

Appendix G13

2016 Wildlife Monitoring Summary Report



MEADOWBANK MINE

2016 WILDLIFE MONITORING SUMMARY REPORT

FINAL

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SECTION 1 • EXECUTIVE SUMMARY

As a requirement of the NIRB Project Certificate, the 2016 Wildlife Monitoring Summary Report represents the 11th of a series of annual Wildlife Monitoring Summary Reports for the Agnico Eagle Mines Ltd. (Agnico Eagle) Meadowbank Mine (the project). Baseline and monitoring programs were first initiated in 1999 and will continue throughout the life of the mine. Details of the wildlife monitoring program for the project are provided in the Terrestrial Ecosystem Management Plan (Cumberland 2006). The 2016 report provides the objectives, methodology, historical and current year results, and management recommendations for each monitoring program. Each subsequent Wildlife Monitoring Summary Report builds on data presented in the previous year's report, and monitoring incorporates recommendations from the previous reports.

Six active Peregrine Falcon (*Falco peregrinus*) nests were observed and monitored at quarry sites along the AWAR in 2016, with successful nesting confirmed at four nests. No nesting activity was observed at Portage Pit in 2016 but a Rough-legged Hawk (*Buteo lagopus*) nest was observed in Goose Pit, although nesting success could not be determined. Raptor nest management plans were not warranted at any of the active nest sites as no project-related effects on raptor nesting success were observed.

The Government of Nunavut (GN) Caribou (*Rangifer tarandus*) collaring program, ongoing for the past eight years in the Baker Lake area, continued in 2016 with monitoring of existing collared animals and 13 additional collars deployed in 2016. Seasonal Caribou movements within and adjacent to the Meadowbank Regional Study Area (RSA) were tracked and mapped throughout the year. In 2016, collared Caribou were present in the RSA during the spring, late summer, fall, and early winter seasons. Movement of collared Caribou in proximity to the AWAR appeared to be more restricted in 2016, especially during spring and fall migration. Only one collared animal briefly crossed the AWAR in early October before turning back and heading east. Agnico Eagle continues to work with the GN to evaluate the collaring and monitoring data to ensure the protection of regional caribou movements.

A Hunter Harvest Study (HHS) was conducted from 2009 to 2015, but declining participation was making interpretation of hunting data increasingly difficult. Agnico Eagle suspended the program for 2016, but has begun discussions with the Baker Lake HTO and GN representatives regarding potential options for collecting hunting and fishing data in the Baker Lake area, and facilitating greater involvement of the local community, including the HTO. The program is planned to resume in 2017.

Typically during Caribou fall migration, road closure is required to ensure safe passage to migrating herds, but this was not required during the fall of 2016 (although one closure of the Vault Haul Road was required during the spring of 2016 because of Caribou presence). Sections of road were closed on four occasions during the spring, in all but one case for a herd of Muskox (*Ovibos moschatus*). More actions to deter Caribou presence around the mine site were required in January and February than in recent winter seasons. No Caribou or large predatory mammal fatalities occurred as a result of activities at the mine or along the AWAR in 2016. Improved food-handling practices and employee awareness programs at the mine site helped ensure that there were no mine-related Wolf (*Canis lupus*) or Wolverine (*Gulo gulo*) fatalities. With the Authorization of the GN officer, one Arctic Fox (*Vulpes lagopus*) needed to be euthanized after attempts to deter the animal were unsuccessful.

SECTION 2 • OVERVIEW

2.1 BACKGROUND

The Agnico Eagle Mines Ltd. (Agnico Eagle) Meadowbank Mine (the project), located in the Kivalliq Region of Nunavut (**Figure 2.1**), received a Project Certificate from the Nunavut Impact Review Board (NIRB) in 2006. The subsequent Water License, GN and AANDC Land Lease, and KIA Land Use Production Lease, allowed for the construction of a gold mine and ancillary facilities including an All Weather Access Road (AWAR), barge unloading facilities, lay-down area, and a fuel tank farm in the vicinity of the Hamlet of Baker Lake.

The 2016 annual report is the 11th of a series of annual Wildlife Monitoring Summary Reports for the project. The purpose of this report is to summarize the 2016 data collected from the wildlife monitoring programs, and to describe natural variation and potential mine-related changes in wildlife populations within and adjacent to the Meadowbank Gold Mine (the mine). The 2016 report describes monitoring objectives and methodology, historical and current year results, mitigation activities, and management recommendations based on 2016 monitoring results.

2.2 PROJECT DESCRIPTION

The Meadowbank Gold Mine (the mine or project), with an expected operating life of about nine years (or until Q3 2018), is located approximately 70 km north of the Hamlet of Baker Lake and 300 km inland from the northwest coast of Hudson Bay.

The scope of the Terrestrial Ecosystem Management Plan (TEMP) is to report on monitoring of the mine during construction, operation, maintenance, reclamation, and closure. This report includes data collected in 2016, the seventh year of operation. Construction of a 106.8 km AWAR between the Hamlet of Baker Lake, the nearest community, and the mine was completed in March 2008 and provides mine site access and re-supply, while on-site mine access roads connect open pit areas to ancillary facilities. Mine site facilities include a mill, power plant, maintenance facilities, tank farm for fuel storage, water treatment plant, sewage treatment plant, airstrip, and accommodations. Mine components include open pits, waste rock storage facilities, and a tailings storage facility.

