winter occupation for the Inuit of Rankin Inlet, Whale Cove, and Chesterfield Inlet (Riewe 1992; Freeman 1976; Golder 2014). Traplines located near food caches could stretch as long as 160 km. 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 practiced by local

communities (Nanuk Enterprises 2011). Furbearer species considered in the TEMMP include wolf, polar bear, grizzly bear, wolverine and Arctic fox.

3.3.1 Gray Wolf

Between 1900 and 1950, wolves were hunted largely attributed to their interference with food caches and traps but also for their high pelt value (Nanuk Enterprises 2011; Riewe 1992; Freeman 1976). Wolves are still rarely observed near the Mine Site. Den surveys were performed in 2021 to evaluate suitability and to document status of any previously identified dens (ERM 2021a). In 2020, ground surveys were performed but no sites were classified as high-quality carnivore denning habitat.

3.3.2 Polar Bear

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). Polar bears sustain traditional lifestyle and constitute an important income for tourism and hunting outfitters industries (Burt and Hickes 2012; Nanuk Enterprises 2011).

Polar bear hunting in the lower Meliadine valley is important to the communities of Rankin Inlet, Chesterfield Inlet, and Whale Cove. 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 for their skins, meat and fat using harpoons then carried by dogs (Burt and Hickes 2012). Today, polar bears are still a source of country food to local Inuit Elders that is shared in the communities. Polar bears are occasionally harvested near Rankin Inlet, though few individuals are observed during the year, commonly only in mid-late summer. IQ and incidental observations suggest that polar bears are more commonly seen between Rankin Inlet and the Mine in recent years. In the vicinity of the Mine site, the lower Meliadine valley and the lowland areas were identified to be potentially suitability for polar bears (Nanuk Enterprises 2011).

3.3.3 Grizzly Bear

Residents of Rankin Inlet, Chesterfield Inlet, and Whale Cove report that the occurrence of grizzly bears is increasing along the Hudson Bay coast. Grizzly bears are mostly considered to be threats to cabins and human safety, especially along the coast in the areas between Diana River and Meliadine River and are hunted as a reaction to their presence or after damage has occurred. There are few grizzly bears harvested by the Rankin Inlet community, and these species are rarely observed near the Mine (Priest and Usher 2004).

3.3.4 Wolverine

Between 1900 and 1950, wolverine hunting was largely attributed to their interference with food caches and traps, but also due to their high pelt value (Nanuk Enterprises 2011; Riewe 1992; Freeman 1976). There are few wolverines harvested by the Rankin Inlet community and are rarely observed near the Mine (Priest and Usher 2004).

3.3.5 Arctic Fox

Arctic fox are common residents in the Mine area, and they are trapped for their fur by community residents in the Meliadine valley area. According to the FEIS (Golder 2014), during the period between 1900 and 1950, trapping foxes for their fur was a predominant winter occupation for the Inuit of Rankin Inlet, Whale Cove, and Chesterfield Inlet (Riewe 1992; Freeman 1976). Arctic fox still represents the main species harvested for his fur by community residents in the Meliadine valley area (Golder 2014).

Baseline studies from 1999 and 2009 indicated that Arctic foxes remain a common resident and abundant in the area. The 2009 baseline den surveys occurred in June when pups emerge from their dens, and again in July to determine pup survival. Baseline den surveys targeted eskers, to focus on areas with the highest potential for active dens and were conducted by helicopter. Surveys identified 21 Arctic fox den sites within the vicinity of the Mine area.

3.4 Raptors Baseline

Bird baseline studies were conducted for the Mine between 1998 and 2011 in the RSA (Golder 2014). Raptor nest occupancy and productivity surveys were completed as part of the wildlife baseline program.

Raptor species observed in the Mine area during surveys included:

- Three species of raptors (gyrfalcon, peregrine falcon and rough-legged hawk); and
- Two owl species (snowy owls and short eared owls).

Peregrine falcon and rough-legged hawk appear to be the most common raptors in and around the Mine. Peregrine falcon nests have been affected by Mine-related activities (e.g., quarries) in the past, and the TEMMP includes mitigations and monitoring for this species. Ground and aerial surveys were used to locate raptor nests in the RSA during baseline monitoring, which will inform mitigation and monitoring in the TEMMP.

3.5 Migratory Birds Baseline

Bird baseline studies were completed for the Mine between 1998 and 2011 in the RSA (Golder 2014). Migratory bird species observed during surveys of the area surrounding Meliadine Mine include:

- Fourteen species of waterfowl; and
- Five species of shorebirds which are considered uncommon.

Point-count surveys were used to determine the occurrence and abundance of upland breeding birds. Program for Regional and International Shorebird Monitoring (PRISM) plots were used to survey shorebird occurrence and aerial surveys were used to survey waterbird occurrence and abundance in the RSA. Songbird and shorebird species richness and densities are low in the Mine area. Although songbirds and shorebirds will be monitored as part of the TEMMP, due to the low number of birds in the area, it is believed that there will be limited observable effects to these species as a result of the Mine, outside of habitat loss due to the Mine footprint.

Ground and aerial surveys were used to locate waterfowl and waterbird breeding areas in the RSA. The most common waterfowl present in the Mine area include Canada goose, tundra swan, long-tailed duck, and sandhill crane. Although there is no shortage of habitat for waterfowl, the Mine has the potential to affect waterfowl habitat and waterfowl are monitored within the TEMMP.

The Meliadine Lake area is important to community residents for hunting geese and other waterfowl in spring and fall. Waterfowl are hunted along the proposed access road route and people use existing trails to access important feeding areas for waterfowl. Waterfowl eggs and feathers are also important for traditional use by community residents.

3.6 Vegetation Baseline

The vegetation cover was mapped within the vegetation study area (VSA), which is a 50 km radius circle surrounding the Mine. Heath Tundra and Sedge Community types are the most abundant plant community types in the LSA and are widely distributed throughout the RSA.

There are approximately 32 traditional use plants species known to occur within the LSA based on IQ studies (FEIS volume 9; Golder 2014; Burt 2010). The IQ studies identified that plants and berries are harvested through the LSA and RSA, including areas overlapping with the Mine footprint (FEIS Volume 9; Golder 2014). Berry picking is common throughout the Meliadine valley and along many of the slopes and eskers that are found throughout the LSA (FEIS Volume 9; Golder 2014).

Some traditional use plant species and habitat will be lost, particularly in heath tundra. Although much of the area is expected to be reclaimed and revegetated, potential of traditional plant use post reclamation is unknown, and some areas will not be reclaimed to a vegetated state (FEIS Volume 6; Golder 2014).

No confirmed listed plant species identified as “At Risk” or “May be at Risk” in Nunavut (CESCC 2020), or federal listed species under COSEWIC or SARA were found in the LSA during the 1998, 2008, 2009, and 2012 field surveys. Three occurrences of listed plant species identified as “Sensitive” in Nunavut (CESCC 2020) were identified in the LSA. These species were associated with wetland or riparian habitats such as meadows, seeps, and marshes that are associated with the Riparian Willow/Birch, Birch Seep, and Sedge Community plant community types (FEIS Volume 6; Golder 2014).

SECTION 4 • CARIBOU AND MUSKOX MONITORING AND MITIGATION

It is anticipated that caribou may interact with the Mine seasonally approximately from early June through July and are not frequently observed outside of this time frame. This section was designed collaboratively with the TAG members to monitor, mitigate, and facilitate its implementation at the Mine.

4.1 Caribou Monitoring Protocol

Agnico Eagle has developed a Caribou Monitoring Protocol as part of the Caribou Protection System to trigger caribou monitoring which would lead to mitigate mine operation effects on the caribou (Table 5; Section 4.5.2). The Caribou Monitoring Protocol consists of four "levels", for which the monitoring is described in the below Table 5.

Table 5: Level 1 to 4 Caribou Monitoring Protocol Summary

Caribou	Level 1	Level 2	Level 3 Rapid Shutdown - Post-calving and summer (>June 16)	Level 4 Rapid Shutdown - Calving (June 1-15)
Monitoring				
Collar Monitoring (Location Maps)	Daily	Daily	Daily	Daily
Collar Monitoring (Daily Rate of Movement)	Daily	Daily	Daily	Daily
Height of Lands Survey	Every 2 days	Daily	3 times per day	4 times per day
Caribou Road Surveillance	Every 2 days	Daily	3 times per day	4 times per day
Calving Ground Overlap with Project	NA	NA	Annual	Annual

Incidental Observations	On-going	On-going	On-going	On-going

4.2 Caribou Monitoring Program

The distribution and abundance of caribou within and around the Mine site will be monitored through the monitoring outlined in this section. The results of all monitoring programs completed as part of the TEMMP are reported in the TEMMP annual report.

4.2.1 Collar Monitoring

Agnico Eagle supports and contributes to the GN's caribou satellite-collaring program. The telemetry data are made available through under a Data Sample and Sharing Agreement (DSSA) with the GN which restrict the distribution. The program collects location data on collared Qamanirjuaq caribou herd at a 4 hour fixed rate. The collar monitoring provides information on the distribution and the movement rate of the collared caribou which allows the mine to plan proactively.

Objectives

The objectives of this collar program are to:

- Detect caribou approaching the Mine site applying the Caribou Monitoring Protocol (Section 4.1) which in turn would trigger other monitoring programs and mitigation measures;
- Detect the on-set of calving based on collar distribution and movement rates (<5 km/day); and
- Provide largescale distribution and general movement of caribou occurring within the Mine LSA, RSA and CESA.

Monitoring Approach

Deployment of collars, data collection, and monitoring of caribou collars will be completed by the GN. The GN will provide the location maps from the previous day to Agnico Eagle. Daily reception of these maps will occur when caribou are likely to be approaching or in the RSA. Agnico Eagle will review the collar maps then will trigger, as necessary, additional monitoring such as height of land surveys and caribou road surveillance (Section 4.2.3). The maps also help with the coordination of the responses following the Caribou Protection System (Section 4.5.2).

4.2.2 Calving Range Monitoring

This section addresses shifts where the calving range of a herd reach the RSA. Caribou population and movement patterns are described in Section 3.1. Following the TAG recommendations, Level 4 monitoring allows the Mine to prepare to trigger mitigation if the calving range enters the mine site.

Objectives

The objectives of this program are to:

- Monitor collared caribou distribution; daily movement and directions during the calving period;
- Monitor annual trends in calving location and timing of the current year and;
- Measure the effectiveness of remote calving range monitoring

With the collaboration of the TAG, Agnico Eagle has developed a remote calving range monitoring that allows collection of information during the calving season beyond what can be observed from the Mine site. Using IQ to find the height of land locations, caribou monitors affiliated with KivIA or KHTO will record information of the calving activities, the locations of caribou and report the information to Agnico Eagle, informing implementation of the mitigation measures described in the Caribou Protection System (Section 4.5.2).

The calving range monitoring also includes analyzing collaring data to estimate the calving kernel density as described in WSP (2023b). A map will be provided to the TAG and in the TEMMP annual report indicating the annual location of the calving range and the monitoring data collected by KivIA and KHTO, when available, and by Agnico Eagle. Details on the content of the Calving Report are described in Section 4.5.2.

4.2.3 Height of Land Surveys and Caribou Road Surveillance

As part of this, height of land surveys and caribou road surveillance are triggered following the Caribou Monitoring Protocol (Section 4.1). These surveys are conducted to determine if caribou are using the area surrounding the Mine site and can provide a finer resolution than that provided by the collar data monitoring program.

Objectives

The objectives of this program are to:

- Measure the distribution and relative abundance of caribou occurring within the Mine LSA and RSA and along the AWAR by completing on-site surveys for caribou.
- Detect caribou approaching the Mine site that may initiate the Caribou Protection System (Section 4.5.2).

Monitoring Approach

Height of land surveys and caribou road surveillance are conducted following the Caribou Monitoring Protocol (Section 4.1). The height of land surveys focus on the vicinity of the Mine site and the caribou road surveillance focus along the AWAR. These surveys consist of Environment staff or Consultant accessing known vantage points (waste rock storage facilities, eskers, lake shores, road quarries) and using binoculars or a spotting scope to scan for caribou. Surveyors will ensure directions are scanned, and distances from the Mine site and along the AWAR to the limit of visibility are thoroughly surveyed. Information collected from the surveys will include the number of individuals (estimate), locations, distance from the Mine or the AWAR, direction travelling. When possible, details such as sex, age group, hunting activities and any other relevant comments will be recorded.

These surveys will directly inform implementation of the Caribou Protection System (Section 4.5.2) and other mitigations as needed.

4.2.4 Behaviour Monitoring

Caribou behaviour changes in response to the Mine may be expressed in two ways: changes to activity budgets and/or changes to distribution. The behaviour monitoring focuses on changes to activity budgets (the proportion of time an animal is engaged in different behaviours). The target is the caribou that occurs regularly in the LSA during the calving, post-calving and summer periods.

The behavioral monitoring also contributes to measuring effectiveness of mitigation as the rates of disturbance and the caribou responses can be measured relative to the level of mitigation.

Objectives

The objectives of the behaviour monitoring are to:

- Determine if caribou activity budgets change with distance from the Mine, and to document caribou responses to disturbances; and
- Determine the type of disturbances and the caribou responses to estimate the effectiveness of mitigation.

Monitoring Approach

Behaviour monitoring will occur when caribou are most frequently observed on site (-June to late-July). The locations will be informed previous data, IQ, KivIA and KHTO observations, the GN collar data, and field observations of caribou during height of land surveys and caribou road surveillance. These surveys will be completed primarily during the post-calving migration but will be completed whenever Level 3 or 4 are triggered. Behaviour surveys will be conducted in multiple locations throughout the Mine and along the AWAR to provide information on potential reactions to different stressors.

Behaviour surveys are undertaken simultaneously on a group of caribou as a scan survey. Scan surveys quantify the frequency of dominant behaviours displayed by a group over a period of time, which can be classified of as the group's activity budget. Potential disturbances (e.g., vehicles, aircraft, people) are recorded and the behavioural response to these stressors is documented. During a behaviour survey, the location, group size, age and sex composition, presence newborn calves, antlered cows, and habitat of a group of caribou will be recorded. Surveys will focus on determining the proportion of time caribou spend bedded, feeding, standing, alert, walking, trotting, and running. The behaviour of caribou groups will be recorded at eight-minute intervals for a minimum of four and a maximum of eight observations per group.

Caribou activity budgets are affected by factors such as weather and biting insect abundance.

A detailed description of behaviour methods and analyses are available in the Meliadine Mine Caribou Behaviour Report.

4.2.5 Camera Monitoring

Camera monitoring is conducted using motion-triggered trail cameras to study caribou interactions with the Mine site or the access roads during their annual migration. The initial study in 2020 was designed to identify features of the AWAR (i.e., slope, substrate, height, and surrounding habitat) that may facilitate caribou crossings 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. Objectives

The objective of the camera monitoring is to:

- Document and assess whether caribou movement near the Mine is affected by infrastructure, including the AWAR.
- Measure the effectiveness of mitigation using the cameras to record the frequency and type of traffic and the relationship between vehicles recorded on the road and at the mine site, and caribou crossing behavior at or crossing the road during the different mitigation levels.

Monitoring Approach

Cameras will be deployed during the period when caribou are most likely to interact with the Mine (-June to late-July). The location of the cameras may be adapted according to the evolution of the previous year's situation around the Mine site. Cameras will be programmed to capture both timed and motion-triggered photos to allow detection of caribou groups at various distances from the camera. Data from this program will be summarized and presented annually in the TEMMP annual report.

Detailed methods for camera surveys are available in the Meliadine Camera Monitoring Program Report.

4.2.6 Habitat Loss

Monitoring for habitat loss is described in Section 5.2.5.1.

4.2.7 Incidental Observations

Agnico Eagle use information received from collar monitoring, KHTO, KivIA and/or incidental observation reports suggesting that caribou are moving towards the Mine to trigger mitigation. More information on incidental observations of caribou are described in Section 5.1.3and wildlife incident reporting is described in Section 5.1.5.

4.3 Muskox Monitoring Protocol

In the situation of muskox being observed in the RSA, Agnico Eagle has developed a Muskox Monitoring Protocol based on the Caribou Protection System to trigger muskox monitoring which would lead to mitigate mine operation effects on the muskox (Table 6; Section 4.5). The Muskox Monitoring Protocol is an integral part of the Meliadine TEMMP, which consists of three "levels". These levels are triggered as follows:

- Level 1: 10 or more muskox within 10 km of the Mine;
- Level 2: less than 10 muskox within 5 km of the Mine; and
- Level 3: 10 or more muskox within 5 km of the Mine.

Table 6: Level 1 to 3 Muskox Monitoring Protocol Summary

Monitoring	Level 1	Level 2	Level 3
Height of Lands Survey Muskox Road Surveillance	• Every 2 days	• Every 2 days	• 3 times per day

4.4 Muskox Monitoring Program

Monitoring to evaluate muskox populations in the RSA and potential interactions with the Mine site is conducted from the following:

- Regional muskox surveys: Agnico Eagle has provided the GN with in-kind contributions and support for previous muskox surveys and will continue to do so, particularly if muskox become more common in the Mine area;

- Wildlife site surveillance and wildlife road surveillance monitoring: Sightings of muskox will be recorded and reported in the TEMMP annual report (Respectively Section 5.1.1and Section 5.1.2);
- Habitat Loss Assessment: Monitoring for habitat loss is described in Section 5.2.5.1; and
- Incidental Observations: Any incidental observations of muskox will be recorded and reported in the TEMMP annual report (Section 5.1.3).

4.5 Mitigation

4.5.1 Management for Shifts in Caribou Calving Ranges

This section describes management response should the calving range of the Qamanirjuaq herd overlaps the mine site or AWAR.

Caribou population and movement patterns are described in Section 4.1.

Agnico Eagle will map the calving and post-calving grounds based on the GPS collars and Inuit knowledge at the end of the year for comparison with the previous year core calving ground. The map will be reported to the TAG and in the TEMMP annual report. Level 4 monitoring and mitigation may be triggered during the calving season, which is from June 1 to 15.

4.5.1.1 Mitigation for calving ground

This section addresses what mitigation should occur if caribou are observed calving within the mine site where historic collar, observations or height of land survey data has not yet shown a long-term shift in calving area has occurred. Prior to and during the calving period, collar monitoring, incidental observations and height of land surveys should provide a warning that caribou are approaching and may calve near the mine.

If caribou are observed calving within the mine or AWAR, the monitoring will trigger Level 4 mitigation in accordance with the existing mitigation plan described in Section 4.5.3. In this event, additional measures will include:

- Agnico Eagle will discuss a daily transportation plan with the KivIA in the daily caribou management meetings to coordinate transportation related to the essential activities of the day.
- Agnico Eagle will minimize the number of transports related to essential activities.
- Agnico Eagle will provide a summary of the daily transportation plan in the daily emails.
- Agnico Eagle will communicate daily with the KivIA and HTO to report the monitoring results and discuss next steps.
- Agnico Eagle will prepare a Calving Report that will be included in the TEMMP annual report and discussed with the TAG.

4.5.1.2 Mitigation for Long-Term Shift of the Core Calving Ground

This section addresses the mitigation should the calving range of the Qamanirjuaq herd overlap the mine site or AWAR. Should a 3-year analysis of collar data indicate that the core calving range has overlapped the mine or AWAR, then additional monitoring will be triggered.

Additional monitoring will include:

- Agnico Eagle will work with the TAG to design a calving range monitoring (Section 4.2.2).
- Height of Land surveys and caribou road surveys (Section 4.2.3) will be conducted on an earlier monitoring schedule prior the calving period. These dates will be supplemented with calving dates derived from the Calving report during the last 5 years.

In the event that the calving caribou is within 10km of the mine site, additional measures will include:

- notify KivIA that collared caribou have entered the 10 km radius;
- increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;
- upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.
- Agnico Eagle will communicate daily with the KivIA and HTO to report the monitoring results and discuss next steps.
- Agnico Eagle will prepare a Calving Report that will be included in the TEMMP annual report and discussed with the TAG.

4.5.2 Caribou Protection System

Agnico Eagle has developed a Caribou Protection System based on a decision tree to monitor caribou and mitigate mine operation effects on the caribou. The Caribou Protection System is an integral part of the Meliadine TEMMP, which consists of four “levels”. These levels are triggered as follows:

- Level 1: 50 or more caribou (or 10 or more muskox) or ≥1 caribou collar location (less than 24 hours old) within 10 km of the Mine;
- Level 2: Less than 50 caribou (or less than 10 muskox) or ≥1 caribou collar location (less than 24 hours old) within 5 km of the Mine;
- Level 3: 50 or more caribou within 5 km of the Mine; and
- Level 4: 50 or more caribou within 5 km of the Mine from June 1 to 15, during the calving season.

In addition, observations of 50 or more caribou immediately adjacent to, or on the AWAR and/or the Mine site will warrant traffic signs, radio alerts, and traffic/work stoppages (e.g., suspension of flights, drilling operations, and circulation of vehicles) depending on where the animals are occurring, until the animals leave the area.

Figure 9 and Table 7 summarize the caribou protection levels, including criteria for moving between each level. The following sections summarize activity specific mitigation measures to be implemented under each level of caribou or muskox protection.

4.5.2.1 Level 1 Caribou Protection

The following mitigation measures will be implemented under a Level 1 caribou protection (i.e., if greater than 50 caribou or ≥1 caribou collar location (less than 24 hours old) are within 10 km of Meliadine Mine):

- Pilots, drilling staff, blasting staff, and open-pit staff will be notified to be vigilant;
- All construction staff will conduct regular scans for caribou or other wildlife while working; and
- Daily site-wide warnings will be communicated.

A Level 1 caribou protection will be in place for 5 days, or until caribou are within 5 km of the Mine, triggering a Level 2 or Level 3 caribou protection (depending on the number of caribou).

4.5.2.2 Level 2 Caribou Protection

The following mitigation measures will be implemented under a Level 2 caribou protection (i.e., less than 50 caribou or ≥1 caribou collar location (less than 24 hours old) are within 5 km of Meliadine Mine):

- Pilots will be notified to prepare for imminent work stoppage, including considerations for prioritizing work;
- Drilling staff will be notified to prepare for imminent work stoppage, including establishment of a plan for work area securement and transportation back to site should the level increase, keeping in mind the restrictions on aircraft and surface traffic under Level 3 caribou protection;
- Blasting staff will be notified to prepare for imminent work stoppage, including securement of materials and the blasting pattern;
- Open-pit staff will be notified to prepare for imminent work stoppage;
- All construction staff will conduct regular scans for caribou or other wildlife;
- Daily site-wide warnings will be communicated;

- Additional measures may be added by the Environment Supervisor as needed (e.g., possible work stoppage depending on location of caribou; and
- Speed limits will be reduced as appropriate to a maximum of 30km/h, and vehicle beacons will not be used on the AWAR.

A Level 2 caribou protection will be in place for either 10 days, until 50 or more caribou are within 5 km (triggering a Level 3 caribou protection), or until caribou move outside the 5 km buffer.

4.5.2.3 Level 3 Caribou Protection: Work Suspension Protocol

A Work Suspension Protocol has been developed by Agnico Eagle in consultation with the TAG to ensure caribou and muskox are able to migrate through the Mine area with minimal disturbance during larger-scale movements.

When the Mine is under a Level 3 caribou protection (triggered by 50 or more caribou, or 10 or more muskox within 5 km of the Mine), Agnico Eagle will implement the Work Suspension Protocol. The activities that could interfere with the caribou or muskox herd migration that will be suspended include the following:

- Helicopter flight;
- Open-pit blasting;
- Drill operation; and
- Circulation of non-essential surface vehicles.

Upon activation of the work suspension protocol, the following steps will be taken:

- A site wide message will be broadcast on all radio channels and via email;
- All employees at the drill sites that are in the direction of the caribou migration and within a 5 km radius of the migration will be notified that they will need to shut down the operations such that the drills and associated helicopter flights can cease as quickly as possible, before caribou are within 5 km;
- Work suspension will include removal of drill rods from holes and securement of the drill station;
- Organize transport of the affected personnel to the camp. Personnel on site that do not require air or road transportation will be requested to walk back;
- During essential helicopter transport of personnel back to camp, the Air Traffic Management Plan will be applied to avoid disturbing the caribou herd (avoidance distance of 1,000 m vertical and 1,500 m horizontal);

- Once staff are returned to camp, helicopters will be grounded (note that use of helicopters for emergency evacuation of personnel for medical reasons will still be allowed, if ground transport is not feasible); and
- Minimize outside workforce when caribou herds (i.e., > 50 animals) move through the Mine.