Environmental baseline studies were conducted in the project area prior to mine approval and integrated into the current project design according to the 2006 TEMP. Wildlife Valued Ecosystem Components (VECs), which were identified in consultation with regulatory agencies and residents of Baker Lake, include vegetation cover (wildlife habitat), ungulates, predatory mammals, small mammals, raptors, waterbirds, and other breeding birds. Further details on the proposed project can be found in the Final Environmental Impact Statement (FEIS 2005).

**Figure 2.1:
Project Location Map**


Legend

- Capital City
- Towns/Villages
- Rivers
- Water
- National Parks

Data Sources:
 Natural Resources Canada
 Geological Survey of Canada
 Caslys Consulting Ltd.




Prepared for:



AGNICO EAGLE

By:



**CASLYS
CONSULTING**

In 2008, construction of the AWAR and numerous camp infrastructure facilities were completed, while in 2009, principal mine site construction commenced. Mine operation commenced in early 2010. Goose Pit was completely depleted in 2014 and the re-flooding trial was not completed in 2016. Agnico Eagle continued ongoing mining operations at Portage and Vault pits. Dewatering activities were completed on Phaser Lake in 2016. In anticipation of dewatering, a fish-out program was completed on Phaser Lake from 14 August to 26 September, with DFO approval. Over 1,300 fish were caught and 72% were successfully transferred to Wally Lake. Lake dewatering occurred from 26 August to 4 October. During dewatering and operations, Agnico Eagle continued to meet approved effluent discharge limits, and completed required monitoring of the receiving environment in Wally Lake. Phaser Pit pre-stripping is scheduled to begin in the second quarter of 2017.

2.3 STUDY AREA BOUNDARIES

The mine site Local Study Area (LSA) includes a 5 km radius area centred on the Main Site and a 5 km radius around the Vault Site creating an elliptical shape with a total area of 194 km² (**Figure 2.2**). The Regional Study Area (RSA) encompasses an area that includes a 25 km radius area around the Main Site and a 50 km wide corridor centred on the AWAR for a total area of 5,106 km² (**Figure 2.2**). The AWAR LSA consists of a 3 km wide corridor centred on the AWAR between Baker Lake and Meadowbank mine site (**Figure 2.2**). Justification for study area size can be found in previous wildlife monitoring summary reports.

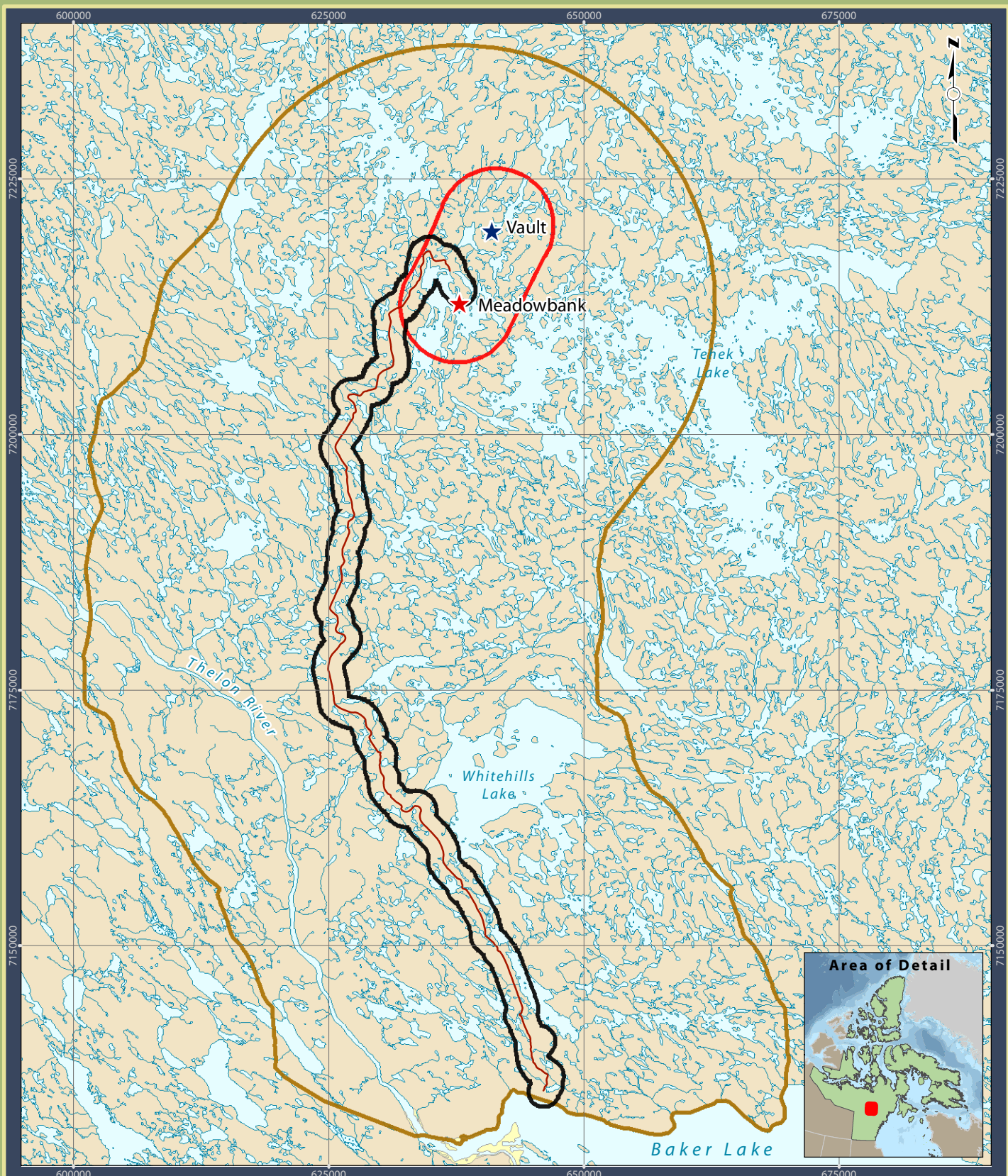
2.4 MONITORING APPROACH – LSA AND RSA

Wildlife monitoring is an essential tool in protecting and maintaining wildlife occurring in the vicinity of the project. A comprehensive monitoring strategy has been implemented and, as required, is adapted to meet the objectives of the management strategy set out in the TEMP (Cumberland 2006). Monitoring programs evaluate the effectiveness of mitigation measures and assess mine-related impact predictions. For all wildlife monitoring programs there is a certain level of uncertainty or unpredictability; therefore, residual effects identified during monitoring may require implementation of adaptive management strategies.

To effectively evaluate the accuracy of impact predictions, a series of quantitative monitoring indicators, which are within the broad categories of habitat distribution, wildlife distribution, wildlife richness, wildlife diversity, wildlife abundance, and environmental health, have been developed. These indicators have been described in detail in earlier annual reports.

2.5 MONITORING APPROACH – MINE SITE

Environmental staff monitor wildlife in close proximity to mine facilities and along the AWAR and Vault Pit Haul Road on a regular basis (discussed in detail in **Sections 6 and 7**). Where unacceptable risks to wildlife are observed, mitigation measures are implemented to avert animals from site activities in accordance with the TEMP (Cumberland 2006). Detailed reporting protocols (e.g., a dangerous animal occurrence, monthly wildlife reports submitted to the GN, road closure notification to GN, KIA, HTO, etc.) are established and implemented by on-site environmental staff. During these events, Agnico Eagle representatives communicate any issues directly with the GN Department of Environment (DoE) Conservation Officer, KIA, and the local HTO.



Legend

-  All-Weather Access Road
-  Local Study Area - All-Weather Road
-  Local Study Area
-  Regional Study Area

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 2.2: RSA and LSA Boundaries for Monitoring Studies

Meadowbank Gold Project

Prepared for:  By: 

2.6 REPORT OBJECTIVES

The primary objectives of the 2016 Wildlife Monitoring Summary Report include:

- Reporting the results of the 2016 wildlife monitoring programs;
- Summarizing the monitoring strategy implemented over the course of the year;
- Evaluating the function and validity of implemented monitoring strategies;
- Summarizing adaptive management strategies;
- Providing management recommendations for 2017; and
- Allowing regulators to contribute advice for improving wildlife management.

2.7 INUIT INVOLVEMENT

Since 1999, local Inuit from the Hamlet of Baker Lake have been involved in all wildlife-related baseline and monitoring surveys. A summary of the various programs and the average number of Inuit involved since 1999 is provided in **Table 2.1**. As required by the IIBA, “Anything done by Agnico in order to implement the TEMP [...] shall incorporate Inuit Qaujimanituqaugit”; therefore, traditional knowledge or IQ has been incorporated in this annual report.

Table 2.1: Inuit Involvement in Baseline and Monitoring Programs for the Meadowbank Mine.

Survey Description	Years Conducted (# of Years)	Average # of Inuit Involved
RSA Aerial Survey	1999, 2002 to 2008 (8) – discontinued	2
LSA Aerial Survey	1999, 2002 to 2008 (8) – discontinued	2
Breeding Bird Plots	2003 to 2012; 2015 (11)	2 to 3
Breeding Bird Transects	2005 to 2011; 2015 (8)	2
Waterfowl Nest Surveys	2004 to 2012 (9) - discontinued	3
Raptor Nest Surveys	2004 to 2007, 2010 to 2016 (11)	3 to 4
AWAR Ground Surveys	2004 to 2016 (13)	3 to 4
Habitat Mapping	2004 to 2005, 2010, 2012, 2014 (5)	1 to 2
Phenology Plots	2003 to 2005 (3) - discontinued	2

SECTION 3 • HABITAT MAPPING

The habitat mapping monitoring program was developed to describe the overall area of different Ecological Land Classification (ELC) units lost due to mine-related activities at three primary locations: Main and Vault sites (which together encompass the mine site), and the AWAR. The primary objective of the habitat mapping monitoring program is to confirm that estimated habitat losses associated with mine site and AWAR construction have not exceeded the threshold limits identified in the TEMP (Cumberland 2006) plus approved extensions. A detailed analysis was provided in the 2014 Wildlife Monitoring Summary Report and the next analysis is scheduled for the 2017 report. For monitoring program details, refer to the 2014 annual report.

Where unnecessary and unplanned habitat degradation has occurred, measures may be taken to reclaim or rejuvenate these areas. Measures may involve removal of contaminated soil, reseeded (e.g., native-grass cultivars and forbs such as nitrogen-fixing legumes), regrading and/or removal of material in affected areas leading to natural revegetation, and transplanting of vegetation.