4.5.2.4 Level 4 Caribou Protection: Work Suspension Protocol from June 1 to 15

The work suspension level 4 will be applied during the calving season, which is from June 1 to 15. The daily rate of movement of collared caribou during pre-calving and calving period of the herd will be used to trigger mitigation. Should one collared caribou within 10 km radius of the mine site reaches a daily rate of movement of the herd below 5km/day, Agnico Eagle will:

- notify KivIA that collared caribou have entered the 10 km radius;
- increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;
- lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.

The work suspension level 4 will be trigger when 50 caribou are within 5km of the site and also trigger similar mitigation as level 3.

A transportation plan will be discussed with the KivIA in the daily meetings to coordinate transportation related to the essential activities of the day. Agnico Eagle will minimize the transportation related to essential activities and will provide a summary of the transportation plan in the daily emails.

Figure 9: Decision Tree for Mitigating Project Operation Effects on Caribou

ᐃᓱᒪᓕᐅᕆᓂᕐᒧᑦ ᐋᖅᑭᐅᒪᔪᖅ ᐊᖏᓗᐊᖏᒋᐊᖅᑎᑦᑎᓂᐊᕐᓗᓂ ᐱᓕᕆᐊᕐᒥᑦ ᐊᐅᓛᖅᑎᑦᑎᓂᕐᒥᑦ ᖃᓄᐃᖓᓕᖅᑎᑦᑎᔪᓂᒃ ᑐᒃᑐᓄᑦ

10 ᑭᓛᒥᑕᓂᒃ ᐅᖓᓯᒃᑎᒋᔪᖅ ᐃᓂᐅᔪᒥᑦ

ᓇᓃᓐᓂᖅ 1

50-ᓂᑦ ᐊᒥᓲᓂᖅᓴᐅᔪᑦ ᑐᒃᑐᐃᑦ

ᖃᐅᔨᓴᐃᖏᓐᓇᓚᐅᖅᑐᑦ ᐅᑭᐅᑉ ᐃᓗᐊᓂᑦ ᐊᑐᖅᓱᑎᒃ ᖁᖓᓯᕈᓯᓂᒃ ᓈᓴᐅᑎᓂᒃ/ᑎᑎᖅᑲᓂᒃ

ᐱᒋᐊᖅᑎᑦᑎᓂᖅ: 50-ᓂᑦ ᐊᒥᓲᓂᖅᓴᐅᔪᑦ ᑐᒃᑐᐃᑦ 10 ᑭᓛᒥᑕᓂᒃ ᖃᓂᑎᒋᔪᑦ ᑕᓯᕐᔪᐊᕐᒧᑦ ᐊᒻᒪᓗ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᖅᑯᑎᒧᑦ

ᖃᐅᔨᒋᐊᖃᑦᑕᕐᓂᖅ: ᒪᓂᕋᕐᒥᑦ ᖃᐅᔨᓴᐃᓂᖅ ᒪᕿᒃ ᐅᐸᔾᔪᒃ ᐊᓂᒍᕐᓂᑕᒫᒃᑯᑦ ᐊᒻᒪᓗ ᕿᒥᕐᕈᔭᐅᓂᖏᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᒃᑯᑦ ᖁᖓᓯᕈᑎᓄᑦ ᑐᑭᓯᐅᒪᔾᔪᑏᑦ ᒪᕿᐃᖅᑕᖅᑕᐅᐸᓗᑎᒃ ᐱᓇᓱᐊᕈᓯᐅᑉ ᐃᓗᐊᓂᑦ

ᐊᖏᓗᐊᖏᒋᐊᖅᑎᑦᑎᓂᖅ: ᖃᐅᑕᒫᑦ ᐅᔭᕋᒃᑕᓇᐊᓗᒃᑖᒥᑦ ᖃᐅᔨᒪᑎᑦᑎᔪᑦ (ᐃᓚᐅᐸᓗᑎᒃ ᑭᕙᓪᓕᕐᒥᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᒃᑯᑦ, ᐆᒪᔪᓕᕆᔨᐊᓛᒃᑯᑦ, ᓄᓇᕗᒻᒥ ᒐᕙᒪᒃᑯᑦ)

ᐊᑯᓂᐅᑎᒋᓂᖓ: ᑕᓪᓕᒪᓄᑦ ᐅᐸᓗᓂᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑭᓯᐊᓂ ᓇᓃᓐᓂᖓ 2 ᑎᑭᐅᑎᔭᐅᒃᐸᑦ (ᑐᒃᑐᐃᑦ 5 ᑭᓛᒥᑕᓂᒃ ᐅᖓᓯᒃᑎᒋᔪᑦ ᑕᓯᕐᔪᐊᕐᒥᑦ)

5 ᑭᓛᒥᑕᓂᒃ ᐅᖓᓯᒃᑎᒋᔪᖅ ᐃᓂᐅᔪᒥᑦ

ᓇᓃᓐᓂᖅ 2

0-49 ᑐᒃᑐᐃᑦ

ᐱᒋᐊᖅᑎᑦᑎᓂᖅ: 50 ᑐᖕᓖᓃᑦᑐᑦ ᑐᒃᑐᐃᑦ ᑕᓪᓕᒪᐃᑦ ᑭᓛᒥᑕᓂᒃ ᖃᓂᑎᒋᔪᑦ ᑕᓯᕐᔪᐊᕐᒧᑦ ᐊᒻᒪᓗ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᖅᑯᑎᒧᑦ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᖅᑯᑎ

ᖃᐅᔨᒋᐊᖃᑦᑕᕐᓂᖅ: ᒪᓂᕋᕐᒥᑦ ᖃᐅᔨᓴᐃᓂᖅ ᒪᕿᒃ ᐅᐸᔾᔪᒃ ᐊᓂᒍᕐᓂᑕᒫᒃᑯᑦ ᐊᒻᒪᓗ ᕿᒥᕐᕈᔭᐅᓂᖏᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᒃᑯᑦ ᖁᖓᓯᕈᑎᓄᑦ ᑐᑭᓯᐅᒪᔾᔪᑏᑦ ᒪᕿᐃᖅᑕᖅᑕᐅᐸᓗᑎᒃ ᐱᓇᓱᐊᕈᓯᐅᑉ ᐃᓗᐊᓂᑦ

ᐊᖏᓗᐊᖏᒋᐊᖅᑎᑦᑎᓂᖅ: ᖃᐅᑕᒫᑦ ᐃᓂᐅᔪᓗᒃᑖᒥᑦ ᖃᐅᔨᒪᑎᑦᑎᓂᖅ ᑐᒃᑐᓂᒃ, ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐃᓱᒪᑕᕆᔭᐅᔪᖅ ᖃᓄᐃᓕᐅᕈᑎᖃᒃᑲᓐᓂᕈᓐᓇᖅᑐᖅ, ᓲᕐᓗ ᓄᖅᑲᖅᑎᓪᓗᒋᑦ ᐱᓕᕆᓃᑦ, ᒪᓕᒡᓗᒋᑦ ᑐᒃᑐᐃᑦ ᓇᒧᙵᐅᓯᒪᓂᖏᑦ/ᖃᓂᑎᒋᓂᖏᑦ, ᑕᒪᒃᑯᐊᕋᓗᐃᑦ

ᐊᑯᓂᐅᑎᒋᓂᖓ: ᖁᓕᑦ ᐅᐸᓗᐃᑦ ᐅᕝᕙᓘᓐᓃᑦ ᓇᓃᓐᓂᖅ 3 ᐱᒋᐊᕐᓗᓂ ᐅᕝᕙᓘᓐᓃᑦ ᑐᒃᑐᐃᑦ ᐊᓂᒍᖅᐸᑕ ᑕᓪᓕᒪᐃᑦ ᑭᓛᒥᑕᐃᑦ ᐃᓗᐊᓃᑦᑐᒥᑦ

ᓇᓃᓐᓂᖅ 3

50-ᓂᑦ ᐊᒥᓲᓂᖅᓴᐅᔪᑦ ᑐᒃᑐᐃᑦt

ᐱᒋᐊᖅᑎᑦᑎᓂᖅ: 50-ᓂᑦ ᐊᒥᓲᓂᖅᓴᐅᔪᑦ ᑐᒃᑐᐃᑦ ᑕᓪᓕᒪᐃᑦ ᑭᓛᒥᑕᓂᒃ ᖃᓂᑎᒋᔪᑦ ᑕᓯᕐᔪᐊᕐᒧᑦ ᐊᒻᒪᓗ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᖅᑯᑎᒧᑦ

ᖃᐅᔨᒋᐊᖃᑦᑕᕐᓂᖅ: ᓄᓇᒥᑦ ᖃᐅᔨᓴᐃᓂᖅ ᐱᖓᓯᐃᖅᓗᑎᒃ/ᖃᐅᑕᒫᑦ ᐊᒻᒪᓗ ᕿᒥᕐᕈᔭᐅᓂᖏᑦ ᑐᒃᑐᓄᑦ ᖁᖓᓯᕈᑎᓂᑦ ᑐᑭᓯᐅᒪᔾᔪᑏᑦ

ᐊᖏᓗᐊᖏᒋᐊᖅᑎᑦᑎᓂᖅ: ᖃᐅᑕᒫᑦ ᐃᓂᐅᔪᓗᒃᑖᒥᑦ ᖃᐅᔨᑎᑦᑎᖅᑲᖅᑕᖅᑐᑦ ᑐᒃᑐᐃᑦ ᒥᒃᓵᓄᑦ (ᐱᖓᓯᐃᖅᓗᑎᒃ/ᖃᐅᑕᒫᑦ), ᐱᓕᕆᓂᖅ ᓄᖅᑲᖅᑎᑕᐅᓂᖓ ᐱᒋᐊᖅᑲᖅᑕᖅᑐᖅ

ᐊᑯᓂᐅᑎᒋᓂᖓ: ᑭᓯᐊᓂ ᑐᒃᑐᐃᑦ ᐊᓂᒍᖅᐸᑕ ᑕᓪᓕᒪᐃᑦ ᑭᓛᒥᑕᐃᑦ ᑭᒡᓕᐅᔪᒥᑦ

ᓇᓃᓐᓂᖅ 4

ᓄᕐᓇᐅᕐᓂᖅ

ᐱᒋᐊᖅᑎᑦᑎᓂᖅ: 50-ᓂᑦ ᐊᒥᓲᓂᖅᓴᐅᔪᑦ ᑐᒃᑐᐃᑦ ᑕᓪᓕᒪᐃᑦ ᑭᓛᒥᑕᓂᒃ ᖃᓂᑎᒋᔪᑦ ᑕᓯᕐᔪᐊᕐᒧᑦ ᐊᒻᒪᓗ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᖅᑯᑎᒧᑦ

ᖃᐅᔨᒋᐊᖃᑦᑕᕐᓂᖅ: ᓄᓇᒥᑦ ᖃᐅᔨᓴᐃᓂᖅ ᐱᖓᓯᐃᖅᓗᑎᒃ/ᖃᐅᑕᒫᑦ ᐊᒻᒪᓗ ᕿᒥᕐᕈᔭᐅᓂᖏᑦ ᑐᒃᑐᓄᑦ ᖁᖓᓯᕈᑎᓂᑦ ᑐᑭᓯᐅᒪᔾᔪᑏᑦ

ᐊᖏᓗᐊᖏᒋᐊᖅᑎᑦᑎᓂᖅ: ᖃᐅᑕᒫᑦ ᐃᓂᐅᔪᓗᒃᑖᒥᑦ ᖃᐅᔨᑎᑦᑎᖅᑲᖅᑕᖅᑐᑦ ᑐᒃᑐᐃᑦ ᒥᒃᓵᓄᑦ (ᐱᖓᓯᐃᖅᓗᑎᒃ/ᖃᐅᑕᒫᑦ), ᐱᓕᕆᓂᖅ ᓄᖅᑲᖅᑎᑕᐅᓂᖓ ᐱᒋᐊᖅᑲᖅᑕᖅᑐᖅ

ᐊᑯᓂᐅᑎᒋᓂᖓ: ᒪᓐᓃᑦ 1-ᒥᑦ 15-ᒧᑦ

Table 7: Level 1 to 4 Caribou Protection System Summary of mitigation

Activity	Level 1	Level 2	Level 3	Level 4 (from June 1 to 15)
Mine Site Communication	Daily site- wide warning email		Site-wide warning email Site-wide warning all radio channels	Site-wide warning email Site-wide warning all radio channels Daily morning meetings with KivIA
Road Traffic	Remain vigilant.	Speed limits <30 km/h. No vehicle beacons on the AWAR.	Essential traffic only; Wildlife has right of way.	Essential traffic only; Wildlife has right of way. A transportation plan will be discussed during the daily meeting with the KivIA.
Aircraft	Remain vigilant.	Prepare for imminent work stoppage.	Suspension of Aircraft operation, except in emergency situations.	Suspension of Aircraft operation, except in emergency situations.
Drilling	Remain vigilant.	Prepare for imminent work stoppage.	Suspension of drilling activities.	Suspension of drilling activities.
Blasting	Remain vigilant.	Prepare for imminent work stoppage.	Suspension of surface blasting.	Suspension of surface blasting.
Open-Pit Mining	Remain vigilant.	Prepare for imminent work stoppage.	Suspension of open-pit mining activities.	Suspension of open-pit mining activities.
Underground Mining	Continuation of underground activities.		Continuation of underground activities not requiring heavy mobile equipment use on surface; and Use of vehicle convoys for shift change, following a path behind visual barriers.	Continuation of underground activities not requiring heavy mobile equipment use on surface; and A transportation plan will be discussed during the daily meeting with the KivIA. A minimum of vehicules will be used.
General Construction	Conduct regular scans for caribou or other wildlife while working.		Suspension of construction activities; and No burning of materials (pallets, scrap wood) will be conducted.	Suspension of construction activities; and No burning of materials (pallets, scrap wood) will be conducted.

Activity	Level 1	Level 2	Level 3	Level 4 (from June 1 to 15)
Temporary Tailing Storage Pad	Continue		Continue activities within double-high seacan walls area	Continue activities within double-high seacan walls area
Feeding 'Buggy Bin'	Continue		Continue activities within double-high seacan walls area	Continue activities within double-high seacan walls area
Crew changes	Continue	Minimized	Minimized	Minimized

4.5.2.5 Permitted Activities during Work Suspension Protocol

Only light duties activities and essential activities to the site function and health and safety will be allowed.

- Refueling of essential generator and power supplies;
- Operation and maintenance of water treatment systems; (diesel pumps required to manage water levels at water collection infrastructures). In preparation for level 4, the basins will be lowered as much as possible to minimize the number of pumps operating during level 4 and to limit traffic on the site;
- Critical inspections required in case of a malfunction;
- Emergency Response Team deployment in case of an emergency;
- Intervention in case of a reportable spill;
- Medical treatment or site evacuation of employee;
- Time-sensitive environmental compliance work;
- Activity intended to prevent a health and safety or environmental risk;
- Feeding the Buggy Bin with double-high seacan walls in place;
- Using a temporary tailings storage pad immediately outside of the Church with double-high seacan walls in place;
- Haulage to the Automation Pad at Portals with double-high seacan walls in place;
- Crew change convoys pending road is opened, as discussed during the daily morning meeting;
- Other light duties activities as approved by the TAG.

4.5.2.6 Activity Restart Protocol

Through ground-based monitoring, the Agnico Eagle wildlife monitor will determine when caribou or muskox are outside of the 5 km buffer from the Mine and report the information to the Meliadine Mine Manager or designate. The observations will also be shared with the KivIA, GN, and KHTO by email. Activities can resume when less than 50 caribou or 10 muskox are outside the 5 km mark for more than two consecutive days, and if an agreement is reached with the KivIA, GN, and KHTO to resume activities. The decision and timing of activity resumption will be communicated to the KivIA, GN, and KHTO by email.

4.5.3 Activities-Specific Protocols for Caribou and Muskox

Several general mitigation measures outlined in Section 6 were developed to also reduce the effects of the Mine on wildlife and wildlife habitat which also consider caribou and muskox. Those mitigation measures presented in Section 6 and are meant to be followed year long.

However, the activities-specific protocols are meant to implement mitigation measures to protect caribou and muskox as presented below focussing on the period where caribou may interact with the Mine specifically when the Caribou Protection System is triggered.

4.5.3.1 Road Traffic Protocol

Mitigations to minimize disturbance to caribou for surface traffic include:

- Under a Level 2 caribou protection speed limits will be reduced as appropriate to a maximum of 30km/h, and vehicle beacons will not be used on the AWAR;
- If small numbers of caribou are crossing Mine roads, traffic will stop and wait for them to cross and move on naturally (i.e., caribou have the right-of-way);
- AWAR traffic will be limited to convoys during caribou migration season when possible, led by Environment Department staff (or an appropriate delegate), and in consultation with KivIA and KHTO;
- Transportation between the Mine site and Rankin Inlet in case of emergency (i.e., a serious unexpected situation that requires immediate action and that, in the case of Mine operations, can be,but not limited to, medical or environmental situations requiring immediate action) may occur following discussions with the KivIA, KHTO, and GN; and
- Caribou will only be moved away from roads in specific circumstances, in discussion with the KivIA, KHTO, and GN (i.e., a emergency on-site); and
- Surface traffic (i.e, vehicles operated for the purpose of maintaining the safety of personnel, Emergency Response Team (ERT), security and wildlife monitoring) will be limited to essential vehicles only in Level 3 and Level 4 caribou work suspension.

For a group of 50 or more caribou or 10 or more muskox within 300 m from the AWAR:

- Regular vehicle traffic for transport to and from the site will be suspended to allow the animals to cross the road;
- Wildlife has the right of the way and vehicles must wait without disturbing their movements. Any vehicles already on the road will stop and wait as needed; and
- The use of the road for mining or construction related activities will cease until caribou or muskox herds have moved outside the work suspension buffer zone.

- Based on local observations of caribou movement, KivIA and Agnico Eagle can agree to more flexible road closures on IOL. The road closure decisions will be documented and reported on the daily observation report email.

4.5.3.2 Aircraft Protocol

An Air Traffic Management Plan has been developed and is summarized below:

- Pilots are notified to be vigilant during Level 1 caribou protection;
- Pilots are notified to prepare for imminent work stoppage during Level 2 caribou protection, including considerations for prioritizing work;
- The Environment Department must be notified if caribou, muskox, or other animals are known to be within 5 km of the helipad. The pilot should radio the Meliadine designated camp aircraft frequency and request that the camp radio operator call out the wildlife team to herd animals away from the helipad, or discuss alternate locations before landing;
- Aircraft will not be operated (Level 3 work suspension), except in emergency situations; and
- If aircraft must be flying for safety reasons over a large herd of caribou (≥50 individuals in close proximity to one another), a 1,000 m vertical and 1,500 m horizontal distance from the herd is observed whenever possible.

4.5.3.3 Drilling Protocol

Drilling staff are required to abide by the following guideline when operating drills at the Meliadine Mine or conducting exploration work in the Mine area:

- Notified to be vigilant during Level 1 caribou protection;

Upon activation of the work suspension protocol, the following steps will be taken:

- Notified to prepare for imminent work stoppage during Level 2 caribou protection, including establishment of a plan for work area securement and transportation back to site should the level increase, keeping in mind the restrictions on aircraft and surface traffic under Level 3 work suspension.
- Inform all employees at the drill sites that are in the direction of the caribou migration and within a 5 km radius of the migration that they will need to shut down the operations such that the drills and associated helicopter flights can cease as quickly as possible, before caribou are within 5 km;
- Shutdown will include removal of drill rods from holes and securement of the drill station; and
- No drilling will be conducted under level 3 work suspension.

4.5.3.4 Blasting Protocol

Blasting staff are required to abide by the following guideline when conducting operations at the Meliadine Mine:

- Blasting staff are notified to be vigilant during Level 1 caribou protection;
- Blasting staff are notified to prepare for imminent work stoppage during Level 2 caribou protection, including securement of materials and the blasting pattern;
- No surface blasting will be conducted during Level 3 caribou protection.

4.5.3.5 Open-Pit Mining Protocol

Open-pit staff are required to abide by the following guideline when conducting operations at the Meliadine Mine:

- Open-pit staff are notified to be vigilant during Level 1 caribou protection ;
- Open-pit staff are notified to prepare for imminent work stoppage during Level 2 caribou protection;
- Open pit mining activities are not permitted (under level 3: work suspension).

4.5.3.6 Underground Mining Protocol

Underground mining activities can continue during all levels of caribou protection. Underground staff are required to abide by the following guidelines when conducting operations at the Meliadine Mine:

- Visual barriers (sea cans) placed around portal entries and surface travel paths to the processing plant; and
- Twice daily vehicle convoys are used for shift change, led by Environmental staff (or appropriate delegates), following a path behind visual barriers from the animals.

4.5.3.7 General Construction and Operation Protocol

Construction and operation staff are required to abide by the following guidelines when working at the Meliadine Mine, and at all Mine-associated sites:

- All construction staff will conduct regular scans for caribou or other wildlife while working under Level 1 caribou protection;
- All construction staff will conduct regular scans for caribou or other wildlife while working under Level 2 caribou protection;

- Construction schedule will consider caribou migration, such as ensuring no open trenches are present during the caribou migration;
- No construction activities under level 3 work suspension; and
- No burning of materials (pallets, scrap wood) will be conducted under level 3 work suspension.

4.6 FEIS Prediction and Thresholds for Caribou and Muskox

The 2014 FEIS made predictions about the effects of the Mine on caribou and muskox (FEIS Volume 6; Golder 2014). Monitoring programs are designed to test impact predictions and examine the efficacy of mitigation measures. Mitigations may be modified through adaptive management as described in Section 1.5, based on monitoring described in the TEMMP, TAG discussion, or changes to the best available science. Predictions from the FEIS, monitoring methods and frequency, thresholds for each monitoring indicator caribou and muskox are summarized in Table 8.

Table 8: Summary of Predicted Effects, Monitoring Methods, and Mitigations for Caribou and Muskox

FEIS Predictions	Threshold	Monitoring Methods	Monitoring Frequency	Mitigations Measures
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss.	• Collar Monitoring • Height of Land Survey • Caribou Road Surveillance • Direct Habitat Loss	• Every 3 years	• Habitat Loss Mitigation
Sensory Disturbance	Caribou avoiding the site <10% caribou deflections from AWAR	• Collar Monitoring • Height of Land Survey • Caribou Road Surveillance • Caribou Behaviour Monitoring	• Caribou and Muskox Monitoring Protocol • Daily / Weekly	• Habitat Loss Mitigation • Road Traffic Management
Vehicle Collisions	No more than 1 ungulate/year	• Wildlife Incident Reporting	• Daily / Weekly	• Road Traffic Management • Road Traffic Protocol • Road Traffic Management
Hunting by Rankin Inlet Residents	To be determined (TBD) after 3 years of data collection, in collaboration with GN.	• Hunter Harvest Survey	• Collected throughout the year and reported annually	• NA
Other Project-related Mortality	No more than 1 ungulate/year	• Wildlife Incident Reporting	• Daily	• Road Traffic Management
Exposure to Contaminated Water or Vegetation	TBD via Screening Level Risk Assessment (SLRA)	• Vegetation Metals Monitoring	• Every 3 years	• Road Design and Maintenance • Management of Hazardous Material

SECTION 5 • WILDLIFE MONITORING

Similar to Section 4, wildlife monitoring methods described here (Section 5) were designed collaboratively with the TAG members. As the Project progresses, any modifications to these monitoring programs arising from TAG recommendations will be documented with reference to the relevant TAG meeting date.

The section is organized with subsections to describe general wildlife monitoring programs (applicable to a range of wildlife VECs) and monitoring programs designed specifically for each terrestrial wildlife VEC.

A summary of the monitoring programs, their frequency, and established thresholds for adaptive management (e.g. supplemental mitigation) is also provided here (Section 5.7).