SECTION 4 • BREEDING BIRD MONITORING

4.1 OVERVIEW

The breeding bird PRISM (Program for Regional and International Shorebird Monitoring) plot and bird transect monitoring programs were designed to evaluate potential project-related changes in breeding bird species abundance, richness, and diversity over time. The program is one component of the larger monitoring strategy to evaluate the success of mitigation measures implemented to minimize the amount of vegetation (i.e., bird habitat) removed or degraded (e.g., dustfall) by the project, and whether certain mine activities such as the mine site or AWAR have resulted in reduced or compromised habitat function or effectiveness (i.e., zone of influence) for breeding birds.

For the breeding bird transects, data analysis in 2011 and 2015 indicated that no road-related effects had been documented to date, and thresholds had not been exceeded; therefore, annual transect surveys do not need to be included in future years of the Meadowbank monitoring program.

4.2 OBJECTIVE

The objective of the breeding bird plot monitoring program is to confirm that a mine-related change of 20% function, determined by an increase or decrease in local breeding bird abundance, richness, and diversity, has not occurred. The program uses the widely accepted Canadian Wildlife Service's (CWS) PRISM protocols (CWS 2005). A secondary objective of the monitoring program is to determine more effective ways to prevent disturbance to nesting birds based on feedback from mitigation measures and observations.

4.3 DURATION

The breeding bird plot monitoring program is to continue every year during the construction period and for at least the first three full years of mine operation (2010 to 2012) in accordance with the TEMP (Cumberland 2006). The last PRISM plot survey was conducted in 2015.

4.4 RECOMMENDATIONS

For the breeding bird PRISM plots, data analysis in 2015 showed that most bird community indices were variable with little difference in overall trends between mine and control plots. Thresholds had not been exceeded and no additional management or mitigation considerations were necessary. The next set of PRISM plot surveys is planned for 2018.

SECTION 5 • RAPTOR NEST MONITORING

5.1 OVERVIEW

The raptor nest survey monitoring program has been designed to confirm that mine-related activities do not result in inadvertent negative effects on nesting raptors. Raptor surveys along the proposed AWAR alignment in 2005 (i.e., prior to construction) indicated that only low suitability habitat for nesting raptors was available. To construct the AWAR in 2007/2008, excavated and blasted rock materials were used from numerous quarries along the alignment, resulting in the creation of some moderate and high suitability raptor nesting habitat areas characterized by steep rock walls. Established nests within some of these quarries are monitored on an annual basis to evaluate occupancy.

5.2 OBJECTIVE

The primary objectives of the raptor nest survey monitoring program are to:

1. Confirm that raptor nest failures are not caused by mine-related activities. The threshold level is one nest failure per year; and
2. Confirm that no project-related mortality of raptors occurs. The threshold level of mortality is one individual per year.

5.3 DURATION

Raptor nest monitoring is to continue annually throughout the operation and decommissioning phases of the mine in accordance with the TEMP (Cumberland 2006).

5.4 METHODOLOGY

Between 2000 and 2009, raptors were periodically recorded during AWAR road surveys, waterbird nest surveys, and aerial surveys and investigated further, as required; however, given the overall low probability of raptor occurrence within the LSA and RSA, a specific raptor survey was not scheduled. In 2009, the observed active Peregrine Falcon (*Falco peregrinus*) nest at Quarry 19 prompted the initiation of a dedicated raptor nest survey in 2010. Surveys from 2011 through 2016 continued this work, focusing particularly on quarries along the AWAR. Sporadic survey in particular areas around the mine site (i.e., Portage, Goose, and Vault pits) was also conducted when raptor are seen in the pits during internal environmental inspection of the area or when employees had reported any sighting. Visual checks of active falcon nest sites were conducted during regular ground reconnaissance surveys along the AWAR. Non-disruptive monitoring techniques, which included monitoring nests from a vehicle within the quarry or from the AWAR, ensured that active nests were not approached by Agnico Eagle personnel. Using these techniques, environmental personnel were able to monitor nest success throughout the summer season. Nest monitoring was not completed along the Vault Road since neither quarries nor potential raptor habitat are present. Any observed raptor activity in this area is documented through regular mine site inspection and road surveys.

5.5 HISTORICAL RESULTS

Single nesting pairs of Peregrine Falcon were recorded in 1996 and 2005 in the Mine RSA, but nests in close proximity to mine facilities have only been routinely recorded since 2009, at which time, dedicated nesting surveys were included in the monitoring program. Six unique Peregrine Falcon nesting sites have been recorded during this period; five of these were located in quarries along the AWAR and one nest was located on the Portage Pit wall (observed in 2012 and 2013) (**Figure 5.1**). Not all of these unique nesting sites are active every year.

5.6 2016 RESULTS

In 2016, six active Peregrine Falcon nests were documented in Quarries 3, 7, 16, 18, 19, and 21 along the AWAR. One previous nest site at Quarry 2 (i.e., in 2014) was not active in 2016, while nesting was observed for the first time at Quarry 7 (see **Table 5.1**). Cumulative information on Peregrine Falcon nests from 2009 to 2016 is summarized in **Table 5.1** and **Figure 5.1**. In addition to the six active nest sites in 2016, Peregrine Falcon activity was also observed at four additional quarry sites (i.e., Quarries 13, 15, 17, 22) during the monitoring program.

A Rough-legged Hawk (*Buteo lagopus*) nest was observed this year in Goose Pit, although eggs and/or chick presence could not be confirmed due to its location.

Observations made throughout the nesting season on raptor activity and nest success are detailed in **Table 5.2**. Nesting success was confirmed through identification of maturing chicks at four out of six active nesting sites along the AWAR in 2016, all of which were previous nesting sites. Nesting success was not confirmed at Quarry 16, where a successful nest was observed for the first time in 2015. Nesting success was also not confirmed at the new site at Quarry 7, or the Rough-legged Hawk nest at Goose Pit. Specific raptor nest management plans were not warranted at any of the active nest sites. No nesting activity in more active areas of the mine (e.g., pits, waste rock piles) was observed; therefore, no steps were required to avert nesting activities.

Some additional observations on raptor activity around the mine site are included in **Appendix A**. Peregrine Falcon was observed flying over the mine site in May and June, as were Rough-legged Hawk. A Gyrfalcon (*Falco rusticolus*) was recorded in May, and a Bald Eagle (*Haliaeetus leucocephalus*) was observed feeding on a carcass in May at the old Portage WTP plant. Bald Eagle, Peregrine Falcon, Rough-legged Hawk, and Snowy Owl (*Bubo scandiacus*) were observed during AWAR surveys (**Section 7.6**).

Table 5.1: Record of Peregrine Falcon and other Raptor Nesting along the AWAR and in the LSA.

Quarry	2009	2010	2011	2012	2013	2014	2015	2016	Comments
1	No	No	No	No	No	No	No	No	Shallow quarry.
2	No	Yes	Yes	Yes	Yes	Yes	No	No	Good cliff faces for nesting. After five years of nesting, no activity since 2014.
3	No	Yes	Yes	Yes	Yes	No	Yes	Yes	2 adults, 3 maturing chicks that presumably fledged. No activity observed until late September when 1 adult spotted nearby.
4 to 6	No	No	No	No	No	No	No	No	Shallow quarry and/or flooded, so not well suited for nesting.
7	No	No	No	No	No	No	No	Yes	Old raven nest. Fractured rock forming cliff faces but limited ledges. 1 adult around nest misdirecting observers. No eggs or chicks observed during season.
8	No	No	No	No	No	No	No	No	No cliff faces, so not well suited for nesting.
9	No	Yes ¹	Yes ¹	No	No	No	No	No	Lots of fractured rock forming cliff faces but limited ledges.
10 /11	No	No	No	No	No	No	No	No	Shallow quarry and/or flooded, so not well suited for nesting.
12	No	No	No	No	No	No	No	No	Shallow quarry and/or flooded, so not well suited for nesting.
13	No	No	No	No	No	No	No	No	Shallow quarry and/or flooded, so not well suited for nesting. 2 adults flying overhead in late September; no nest.
14	No	No	No	No	No	No	No	No	Shallow quarry and/or flooded, so not well suited for nesting.
15	No	No	No	No	No	No	No	No	Shallow quarry and/or flooded, so not well suited for nesting. 1 adult observed in vicinity on one occasion; no nest.
16	No	No	No	No	No	No	Yes	Yes	Moderate depth with good cliff faces, no ledges. 2 adults observed flying and intimidating observers, no eggs or chicks observed during season.
17	No	No	No	No	No	No	No	No	Very shallow quarry. 2 adults flying and intimidating observers; no nest.
18	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Good, high cliff face but no ledges. 2 adults observed intimidating, 1 chick confirmed and presumably fledged. One adult observed in September.
19	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Good, vertical cliff face, some suitable ledges. 2 active adults, 3 maturing chicks observed over summer and presumably fledged. 1 adult still remaining in late Sept.
20	No	No	No	No	No	No	No	No	Very shallow quarry, so not well suited for nesting.
21	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Good, high cliff face, no ledges. 2 active adults, 4 maturing chicks over summer and presumably fledged. 1 chick in nest in mid-August. 1 adult observed in late August.
22	No	No	No	No	No	No	No	No	Good, high cliff face, but nesting has not been confirmed. 2 adults observed in vicinity; no nest.
Portage	No	No	No	Yes	Yes	No	No	No	No falcons observed.
Vault	NA	NA	NA	NA	No	No	No	No	No falcons observed.
Goose	NA	NA	No	No	No	No	No	Yes	Rough-legged Hawk nest observed in 2016; not possible to confirm egg or chick presence.