5.1 General Wildlife Monitoring

The following general wildlife monitoring programs will be conducted to assess the effects of the Mine on multiple species of wildlife and their habitat. General wildlife monitoring is described by method, and applies to all wildlife, including caribou and muskox. Additional monitoring specific to caribou is described in Section 4.2, and muskox in Section 4.4. The results of all monitoring programs completed as part of the TEMMP are reported in the TEMMP annual report.

5.1.1 Wildlife Site Surveillance Monitoring

Wildlife is expected to be present near the Mine throughout construction, operation, and closure. Site surveillance monitoring is intended to provide timely and continual information of wildlife activities at the Mine. This type of monitoring will provide direct feedback to Mine operations regarding the effectiveness of waste management and wildlife mitigation practices. Examples of wildlife activities that will be documented through the site surveillance monitoring include:

- The presence of wildlife in areas where food may be available;
- The use of buildings for shelter or nesting; and
- The use of water management ponds by waterfowl.

Particularly, this portion of the program is designed to inform Agnico Eagle when and where wildlife are most likely to interact with the Mine and what species are most common.

Objectives

- Record the presence of wildlife within and around the Mine footprint to allow Environmental staff to remain appraised of current and emerging issues, so that they can effectively manage issues as they arise.

Monitoring Approach

Agnico Eagle's Environmental staff will undertake systematic tours of the Mine site and record wildlife observations or recent wildlife sign (e.g., tracks, scat, nesting, denning, etc.). The survey will be completed on foot and by truck, at least once per week, or more as necessary. Monitoring will be continuous throughout all phases of the Mine.

The staff will record the area surveyed (survey effort) and the nature and location of observations. All areas of the Mine site and infrastructure will be surveyed, with focus on areas where there is greater risk, such as:

- Areas with potential wildlife attractants (i.e., accommodations, kitchen, truck shop, waste transfer area, incinerator, etc.);
- Infrastructure with potential to be used by wildlife for shelter, denning or nesting; and
- Areas where people are regularly working outdoors.

Based on findings from the site monitoring, Environmental staff may at any time suggest or undertake improvements to environmental design features, modify mitigation and management practices and policies, or request additional training for staff, as required. Agnico Eagle is also considering the placement of remote cameras near facilities to monitor areas of potential wildlife attraction (e.g., kitchen area, waste management areas).

5.1.2 Wildlife Road Surveillance Monitoring

Wildlife road surveillance monitoring is designed to determine the frequency and distribution of wildlife interactions with the Mine site roads, particularly the AWAR. Results from these surveys will be used to verify impact predictions and/or monitoring thresholds (Section 5.7).

Objectives

The objective of road surveillance is to record the presence of wildlife and/or wildlife signs (e.g., tracks, nesting) along the AWAR corridor and other site roads.

Monitoring Approach

Agnico Eagle, in collaboration with the KHTO, will carry out wildlife surveys along the AWAR and RIBR weekly. Surveys will be conducted by environment staff and/or KHTO scanning both sides of the road (to a maximum horizontal distance of approximately 1 km from the road edge) travelling at a maximum speed of 30 km/h.

Information collected will be entered in the sightings log database and will include date and time, species, number of individuals, sex, age, location, distance from the road, side of the road, and any other relevant comments The Roads Management Plan for the Mine addresses specific measures related to traffic management, road access, road safety including wildlife management measures.

5.1.3 Incidental Observations

In addition to the targeted monitoring conducted by Environment staff, incidental observations of wildlife by Agnico Eagle staff, contractors, or visitors will be recorded. Through recording the presence of wildlife within and around the Mine footprint, Environment staff will remain appraised of current and emerging issues and will be able to mitigate issues before they arise. Wildlife awareness posters are posted at key locations (e.g., kitchen, orientation center). Sightings cards are available to employees and workers are encouraged to record any incidental observations of wildlife.

Objectives

The primary objective of this program is to record the presence of wildlife and/or wildlife signs (e.g., tracks, nesting) in relation to the Mine site and along the access roads, providing additional information to Environmental staff regarding wildlife habitat use, seasonal timing, areas of potential human-wildlife conflict, and areas of potential attraction.

Monitoring Approach

Incidental observations of any wildlife species will be recorded by Agnico Eagle personnel at the Mine site, along the roads, while conducting exploration activities, and while travelling to/from the Mine site via air or ground. Information will be transmitted digitally using an input form. Where animals are observed near roads, the vehicle operator will report the number of animals, location, and direction of travel to the Mine radio dispatcher, who will collect the information and inform vehicle operators. The Environment staff will collect incidental observation records and review them monthly. Incidental observations will be compiled and reported.

5.1.4 Wildlife Sightings Log

The wildlife sighting log is a database designed to be used by Environment staff to determine the frequency and distribution of wildlife sightings, and of wildlife interactions with the Mine site. The log will be used as a leading indicator of change in wildlife distribution (e.g., if a new species such as grizzly bears is observed) and verify impact predictions through reporting wildlife observations and wildlife incidents (e.g., vehicle-wildlife collisions on the road). All wildlife species are the target of this program.

Of particular importance is the frequency of wildlife entering the Mine site areas and along the AWAR corridor. This information can then be used to:

- Determine if areas are attracting wildlife;

- Document human-wildlife conflicts;
- Identify areas/timing of wildlife mortality or potential mortality;
- Identify seasonal trends of wildlife occurrence in the Mine area; and
- Evaluate effectiveness of mitigation (e.g., waste management and landfill).

Objectives

The primary objective of the general wildlife sightings log is to record the presence of wildlife and/or wildlife signs (e.g., tracks, nesting) in relation to the Mine site and along the access roads.

Monitoring Approach

The wildlife sightings log will be completed by Agnico Eagle's Environmental staff during all phases of the Mine. Information collected include date and time, species, number of individuals, sex, age, location, and any other relevant comments. Wildlife observations will be compiled and reported annually.

5.1.5 Wildlife Incident Reporting

This section outlines the procedure for documenting incidents. Wildlife incidents refer to a range of possible occurrences at the Mine, including:

- Human-wildlife interactions that present a risk to either;
- Wildlife-caused damage to property or delay in operations;
- Wildlife deterrent actions; and
- Wildlife injury or mortality.

Target species for incident reporting is all wildlife species, with a particular interest on carnivores (e.g., Arctic fox) as they may be attracted to the site.

Objectives

The objectives of recording and reporting wildlife incidents are to:

- Provide appropriate information to on-site Environment staff for dealing with wildlife interactions at the Mine site; and
- Provide an array of example encounters so that appropriate mitigation and management can be implemented to keep humans and wildlife safe, using only humane control methods.

Monitoring Approach

All incidents and deterrent actions will be investigated and documented. Incidents may also be observed through site and road surveillance monitoring activities (Sections 5.1.1 and 5.1.2). Documenting incidents will include photographs, names of people involved, the nature of the incident, and supporting information such as the time, date, location, and follow-up actions that occurred. Wildlife incident monitoring will be undertaken as required, continuously throughout the construction, operation, and closure phases of the Mine.

Documenting incidents allows for adaptive management and further development of mitigation. Incidents will require follow-up to determine what can be done to prevent similar occurrences in future. Wildlife mortalities will be reported to the GN. Migratory bird mortalities and incidents will also be reported to ECCC (mine-related or otherwise), including any migratory birds detected through surveillance monitoring (Sections 5.1.1 and 5.1.2).

5.2 Caribou and Muskox Monitoring

Refer to Section 4.

5.3 Furbearer Monitoring

This section outlines the monitoring for furbearer species which include wolf, polar bears, grizzly, wolverine, and Arctic fox.

5.3.1 Den Surveys

Prior to construction of mine infrastructure, surveys are required to locate dens of denning carnivores in accordance with NIRB Project Certificate No. 006 (Amendment No. 002) Term and Condition 53.

Objectives

- Identify dens and denning habitat prior to ground clearing and construction of new infrastructure.

Monitoring Approach

Surveys will be completed to locate dens of Arctic fox, grey wolf, polar bear, grizzly bear, and wolverine. The den surveys will consist of visual observations of dens during the species sensitive periods. Individual observations and signs of furbearer activities will also be used to determine the type of wildlife using the den and if the den is active. Methods may include the use of drones, binoculars, or trail cameras.

5.4 Raptor Monitoring

The target species for the raptor monitoring program is primarily peregrine falcons; however, information will be collected on other raptor species if they occur in the LSA and RSA, including rough-legged hawks, gyrfalcons, and short-eared owls.

5.4.1 Pre-Clearing Surveys

Prior to construction of mine infrastructure, surveys are required to locate raptor nests and avoid disturbance to active nests.

Objectives

- Identify nests prior to ground clearing and construction of new infrastructure.

Monitoring Approach

Information from the Arctic Raptors Research Program (Section 5.2.3.3), site surveillance (section 5.1.1) and incidental observations (section 5.1.3) will be used to identify known raptors nest locations.

Methods include (but are not limited to) foot-based visual surveys completed by an environment staff or a specialized consultant. Nest surveys for raptors may also include stand watches, call-playbacks, point counts and ground searches.

5.4.2 Arctic Raptors Population Monitoring

Agnico Eagle will work in collaboration with arctic raptor specialist to develop and implement the raptor monitoring program.

Objectives

The objective of this program is to evaluate disturbance to nesting raptors through the collaborative Arctic Raptor Research Program, with the following sub-objectives:

- Identify new nesting sites in high-quality habitat;
- Monitor distribution and breeding density;
- Monitor clutch size and productivity; and
- Mark individual adults and nestlings to identify site fidelity and mortality.

Monitoring Approach

Methods will include ground-based occupancy surveys, marking of breeding adults and nestlings, remote camera monitoring to identify cause of nestling mortality (if it occurs), monitoring

precipitation and temperature at nest sites, and potentially estimating prey abundance. Additional details on methods are described in the annual reports prepared by arctic raptors specialist and will be summarized in the TEMMP annual reports.

Agnico Eagle will submit raw data and reports related to this program to the GN.

5.5 Migratory Bird Monitoring

This section includes surveys related with avian VECs and focussing on waterfowl, waterbirds, upland breeding birds, and shorebirds.

5.5.1 Pre-Clearing Surveys

Prior to construction of mine infrastructure, surveys are required to locate migratory bird nests and avoid disturbance to active nests.

Objectives

- Identify nests by completing pre-clearing surveys prior to ground clearing and construction of new infrastructure.

Monitoring Approach

Prior to construction of mine infrastructure, surveys are required to locate migratory bird nests and avoid disturbance to active nests. Methods include (but are not limited to) foot-based visual surveys completed by an Environment staff or consultant, shoreline surveys (Section 5.2.4.3), PRISM plots (Section 5.2.4.4), or point counts (Section 5.2.4.5).

5.5.2 Shoreline Surveys

The shoreline survey is designed to determine nesting distribution within 200 m of mining and mine-related infrastructure (e.g., AWAR). This buffer (200 m) is the approximate zone of influence for sensory disturbance to migratory birds, as defined in the FEIS (FEIS Volume 6; Golder 2014).

The target species for the shoreline surveys include waterfowl and waterbird species such as ducks, geese, loons, mergansers, and swans.

Objectives

- The primary objective of the shoreline survey monitoring program is to determine the effects, if any, of sensory disturbance from mining activities (including the AWAR) on breeding success of migratory waterbirds, or on changes in distribution of mated pairs.

Monitoring Approach

Ground-based surveys will be conducted at ponds, wetlands, and lake shorelines within 200 m of mining-related infrastructure (Figure 10). Two observers will walk along the water's edge to assess the presence, or any indication, of breeding waterfowl and/or waterbirds. One observer will walk 5 m from the water's edge, while the second observer will walk 15 m from the water's edge with the intent of flushing any breeding waterfowl or waterbird pair in the vicinity. This survey will occur during the peak of the breeding season (i.e., early July). Observations will be recorded on a datasheet and location coordinates will be recorded. If breeding is confirmed along any portion of the surveyed areas within 200 m of mining infrastructure, then a follow-up survey will be completed only at those specific nesting sites to determine nesting success.

In consultation with the GN, monitoring will be conducted for the first three years of operations. This will assist in determining the effectiveness of this monitoring program to determine effects of the Mine on waterfowl; this will inform the frequency of monitoring thereafter.

5.5.3 PRISM Plot Surveys

The Program for Regional and International Shorebird Monitoring Program (PRISM; CWS 2008) is designed to measure mining-related effects on upland bird (i.e., songbirds) and shorebird species richness, diversity, and relative abundance. Specifically, the PRISM monitoring will be used to assess changes in parameters from general mining activities but excluding the AWAR. The target species for the PRISM plot surveys include upland migratory birds (i.e., songbirds and shorebirds) and non-migratory birds (i.e., ptarmigan).

Objectives

- Determine any mine-related changes in upland and shorebird abundance, species richness, diversity, and distribution.

Monitoring Approach

The PRISM survey methods are used consistently across North America so data can be compiled and compared across the continent. PRISM plots will be selected to compare shorebird data near the Mine with data collected outside the zone of influence of the Mine (i.e., control areas).

To ensure consistency with baseline data survey methods, PRISM plots will be rapid plots, which are 400 m x 300 m (12 ha) following the PRISM protocols (CWS 2023). Two observers spaced at 25 m intervals will walk through each plot along a systematic grid and record birds and nests observed. A sufficient sample size will be determined and established within control areas (i.e., outside the zone of influence of the Mine) and mine areas (i.e., within the zone of influence of the Mine). Plots will be placed within a single habitat type, if possible. Data analysis will be completed to determine

differences in measured parameters (i.e., relative abundance, richness, diversity) between control plots and mine plots while considering temporal patterns.

As per consultation with ECCC in 2019, PRISM surveys will be completed at 24 randomly selected plots (of a selected subset of 48 regional plots in proximity to the Mine) over 2 years, every 5 years.

5.5.4 Point Count Surveys

The point count surveys are designed to measure mining-related effects on upland bird (i.e., songbirds) and shorebird species richness, diversity, and relative abundance. Specifically, the point count survey data will be used to assess changes due to increased traffic along the AWAR, per consultation with ECCC. The target species for the point count surveys include upland migratory birds (i.e., songbirds and shorebirds) and non-migratory birds (i.e., ptarmigan).

Objectives

- Determine any AWAR-related changes in upland and shorebird abundance, species richness, diversity, and distribution.

Monitoring Approach

Point count surveys will be completed along transects on either side of the AWAR. 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 center of the preceding plot (Figure 11). Six transects with 12 plots per transect result in a total of 72 point counts. 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.

Figure 10: Migratory Bird Shoreline Survey Area

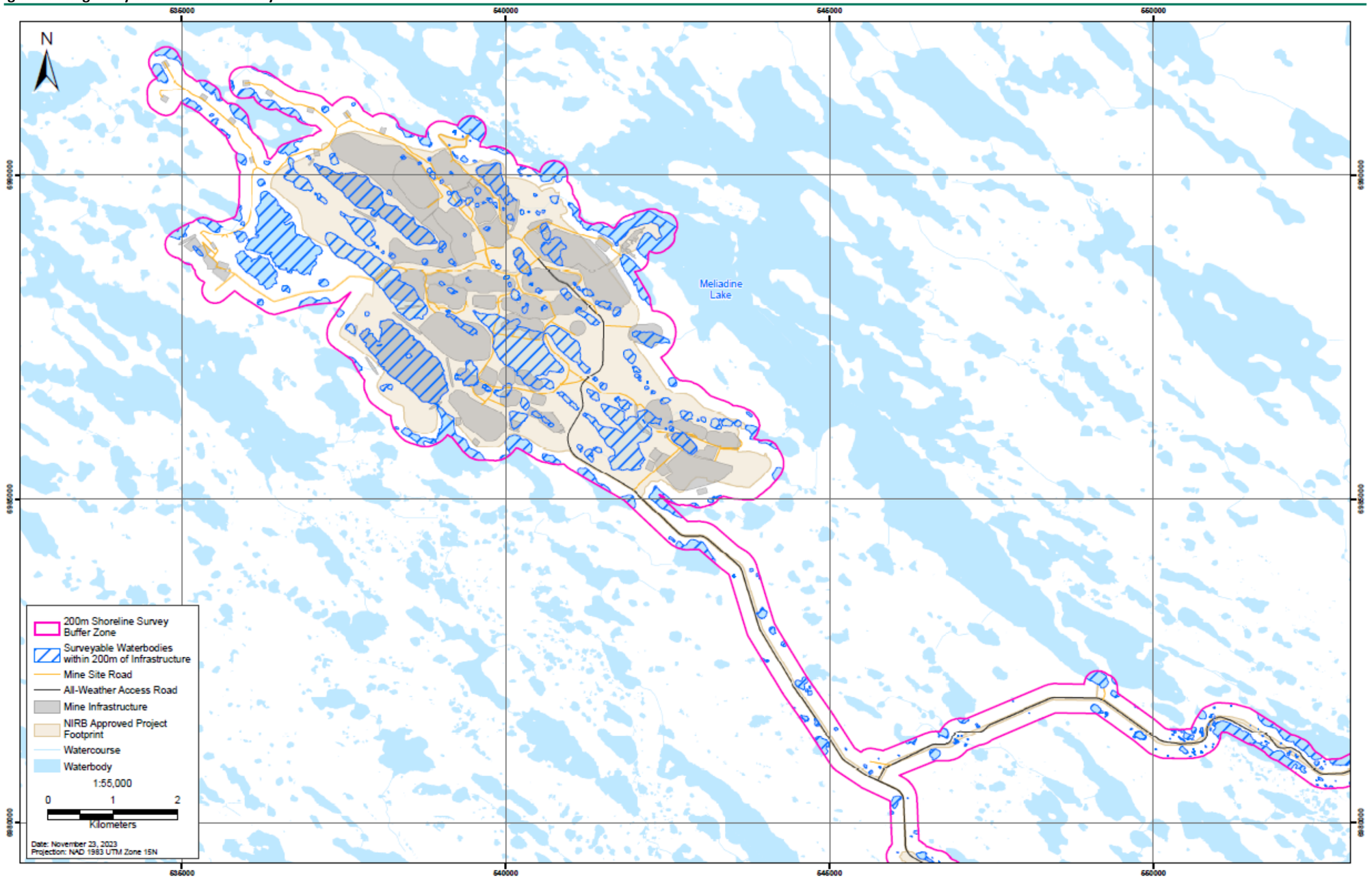
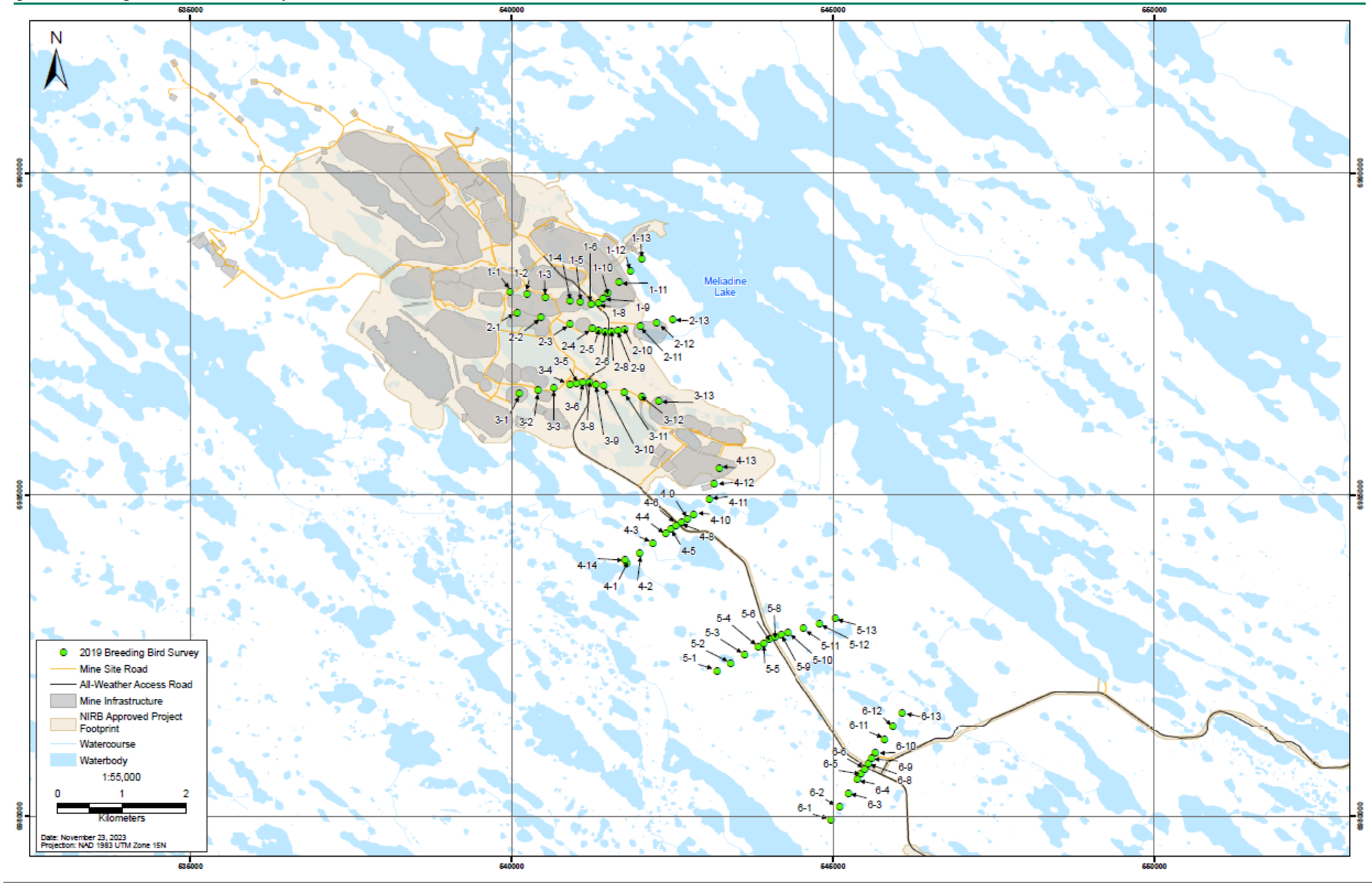


Figure 11: Breeding Bird Point Count Survey Locations



5.6 Vegetation Monitoring

Vegetation monitoring is conducted to measure and track Mine-related effects to vegetation communities and implement mitigation through adaptive management.

5.6.1 Vegetation and Direct Habitat Loss Assessment

Vegetation and direct habitat loss occurs through the construction of the Mine infrastructure (e.g., roads, mine rock piles, core mine facilities) in suitable wildlife habitat. Monitoring the amount of direct habitat loss is assessed every three years.

Objectives

- Measure the loss of vegetation communities and to determine if direct vegetation/habitat loss due to the Mine footprint stays within impact prediction of 2,950 ha.

Monitoring Approach

Direct habitat loss is monitored by calculating the amount of vegetation/wildlife habitat lost due to mine development every three years. A digital map of the as-built footprint is compared to the predicted footprint and the vegetation map to determine effects on wildlife habitats. The amount of vegetation community/wildlife habitat disturbed by the Mine footprint is then calculated using ArcGIS to determine the area of habitat loss due to mine infrastructure and reported in the TEMMP Annual Report.

5.6.2 Revegetation Monitoring

As part of the revegetation monitoring plan in collaboration with the University of Saskatchewan, studies will be carried out at selected test plots to assess natural revegetation processes in disturbed areas.

Objectives

- Assess revegetation success.

Monitoring Approach

Studies will be carried out in collaboration with the University of Saskatchewan at selected test plots to assess natural re-vegetation processes in disturbed areas. These test plots will evaluate plant species ingress, growth and survival on various disturbed sites, including rock fill covers, to determine re-vegetation success and the expected duration for vegetation establishment. The following data will be collected at test plots:

- Plant species inventory;

- Percent cover for each vegetation layer (moss, lichen, herbaceous, grass, shrub); and
- Site photographs to document re-vegetation progress.

Additional details on the revegetation test plot study methods are described in further detail in the University and TEMMP annual reports.

5.6.3 Invasive Species

The section 91 of the Nunavut's Wildlife Act specify that no person shall release a member of a species into a habitat in which that species does not belong or never naturally occurred. The early detection of non-native and invasive species is the most effective mitigation once invasive species are introduced to an area.

Objectives

- Measure and track distribution of non-native and invasive plants.