2016 WILDLIFE MONITORING SUMMARY

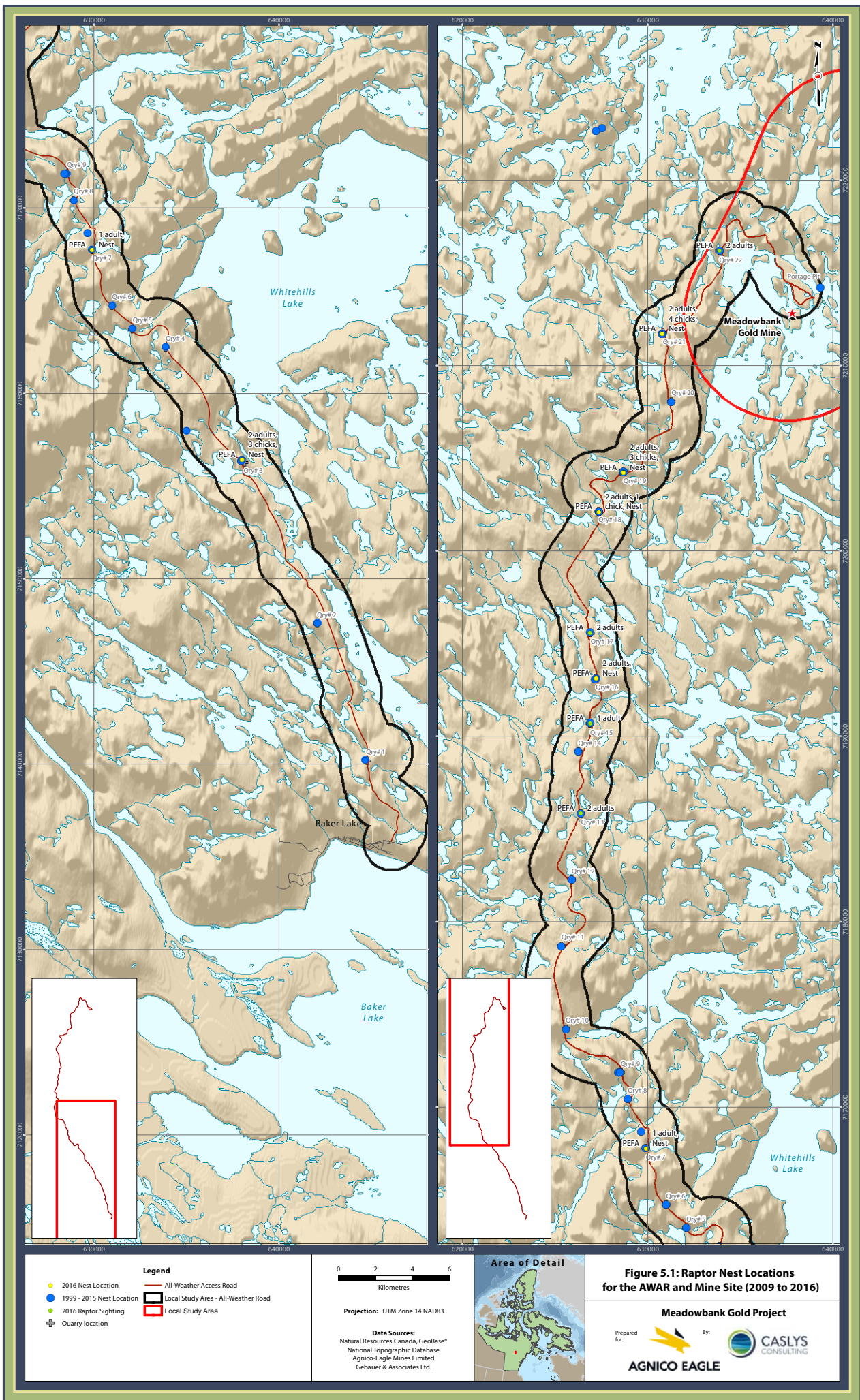
Table 5.2: Raptor Nests Identified and Monitored at the Mine Site and along the AWAR between Baker Lake and the Meadowbank Mine Site in 2016.

Quarry or Pit Location	GN Site # ¹	Species	Location (UTM)	2016 Observation Date	Observations
3	4004	Peregrine Falcon	14W 0638009 7156419	24 June	1 adult
				26 July	2 adults, 3 chicks
				9 Aug	2 adults, 3 maturing chicks
				17 Aug	No activity
				30 Sept	1 adult perched on quarry wall
7	n/a	Peregrine Falcon	14W 0629905 7167764	17 July	1 adult
				22 July	1 adult, misdirecting observers
				17 Aug	1 adult
				20 Sept	No activity
13	n/a	Peregrine Falcon	n/a	30 Sept	2 adults flying over
15	n/a	Peregrine Falcon	n/a	30 Aug	1 adult
16	4007	Peregrine Falcon	14W 0627212 7193129	10 June	1 adult
				17 July	1 adult
				22 July	2 adults, flying to intimidate
				5 Aug	1 adult
				9 Sept	1 adult
17	n/a	Peregrine Falcon	n/a	22 July	2 adults, flying to intimidate
				9 Sept	1 adult
18	4008	Peregrine Falcon	14W 0627351 7202109	3 June	1 adult
				24 June	1 adult
				17 July	1 adult
				22 July	1 adult, flying to intimidate
				23 July	2 adults, 1 chick in nest
				26 July	2 adults, 1 chick in nest
				5 Aug	1 adult
				9 Aug	2 adults, no chick confirmed
				17 Aug	2 adults, no chick observed
				2 Sept	1 adult
				20 Sept	2 adults flying over
23 Sept	1 adult perched				

Table 5.3: Continued.

Quarry or Pit Location	GN Site # ¹	Species	Location (UTM)	2016 Observation Date	Observations
19	3901	Peregrine Falcon	14W 0628686 7204285	10 June	1 adult
				14 June	1 adult
				24 June	2 adults
				17 July	2 active adults
				23 July	2 adults, 3 chicks in nest
				26 July	2 adults, 3 chicks in nest
				5 Aug	1 adult
				9 Aug	2 adults, 3 maturing chicks
				17 Aug	1 adult
				30 Aug	1 adult
				2 Sept	2 adults
				9 Sept	1 adult
				20 Sept	No activity
23 Sept	1 adult flying				
21	4009	Peregrine Falcon	14W 0630781 7211705	10 June	1 adult
				24 June	1 adult
				17 July	2 active adults
				23 July	2 adults, 3 to 5 chicks in nest
				26 July	2 adults, 4 chicks confirmed in nest
				5 Aug	1 adult
				9 Aug	2 adults, 4 large maturing chicks
				17 Aug	2 adults, 1 chick observed
				30 Aug	1 adult
				20 Sept	No activity
22	n/a	Peregrine Falcon	n/a	12 Aug	2 adults flying and diving
Goose Pit	n/a	Rough-legged Hawk	14W 0638699 7212031	24 July	1 hawk and nest, but not possible to monitor

¹ Government of Nunavut (GN) Raptor Database site number



Legend

- 2016 Nest Location
- 1999 - 2015 Nest Location
- 2016 Raptor Sighting
- ⊕ Quarry location
- All-Weather Access Road
- ▭ Local Study Area - All-Weather Road
- ▭ Local Study Area

0 2 4 6
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited
 Gebauer & Associates Ltd.



Figure 5.1: Raptor Nest Locations for the AWAR and Mine Site (2009 to 2016)

Meadowbank Gold Project

Prepared for: By:

5.7 ACCURACY OF IMPACT PREDICTIONS

A summary of the impact predictions identified in the TEMP (Cumberland 2006) is provided in **Table 5.3**. The 2016 raptor monitoring data were compared to the impact prediction thresholds to evaluate adherence to impact predictions and provision of adaptive management, as either a necessary or proactive measure.

Table 5.4: Accuracy of Impact Predictions – Disturbance to Nesting Raptors for the AWAR and Mine Site, and Raptor Mortality.

Potential Effect	Threshold	Threshold Exceeded (2016)	Adaptive Management Implemented	Status
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by mine-related activities. Threshold is one nest failure per year.	NO	NO	AWAR Surveys Dedicated Raptor Nest Surveys Daily / Weekly Systematic Mine Site Ground Surveys
Raptor Mortality	One (1) individual	NO	NO	AWAR Surveys Daily / Weekly Systematic Mine Site Ground Surveys

5.8 MANAGEMENT RECOMMENDATIONS

Quarrying activities along the AWAR corridor have created moderate to high suitability Peregrine Falcon nesting habitat. Falcons are expected to continue to use select quarries for the foreseeable future, which may necessitate the implementation of a raptor nest management plan for nests if deemed necessary. Agnico Eagle will continue to:

- Conduct raptor nest surveys annually at each of the quarries along the AWAR early in the nesting season (mid- to late June) to confirm the status of previously confirmed raptor nests, assess the presence of new raptor nests, and determine the need, if any, for a raptor nest management plan;
- Monitor active raptor nests weekly in the breeding season to confirm nest success or failure;
- Ensure that environmental personnel maintain accurate records of nesting activity and success for all active nests for the duration of these surveys in order to determine if thresholds are exceeded;
- Monitor pits and waste rock piles at the mine site to avert nesting attempts by raptors. If a nest is established, the general mine site Peregrine Falcon Management and Protection Plan will be followed; and
- If the Management Plan is not successful in averting falcon nesting in active mining pits, consult with Dr. Franke to discuss site-specific protective measures and, if needed, deterrence recommendations to ensure falcon protection. Dr. Alastair Franke, from the University of Alberta, has been conducting research on raptors in Nunavut since 2003.

SECTION 6 • MINE SITE GROUND SURVEYS

6.1 OVERVIEW

The mine site ground survey monitoring program has been designed to verify that impacts to wildlife in and around the mine site LSA are not occurring. The program has a strong emphasis on monitoring mortality of various wildlife groups utilizing habitats in the vicinity of the mine site. In addition, the mine site ground survey monitoring program is an integral component of the monitoring strategy for evaluating sensory disturbance indicators for Caribou (*Rangifer tarandus*).

6.2 OBJECTIVES

The primary objectives of the mine site ground surveys are to:

1. Evaluate whether mine-related construction and operation activities preclude Caribou from using suitable habitats beyond 500 m (considered to be an average across various disturbance types) of mine buildings, facilities, and roads. Threshold level within mine facilities is unnatural Caribou use patterns beyond 500 m. The threshold level along the AWAR is unnatural Caribou use patterns beyond 1,000 m (also see **Section 7**);
2. Confirm that Caribou will not be killed through other mine-related mortality such as falling in pits, tailings sludge, or other means. The threshold level of mortality is one individual per year;
3. Verify that measures are in place such that no Grizzly Bears (*Ursus arctos*) or Wolverines (*Gulo gulo*) will need to be destroyed at the mine site. The threshold level of mortality for predatory mammals is one individual per year; and
4. Verify that high value habitats (e.g., sedge meadows) are avoided, and all activities within 100 m of a bird nest site during the latter part of the nest stage (fledgling) are avoided.

6.3 DURATION

The mine site ground surveys are to be conducted regularly by Agnico Eagle environmental personnel over the operation and closure phases of the mine to verify that changes to habitats around the mine site do not cause effects to wildlife and their use of habitat.

6.4 METHODOLOGY

6.4.1 Mine Site Inspections

In 2016, environmental personnel conducted regular mine site inspections focusing on waste management, spills, hazardous waste management, and wildlife monitoring. Formal mine site inspections were carried out at least weekly as part of the broader environmental on-site management. During these inspections, non-conformities were identified and rapidly address by the responsible department.