Monitoring Approach

Non-native and invasive plant species monitoring will be conducted during construction and operations. Non-native species in Nunavut are shown in Appendix D. Disturbed areas such as active mine sites, borrow pits and roads will be surveyed for non-native and invasive plant species presence using defined monitoring locations. As state in the Project Certificate T&C 37, any non-native and invasive plant species are identified in the Mine area will be reported to the GN, as per guidelines. As part of the reporting process, the following information will be collected and sent to the GN:

- Site location:
  - Continuous invasive plant occurrences with less than a 100 m gap between plants are recorded as one site. Occurrences over 100 m apart with no target species between them are recorded as separate sites; and
  - If the species was found on a new site, information about the site must be recorded in addition to the data gathered during the inventory of the infestation(s).
- Date of observation;
- UTM coordinates of observation;
- Species: if needed to confirm the invasive plant species, collect a sample (bag and label). When a single site supports multiple invasive plant species, record the species on that site;
- Extent: assess the estimated area that the invasive or non-native species occupies in square metres. If site is larger than 0.2 ha, make a visual estimate of the infestation:

  - Draw the infestation using reference points on a Mine site plan or orthophoto at a scale of 1:5,000. These polygons can be digitized later and loaded in the Invasive Alien Plan Program (IAPP) Site and Invasive Plant Survey Record form;
  - Or, capture the spatial data with a Global Positioning System (GPS) unit by walking the perimeter of the site and downloading the polygon that is generated;
  - Or, pace the length and width of the infestation or measure with a tape measure; and
  - Extremely large infestations (greater than 5 ha), for which creating a spatial polygon by walking the perimeter of the infestation would be impractical, can be assigned a best estimate of the total area, average density, and distribution.
- Density: estimate the number of plants per square metre as one of the following density classes:
  - Low (≤ 1 plant/m^2 (square metre));
  - Medium (2-5 plants/m^2);
  - High (6-10 plants/m^2); and
  - Dense (> 10 plants/m^2).
- Growth Stage: assess the growth stage as:
  - Seedling – Occurring when the first two true leaves are present to when the first bud occurs;
  - Bud – Occurring when the first flower bud is present but there are no petals visible;
  - Flower – Occurring when one flower has fully opened until the first seed head is visible;
  - Seed set – Occurring when the first seed head is visible to when most seed heads are no longer present on the plant; and
  - Expired – The majority of seeds or seed heads are no longer present on the plant to when the plant is dead.
- Photographs: a photographic record should be completed at each site surveyed to observe the overall changes to the landscape over time. Photographs are taken from the four cardinal directions (north, south, east, and west) from the centre of the weed infestation (where the UTM co-ordinate was taken); and

Before leaving the area after the inventory, clothing and travel equipment will be checked for any invasive plant parts, to avoid spread to other areas.

5.6.4 Vegetation Metals Monitoring

Agnico Eagle completed sampling to determine baseline levels for metals in soils found in areas with berry-producing plants in 2017, and an on-going monitoring program to assess the health of vegetation near the Mine areas.

Objectives

- Monitor and assess the health of vegetation near the Mine areas to track potential dust-related effects on vegetation.

Monitoring Approach

Details of the program are provided in Appendix E. Note that this program is currently being redesigned for inclusion in the TEMMP.

5.7 FEIS Predictions and Thresholds for Wildlife

This section summarizes the monitoring programs and associated thresholds that have been established to evaluate the effectiveness of existing mitigation measures (Section 6) and to validate FEIS impact predictions for wildlife VECs other than caribou and muskox. Mitigation measures in place are considered effective if the related monitoring thresholds are not exceeded. Monitoring thresholds were generally developed from FEIS impact predictions, but may be modified according to TAG recommendations as the Project progresses. If thresholds are exceeded, additional mitigation can be implemented following the principles of Adaptive Management (Section 1.5), and based on information gained from the various monitoring programs.

For example, if thresholds for project-related mortality of furbearers are exceeded in any given year, a review of causes would be initiated, and supplemental training on management of attractants could be provided to all relevant departments, if this is identified as the primary cause. The implementation of supplemental mitigation measures (adaptive management) will be detailed in annual TEMMP Reports, and these may be incorporated into TEMMP updates, if ongoing changes are required to manage impacts.

For each wildlife VEC, Tables 12 – 15 summarize the FEIS predictions for potential effects, current monitoring programs and their frequency of implementation, and established monitoring thresholds.

Table 9: Summary of Predicted Effects, Monitoring Methods, and Management Thresholds for Ungulates

FEIS Predictions	Threshold	Monitoring Program	Monitoring Frequency
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	• Vegetation and Direct Habitat Loss Assessments	Every 3 years
Sensory Disturbance	See Section 4	See Section 4	See Section 4
Vehicle Collisions	No more than 1 ungulate/year	• Wildlife Sightings Log • Wildlife Site Surveillance • Wildlife Road Surveillance	Daily
Hunting by Rankin Inlet Residents	TBD after 3 years of data collection (after 2023 survey) in collaboration with the GN (and TAG)	• Hunter Harvest Study	Collected throughout the year and reported annually
Other Project-related Mortality	No more than 1 ungulate/year	• Wildlife Sightings Log • Wildlife Site Surveillance • Wildlife Road Surveillance	Daily
Exposure to Contaminated Water or Vegetation	No greater than 2,951 ha of terrestrial habitat loss	• Vegetation Metals Monitoring	Every 3 years

Table 10: Summary of Predicted Effects, Monitoring Methods, and Mitigations for Furbearers

FEIS Predictions	Threshold	Monitoring Methods	Monitoring Frequency	Mitigations Measures
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	• Direct Habitat Loss	• Every 3 years	• Habitat Loss Mitigation
Project-related Mortality[1]	20 Arctic fox/year	• Wildlife Sightings Log • Wildlife Site Surveillance Monitoring • Wildlife Road Surveillance • Dens Surveys	• Daily	• Wildlife Incident Reporting • Employee Policies and Training • Road Traffic Management • Management of Hazardous Material • Management of Attractions • Deterring Wildlife • Furbearer Den Setback and Sensitive Periods • Response to Encounters

[1] Excluding animals trapped under GN guidance.

Table 11: Summary of Predicted Effects, Monitoring Methods, and Mitigations for Raptors

FEIS Predictions	Threshold	Monitoring Methods	Monitoring Frequency	Mitigations Measures
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	• Direct Habitat Loss	• Every 3 Years	• Habitat Loss Mitigation
Disturbance of Nesting Raptors	To be determined (TBD) in consultation with GN related to occupancy and productivity.	• Active Nest Monitoring	• Nests within 200 m – Daily • Nests from 200 to 1,000 m – Weekly	• Pre-Clearing Surveys • Raptor Nest Setbacks and Sensitive Period
Project-related Mortality	No more than 1 raptor/year	• Wildlife Sightings Log • Wildlife Site Surveillance Monitoring • Wildlife Road Surveillance	• Mine Site – Daily • AWAR – 2x/Week	• Wildlife Incident Reporting • Employee Policies and Training • Management of Attractions • Deterring Wildlife • Deterring Raptors

Table 12: Summary of Predicted Effects, Monitoring Methods, and Mitigations for Migratory Birds

FEIS Predictions	Proposed Threshold	Monitoring Methods	Monitoring Frequency	Mitigations Measures
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss No greater than 515 ha of aquatic habitat	• Direct Habitat Loss	• Every 3 Years	• Habitat Loss Mitigation
Changes in Breeding Bird Populations	TBD once NRV is established through consultation with ECCC	• Point Count Surveys • PRISM Plot Surveys	• Breeding Bird – Every 3 Years • PRISM – Plots surveyed over 2 years every 5 Years	• Pre-Clearing Surveys • Migratory Bird Nest Setbacks and Sensitive Periods • Deterring Migratory Birds • Employee Policies and Training • Air Traffic Mitigation • Road Traffic Management
Disturbance of Nesting Waterfowl	TBD once NRV is established through consultation with ECCC and GN	• Shoreline Surveys	• Annually	• Pre-Clearing Surveys • Migratory Bird Nest Setbacks and Sensitive Periods • Employee Policies and Training • Air Traffic Mitigation • Road Traffic Management
Exposure to Contaminated Water or Vegetation	TBD via SLRA	• Vegetation and Soil Samples	• Every 3 Years	• Management of Hazardous Materia • Road Design and Maintenance

FEIS Predictions	Proposed Threshold	Monitoring Methods	Monitoring Frequency	Mitigations Measures
Project-related Mortality	No more than 1 waterbird/year	• Wildlife Sightings Log • Wildlife Site Surveillance Monitoring • Wildlife Road Surveillance	• Mine Site – Daily • AWAR – 2x/Week	• Wildlife Incident Reporting • Employee Policies and Training • Management of Attractions • Deterring Wildlife • Deterring Migratory Birds • Migratory Bird Nest Setbacks and Sensitive Periods • Deterring Migratory Birds

Table 13: Summary of Predicted Effects, Monitoring Methods, and Mitigations for Vegetation

FEIS Predictions	Thresholds	Monitoring Methods	Monitoring Frequency	Mitigations Measures
Direct loss of plant communities due to Project footprint	Habitat directly lost must be within impact predictions (i.e., 2951 ha of terrestrial habitat loss)	• Direct Habitat Loss	• Every 3 years	• Habitat Loss Mitigation
Habitat Reclamation following Mine Closure	Success is defined as establishment of seeded/planted species and natural vegetation encroachment of native species	• Revegetation Monitoring	• Once pre-construction baseline (2017) • 3 times Post-Closure	• Habitat Loss Mitigation
Habitat Degradation by Contamination	No non-native and invasive species occurrences in Project area	• Invasive Species Monitoring	• Annually	• Habitat Loss Mitigation
Habitat Degradation by Contamination	No negative effects to plants and plant communities due to dust deposition.	• Vegetation Metals Monitoring	• Every 3 Years	• Habitat Loss Mitigation

SECTION 6 • WILDLIFE MITIGATION

The following sections outline general mitigation measures to reduce the effects of the Mine on wildlife and wildlife habitat. Many of these mitigation measures are designed for multiple wildlife species, including the caribou (Section 6.1), while others are specific to individual VECs (Section 6.2). Most mitigation measures were designed as part of the Project FEIS (and Amendments) to address and limit potential Project-related effects. These measures follow best management practices (BMP) from other similar operating mines in the region, including Meadowbank, Snap Lake, Ekati, Diavik, and Gahcho Kué (BHPB 2010; DDMI 2010; De Beers 2007; De Beers 2013). As the Project progresses, mitigation measures may also be updated here, as required, based on monitoring results and/or TAG recommendations. Any such changes are clearly documented (e.g. TAG meeting date reference). Mitigations are listed by activity type for ease of use.

6.1 General Wildlife Mitigation

6.1.1 Employee Policies and Training

All Agnico Eagle employees and contractor personnel are provided with wildlife environmental awareness training. The following policies and management actions are applicable to all employees and contractor personnel on-site:

- Feeding wildlife is prohibited at all times on or in the vicinity of the Mine site, including during travel to and from the Mine site;
- Littering is prohibited at all times on or in the vicinity of the Mine site, including during travel to and from the Mine site;
- Training and reinforcement of proper waste management practices to all workers and visitors to the site;
- Training is provided to all staff on proper waste management practices and risks associated with careless disposal of food wastes and liquids, such as coffee and juices;
- Harassment of wildlife in any form is prohibited at all times on or in the vicinity of the Mine site, including during travel to and from the site;
- All traffic signs and speed limits will be obeyed, and all drivers will receive on-site training;
- Wildlife observations will be reported to the Environment Department, including carcasses, observed on and in the vicinity of the Mine site and along access roads, as soon as possible;
- All sightings of caribou or muskox will be reported to the Environment Department immediately;

- All incidents involving interactions with wildlife, use of deterrence, or injury of wildlife will be documented, evaluated by Environment Department staff, and reported in the TEMMP annual report;
- Hunting, trapping, harvesting, and fishing is prohibited for employees and contractors while at work;
- The deliberate destruction or disruption of wildlife nests, eggs, dens, burrows is prohibited; and
- Sea-can doors will be kept closed at all times to avoid wildlife using them as a shelter.

6.1.2 Road Design and Maintenance

A Road Management Plan and Dust Management Plan have been developed. Mitigation measures to minimize disturbance to wildlife (including sensory disturbance) through road design and maintenance procedures include:

-
- Roads were designed as narrow as possible, while maintaining safe construction and operation practices, and meeting legislated requirements;
- Dust will be actively suppressed from roads (water and/or other dust suppressants). Potential use of chemical dust suppressants in accordance with the Environmental Guidance for Dust Suppression published by the GN (FEIS Volume 2; Golder 2014);
- Enforcing speed limits will assist in reducing dust and noise generation from roads;
- Site roads have been designed and constructed to use smaller material sizes that facilitate caribou crossing (i.e., large boulders are not used);
- Snow will be pushed with a dozer when clearing the road to avoid buildup of snowbanks on the sides of the roads;
- Road surfaces will be maintained through grading and the addition of granular material;
- Equipment will be maintained regularly to limit noise;
- Upon consultation with the KivIA and KHTO, ‘no shooting zone’ signage will be established along the road and around the Mine site (FEIS Volume 2; Golder 2014);
- All roads will be decommissioned and scarified as described in the Mine Closure and Reclamation Plan (FEIS Volume 2; Golder 2014);
- Access to the Mine site is controlled by a gate. Private vehicles (cars, trucks) are required to have a special authorization. Rules for road use within the controlled road sections are posted at the gate; and

- Wildlife carcasses observed on and in the vicinity of the site and along access roads will be reported to Environment staff immediately to minimize the attraction of predators and scavengers to roads and roadsides where they would be at an increased risk of colliding with vehicles. The GN Conservation Officer will be consulted to determine appropriate course of action.

6.1.3 Road Traffic Management

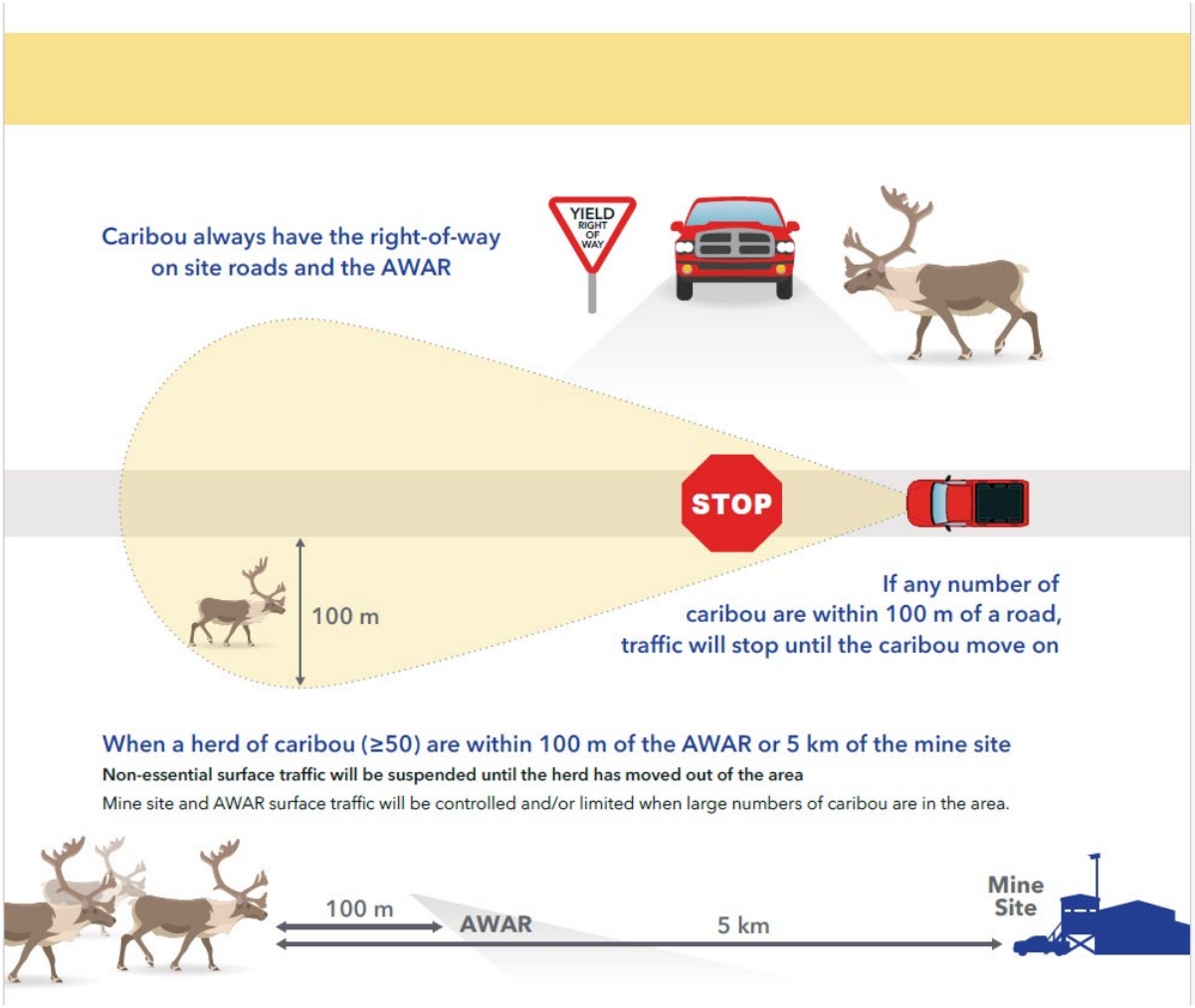
The Road Management Plan addresses specific measures related to traffic management, road access, road safety, and wildlife management measures. All drivers are required to abide by the guidelines in this plan when driving at the Mine, travelling to/from the Mine, or transporting goods along the AWAR and RIBR. Mitigation measures to minimize disturbance to wildlife due to traffic are summarized in Figure 12 and include:

- AWAR traffic and access will follow the protocols outlined for Level 3 and 4 caribou protection in Section 4.5.3.1;
- Wildlife will be provided the right-of-way on all roads.
- Maximum speed limit of 50 kilometres per hour (km/h) on all site roads. Speed limit will be reduced to a maximum of 30 km/h when caribou or other wildlife are known to be on-site. Enforcing speed limits will assist in reducing dust and noise generation from roads;
- A near-miss between a vehicle and an animal will be reported as a wildlife incident;
- Stationary equipment (e.g., crushers, incinerators) will be housed inside buildings; and
- Equipment will be maintained regularly to limit noise.

During periods when herds of caribou (50 or more individuals) are within 100 m of the AWAR, the southern gate will be closed to traffic.

In accordance with commitment C-7, Agnico Eagle will record traffic rates by vehicle type along the AWAR daily (number and type of mine vehicles, and number and type of public vehicles). This information is recorded by gatehouse attendants, and is reported annually in the TEMMP Report.

Figure 12: Driving Mitigation for Wildlife


Caribou always have the right-of-way
on site roads and the AWAR
YIELD
RIGHT OF WAY
STOP
100 m
If any number of
caribou are within 100 m of a road,
traffic will stop until the caribou move on
When a herd of caribou (≥50) are within 100 m of the AWAR or 5 km of the mine site
Non-essential surface traffic will be suspended until the herd has moved out of the area
Mine site and AWAR surface traffic will be controlled and/or limited when large numbers of caribou are in the area.
100 m
AWAR
5 km
Mine
Site

ᐃᖏᕐᕋᔾᖕᓂᕐᒧᑦ ᐱᔭᓇᐊᓖᑦ ᓂᕐᔪᑎᓄᑦ

ᒪᓕᒃᑕᐅᓂᖏᑦ ᐃᖏᕐᕋᔾᑲᑕᓗᐊᕆᐊᖃᖏᓐᓂᕐᒧᑦ ᐱᔭᕆᐊᖃᖅᐳᖅ ᒥᓂᕆᐊᕐᓂᐊᕐᓗᒋᑦ ᑕᐃᑲᙵᐅᖏᑦᑐᖅ ᓂᕐᔪᑎᓄᑦ ᐱᕙᓄᑦ ᐊᒻᒪᓗ ᒪᓕᒃᑕᐅᔭᕆᐊᖃᖅᑐᑦ ᐊᕐᑯᑎᓗᒃᑖᓄᑦ ᑕᓯᕐᕙᐊᕐᒥᑦ ᐱᓕᕆᐊᖑᕙᓄᑦ

ᐊᖏᓘᒃᑯᑦ 50 ᑮᓛᒥᑕᐃᑦ/ᐃᑲᕐᕋᒥᑦ ᓇᑭᖅᓴᕐᓂᕐᒧᑦ ᑭᒡᓕᖅᑲᖅᑐᑦ ᐃᓂᐅᔪᒥᑦ ᐊᑉᕐᑯᑎᓗᒃᑖᓄᑦ

ᓇᑭᖅᓴᕐᓂᖅ ᓱᑲᐃᓕᕆᐊᕐᓗᒍ ᐊᖏᓛᒧᑦ 30 ᑭᓛᒥᑕᐃᑦ/ᐃᑲᕐᕋᒥᑦ ᑐᒃᑐᐃᑦ ᐊᓯᖏᓪᔫᓐᓃᑦ ᓂᕐᔪᑏᑦ ᖃᐅᔨᔭᐅᒃᐸᑕ ᐃᓂᐅᔪᒦᕐᑐᑦ

ᓱᑲᐃᓕᕆᐊᖅᓯᒪᓗᑎᒃ ᐸᓂᕐᓇᓗᐊᖅᑎᓪᓗᒍ ᐳᔪᖃᑖᓕᐅᓇᓂᖅᓴᐅᓐᓇᖅᑎᓪᓗᒍ ᐊᔪᕐᓇᙱᒃᑳᖓᑦ

ᓄᓇᒃᑰᕈᑏᑦ ᓄᖅᑲᓇᐊᖃᙱᑦᑐᖅ 100 ᒦᑕᓂᒃ ᖃᓂᑎᒋᓗᑎᒃ ᖃᐅᔾᒪᔭᐅᔪᓂᒃ ᑎᖕᒥᐊᓄᑦ ᐅᐸᓗᖃᕝᕕᐅᔪᓂᑦ

ᑭᒡᓕᕙᐊᕐᔪᐃᑦ ᐅᐸᓗᖏᑦ 500 ᒦᑕᓂᒃ ᐅᖓᓯᒃᑎᕆᔪᒥᑦ ᐃᓅᐃᓵᖅᑕᐅᓂᕐᒧᑦ ᑭᓪᓕᖅᑲᖅᑐᑦ

ᑭᒡᓕᕙᐊᕐᔪᐃᑦ ᐅᐸᓗᖏᓐᓄᑦ ᑎᑭᐸᑕ ᓄᖅᑲᓇᐊᖅᑲᖅᐳᖅ ᐅᐸᓗᓄᑦ ᑭᓪᓕᕆᔭᐅᔪᒥᑦ ᖄᖏᐅᑎᖏᓪᓗᓂ, ᐃᑭᒪᔪᑦ ᓄᓇᒃᑰᕈᑎᒥᖏᖓᕐᓗᑎᒃ. ᐃᑭᒪᔪᑦ ᓄᓇᒃᑰᕈᑎᒥᑦ ᐊᓂᔭᓇᐊᖃᕐᐸᑕ, ᑭᓪᓕᖃᖅᑎᓪᓗᒋᑦ ᖃᐸᓯᐅᓂᖏᑦ ᐊᑕᐅᑦᑎᒃᑯᑦ ᐊᓂᔪᑦ.

ᓂᕐᔪᑏᑦ ᐊᓂᒍᖅᑎᑕᐅᖅᑲᐅᑕᐅᖏᓐᓇᓇᐊᖃᖅᑐᑦ ᐅᔭᕋᒃᑕᓇᐊᑉ ᐊᑉᕐᑯᑎᖏᓐᓂᑦ ᐊᒻᒪᓗ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᕐᑯᑎᒥᑦ

ᐅᒥᖕᒪᐃᑦ ᖁᓪᓕᑦ ᐅᖓᑖᓅᖅᑐᑦ 100 ᒦᑕᓂᒃ ᖃᓂᑎᒋᒃᐸᑕ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᕐᑯᑎᒧᑦ ᑕᖅᓚᒪᐃᑦ ᑭᓛᒥᑕᓂᒃ ᐅᖓᓯᒃᑎᒋᒃᐸᑕᔫᓃᑦ ᐅᔭᕋᒃᑕᓇᐊᕐᒥᑦ

ᐱᓕᕆᙱᒃᑲᓗᐊᖅᐸᑕ ᖃᓄᐃᖏᑦᑐᑦ ᓄᓇᐅᑉ ᖄᖓᓂᑦ ᐃᖏᕐᕋᔫᑦᑐᑦ ᓄᖅᑲᖅᑎᑕᐅᓂᐊᖅᑐᑦ ᑭᓯᐊᓂ ᐅᒥᖕᒪᐃᑦ ᐃᓂᐅᔫᒥᑦᑐᖕᓃᖅᐸᑕ

ᐅᔭᕋᒃᑕᓇᐊᒥᑦ ᐊᒻᒪᓗ ᐅᑭᐅᓗᒃᑖᖅ ᐊᑉᕐᑯᑎᒥᑦ ᐃᖏᕐᕋᔫᑦᑐᑦ ᐊᐅᓚᑕᐅᓂᐊᖅᑐᑦ ᐊᒻᒪᓗ/ᐅᕝᕙᓘᓐᓃᑦ ᑭᓪᓕᖅᑲᖅᑎᑕᐅᓗᑎᒃ ᐃᓂᐅᔪᒥᑦ ᐊᒥᓲᔭᕌᖓᑕ ᐅᒥᖕᒪᐃᑦ

ᐅᖃᐅᓯᕆᓗᒋᑦ
ᐊᒃᑐᖅᑕᐅᖅᑲᔭᖅᑐᑦ
ᐊᑯᓂᖏᓐᓂᑦ ᓄᓇᒃᑰᕈᑏᑦ
ᐊᒻᒪᓗ ᓂᕐᔪᑏᑦ
ᑕᑯᔭᐅᖅᑲᐅᓂᖏᑦᑎᑐᑦ

ᐅᖃᐅᓯᕆᑲᐅᑎᒋᓗᒋᑦ ᐅᔭᕋᒃᑕᓇᐊᒥᑦ ᐊᒻᒪᓗ ᖃᓂᑕᖕᒐᓂᑦ ᐊᒻᒪᓗ ᐊᑉᕐᑯᑎᓂᑦ ᑕᑯᔭᐅᔪᑦ ᑐᖁᖕᒐᔪᑦ ᓂᕐᔪᑏᑦ, ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓄᑦ

ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᑦᕆᐊᖕᕕᒋᓂᐊᖅᑕᖏᑦ ᓄᓇᕗᒻᒥ ᒐᕙᒪᒃᑯᑦ ᐆᒪᔪᓕᕆᔨᖏᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᒪᖔᑕ

6.1.4 Air Traffic Mitigation

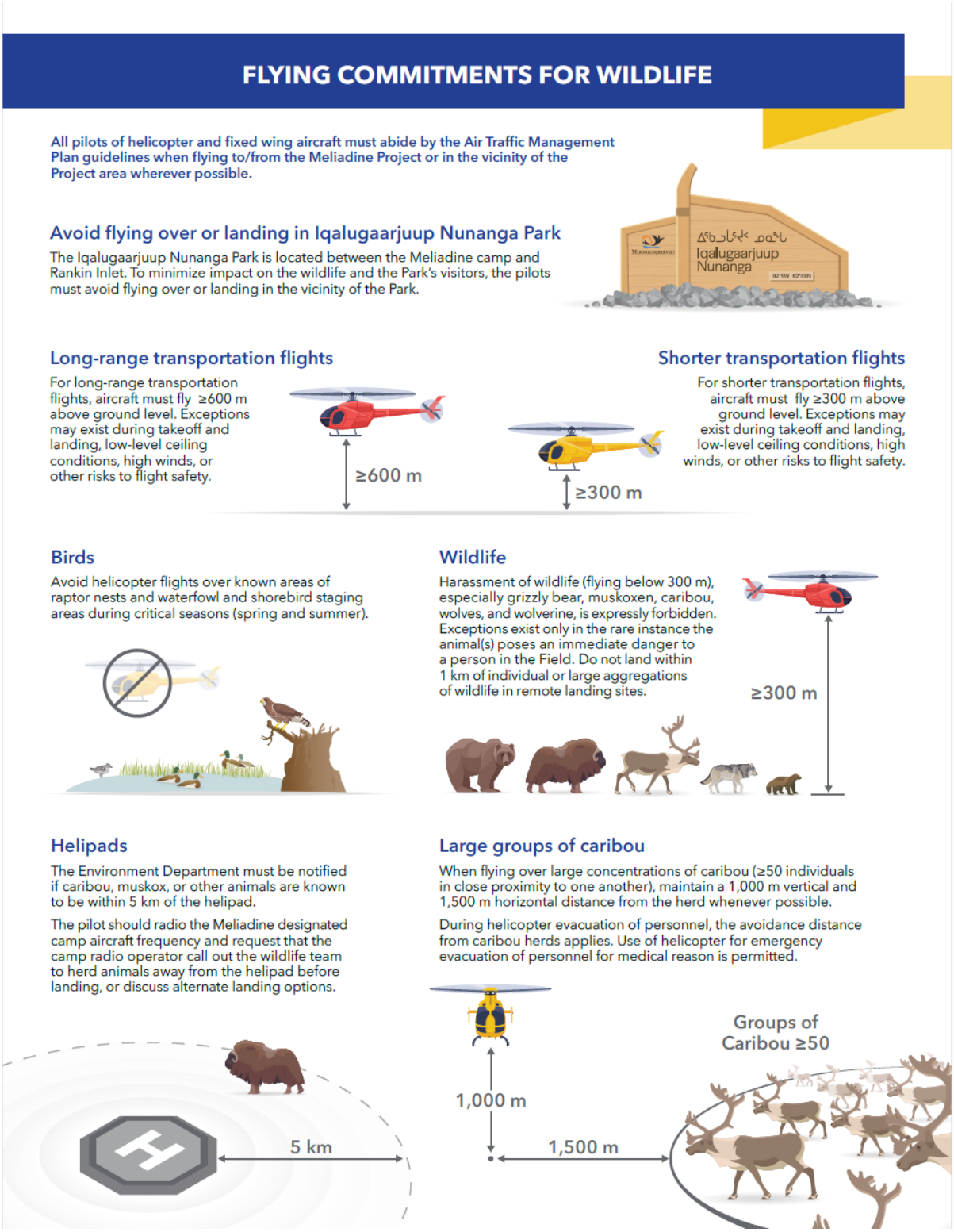
An Air Traffic Management Plan has been developed. All pilots are instructed to follow the guidelines set forth when flying to/from the Meliadine Mine or in the vicinity of the Mine area wherever possible (from a safety perspective).

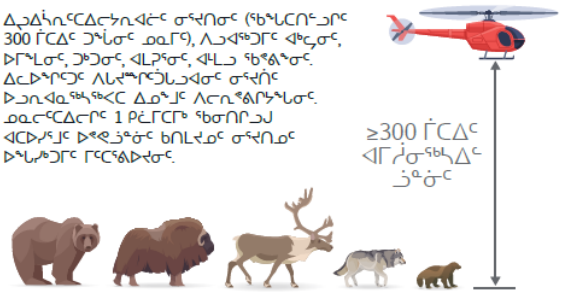
Air traffic mitigation measures for the protection of wildlife are summarized in Figure 13 and include:

- For long-range transportation flights to and from Rankin Inlet, aircraft (fixed-wing and helicopters) are to fly at a minimum of 600 m above ground level. Exceptions may exist during takeoff and landing, low-level ceiling conditions, high winds, or other risks to flight safety;
- For relatively shorter transportation flights such as airlift for staff and equipment between camp and ore bodies within the Meliadine lease, the aircraft are to fly at a minimum of 300 m above ground level. Exceptions may exist during takeoff and landing, low-level ceiling conditions, high winds, or other risks to flight safety;
- The Environment Department must be notified if caribou, muskox, or other animals are known to be within 5 km of the helipad. The pilot should radio the Meliadine designated camp aircraft frequency and request that the camp radio operator call out the wildlife team to herd animals away from the helipad, or discuss alternate locations before landing;
- When flying over large herds of caribou (≥ 50 individuals near one another), a 1,000 m vertical and 1,500 m horizontal distance from the herd should be maintained whenever possible;
- At remote landing areas, helicopters are asked to not land within 1 km of individual animals or herds of wildlife;
- Flying below 300 m near wildlife (particularly grizzly bear, muskox, caribou, wolf, and wolverine) is considered harassment of wildlife and is prohibited. Exceptions exist only in the rare instance the animal(s) poses an immediate danger to a person in the field;
- The Iqalugaarjuup Nunanga Park is located between the Meliadine camp and Rankin Inlet. To minimize impact on the wildlife and the park's visitors, the pilots shall avoid flying over or landing in the vicinity of the park; and
- During spring migration, summer breeding, and fall migration, avoid helicopter flights over known areas of active raptor nests, active waterfowl nests, and shorebird/waterfowl staging areas. The Environment Department can inform pilots of these areas.

Further mitigation measures related to caribou and muskox are described in Section 4.5.3.2.

Figure 13: Flying Commitments for Wildlife





ᑎᖓᓯᒃᑯᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᓃᑦ ᓂᕈᐊᕐᑎᓄᑦ

ᑕᒪᕝᓂ ᓄᓂᑦ ᐊᓯᐅᓪᓗᒍ ᐅᖃᐅᓯᖏᓪᓗ ᐊᑐᖅᑐᐃᓐᓇᖅᑐᓂᐊᕐᓗᒍ.

ᖃᖓᑕᑦᑕᐃᓕᓗᑎᒃ ᖁᕐᓵᒍᑦ ᐅᕝᕙᓘᓐᓃᑦ ᒥᑦᑕᐃᓕᓗᑎᒃ ᐃᖃᓗᒑᕐᔪᐊᑉ ᓄᓇᖓᓂᑦ ᒥᕐᖑᐃᖅᓯᕐᕕᖕᒥᑦ

ᐃᖃᓗᒑᕐᔪᐊᑉ ᓄᓇᖓ ᒥᕐᖑᐃᖅᓯᕐᕕᒃ ᐊᑯᓐᓂᖓᓃᕋᖅ ᑕᓯᕐᔪᐊᕐᒥᑦ ᓄᓇᓕᐊᓛᑉ ᐊᒻᒪᓗ ᑲᖏᖅᖠᓂᐅᑉ. ᒥᑭᓛᒃᑯᖅᑎᓐᓂᐊᕐᓗᒍ ᐊᒃᑐᖅᑕᐅᓂᖏᑦ ᓂᕐᔪᑏᑦ ᐊᒻᒪᓗ ᒥᕐᖑᐃᖅᓯᕐᕕᖓᒥᑦ ᑕᑯᔭᖅᑐᐃᓯᒪᔪᑦ, ᖃᖓᑕᓯᖅᑏᑦ ᖁᕐᓵᒍᑦ ᖃᖓᑕᑦᑕᐃᓕᔭᕆᐊᖃᖅᑐᑦ ᐅᕝᕙᓘᓐᓃᑦ ᒥᑦᑕᐃᓕᓗᑎᒃ ᒥᕐᖑᐃᖅᓯᕐᕕᖕᒥᑦ.

ᐅᖓᓯᒃᑐᒧᑦ ᑎᖓᓯᑦ ᖁᓕᒥᒎᑏᑦ ᐃᖏᕐᕋᔭᒃᑐᑦ

ᐅᖓᓯᒃᑐᒧᑦ ᑎᖓᓯᑦ ᖁᓕᒥᒎᑏᓪᓗᓐᓃᑦ ᖃᖓᑕᔪᓄᑦ, ᑎᖓᓯᑦ 600 ᒦᑕᐃᑦ ᓄᓇᒥᑦ ᑭᒡᓕᖃᖅᓗᑎᒃ ᖃᖓᑕᔭᕆᐊᖃᖅᑐᑦ. ᐃᓚᐅᖏᑦᑐᑦ ᖃᖓᑦᑕᖅᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᒥᑦᑕᖅᑐᖅᑎᓪᓗᒋᑦ, ᓄᕗᔭᐃᑦ ᐊᑦᑎᒃᐸᑕ, ᐊᓄᓇᑐᒃᐸᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᐊᓯᖏᓐᓂᑦ ᐅᑐᓇᐊᓇᕐᓂᖅᑕᖅᐸᑦ ᑎᖓᓯᑦ ᐊᑦᑕᕐᓇᖅᑐᒦᓐᓂᐊᖏᓪᓗᑎᒃ.

ᖃᓂᓐᓂᖅᓴᒧᑦ ᑎᖓᓯᑦ ᖁᓕᒥᒎᑏᑦ ᐃᖏᕐᕋᔭᒃᑐᑦ

ᖃᓂᓐᓂᖅᓴᒧᑦ ᖃᖓᑕᔪᓄᑦ, ᑎᖓᓯᑦ 300 ᒦᑕᓂᒃ ᓄᓇᒥᑦ ᑭᒡᓕᖃᖅᓗᑎᒃ ᖃᖓᑕᔭᕆᐊᖃᖅᑐᑦ. ᐃᓚᐅᖏᑦᑐᑦ ᖃᖓᑦᑕᖅᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᒥᑦᑕᖅᑐᖅᑎᓪᓗᒋᑦ, ᓄᕗᔭᐃᑦ ᐊᑦᑎᒃᐸᑕ, ᐊᓄᓇᑐᒃᐸᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᐊᓯᖏᓐᓂᑦ ᐅᑐᓇᐊᓇᕐᓂᖅᑕᖅᐸᑦ ᑎᖓᓯᑦ ᐊᑦᑕᕐᓇᖅᑐᒦᓐᓂᐊᖏᓪᓗᑎᒃ.

ᑎᖓᐊᑦ

ᖁᓕᒥᒎᑏᑦ ᖃᐅᔾᔨᒪᔭᐅᔪᓂᑦ ᑭᒡᒐᕙᐊᕐᔪᖅᓱᐃᑦ ᐅᐸᓗᖅᑲᕐᕕᖏᑦᑎᒎᖅᑕᐃᓕᔭᕆᐊᓖᑦ ᐊᒻᒪᓗ ᑎᖓᐊᑦ ᐊᒻᒪᓗ ᓯᒡᔭᒥᑦ ᓄᖅᖃᖓᕝᕕᐅᖃᑦᑕᖅᑐᓂᑦ ᐅᐱᖕᖑᐊᒃᑯᑦ ᐊᒻᒪᓗ ᐊᐅᔭᒃᑯᑦ.

ᐆᒪᔪᓕᕆᓂᖅ

ᐃᓗᐃᓯᕆᑦᑕᐃᓕᔭᕆᐊᓖᑦ ᓂᕈᐊᑎᓂᑦ (ᖃᖓᑕᑎᓪᓗᒋᑦ 300 ᒦᑕᐃᑦ ᑐᖓᓂᑦ ᓄᓇᒥᑦ), ᐱᒍᐊᖅᑐᒥᑦ ᐊᒃᓴᓂᑦ, ᐅᒥᖕᒪᓂᑦ, ᑐᒃᑐᓂᑦ, ᐊᒪᕈᕐᓂᑦ, ᐊᒻᒪᓗ ᖃᕝᕕᖕᓂᑦ. ᐃᓚᐅᖏᑦᑐᑦ ᐱᒋᔫᖏᑦᑑᒐᓗᐊᓂᑦ ᓂᕈᐊᖏᑦ ᐅᑐᓇᐊᓇᖅᓴᖅᐸᑕ ᐃᓄᖕᒧᑦ ᐱᓕᕆᕝᕕᒋᔭᖓᓂᑦ. ᓄᓇᓕᑦᑕᐃᓕᕆᑦ 1 ᑭᓛᒥᑕᒥᒃ ᖃᓂᑎᒋᓗᒍ ᐊᑕᐅᓯᕐᒧᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑲᑎᒪᔪᓄᑦ ᓂᕈᐊᑎᓄᑦ ᐅᖓᓯᒃᑐᒥᑦ ᒥᑦᑕᕐᕕᐅᔪᓂᑦ.

ᖁᓕᒥᒎᑏᑦ ᑐᙵᕝᕕᖏᑦ

ᐊᕙᑎᓕᕆᓃᒃᑯᑦ ᖃᐅᔨᑎᑕᐅᔭᕆᐊᖃᖅᑐᑦ ᑐᒃᑐᐃᑦ, ᐅᒥᖕᒪᐃᑦ, ᐊᓯᖏᖕᓘᓐᓃᑦ ᓂᕈᐊᖏᑦ ᖃᐅᔨᒪᔭᐅᒃᐸᑕ 5 ᑭᓛᒥᑕᓂᒃ ᖃᓂᑎᒋᔪᑦ ᖁᓕᒥᒎᓕᐅᑉ ᑐᙵᕝᕙᖓᓄᑦ.

ᖁᓕᒥᒎᖅᑎ ᖃᐅᔨᑎᑦᑎᔭᕆᐊᖃᖅᑐᖅ ᑕᓯᕐᔪᐊᕐᒥᑦ ᓄᓇᓕᐊᓛᒥᑦ ᑎᖓᓯᓕᕆᔨᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᐅᖃᓘᕝᕕᒋᔭᖓ ᖃᐅᔨᑎᑦᑎᓗᓂ ᓂᕈᐊᓯᕆᔨᓂᑦ ᑲᑎᒪᔪᓂᒃ ᓂᕈᐊᑎᓂᒃ ᕿᒫᑎᑦᑎᑦᑯᔨᓗᓂ ᖁᓕᒥᒎᓕᐅᑉ ᑐᙵᕝᕙᖓᓂᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᐊᓯᐊᓄᖕᒑᖅ ᒥᓪᓗᓂ.

ᑲᑎᒪᔪᑦ ᑐᒃᑐᐃᑦ

ᖃᖓᑕᑎᓪᓗᒋᑦ ᐊᒥᓲᑉᓗᑎᒃ ᑲᑎᒪᔪᑦ ᑐᒃᑐᓂᑦ (≥50 ᐅᖓᑖᓅᖅᑐᑦ ᑐᒃᑐᐃᑦ ᖃᓂᒌᒍᑎᐸᓗᑎᒃ),1,000 ᒦᑕᓂᑦ ᓄᓇᐅᑉ ᖁᖠᓃᓪᓗᑎᒃ ᐊᒻᒪᓗ 1,500 ᒦᑕᐃᑦ ᓴᓂᒧᑦ ᐅᖓᓯᒃᑎᑭᓗᒋᑦ ᑲᑎᒪᔪᓂᑦ ᑐᒃᑐᓂᑦ ᐊᔪᖅᓇᙱᒃᑳᖓᑦ.

ᖁᓕᒥᒎᓕᒃ ᐃᓄᖕᒥᑦ ᑐᐊᕙᓇᖅᑐᒃᑯᑦ ᐊᐅᓪᓚᕇᔾᔨᓇᐊᖅᑲᖅᐸᑦ, ᐱᑦᑕᐃᓕᓂᕐᒧᑦ ᐅᖓᓯᒃᑎᑭᓯᓇᐊᖅᑲᖅᓂᖅ ᑐᒃᑐᐃᑦ ᐊᒥᖅᓴᓂᑦ ᐊᑐᖅᑐᖅ. ᐊᑐᖅᑕᐅᓂᖏᑦ ᖁᓕᒥᒎᑏᑦ ᑐᐊᕙᓇᖅᑐᓄᑦ ᐊᐅᓪᓚᖅᑎᑕᐅᓯᓇᐊᓕᖕᒥᑦ ᐱᓕᕆᔨᒥᑦ ᐃᓗᐊᖅᓴᖅᑕᐅᓯᓇᐊᖅᑲᖅᑐᓂ ᐊᔪᙱᑎᑕᐅᔪᑦ.

6.1.5 Management of Hazardous Material

- Follow the procedures outlined in the Hazardous Material Management Plan:
  - Wastes associated with mechanical maintenance and repairs will be managed of per the Hazardous Materials Management Plan;
  - Hazardous material will be shipped off site for recycling or disposal at an appropriate facility.
- Adhere to and regularly update the Spill Contingency Plan:
  - Designate and train a spill response team consisting of on-site personnel;
  - Provide spill containment supplies at fuel transfer and storage areas;
  - Immediately isolate, clean and report any spills.
  - Keep spill response equipment readily available and maintained.
- Isolate or remove any physical or chemical hazards to wildlife.
- Maintain vehicles and equipment.
- Store fuel in double-walled containers or single-walled containers in lined containment areas.

6.1.6 Management of Attractants

The following policies and practices are included to reduce the numbers of scavenging wildlife such as carnivores and birds attracted to the Mine, and limit human-wildlife interactions:

- Construction of the Mine will be based out of Rankin Inlet or the Meliadine camp, eliminating the need for temporary camps along the AWAR route.
- Kitchen garbage and waste from dormitories and offices will be incinerated daily to limit attractions to wildlife;
- Waste facilities and incinerators will be enclosed;
- The landfill will be inspected and covered progressively;
- Waste products that cannot be incinerated or landfilled will be collected, sorted, and placed in designated areas within the Waste Management Area until they can be shipped off site;
- All small temporary storage containers for garbage and recycling will have wildlife protective features (i.e. have bear proof lids);
- Ongoing review of the efficiency of the waste management program and improvement through adaptive management;
- Staff working outdoors will be provided designated indoor areas for lunch and coffee breaks;

- All buildings and containers (e.g., sea cans) large enough to harbour any wildlife species will always have their doors shut when not being used by personnel to prevent wildlife from entering;
- Skirt all buildings and stairs to the ground to limit opportunities for use as shelter by wildlife, as applicable;
- Wildlife surveillance monitoring will detect use of Mine infrastructure, including waste disposal infrastructure (e.g., landfill and incinerator, among others) by wildlife as an attractant, for nesting or shelter with be identified during regular site surveillance monitoring (Section 5.1.1); and
- Develop an internal environmental working group to improve waste management protocols at Meliadine.

6.1.7 Deterring Wildlife

Deterring wildlife is only done in response to situations where action is required to keep both humans and wildlife safe, using humane methods. Deterrent actions start with the least intrusive method, and then increase in intensity. Each deterrent action will stop as soon as the animal moves away from the potentially hazardous site or activity or no longer poses a threat to humans. The intensity of the deterrent practice should increase only if previous steps are unsuccessful and if warranted by the risk to staff or wildlife.

Consultation with GN will be had regarding any problematic wildlife (including caribou and muskox) or to receive additional direction regarding new issues that arise. Problematic wildlife will only be destroyed as a last resort, and upon approval by GN.

Wildlife deterrent actions will be performed only by designated individuals (such as the environmental monitors or security staff). Training for these individuals will include the following information:

- Basic wildlife ecology and behaviour;
- Prevention of wildlife-human encounters;
- Contingencies for wildlife-human encounters;
- Proper use of deterrents (such as bear bangers and firearms); and
- Documenting and reporting any deterrent actions undertaken.

For deterrent actions to be successful there must be:

- Effective implementation of the Landfill Management Plan, Incinerator Management Plan, and Landfarm Management Plan, particularly as they relate to the disposal of food waste; and
- Absence of food, shelter, or other rewards for wildlife within the Mine site.

In the event that caribou with calves are spotted on site adjacent to AWAR/Discovery Road waterline, Agnico Eagle will confer with KivIA, GN, KHTO and community elders and assess installing additional deterrents on site.

6.1.8 Habitat Loss Mitigation

Mitigation to reduce direct habitat loss includes the following:

- Compact Mine plant arrangement was designed to reduce the overall footprint.
- As the Mine develops, Agnico Eagle promotes natural re-vegetation and practices progressive reclamation;
- Conventional insulation, baffles, and noise suppressors will be used on Mine site equipment;
- Stationary equipment (e.g., crushers, incinerators) will be housed inside buildings;
- Create passageways for wildlife near waterlines at pre-determined locations so it will not be a barrier to wildlife movement;
- The deliberate destruction or disruption of wildlife nests, eggs, dens, burrows is prohibited;
- Conduct land clearing for facilities outside of the nesting period of migratory birds (May 15 to September 15) for work area known to be used by nesting birds; and
- Implement the Mine Closure and Reclamation Plan and remove physical hazards (FEIS Volume 2, Golder 2014)

6.2 Species-Specific Mitigation

This section details mitigation measures that are specific for some wildlife groups.

6.2.1 Caribou and Muskox-Specific Mitigation

The mitigation measures specific for the caribou and the muskox are presented in the Section 4.5.

6.2.2 Furbearer Specific-Mitigation

6.2.2.1 Mitigation for furbearers (bears, wolverine, wolf and fox), specifically mitigation directed at dealing with problem wildlife, occurs through the following general wildlife mitigation programs described in Section 6.1Furbearer Den Setbacks and Sensitive Periods

In addition to general wildlife mitigation described in Section 6.1, specific mitigation for furbearer dens includes the following:

- Furbearer dens will be identified and a construction setback area clearly marked at site prior to construction of new infrastructure. The area will be avoided where possible (Table 9);
- Construction activities will be avoided near active furbearer dens during the sensitive period, wherever possible (Table 9);
- Pre-construction monitoring for furbearer dens will be completed as described in Section 5.2.2.1.

Table 14: Wildlife Sensitive Periods for Furbearers at the Meliadine Mine

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)	1,500 m	Sept 30-Mar 30	Blasting
Wolverine dens	2,000 m	Oct 15-July 15	General industrial activity

Source: GNWT 2016

6.2.2.2 Response to Encounters

Predatory mammals such as wolves, wolverine, Arctic fox and bears rarely attack people. However, they could be dangerous and should be given respect. Arctic fox is easily tamed, quickly losing their fear of humans, and often approaching. Sick or injured animals may no longer be able to feed themselves and could be in a state of starvation. Often, they show few physical signs that something may be wrong, but typically act more aggressively or even 'friendly' towards humans. Therefore, a close encounter with a predatory mammal could be dangerous. Bites and scratches from wildlife should be reported immediately to Health & Safety since animals can be vectors for rabies or avian flu.

The goal of wildlife deterrent action is to respond to situations using humane methods that keep both humans and wildlife safe. Deterrent actions start with the least intrusive method, and then increase in intensity. Details regarding deterring wildlife are provided in Section 6.1.7 and Appendix F. Additionally, Appendix F outlines scenarios with steps to follow, should a wildlife encounter occur.

6.2.3 Raptor-Specific Mitigation

6.2.3.1 Mitigation for raptors and raptor nests occurs through the general wildlife mitigation programs described in Section 6.1Raptor Nest Setbacks and Sensitive Period

In addition to general wildlife mitigation described in Section 6.1, mitigation for raptors includes specific mitigation to minimize disturbance, particularly of nests.

The following management actions will be applied during the construction phase of the Mine:

- Situate mine infrastructure to avoid active raptor nests, where possible;
- Schedule construction activities, where possible, to avoid disturbance of known raptors nests within 1 km during the nesting period: May 15 to July 20;
- During ground clearing, if it is not possible to avoid the nesting period, then conduct pre-construction surveys for raptor nests (Section 5.2.3.1);
- Report to the GN any raptor nesting activity observed on Mine infrastructure or within 1 km of the Mine;
- If a raptor nest is found during pre-clearing surveys within the Mine footprint, then the Environment Department will set up a buffer with an objective of 1 km, but of at least 100 m, around the nest site. The nest will be monitored and the breeding success of the raptor will be reported in the annual TEMMP annual Report;
- Prior to removal of any nest or deterrence of nesting raptors, the GN will be contacted to discuss proposed mitigation options as listed in the TEMMP and will obtain the required permit prior to undertaking any activity that can lead to the destruction of raptor nests or the deterrence of raptors from nesting sites;
- Mine site infrastructure (e.g., buildings, towers, etc.) will be constructed and maintained in such a way as to limit the attractiveness as a nesting site to raptors; and
- Raptors can become acclimated to human activities and will build nests on infrastructure. If a raptor builds a nest on mine infrastructure (e.g., building, towers, etc.) then normal operations at that site can continue. The Environment Department will manage the area surrounding the nest such that no new activities will be conducted within 100 m of the active raptor nest, but existing activities can continue. The nest will be reported to the GN and monitored to determine the nest success, which will be reported in the annual TEMMP annual report.

6.2.3.2 Deterring Raptors

Cliff nesting raptors can be attracted to mining pits as nesting sites. Mitigation and management to prevent mortality to raptors in open pits, quarries, or other mine infrastructure include the following:

- The open pits will be checked for raptor nesting during the breeding season prior to blasting;
- If a raptor nest is observed being constructed in a pit, but the raptor has not yet laid eggs, then the nest will be removed by environment personnel, in consultation with the GN;
- If locations are found that are frequently used as nests, then appropriate mitigation will be used to dissuade raptors from using this area (e.g., netting, bird spikes);
- If a raptor persists in attempting to nest in the pits despite the mitigation listed above, then after discussion with the GN, raptors will be excluded from the Mine infrastructure using an agreed upon auditory or visual hazing methods (e.g., bear bangers, bright lights, playback of raptor calls, flashers, models of raptors); and
- The GN will be contacted to discuss the proposed mitigation options and obtain an appropriate permit prior to conducting any of these activities.

6.2.4 Migratory Bird Specific Mitigation

Mitigation for migratory birds and their nests occurs through the following general wildlife mitigation programs described in Section 6.1.

Agnico Eagle will follow ECCC's recommendation that avoidance should be the primary mitigation measure to avoid the incidental take of migratory birds. If vegetation clearing cannot be scheduled outside the breeding season (May 15 to August 15), migratory bird nest searches will be completed to search for active nests within four days of clearing activities by an environment staff or consultant (ECCC 2023).

Pre-clearing surveys will be carried out using accepted standard protocols (Section 5.2.4.1). If nests containing eggs or young of migratory birds are located or discovered, activities in the nesting area will be mitigated until nesting is completed (i.e., the young have left the vicinity of the nest). Any nest found should be protected with a buffer zone appropriate for the species and the surrounding habitat, through consultation with ECCC, until the young have left the nest. Upon identification of a nest, an initial buffer will be established following the setback distances presented in Table 15 based on species groups. Final buffer zones will ultimately be chosen on a site-specific basis following a risk-based assessment of the species in question, the habitat and the type of Project activity and its potential to disturb wildlife (see Table 10 and Figure 14).

Agnico Eagle will incorporate, when possible, the ECCC Guidelines to Reduce Risk to Migratory Birds (see Table 10 and Figure 14 for recommended setbacks, and footnotes for adjustments to setbacks for sensitive species and species at risk; ECCC 2023). As per Term and Condition No. 62, if a setback is not feasible, Agnico Eagle will develop nest-specific guidelines and procedures to ensure the bird's nests and their young are protected. Nest-specific guidelines will be based on a risk assessment of the proposed activity and its likelihood to disturb birds, on the species of birds and their sensitivity, and on the timing during the season.

Table 15: Bird Protection Setback Distances during Sensitive Period (May 15 to August 15)

Species Group	Pedestrians /ATVs (m)	Roads / Construction / Industrial Activities (m)
Songbirds	30	100
Shorebirds	50[a]	100[a]
Ducks	100	150
Terns/Gulls	200[b]	300[b]
Geese	300	500
Swans/Loons/Cranes	500	750

[a] If project activities are within the breeding ranges of American Golden Plover or Ruddy Turnstone, these setbacks should be increased to 150 m for Pedestrians/ATVs and 300 m for Roads/Construction/Industrial Activities respectively. If project activities are within the breeding ranges of Black-bellied Plover, Whimbrel or Red Knot (a Species at Risk [SAR]), these setbacks should be increased to 300 m for Pedestrians/ATVs and 500 m for Roads/Construction/Industrial Activities. If field crew are trained in the identification of these species then these higher setbacks need only apply to these more sensitive species, and lower setbacks can be used for the remaining shorebird species. In areas where several species are nesting in proximity, setbacks for the most sensitive species should be used if they are present.

[b] If project activities are in proximity to breeding colonies of Ross's Gull (SAR) or Ivory Gull (SAR) these setbacks should be increased to 500 m Pedestrians/ATVs and 750 m for Roads/Construction/Industrial Activities.

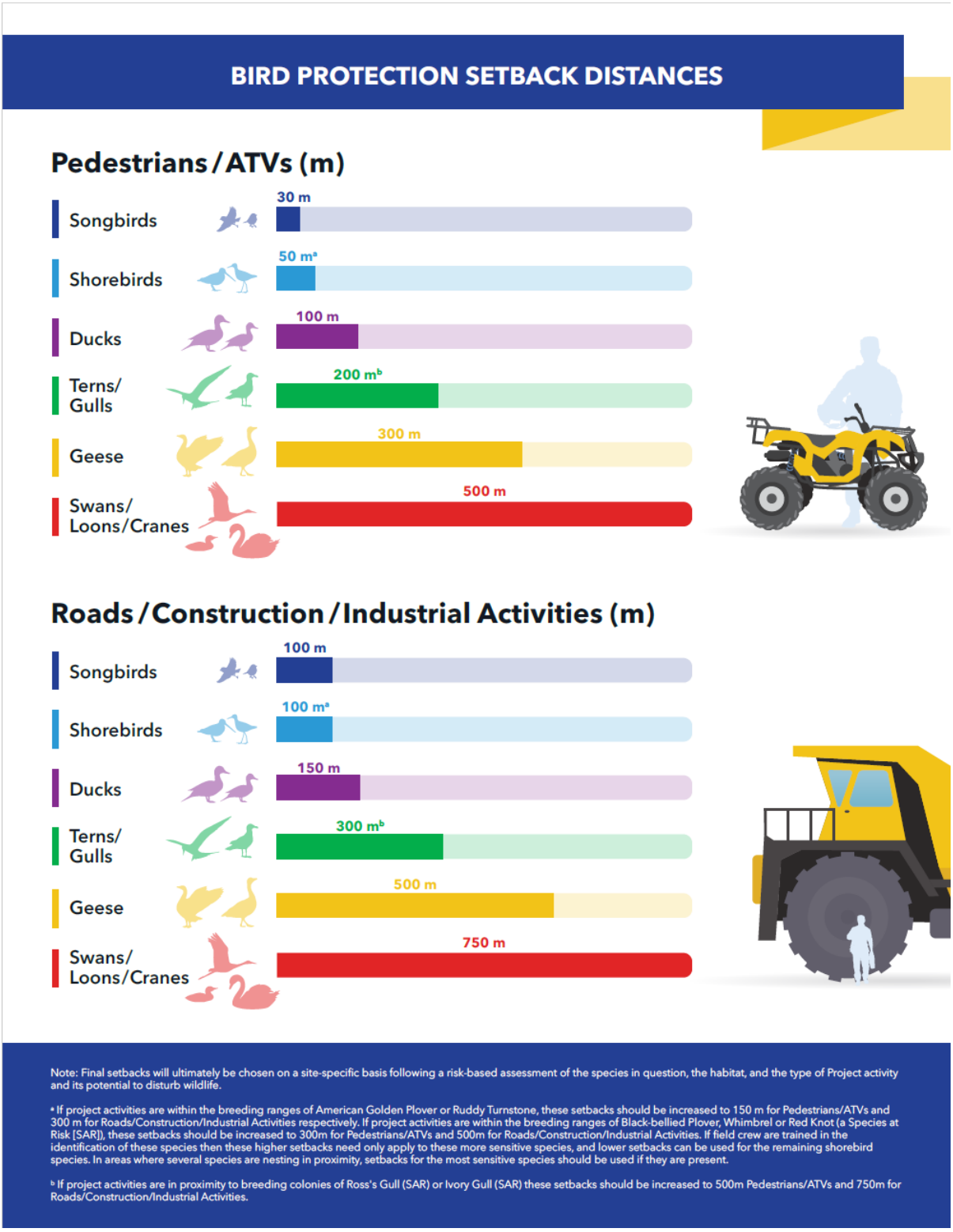
6.2.4.1 Deterring Migratory Birds

Agnico Eagle may be required to deter waterbirds from using water management ponds at Meliadine. Deterrent measures include water cannons, predator kites, and decoys, as well as monitoring protocols at the ponds. Agnico Eagle will consult with ECCC to determine if deterrent measures are required and what measures are the most appropriate.

Bird spikes, infrastructure design, and camp hardening may be used to prevent nesting of migratory birds in and around camp infrastructure, prior to nests being initiated. Additional information regarding deterring wildlife is provided in Appendix F.

Migratory birds can become acclimated to human activities and will build nests on infrastructure. If a migratory bird builds a nest on mine infrastructure (e.g., building, towers, etc.) then normal operations at that site can continue. The Environment Manager will manage the area surrounding the nest such that no new activities will be conducted within the designated buffered area around the active nest, but existing activities can continue. The nest will be reported to the GN and monitored to determine the nest success, which will be reported in the TEMMP Annual Report.

Figure 14: Bird Protection Setback Distances



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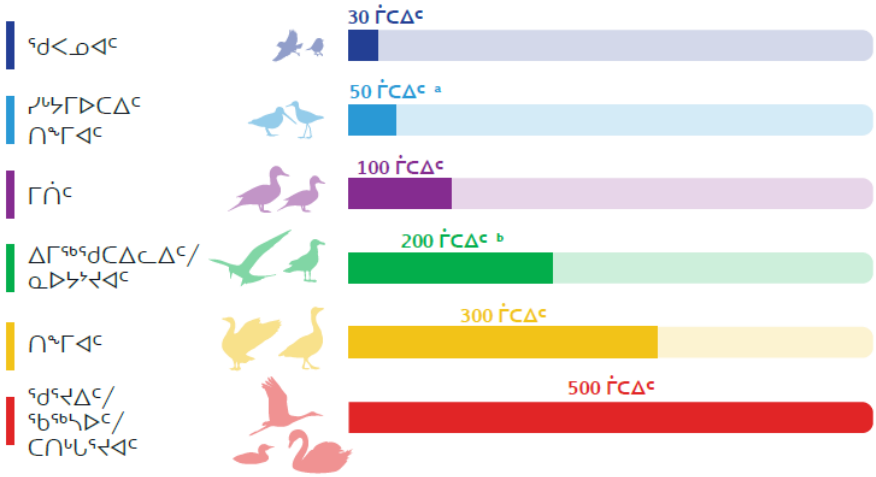

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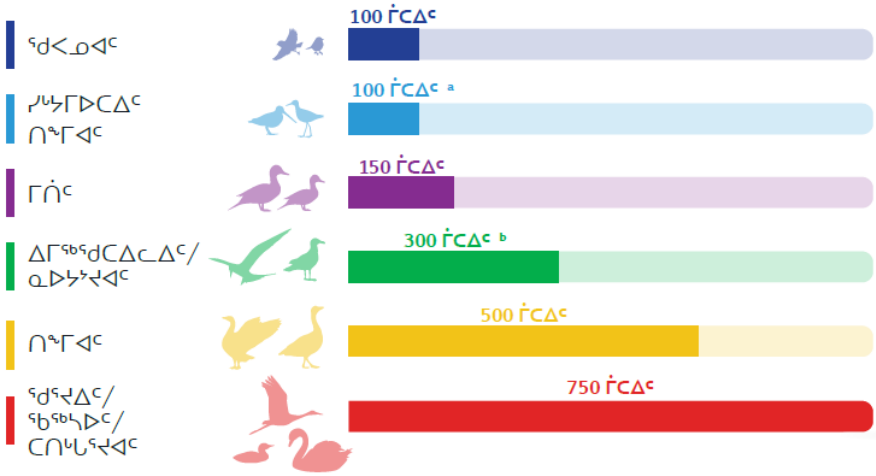

ᖃᐅᔨᓴᓕᒃᑕ: ᑭᖑᓪᓕᖅᑐᑦ ᐊᖏᕐᕈᓐᓃᑦ ᓂᕆᐊᖏᖅᑕᐅᓂᖏᑦᑐᑦ ᐃᓂᐅᔨᔪᓂ ᐱᓕᕆᑦ ᐅᖃᓕᒫᓂᖅᐹᒥ ᖃᐅᔨᓴᓇᐃᖏᕐᕕᐅᑎᓂᒃᑯᓂᑦ ᓂᕈᐊᑎᓂᒃ ᐱᓕᕆᑦᑐᖅᑐᐅᓂᖅ, ᓂᕈᐊᑎᓂ ᐃᓂᐅᔨᓂᖅ ᐅᓂᒃᑳᖅᑎᑦᑎᓂᒃᑯᓐᓂᒃ ᐊᑐᕐᓂᖅᑐᐃᓐᓇᖅᑐᑦ, ᐊᑦᖢᕈᑭᓱᓂᖅ ᐃᓂᐅᔨᓂᖅ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ 300 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᓴᓚᑦ. ᐱᓕᕆᑦ ᐊᑦᖢᕈᑭᓱᓂᖅ ᐃᓂᐅᔨᓂᖅ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ 500 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᓴᓚᑦ. ᐱᓕᕆᑦ ᐊᑦᖢᕈᑭᓱᓂᖅ ᐃᓂᐅᔨᓂᖅ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ 750 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᓴᓚᑦ.

[a] ᐱᓕᕆᑦ ᐱᐊᒋᓕᑕᒃᓴᐱᖁᓴᒃᑲᖏᑕᖅᑐᓂᕐᒧᑦ ᑐᓴᒋᓕᓂᓂ ᐅᓂᒡᓚᖅᑐᓂᖅ ᖃᓄᖅᓱᖅᑕᒋᓕᑕᓂᓂ, ᐅᓂᒡᓚᑦ ᐊᒻᒪᓂᓕᕆᓂᖅ 150 ᑭᑕᐃᑦ ᐃᓄᐃᑦ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ 300 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᓴᓚᑦ. ᐱᓕᕆᑦ ᐊᑦᖢᕈᑭᓱᓂᖅ ᖃᓄᖅᓱᖅᑕᒋᓕᑕᓂᓂ ᐅᓂᒡᓚᖅᑐᓂᖅ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ 500 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᓴᓚᑦ. ᐱᓕᕆᑦ ᐊᑦᖢᕈᑭᓱᓂᖅ ᐃᓂᐅᔨᓂᖅ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ 750 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᓴᓚᑦ.

[b] ᐱᓕᕆᑦ ᖃᐅᔨᓴᓕᒃᑕ ᐅᓴᓕᖅᑐᓂᖅ ᐊᐅᓚᑦᑎᓪᓕᐊᓂ (ᐊᑎᒥᓂᑦ ᐅᓕᓗᐊᓪᓚᖅᑐᓂᖅᑎᑦᑎᓂᑐ) ᐅᓴᓕᓴᐅᓂ ᐊᐅᓚᑦᑎᓂ (ᐊᑎᒥᓂᑦ ᐅᓕᓗᐊᓪᓚᖅᑐᓂᖅᑎᑦᑎᓂᑐ) ᐅᖃᓕᒫᓂᖅᓂ ᐊᖏᕐᕈᓐᓃᑦᑐᓂᖅᑐᓂᒃ 500 ᑭᑕᐃᑦ ᐱᓕᕆᑦ / ᐄᐊᓐᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ 750 ᑭᑕᐃᑦ ᐊᖏᕐᕈᓐᓃᑦ / ᓴᓇᙳᑦᑕᐊᓚᑦ / ᐱᓕᕆᑦ.

6.2.5 Vegetation and Wildlife Habitat

The Vegetation Management Plan incorporates a number of BMP to mitigate the effects of the Mine on plant populations and communities. These include the following:

- Where possible, limit the size of the footprint area (thus limiting the extent of disturbance) and optimize the placement of infrastructure (e.g., avoiding sensitive ecosystems and plants);
- Promote natural re-vegetation of disturbed areas;
- Follow GN guidelines regarding non-native and invasive plant species and incorporate protocols for monitoring non-native and invasive plant species;
- Use of design features (i.e., dams, drainages, dykes, and diversions) to reduce changes to local flows, drainage patterns, and drainage areas; and
- Implement the Risk Management and Emergency Response Plan, Spill Contingency Plan, and Hazardous Materials Management Plan, specifically as it relates to spills and releases.

SECTION 7 • HUNTER HARVEST SURVEY

A potential effect of the Meliadine Mine identified in the FEIS is increased hunter harvest efficiency due to construction of the AWAR (Golder 2014). Frequency of access likely will not change from Rankin Inlet as a result of the AWAR, but harvest efficiency may increase.

Agnico Eagle renewed its Collaboration Agreement with the KHTO, in line with the Project Certificate No.006 Term and Condition 46 and 48, whereby Agnico Eagle consults with the KHTO on the Hunter Harvest Survey (HHS) program.

The target species for the Hunter Harvest Survey includes all wildlife species that are targeted for harvest including caribou, muskox, wolves, foxes, wolverine, and waterfowl, among others. In addition, there is the potential to gather information on angling success as elevated angling pressure is anticipated, at least for Arctic char. Thresholds for adaptive management will need to be discussed and set in collaboration with the KHTO and GN personnel, based on findings.

7.1 Objectives

The specific objectives of the hunter harvest survey are as follows:

- Gather information on Inuit and non-Inuit harvesting rates of caribou in the Mine area;
- Gather information on Inuit and non-Inuit harvesting rates of non-caribou wildlife in the Mine area;
- Gain further understanding of regional distribution and seasonality of hunting and fishing activity;
- Determine if the AWAR has influenced Inuit and non-Inuit harvesting rates of caribou and other wildlife; and
- Provide information to the KHTO, KivIA, and GN, to help make informed decisions regarding fish and wildlife management in the Rankin Inlet.

After three years of data collection through implementation of the HHS (i.e. after the 2023 HHS) results will be reviewed in collaboration with the TAG as needed to determine the need for mitigation measures and the feasibility of establishing harvest-related thresholds.

7.2 Monitoring Approach

The monitoring methods will primarily be in the form of a hunter survey. Data will be continuously collected and analysed at the end of each calendar year and provided within the TEMMP annual report.

The HHS will seek to:

- Increase and maintain hunter participant rates moving forward;
- Improve resource protection;
- Improve hunter awareness and education;
- Increase the integration of IQ information and Traditional Knowledge; and
- Increase availability of data to understand wildlife harvest and to assist Agnico Eagle's mitigative actions and GN's management decisions.

One of the greatest challenges will be hunter participation. However, Agnico Eagle has experienced these issues in the past when implementing a harvest survey as part of their Meadowbank Project and successfully developed novel and unique mechanisms to promote increased hunter participation (i.e., prize draws, provision of full-colour calendar with participant images).

Survey data collected by Agnico Eagle and in collaboration with the GN will include documentation of harvest success and will include the following:

- Number of harvested animals by species for each visit;
- Harvesting locations;
- Timing of harvesting; and
- Hunter efficiency (number of animals harvested/participant).

Hunters will also subjectively qualify their hunting experience (i.e., casual hunter or life-long hunter) and their hunting location preferences (i.e., convenient locations, favourite hunting spots, remote areas). This information will be used along with information regarding hunter's distance from the AWAR and hunting vehicle used (all terrain vehicle [ATV] or truck) to determine if the AWAR is facilitating hunting efficiency, and if so, to what extent. Information collected from participants will be kept anonymous.

An outline to address the HHS program objectives is described below.

7.2.1 Evaluate Hunter Efficiency – Harvest Success

Hunters are encouraged to record the following parameters for each harvest trip they undertake:

- Harvest (species, number, sex, age class, etc. – see below);
- Observations (species, number, sex, age class, etc. – see below); and
- Neither Harvest nor Observation (can be reported as just a "0")

The data can then be evaluated by Agnico Eagle by calculating the following:

- To quantify harvesting success, the proportion of trips with at least one successful harvest can be calculated relative to the total number of trips taken (assuming that each trip was initially motivated to harvest wildlife). This can be done by pooling all participating hunter data;
- To address the possibility that hunting was without success because no wildlife was encountered, the proportion of hunting trips with observations only (and no harvests) can be calculated; and
- Finally, hunting trips with neither harvests nor observations can be determined. The three numbers can be presented monthly or annually to reflect seasonality and annual fluctuations.

7.2.2 Evaluate Use of AWAR – Travel Distances

Hunters will record the following parameters for each harvest trip they undertake:

- Route from starting point (e.g., home, camp) to endpoint (e.g., home, camp). This can be done by indicating on a map, described via landmarks, or using GPS waypoints;
- Mode of transportation (e.g., truck, ATV, snow machine, boat, foot, dog team);
- Use of AWAR. This is a yes / no response. If yes, report approximate distance travelled or provide starting point and endpoint. Agnico Eagle can then evaluate data by calculating average travel distances from starting point to endpoint of all recorded trips; and
- Success of trip (i.e., number of animals harvested including zero harvest).

These calculations can be done across a variety of temporal scales (e.g., monthly or annually) and for any species harvested (e.g., wolves usually require longer hunter travel than foxes, etc.) or by mode of transportation.

Information collected can then be used to determine if the use of the AWAR is associated with harvesting success. This can be evaluated by calculating the number / rate of successful hunting trips (as per definition above) and efficiency of those hunting trips (i.e., the number of animals harvested per trip) using AWAR versus all other routes.

7.2.3 Summarize Information on Harvest Distribution, Wildlife Distribution & Physical Condition

Hunters will record the following parameters for each harvest trip they undertake:

- Harvest (species, number of animals, sex, age [young, mature, old], physical condition [healthy, skinny, diseased, unknown], location of harvest); and
- Observations of other wildlife (including species, number of animals, approximate distance).

The data can then be summarized by Agnico Eagle by calculating the following:

- Calculate the total number of animals per species harvested by participating hunters by month or annually;
- Calculate the percentage of healthy animals per harvested species by month or annually (could also be done by sex and age class);
- Calculate the total number of animals per species observed by participating hunters by month or annually;
- Plot harvest locations; and
- Plot other wildlife observation locations.

7.2.4 Determine Reliability of Reported Harvest in Hunter Harvest Study

There is a chance of under reporting in the HHS due to lack of motivation to voluntarily collect the information requested.

To ensure this is clearly presented in annual reports, the following rates can be calculated as qualifiers of the results:

- Calculate hunter participation rate for the study (i.e., the number of hunters that are registered with the HHS relative to the number of reports received back); and
- Compare the number of hunters registered with the HHS to active hunters in the community (this information could be obtained either using Priest data or by asking KHTO for a complete list of active hunters).

The HHS program results will be presented in the TEMMP Annual Report. In addition, an administrator for the HHS program will be appointed and will meet with HHS participants on at least a quarterly basis to document harvests and discuss general hunting trends and observations.

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WSP Ltd. 2024. 2023 Qamanirjuaq Calving Ranges Meliadine Terrestrial Advisory Group Meeting January 24, 2024. Prepared by WSP on the behalf of Agnico Eagle, Meliadine Mine Terrestrial Advisory Group.

APPENDIX A • NIRB TERMS AND CONDITIONS

Table A-1: Terms and Conditions – Requirement for TEMMP

Term	Condition	Location
43	The Proponent shall continue to develop and implement Project-specific monitoring for the terrestrial environment through its Terrestrial Environment Management and Monitoring Plan (TEMMP), and will demonstrate appropriate refinements to design, incorporation of analytical methods and elaboration of methodologies. The TEMMP shall contain clear thresholds to allow for the assessment of long-term trends and cumulative effects where project interactions are identified. Coordination and cooperation will be required where data collection, analysis and interpretation, or responsibility for mitigation and management requires the efforts of multiple parties (e.g., government, Kivalliq Inuit Association, communities).	Sections 1.2.4, 4, 5, 6, and 7

Table A-2: Terms and Conditions – Requirement for Terrestrial Advisory Group

Term	Condition	Location
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.	Sections 1.2.4, 1.3, 1.5, 4, 5, and 6; Appendix E

Table A-3: Terms and Conditions – Caribou and Muskox

Term	Condition	Location
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 exisiting 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.	Sections 1.2.3, 1.2.4, 1.3, 1.5, 4.1, 4.2, 4.3, 4.4, 4.6 and 6 3
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.	Sections 1.2.3 and 7
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.	Sections 4.1 and 4.2
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.	Sections 4.3 and 4.4
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.	Sections 5.1 and 6.1.2

Term	Condition	Location
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.	Sections 4.2.3 and 5.1
119	The Proponent shall include within its updated Terrestrial Wildlife Management and Monitoring Plan (TEMMP), a commitment to establishing deterrents along the 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.	Sections 6.1.2, 6.1.6, and 6.1.7; Appendix F

Table A-4: Terms and Conditions – Requirement for Hunter Harvest Survey

Term	Condition	Location
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: • 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; • 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, • Increasing local knowledge of the project development areas, including establishing baseline harvesting levels prior to unrestricted public access on the all-weather access road.	Sections 4.2 and 7
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.	Section 7

Table A-5: Terms and Conditions – Furbearers

Term	Condition	Location
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.	Sections 5.2.2 and 6.2.2
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.	Sections 5.1.5 and 6.3

Table A-6: Terms and Conditions – Migratory Birds

Term	Condition	Location
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.	Sections 5.2.4.1, 6.1.8, 6.2.3, 6.2.4, and 6.3
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 Mitigation and Monitoring Plan (TEMMP).	Sections 5.2.4.1, 6.1.7, 6.2.3, 6.2.4, and 6.3
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 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.	Sections 6.2.3.1 and 6.2.4.1
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.	Sections 5.2.3, 5.2.4, 6.1, 6.2.3, and 6.2.4
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 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.	Sections 5.2.3, 5.2.4, 6.2.3, 6.2.4, and 6.3

Table A-7: Terms and Conditions – Vegetation

Term	Condition	Location
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.	Sections 5.2.5.3 and 6.2.5; Appendix D
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.	Section 5.2.5.4; Appendix E
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.	Section 5.2.5.1; Appendix E
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 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.	Section 5.2.5; Appendix E

Table A-8: Terms and Conditions – Reporting

Term	Condition	Location
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.	Section 1.6
56	The Proponent shall report annually to the NIRB regarding its terrestrial environment monitoring efforts, with inclusion of the following information: • Description of all updates to terrestrial ecosystem baseline data; • A description of the involvement of Inuit in its monitoring programs; • 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; • Results of the annual monitoring program, including field methodologies and statistical approaches used to support conclusions drawn; and • An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as standard weather summaries.	Section 1.6
57	Within its annual report to the NIRB, the Proponent shall incorporate a review section which includes: • An examination for trends in the measured natural variability of Valued Ecosystem Components in the region relative to the baseline reporting; • 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 ; • A demonstration and description of how the monitoring results, including the all-weather access road, associated access roads/trails, and waterlines contribute to cumulative effects of the project; and • Any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program.	Section 1.6

APPENDIX B • COMMITMENTS

Table B-1: Agnico Eagle Commitments – 2014 Final Environmental Impact Statement Hearing

No	Reference	Commitment	Location
5	GN-05	The Proponent shall not conduct routine[1] helicopter flights over or land in Iqalugaarjuup Nunanga Territorial Park. The Proponent will communicate this commitment to all helicopter companies contracted by The Proponent to do work at the Meliadine Project site prior to the start of such contracted work. [1]Emergency flights excepted, specifically medical evacuation flights and/or search and rescue overflights.	Section 6.1.4
9	GN-09	In consultation with the Government of Nunavut and other relevant parties, the Proponent shall develop adequate monitoring and mitigation measures relating to the harvesting of caribou and improved harvesting access granted by the AWAR. These measures shall include, but not necessarily be limited to, a Road Access Management agreement between the Proponent and the DIO's (KIA and the Rankin HTO) to be completed prior to phase II of road construction.	Section 7 Hunter Harvest Survey
15	GN-15	The Proponent shall not destroy or disturb raptor nests without a permit issued by the Government of Nunavut.	Sections 6.1.7,6.1.7 and 6.2.3

Table B-2: Agnico Eagle Commitments – 2018 Amendment 1 – Saline Effluent Discharge

No	Reference	Commitment	Location
11	GN-01	Agnico Eagle commits to maintaining the objectives and thresholds for wildlife entering the mine infrastructure areas and the AWAR corridor. Agnico Eagle will continue to meet the standards set out in the TEMMP: "Vehicle Collisions - no more than 1 caribou per year and Caribou Movement - no more than 10% deflection of caribou approaching roads and infrastructure."	Section 5.3 and 6.3; Tables 8, 12, 13, 14, and 15

Table B-3: Agnico Eagle Commitments – 2021 Amendment 2 - Waterline

No	Reference	Commitment	Location
4	KivIA-TC- 16	a. Agnico Eagle in consultation with the Terrestrial Advisory Group (TAG) will revise the Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Meliadine Project. The revision will include additional details on monitoring and analysis of caribou movement through the Meliadine project AWAR/waterlines corridor taking into consideration options such as: geo-fencing, GPS collar tracking (which the Government of Nunavut will make its best efforts to provide), camera study, KHTO road monitoring, and site visits by Elders. It will also show how this monitoring will feed into the adaptive management of project operations, taking into consideration seasonal caribou movement through the corridor. This next version of the TEMMP will be revised following the establishment of the Terrestrial Advisory Group, and the receipt of advice from the Terrestrial Advisory Group on potential appropriate Terrestrial Environment Management and Monitoring Plan revisions and/or special studies taking into consideration the changes to the corridor. b. Regarding establishing a Terrestrial Advisory Group for the Meliadine Project, the recommended T&C from Government of Nunavut is supported (GN-TRC-06; 1 to 2).	Sections 1.2.4, 4.2.1, 4.2.3, 4.2.5, and 5.1; Please refer to the 2023 TAG Terms of Reference (Agnico Eagle 2023).
7	GN-TRC-06	Agnico Eagle will collaborate with the Government of Nunavut through the Terrestrial Advisory Group in evaluating a remote triggered camera program to estimate levels of project-related and public traffic, at various points along the all-weather-access-road during June, July, and August. A primary objective of this program will be to support caribou effects monitoring and potentially replace existing monitoring requirements that are duplicated.	Section 4.2.5
8	-	Agnico Eagle commits to include HTOs and Northlands Denesuline First Nation and Sayisi Dene First Nations in the Terrestrial Advisory Group of the project.	Please refer to the 2023 TAG Terms of Reference (Agnico Eagle 2023).
9	-	During the construction phase, Agnico Eagle commits to no open trenches during the caribou migration. Agnico Eagle will advance construction by sections and consider caribou migration into the construction schedule.	Sections 4.5.3.7 and 6.1.6
12	-	The next version of the TEMMP will be revised following the establishment of the Terrestrial Advisory Group, and the receipt of advice from the Terrestrial Advisory Group on potential appropriate TEMMP revisions and/or special studies taking into consideration the changes to the corridor.	Section 1.2.4 Please refer to the 2023 TAG Terms of Reference (Agnico Eagle 2023).
13	-	Agnico Eagle will provide a list of the various TEMMP documents that have been/will be submitted.	Submitted with each Version of the TEMMP

No	Reference	Commitment	Location
14	-	Agnico Eagle will have a discussion with KHTO and BHTO and other interested parties (KivIA, Government of Nunavut, KWB) to discuss the no hunting zone near AWAR.	Section 6.1.2
17	-	Agnico Eagle and the Government of Nunavut commits to continuing communication regarding possible collaboration on GN managed research programs through a Research Contribution Agreement that addresses topics such as discussion of anticipated regional research data required by Agnico Eagle and financial and in kind contribution of Agnico Eagle to GN research programs. Both parties will continue to collaborate on a Data Sample and Sharing Agreement (DSSA). It is acknowledged by both parties that GN regional caribou monitoring data is collected by GN on behalf of the public interest. Access to such GN regional caribou monitoring data could support Agnico Eagle's requirements and legal obligations in order to carry out its monitoring programs under the Project Certificate.	Sections 1.2.3, 4.2.1, 4.4, 4.5, 5.1.2, and 7
18	-	Agnico Eagle agrees to provide the 2020 field data from the camera-monitoring program to the KHTO, subject to a mutually acceptable Data Sharing Agreement to be negotiated and signed by Agnico Eagle and the KHTO.	Please refer to the 2020 Caribou Trail Camera Study Report (ERM 2021b)
21	-	Agnico Eagle commits to meet with KHTO to discuss the side slopes on a certain number of traditional land use crossing of the waterline.	Please refer to the 2020 Caribou Trail Camera Study Report (ERM 2021b)
24	GN-TRC-06	Agnico Eagle Mines (AEM) will revise the Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Meliadine Project to include details of the AWAR Road Survey, Caribou Collaring, and Caribou Behavioral Monitoring programs before 2021 annual report, as requested by the GN in its Technical Review Comment 6 (parts 1.1 to 1.3) during NIRBs review of the FEIS Addendum. All revisions will consider the advice provided by the Terrestrial Advisory Group.	Section 4.2.1, 4.2.3, 4.2.4, and 5.1.2
25	GN-TRC-06	AEM shall revise the Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Meliadine Project to update a decision tree that specifies the frequency of AWAR road surveys that will be conducted when caribou in specified group sizes are observed within specified distances of the Project's AWAR as per comments by the Terrestrial Advisory Group.	Sections 4.5.2 and 4.5.3.1 Figure 9
27	WB-FWS-1	AEM had committed to a regional approach that integrates IQ and science through the creation of a Terrestrial Advisory Group (TAG).	Section 1.2.4 Please refer to the 2023 TAG Terms of Reference (Agnico Eagle 2023).

No	Reference	Commitment	Location
38	N-FWS-1 KIA-TC-3 SDFN/ NDFN-FWS-1	Agnico Eagle will discuss the proposed recommendations with the Kivalliq Inuit Association, the Government of Nunavut, and the Sayisi Dene First Nation/Northlands Denesuline First Nations and other interested parties, as well as the Terrestrial Advisory Group, and a revision will be provided to the Kivalliq Inuit Association, the Government of Nunavut and the Sayisi Dene First Nation/Northlands Denesuline First Nations, and other interested parties of the Terrestrial Advisory Group, within six months after project approval. Revisions will be: 1) A Local Study Area that reflects recent research regarding the Zone-of-Influence around northern mines and mine roads; 2) A definition of "deflection" that takes into account the observed behaviour of caribou paralleling the road or adjusting their course away from the road at any angle of movement; and 3) Agnico Eagle will consult with the interested parties the size of the study area, the definitions of deflection and no crossing potential (using both IQ and technical criteria and incorporating a definition that accounts for caribou paralleling the road), and incorporating other relevant variables (e.g., insect harassment and daily traffic levels). These revisions will be made within six months following issuance of the Project Certificate and incorporate the Terrestrial Advisory Group	Section 2.3.1 Please refer to the Commitment 38 Analyses (WSP 2023b).
42	-	Agnico Eagle commits to entering a Memorandum of Understanding (MOU) associated with the Terrestrial Advisory Group with mutually agreeable terms and conditions with each individual party of the Terrestrial Advisory Group that requests an MOU. The Meliadine Terrestrial Advisory Group MOUs would be generally consistent with the MOU prepared for the Meadowbank-Whale Tail Terrestrial Advisory Group.	Please refer to the 2023 TAG Terms of Reference (Agnico Eagle 2023).

Table B-4: Agnico Eagle Commitments – 2018-2022 TEMMP Comment Responses

Reference	Commitment	Location
KivIA-2	Agnico Eagle will refer to the Terrestrial Environment Management and Monitoring Plan as "TEMMP". The annual report discussing the implementation of TEMMP requirements and monitoring results will be referred to as the “TEMMP Report”	See Section 1.6 Whole document
ECCC-4	Discussion with ECCC occurred to establish mortality threshold for upland breeding birds. Due to the different bird status (endangered or not) and different situation that can occur, the threshold for evaluation of mitigation measures will be one. For all upland breeding birds found dead, ECCC will be notify and an evaluation of mitigation measures, if necessary will be discussed. This will be added to the next TEMMP report.	Section 6.3; Table 14
ECCC-5	Agnico Eagle will ensure that the proper status for the barren-ground caribou is stated in the next TEMMP report	Section 4.6; Table 2
ECCC-7	We suggest that the TEMMP be updated to clarify any confusion and to be focused on in-kind contributions of monitoring results to regional datasets through the PRISM for the Arctic, on a 3-year rotation, and breeding bird monitoring (point counts every three years). This would align with terrestrial management plans for other northern mining projects. Updates to the TEMMP will be included as recommendations in the annual reports moving forward, as appropriate.	Section 5.2.4.3 and 5.2.4.4
GN-03	For future annual reports, Project Certificate No. 006 Term and Condition No. 40 will be added in the concordance table (currently presented in Appendix H-6 of the 2018 TEMMP Annual Report)	Appendix A

APPENDIX C • SUPPLEMENTAL CARIBOU BASELINE INFORMATION

Table C-1: Population Estimates for the Qamanirjuaq Herd between 1949 and 2017

Year	Estimate	SE	Method	Source
1949	145,000	-	Not Available	Banfield 1980
1950	30,000	-	Not Available	Ruttan 1967
1950	120,000	-	Not Available	Heard & Calef 1986
1955	150,000	-	Not Available	Ruttan 1967
1963	30,000	-	Not Available	Malfair 1963
1965	150,000	-	Not Available	Ruttan 1967
1967	35,000	-	Not Available	Ruttan 1967
1968	72,561	-	Visual survey of calving ground	Parker 1972
1968	63,000	-	Visual survey of calving ground	Parker 1972
1968	51,000	-	January-April Surveys	Parker 1972
1968	40,000	-	Post-calving photo survey	Parker 1972
1971	22,831	-	Visual survey but unreliable	Land & Bowden 1971
1974	44,891	-	Visual survey of calving ground	Hawkins & Howard 1974
1974	61,500	-	Fall aerial surveys	Robertson 1975
1974	54,000	-	Visual survey of calving ground	Hawkins and Howard - Unpublished data
1976	42,000	-	Not Available	Jakimchuck 1979
1976	43,800	-	Visual survey of calving ground	Calef & Hawkins 1981
1977	44,095	5,172	Visual survey of calving ground	Heard 1981
1977	30,770	-	March-April Survey	Calef & Hawkins 1981
1980	38,666	14,197	Visual survey of calving ground	Heard & Calef 1986; Cooper 1981
1982	180,000	-	Visual survey of calving ground	Heard & Calef 1986; Gates 1985
1983	230,000	5,9000	Photo survey of calving ground	Heard and Jackson 1990a; Williams 1995

Year	Estimate	SE	Method	Source
1983	126,000	-	Post-calving photo survey	Heard 1986
1985	272,032	142,199	Photo survey of calving ground	Heard and Jackson 1990a; Williams 1995
1988	220,999	72,459	Photo survey of calving ground	Heard and Jackson 1990a; Williams 1995
1994	495,665	105,426	Photo survey of calving ground	Campbell et al. 2010
2008	348,661	44,861	Photo survey of calving ground	Campbell et al. 2010
2014	264,718	44,084	Photo survey of calving ground	Campbell et al. 2015
2017	288,244	46,123	Photo survey of calving ground	Boulanger et al. 2018
2022	252,892	35,153	Photo survey of calving ground	Campbell et al. 2022

APPENDIX D • NON-NATIVE VEGETATION 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.*

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.

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		Flowering Plant
Taraxacum officinale	Common Dandelion		Flowering Plant
Sonchus arvensis	Field Sow Thistle		Flowering Plant
Leucanthemum vulgare	Oxeye Daisy		Flowering Plant
Thlaspi arvense	Field Pennycress		Flowering Plant
Capsella bursa-pastoris	Shepherd's Purse		Flowering Plant
Barbarea vulgaris	Yellow Rocket		Flowering Plant
Amaranthus retroflexus	Green Amaranth		Flowering Plant
Hordeum vulgare	Common Barley		Flowering Plant
Puccinellia distans	Spreading Alkali Grass		Flowering Plant
Vicia cracca	Tufted Vetch		Flowering Plant
Papaver somniferum	Opium Poppy		Flowering Plant
Plantago major	Common Plantain		Flowering Plant
Polygonum aviculare	Prostrate Knotweed		Flowering Plant
Pieris rapae	Cabbage White		Butterfly
Sturnus vulgaris	European Starling		Passerine Bird
Passer domesticus	House Sparrow		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

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).

* 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).

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.

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		Fish
Gymnocephalus cernuus	Ruffe		Fish
Caprella mutica	Skeleton Shrimp		Crustacean
Chelicorophium curvispinum	Data unavailable		Crustacean
Dikerogammarus villosus	Killer Shrimp		Crustacean
Gmelinoides fasciatus	Data unavailable		Crustacean
Pontogammarus robustoides	Data unavailable		Crustacean
Eriocheir sinensis	Chinese Mitten Crab		Crustacean
Hemimysis anomala	Data unavailable		Crustacean
Balanus improvisus	Acorn Barnacle		Crustacean
Corbicula fluminea	Asian Clam		Mollusc
Dreissena bugensi	Quagga Mussel		Mollusc
Bythotrephes longimanus	Spiny Water Flea		Zooplankton
Cercopagis pengo	Fishhook Water Flea		Zooplankton
Eubosmina maritima	Data unavailable		Zooplankton
Marenzelleria cf. viridis	Data unavailable		Worm
Marenzelleria cf. wireni	Data unavailable		Worm
Cordylophora caspia	Freshwater Hydroid		Hydrozoa
Coscinodiscus wailesii	Data unavailable		Phytoplankton
Odontella sinensi	Data unavailable		Phytoplankton
Prorocentrum minimum	Data unavailable		Phytoplankton
Codium fragile ssp. tomentosoides	Oyster Thief		Algae
Glugea hertwigi	Data unavailable		Protozoa
Amphilina foliacea	Data unavailable		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 • VEGETATION HEALTH PROGRAM

TO Stephane Robert, Josee Brazeau, Ryan Vanengen
Agnico Eagle Mines Ltd.

DATE November 20, 2015

CC

FROM Corey De La Mare, Lasha Young
Golder Associates Ltd.

PROJECT No. 1535029 - 2000

NIRB PROJECT CERTIFICATE NO.: 11MN034 – CONDITIONS 38 AND 39

Introduction

In October 2014, the Nunavut Impact Review Board (NIRB) issued their Final Hearing Report for Agnico Eagle Mines Ltd. (Agnico Eagle) Meliadine Gold Project (the Project). This report presents the procedural timeline for the Project and concerns heard from Inuit communities, interveners (e.g., Kivalliq Inuit Association) and the board itself. Consequently, NIRB developed 127 Terms and Conditions that are to be implemented by the Proponent and/or interveners, where warranted.

This memorandum addresses Condition 39, which requires details for the implementation of a vegetation health program within 6 months of issuance of the Project Certificate. Condition 39, described below, is also closely related to Condition 38, which relates to metals found in soils in areas with berry-producing plants. As a result, both Conditions will be addressed through a combined program and the background information related to these topics and the proposed sampling program are described in this memorandum.

NIRB Conditions

Term and Condition Numbers 38 and 39 from Project Certificate No. 11MN034 as issued by NIRB for the Project are as follows:

- **38 (To assess the impact of the Project on berry-producing plants)**: The Proponent (Agnico Eagle) 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 with the Terrestrial Management and Monitoring Plan (TEMMP) to incorporate ongoing monitoring of these parameters prior to commencing operations.
- **39 (To monitor metal levels in vegetation)**: 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.

Background and Rationale

Some metals in trace amounts (i.e., boron, chlorine, copper, iron, manganese, molybdenum, and zinc) provide essential sources of nutrients to many organisms, including plants and animals (Pais and Jones 1997). However, a large number of metal elements are known to have adverse or toxic effects on plant or animal tissue at high concentrations depending on the nature of the metal, environmental conditions, and the species affected (Pais and Jones 1997; Kabata-Pendias 2001). In some cases, certain plant species may accumulate toxic elements or compounds, but the rate and effectiveness by which plants uptake nutrients and trace elements, including metals, is quite variable (Greger 2004).

Generally, the uptake of metals in plants occurs from the soil matrix via the roots or from the atmosphere through direct absorption through the leaf cuticle (Kabata-Pendias 2001). Absorption of metals from the soil matrix requires that metals be present in solution for them to be taken up by plants (Greger 2004). The availability of metals is governed by soil properties like moisture, pH, and organic matter content. The result is that soils containing higher amounts of organic matter, clay content, and pH levels will typically bind metals to the soil matrix making them unavailable for uptake by plants (Greger 2004). Plant uptake of metals through the leaves can occur through deposition of dry materials (i.e., dust or airborne particles containing metal elements) or wet materials (i.e., precipitation containing metal ions in solution) (Greger 2004). In most cases, uptake of toxins in plant tissues is proportional to availability in the surrounding environment (Greger 2004).

To effectively assess the potential effects of dust borne contaminants containing metals originating from a proposed road sites and mine, it is critical to have a good understanding of the baseline concentration of metals. Consequently, Agnico Eagle (formerly Comaplex) undertook metals sampling in soils (related to Condition 38) and plant tissues (related to Condition 39) in 2008 and 2009. Establishing a baseline sampling program for estimating background concentrations of metals in soils and plant tissues provides a basis for evaluating potential effects and for implementing a monitoring program to assess changes to metal concentrations in plant tissue and soils over the duration of the Project.

Baseline Methods

Baseline metal concentrations in plant tissue and soil in the Local Study Area (LSA) undertaken in the fall of 2008 and completed in the fall of 2009 are provided in SD 6-2 Terrestrial Vegetation and Wildlife Baseline Synthesis Report Meliadine Gold Project, Nunavut, submitted in support of the Final Environmental Impact Statement (Agnico Eagle 2014). Sample sites were selected to represent the range of vegetation types in the vicinity of the proposed mine site and road. Seventeen permanent sampling sites were established in the vicinity of the proposed mine site and along the proposed all-weather road, and an additional 12 sites were established along the road to the Discovery area (Figure 1), which is no longer being considered as part of the first phase of development for the Project. All sites were permanently marked with a metal stake and a tag denoting the site name, as well as a painted rock, and GPS waypoints were obtained. These sites were established as permanent plots that can be re-visited as part of a project monitoring program.

Tissue samples from at least 2 different plant species and a soil sample were collected from each site. Two equal sub-samples of soil were taken from the rooting zone and combined into one composite sample of approximately 200 g. Plant species for tissue analysis were selected based on their relative abundance in the area and their relative importance to human or wildlife consumption. The species selected for tissue analysis are summarized in Table 1.

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

STUDY AREA

1.5 0 1.5
KILOMETRES

LEGEND

- SOIL AND PLANT TISSUE SAMPLING PLOT
- CAMP
- PROPOSED MINE SITE
- ALL-WEATHER ACCESS ROAD (AWAR)
- ROAD - NEW
- ROAD - EXISTING
- WATERCOURSE
- LOCAL STUDY AREA - MINE
- LOCAL STUDY AREA - ROAD
- WATERBODY
- TERRITORIAL PARK

REFERENCE

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

3 0 3
KILOMETRES

PROJECT
AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
SOIL AND PLANT TISSUE SAMPLING LOCATIONS - 2008 AND 2009

Golder Associates

PROJECT		1535029	FILE No.	
DESIGN	CD	13 Nov. 2015	SCALE AS SHOWN	REV. 0
GIS	CDB	13 Nov. 2015		
CHECK	JR	17 Nov. 2015		
REVIEW	CD	17 Nov. 2015		

FIGURE: 1

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Table 1: Plant Species Selected for Metal Concentration Baseline and Monitoring in 2008 and 2009

Scientific Name	Common Name
Shrubs	
Arctostaphylos alpina	Alpine manzanita
Betula nana	Swamp birch
Empetrum nigrum	Black crowberry
Ledum palustre ssp. *decumbens*	Marsh Labrador tea
Salix planifolia	Tealeaf willow
Salix lanata ssp. *richardsonii*	Lanate willow
Vaccinium uliginosum	Alpine blueberry
Vaccinium vitis-idaea	Mountain cranberry
Forbs	
Oxytropis arctica var. *bellii*	Bell's Point-vetch
Grasses and Sedges	
Carex aquatilis	Water sedge
Carex misandra	Shortleaf sedge
Poa sp.	Bluegrass
Non-vasculars	
Aulacomnium sp.	n/a
Flavocetraria nivalis (formerly *Cetraria nivalis*)	Crinkled snow lichen

n/a = not applicable

Only healthy plants were collected; plant specimens with obvious signs of disease, such as yellowing leaves, holes in leaves, or lack of foliage were not collected. Leaves and new growth were obtained from all woody plants by taking cuttings from the tips of the plants and placing samples in a Ziploc bag, while all above ground tissues of forbs and grasses were collected and placed in Ziploc bags. Non-vascular plants were collected from the ground surface and placed in a Ziploc bag. Composite tissue samples for each species were taken from collected plant materials.

All plant tissue and soil samples were frozen in the field and later transported to ALS Laboratories for subsequent metals analysis. Plant tissue samples collected in 2008 were analyzed using Inductively Coupled Plasma Mass Spectrometry (ICPMS) for 28 metals (Table 2), and the Metals-Canadian Council of Ministers of Environment (CCME) package was used to assess for 19 metals in the soil samples (Table 2). In 2009, plant tissues and soil samples were analyzed for metals using the Inductively Coupled Plasma Optical Emission Spectrometry (ICPOES) and ICPMS packages (Table 2).

Table 2: Selected Metals Assessed in Plant Tissue and Soil Samples in 2008 and 2009

2008 Plant Tissue (mg/kg)	2008 Soil Matrix (mg/kg)	2009 Plant Tissue (mg/kg) and Soil Matrix (mg/kg)
Aluminum (Al)	Antimony (Sb)	Aluminum (Al)
Antimony (Sb)	Arsenic (As)	Antimony (Sb)
Arsenic (As)	Barium (Ba)	Arsenic (As)
Barium (Ba)	Beryllium (Be)	Barium (Ba)
Beryllium (Be)	Cadmium (Cd)	Beryllium (Be)
Cadmium (Cd)	Chromium (Cr)	Bismuth (Bi)
Calcium (Ca)	Cobalt (Co)	Cadmium (Cd)
Chromium (Cr)	Copper (Cu)	Calcium (Ca)
Cobalt (Co)	Lead (Pb)	Chromium (Cr)
Copper (Cu)	Mercury (Hg)	Cobalt (Co)
Iron (Fe)	Molybdenum (Mo)	Copper (Cu)
Lead (Pb)	Nickel (Ni)	Iron (Fe)
Magnesium (Mg)	Selenium (Se)	Lead (Pb)
Manganese (Mn)	Silver (Ag)	Lithium (Li)
Mercury (Hg)	Thallium (Tl)	Magnesium (Mg)
Molybdenum (Mo)	Tin (Sn)	Manganese (Mn)
Nickel (Ni)	Uranium (U)	Mercury (Hg)
Phosphorus (P)	Vanadium (V)	Molybdenum (Mo)
Potassium (K)	Zinc (Zn)	Nickel (Ni)
Selenium (Se)		Phosphorus (P)
Silver ((Ag)		Potassium (K)
Sodium (Na)		Selenium (Se)
Strontium (Sr)		Sodium (Na)
Thallium (Tl)		Strontium (Sr)
Tin (Sn)		Thallium (Tl)
Titanium (Ti)		Tin (Sn)
Vanadium (V)		Titanium (Ti)
Zinc (Zn)		Uranium (U)
		Vanadium (V)
		Zinc (Zn)

Baseline Results

Metals concentrations for the collected soil samples were assessed relative to the CCME (2007) criteria for contaminated soils to determine if any metals exceeded acceptable limits for agricultural sites under the existing baseline conditions. The soil quality guidelines for agricultural sites were used, as the site in its current state is considered unaltered at baseline.

The majority of soil metal concentrations in 2008 sample plots were within acceptable guidelines, with the exception of Arsenic (As), which exceeded CCME limits on 10 plots (Appendix A Table A-1). Most of these plots were found in the immediate vicinity of the proposed Meliadine main site or along the proposed road near the main site. The exception was plot 08-015, which was located southwest of the main mine site near the proposed Discovery area road. One plot, 08-010, had borderline values for Arsenic at 11.8 mg/kg. Cobalt (Co), Copper (Cu) and Selenium (Se) also exceeded CCME agricultural criteria on 2 sites (Table 4-10). Soil plot 08-002 had high levels of copper and selenium, whereas plot 08-005 had levels of cobalt and copper above CCME criteria. Both sites are located near the proposed Meliadine main mine site.

For the 2009 samples, only soil plots 09-D02 and 09-D08 had elevated levels of Arsenic (As) at 12.6 mg/kg and 20 mg/kg respectively, compared to the CCME guideline value of 12 mg/kg (Table 4-11). All other soil metal concentrations in the 2009 sample plots were below applicable CCME guidelines (Table 4-11).

Plant Tissue Metal Concentrations

Metal concentrations in tissue from selected plant species were also analyzed to provide an understanding of baseline levels of various metals that may be concentrated in plant tissue. The results of the plant tissue metals analyses for 2008 and 2009 indicate that there was a wide variability in the range of metal concentrations (Appendix B, Tables B-1 and B-2). Alpine manzanita and snow lichen tissue were found to have some the highest concentrations of Aluminium (Al) and Iron (Fe) in both 2008 and 2009 sample plots, with black crowberry also showing high levels of Aluminium (Al) in the 2009 plots. In the 2008 samples, Nickel (Ni) concentrations were found to be highest in *Oxytropis arctica var. bellii*, whereas flat-leaved willow and mountain cranberry had some of the highest levels for Zinc (Zn) and Manganese (Mn), respectively Appendix B, Table B-1. This is in contrast to the 2009 samples taken along the proposed Discovery Road alignment, which showed high levels of nickel Appendix B, Table B-2. The highest levels of arsenic were found in alpine manzanita, along with water sedge on 2 plots located near the proposed Meliadine main site (Appendix B, Table B-1).

Observed metal concentrations reflect naturally occurring levels. While there is no known literature available on the levels of metals that would be toxic to the plant species selected, at the time of sampling, there were no indications of disease or toxicity symptoms observed in the areas studied, with some rare exceptions of a fungus infection called “rust” affecting swamp birches. This condition is seen throughout the mainland arctic (P. Burt, 2008, pers. comm.), and is not particular to this area.

Future Sampling Program

The baseline metals sampling program setup in 2008 and 2009 were designed to characterize the metal concentrations in soils and plant tissues located in close proximity to proposed Project infrastructure, as designed at that time. Subsequently, the mining footprint has altered and Phase 1 of the Project is in the water licencing phase. The future sampling program will consist of sampling locations stratified as follows:

- On-site – these locations will be in immediate proximity to Project infrastructure (e.g., All Weather Access Road [AWAR], open pits, waste rock storage areas, borrow pits and quarries, among other)
- Near-site – areas downwind of dust deposition but not immediately adjacent to infrastructure to determine if there are far-field effects (i.e., outside of immediate anticipated influence of the Project); and
- Reference – areas outside the influence of the Project representing natural conditions.

Based on results from Agnico Eagle's Meadowbank operation, the main sources of dust emissions are roads, waste rock, and tailings. Figure 1 shows previous locations sampled for metal concentrations, and Figure 2 shows the locations of proposed on-site, near-site, and reference sampling areas, of which some were sampled in 2008 and 2009 so that subsequent metals data can be compared to baseline levels. In addition, some sampling stations will be placed in close proximity to Dustfall Monitoring Stations (i.e., 2 dynamic stations and 5 static stations) that will be established along the AWAR and adjacent to mining infrastructure (Agnico Eagle 2015) so that the relative change in dustfall could be compared to changes in metal concentrations. The distribution of on-site sampling locations will be stratified by infrastructure component (e.g., AWAR, waste rock storage areas and tailings areas). Metals sampling methods will follow those used in 2008 and 2009 and it is proposed that these areas are sampled prior to construction and for one year after construction. Specifically, soils will be sampled from areas with berry-producing plants and vegetation tissue sampling will be collected from species consistent with past sampling including shrubs, sedges and lichen (see Table 1). Following these sampling periods, it is suggested that metals sampling is completed every three years provided that there are no exceedances in predicted dust deposition parameters (Agnico Eagle 2015). Table 3 shows the proposed stratified sample size for soils and berry-producing plants and lichen and Figure 2 shows the proposed sampling distribution.

Table 3: Proposed Sampling Strategy for Metals in Soils and Plant Tissue

Infrastructure Treatment	On-Site	Near-Site	Total
All Weather Access Road (AWAR)	10	10	20
Waste Rock Storage Areas (WRSA)	5	5	10
Tailings Facility	5	5	10
Reference	15		
Total	**20**	**20**	**55**

Analysis of metals concentrations will be similar to previous work done whereby the concentrations are compared against CCME criteria. Reporting of these results will be included in the TEMMP accordingly.

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

STUDY AREA

1.5 0 1.5
KILOMETRES

LEGEND

PROPOSED METALS SAMPLING LOCATION
- ON-SITE
- NEAR SITE
- REFERENCE
- CAMP
- PROPOSED MINE SITE
- ALL-WEATHER ACCESS ROAD (AWAR)
- ROAD - NEW
- ROAD - EXISTING
- WATERCOURSE
- LOCAL STUDY AREA - MINE
- LOCAL STUDY AREA - ROAD
- WATERBODY
- TERRITORIAL PARK

REFERENCE

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

3 0 3
KILOMETRES

PROJECT
AGNICO EAGLE
AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
PROPOSED METALS SAMPLING DISTRIBUTION FOR ON-SITE, NEAR-SITE AND REFERENCE POINTS

Golder Associates

PROJECT		1535029	FILE No.	
DESIGN	CD	13 Nov. 2015	SCALE AS SHOWN	REV. 0
GIS	CDB	13 Nov. 2015		
CHECK	JR	17 Nov. 2015		
REVIEW	CD	17 Nov. 2015		

FIGURE: 2

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Appendix A
Soil Metal Concentrations 2008 and 2009

Table A-1: Soil Metal Concentrations (mg/kg) Associated with each 2008 Sample Plot

	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Tin	Uranium	Vanadium	Zinc
	(Sb)	(As)	(Ba)	(Be)	(Cd)	(Cr)	(Co)	(Cu)	(Pb)	(Hg)	(Mo)	(Ni)	(Se)	(Ag)	(Tl)	(Sn)	(U)	(V)	(Zn)
Detection Limits	0.2	0.2	5	1	0.5	0.5	1	2	5	0.05	1	2	0.2	1	1	5	2	1	10
2007 CCME Guideline (agricultural)	20	12	750	4	1.4	64	40	63	70	6.6	5	50	1	20	1	5	23	130	200
2008 Soil Sample Plots																			
08-001	<0.2	**51.8**[a]	36	<1	<0.5	32.7	14	31	10	<0.05	<1	38	<0.2	<1	<1	<5	<2	22	50
08-002	<0.2	**59.9**	53	<1	0.5	11.1	9	**66**	8	0.05	<1	48	**1.2**	<1	<1	<5	<2	9	60
08-003	<0.2	**47.3**	93	<1	<0.5	16	19	30	<5	<0.05	2	20	0.4	**<1**	<1	<5	<2	15	20
08-004	<0.2	**13**	118	<1	<0.5	12.3	6	8	<5	0.16	<1	10	0.2	<1	<1	<5	<2	8	70
08-005	<0.2	**51.1**	117	<1	<0.5	10.7	**45**	**72**	<5	<0.05	7	39	0.8	<1	<1	<5	<2	9	40
08-006	<0.2	**26.9**	22	<1	<0.5	25.6	5	18	7	0.08	<1	20	0.2	<1	<1	<5	<2	15	50
08-007	<0.2	**13.9**	24	<1	<0.5	31.6	5	8	<5	0.09	<1	12	0.2	<1	<1	<5	<2	18	30
08-008	<0.2	**23.3**	31	<1	<0.5	22	6	9	<5	<0.05	<1	13	0.2	<1	<1	<5	<2	15	40
08-009	<0.2	1.2	51	<1	<0.5	5.2	1	5	<5	0.11	<1	4	0.4	<1	<1	<5	<2	4	20
08-010	<0.2	**11.8**	81	<1	0.8	23.1	9	18	<5	0.19	<1	19	0.4	<1	<1	<5	<2	15	60
08-011	<0.2	7	73	<1	<0.5	29.4	10	15	<5	<0.05	<1	24	0.2	<1	<1	<5	<2	39	40
08-012	<0.2	**49.7**	35	<1	<0.5	26.9	15	30	10	<0.05	1	31	<0.2	<1	<1	<5	<2	18	40
08-013	<0.2	5.9	40	<1	<0.5	27.4	7	18	<5	<0.05	1	15	<0.2	<1	<1	<5	<2	29	30
08-014	<0.2	8.4	64	<1	<0.5	29.1	8	29	<5	<0.05	1	24	0.4	<1	<1	<5	<2	25	30
08-015	<0.2	**19.5**	72	<1	<0.5	51.3	11	13	6	<0.05	<1	22	<0.2	<1	<1	<5	<2	38	50
08-016	<0.2	1.3	113	<1	<0.5	32.2	5	8	<5	0.16	<1	13	0.4	<1	<1	<5	<2	30	40
08-017	<0.2	2.7	74	<1	<0.5	31.8	7	7	<5	<0.05	<1	16	<0.2	<1	<1	<5	<2	27	30
08-018	<0.2	1.4	18	<1	<0.5	8.5	2	5	<5	<0.05	<1	5	<0.2	<1	<1	<5	<2	9	20
08-019	<0.2	1.1	22	<1	<0.5	12.7	3	2	<5	<0.05	<1	7	<0.2	<1	<1	<5	<2	14	20
08-020	<0.2	8.3	50	<1	<0.5	23	15	29	<5	<0.05	<1	26	<0.2	<1	<1	<5	<2	23	40

[a] Values in bold and shaded refer to soil metal concentrations that exceed CCME limits.

mg/kg= milligrams per kilograms; <= less than

Table A-2: Soil Metal Concentrations (mg/kg) Associated with each 2009 Sample Plot

Metal		Detection Limits	2007 CCME Guideline (agricultural)	2009 Soil Sample Plots							
				09-D01	09-D02	09-D03	09-D04	09-D05	09-D06	09-D08	09-D09
Aluminum	(Al)	10	n/a	9670	9530	1240	9580	6370	3550	5820	8460
Antimony	(Sb)	0.05	20	<0.050	<0.050	0.113	0.056	<0.050	0.067	<0.050	<0.050
Arsenic	(As)	0.05	12	6.66	**12.6** [a]	4.52	8.91	1.85	1.80	**20.3**	4.03
Barium	(Ba)	0.1	750	71.3	72.7	61.9	73.6	119	99.9	51.7	64.0
Beryllium	(Be)	0.2	4	3.11	3.71	0.24	2.74	1.73	0.92	2.11	2.73
Bismuth	(Bi)	0.3	n/a	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Cadmium	(Cd)	0.5	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	(Ca)	10	n/a	5530	6760	26700	1950	3270	4100	7680	5810
Chromium	(Cr)	0.5	64	39.3	39.5	2.98	37.0	33.0	10.5	23.2	36.2
Cobalt	(Co)	0.5	40	11.1	18.4	3.75	6.80	4.89	3.68	10.9	8.95
Copper	(Cu)	0.5	63	53.4	42.6	31.1	22.7	13.5	12.9	32.5	19.4
Iron	(Fe)	5	n/a	17900	21300	1700	16100	10300	5170	11600	15300
Lead	(Pb)	0.1	70	5.31	4.35	5.29	3.98	2.92	2.87	4.06	3.67
Lithium	(Li)	0.5	n/a	12.0	13.1	0.83	9.40	3.24	1.45	7.16	12.6
Magnesium	(Mg)	5	n/a	6740	6550	1060	5200	3850	1770	4520	7080
Manganese	(Mn)	0.2	n/a	238	425	271	90.6	138	50.9	237	251
Mercury	(Hg)	0.01	6.6	0.113	0.023	0.202	0.169	0.180	0.161	0.015	0.025
Molybdenum	(Mo)	0.05	5	0.679	0.688	1.34	0.648	0.484	0.322	0.297	0.244
Nickel	(Ni)	0.5	50	26.8	33.0	20.6	16.3	10.5	6.97	17.2	16.9
Phosphorus	(P)	20	n/a	658	672	939	885	1070	872	619	596
Potassium	(K)	100	n/a	2670	1970	1090	1330	2300	680	1110	2530
Selenium	(Se)	1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sodium	(Na)	100	n/a	320	310	130	<100	120	100	210	230
Strontium	(Sr)	0.3	n/a	31.5	41.2	195	19.4	17.8	29.8	32.2	28.6
Thallium	(Tl)	0.03	1	0.174	0.214	0.066	0.106	0.137	0.043	0.090	0.124
Tin	(Sn)	0.2	5	0.47	0.42	0.28	0.25	0.30	0.25	0.31	0.37
Titanium	(Ti)	0.5	n/a	824	945	67.6	446	666	300	574	878
Uranium	(U)	0.01	23	1.97	1.37	0.634	0.647	0.592	0.353	0.527	0.688
Vanadium	(V)	0.5	130	27.7	26.1	3.67	16.3	19.2	6.91	17.7	26.6
Zinc	(Zn)	0.5	200	46.7	48.9	53.5	39.7	44.7	32.5	32.3	36.3

[a] Values in bold and shaded refer to soil metal concentrations that exceed CCME guidelines.

mg/kg= milligram per kilogram; <= less than.

Appendix B
Plant Tissue Metal Concentrations 2008 and 2009

Table B-1: Range of Selected Metal Concentrations in Collected Plant Tissue in 2008

Scientific Name	Common Name	# of samples	Aluminum (Al) (mg/kg)	Arsenic (As) (mg/kg)	Iron (Fe) (mg/kg)	Manganese (Mn) (mg/kg)	Nickel (Ni) (mg/kg)	Zinc (Zn) (mg/kg)
Arctostaphylos alpina	Alpine manzanita	3	450 to 1890	0.7 to 2.1	266 to 1210	47.8 to 243	1.6 to 4.6	81.9 to 140
Aulacomnium moss	n/a	1	390	<0.2	256	749	3.8	48.6
Betula nana	Swamp birch	4	30 to 130	0.2 to 0.7	48 to 125	67.9 to 554	0.9 to 6	73.6 to 174
Carex aquatilis	Water sedge	3	190 to 520	1.8 to 3.7	245 to 1050	211 to 301	1.9 to 3.9	18.6 to 29.2
Carex misandra	Shortleaf sedge	1	170	0.5	187	121	4.1	17.5
Flavocetraria nivalis	Crinkled snow lichen	11	180 to 2090	0.2 to 1.4	140 to 1600	79.2 to 235	1 to 4.3	17.9 to 27.5
Empetrum nigrum	Black crowberry	11	30 to 880	0.2 to 1.1	33 to 628	271 to 860	2.1 to 4.9	11.7 to 19.8
Ledum paulstre ssp. *decumbens*	Marsh Labrador tea	2	70 to 80	<0.2 to <0.2	52 to 63	170 to 264	0.7 to 1	25.8 to 30.6
Oxytropis arctica var. belliii	Bell's Point-vetch	1	120	0.3	112	107	10	16.9
Poa sp.	Bluegrass	1	170	0.7	214	38.7	1.3	12.9
Salix planifolia	Tealeaf willow	1	40	<0.2	105	295	1.9	523
Salix lanata ssp. *richardsonii*	Lanate willow	1	220	1.7	389	136	2.6	378
Vaccinium uliginosum	Arctic blueberry	2	230 to 280	0.2 to 0.5	83 to 154	685 to 1160	1.2 to 1.6	39.3 to 46.3
Vaccinium vitis-idaea	Mountain cranberry	2	100 to 180	0.2 to 0.2	67 to 130	398 to 682	2.1 to 3.7	24.3 to 30.1

Table B-2: Range of Selected Metal Concentrations in Collected Plant Tissue in 2009

Scientific Name	Common Name	# of samples	Aluminum (Al) (mg/kg)	Arsenic (As) (mg/kg)	Iron (Fe) (mg/kg)	Manganese (Mn) (mg/kg)	Nickel (Ni) (mg/kg)	Zinc (Zn) (mg/kg)
Arctostaphylos alpina	Alpine manzanita	1	155	0.398	281	1.09	47.2	55.3
Betula nana	Swamp birch	2	16 to 26	0.097	49.4 to 53.9	0.63 to 9.72	126 to 1330	49.2 to 222
Flavocetraria nivalis	Crinkled snow lichen	2	186 to 511	0.389 to 0.405	238 to 317	1.74 to 3.05	99.8 to 123	19.6 to 32.3
Empetrum nigrum	Black crowberry	6	91 to 222	0.085 to 0.257	104 to 251	2.55 to 5.73	253 to 659	12.3 to 21.1
Ledum paulstre ssp. *decumbens*	Marsh Labrador tea	3	43 to 46	0	32.3 to 42.6	0.81 to 0.94	579 to 1020	31.5 to 37.5
Vaccinium uliginosum	Arctic blueberry	1	48	0.057	42.1	6.07	1470	31.3
Vaccinium vitis-idaea	Mountain cranberry	1	91	0	45.8	1.02	2380	25.8

mg/kg= milligram per kilogram