Weekly inspections included:

- Regular monitoring of Caribou and Muskox (*Ovibos moschatus*) in the vicinity of the facilities. Large mammal presence within the mine is documented during daily and weekly (formal) inspections. Any issues related to safety or proximity effects are identified and the appropriate mitigation is implemented. If risks to animal health are perceived, efforts are made to avoid the wildlife and provide them the right of way. In 2016, weekly mine-site ground survey inspections were conducted;
- Regular monitoring of all large mammals on the site;
- Regular monitoring of breeding birds (especially in the spring). No nests were found in 2016 therefore no additional monitoring occurred; and
- Inspections of waste management areas, bins, and hazardous material storage.

During environment department inspections and wildlife ground surveys, which focus on migratory birds, ungulates, Arctic Fox (*Vulpes lagopus*), Wolf (*Canis lupus*), Grizzly Bear, and Wolverine, or through general employee observations or incidence reports provided to the environment department, technicians record and follow up as needed to ensure the protection of wildlife near the mine site. These observations, along with monitoring and deterring activities are recorded in **Appendices A** and **B**. Monthly summary reports and wildlife observation data are submitted to the GN. Quarterly reports are submitted to the KIA.

No ancillary construction activity was undertaken without environmental notification and all activities were within the predicted and approved mine footprint as confirmed through environmental inspections, ground surveys, and coordination with engineering and site services on the mine site. All areas used by the mine have been accepted and approved by regulators and the KIA through submission and acceptance of annual reports and updated management plans.

6.4.2 Incidental Mine Site Wildlife Observations

All mine site personnel, including construction and support staff, are required to document and report wildlife observed within the boundaries of the mine as well as ancillary areas (particularly the AWAR). The protocol involves filling out a wildlife log form located in designated areas or by notifying staff in the environment department, which is intended to ensure that potential problem animals are identified in accordance with Appendix A - Section 2.2.8 (Reporting Wildlife Observations and Incidents) of the TEMP (Cumberland 2006). Completed incidental wildlife log forms are collected on a regular basis for review by environmental personnel. Pertinent data, and daily and weekly mine site inspection reports are consolidated and entered into a database (**Appendix A**). Monthly summary reports and wildlife observation data are submitted to the GN. Quarterly reports are submitted to the KIA.

6.4.3 Waste Management and Landfill

Operation and management of on-site waste is an important component of wildlife management at Meadowbank. The monitoring program in 2016 built on the successes and approaches of monitoring in previous years (see 2014 Wildlife Monitoring Summary Report for details).

6.5 2016 RESULTS

6.5.1 Incidental Wildlife Observations

Mine site incidental observations were consolidated from the daily and weekly inspection reports, and observations by mine personnel (see **Appendix A**). Observations were used by environmental personnel to monitor wildlife activity within the mine site and identify potential problem animals. A summary of observations that required action is provided in **Table 6.1** below.

In 2016, records indicate that more deterrence action was taken around the mine site, especially for Caribou in January and February. Deterrence ranged from minimal actions (i.e., blocking the road, approaching animals or herds on foot or by vehicle) to more aggressive use of flares and scare cartridges. In the majority of cases, deterrence proved effective (**Table 6.1** and **Appendix A**).

Trends and unique wildlife observations around the mine site are discussed in the following sections. In some cases, observations led to direct action to prevent human-wildlife conflict. For example, in December 2016, a memo was distributed to all employees and contractors regarding wildlife encounter protocols as a result of more frequent observations around the mine site of Arctic Fox, Red Fox (*Vulpes vulpes*), Caribou, and Wolverine (see **Appendix B**).

6.5.2 Breeding Bird Nest Monitoring

No breeding bird nests were found or monitored at the mine site or along the AWAR in 2016.

2016 WILDLIFE MONITORING SUMMARY

Table 6.1: Wildlife Presence Requiring Action (from Appendix A).

Date	Species	#	Location	Action
07 Jan	Caribou	2	Vault Ring Road	Deterred (blocked road)
09 Jan	Caribou	2	Vault Ring Road	Deterred (blocked road)
11 Jan	Caribou	2	Vault Ring Road	Deterred
14 Jan	Caribou	2	Vault Ring Road	Deterred
15 Jan	Caribou	2	Vault Ring Road/Parking	Deterred (truck)
17 Jan	Caribou	2	Vault Parking area	Deterred
20 Jan	Caribou	2	Vault Parking area	Deterred (flares and screamers)
21 Jan	Caribou	8	Vault Parking area	Deterred (truck)
25 Jan	Caribou	2	Vault Parking area	Deterred (truck)
27 Jan	Caribou	2	Vault Camp area	Deterred (scare cartridges)
31 Jan	Caribou	2	Vault Camp area	Deterred (scare cartridges)
2 Feb	Caribou	2	Vault Camp area	Deterred (scare cartridges)
7 Feb	Caribou	2	Vault Camp kitchen	Deterred (walking)
9 Feb	Caribou	2	Vault Camp kitchen	Deterred (walking)
16 Feb	Caribou	2	Vault explosive area	Deterred (truck)
21 Feb	Caribou	2	Vault Road/Camp	Deterred (walking)
22 Feb	Caribou	2	Vault Road/Camp	Deterred (walking)
10 Mar	Wolverine	1	Sludge dump	Deterred
18 Mar	Caribou	3	Vault Camp	Deterred (to prevent road access)
29 Mar	Caribou	2	Airport	Deterred (off airstrip)
30 Mar	Caribou	8	WTP	Deterred
5 Apr	Caribou	8	Airport	Deterred (off airstrip)
7 Apr	Wolf	1	Fuel farm/Core shack/ Nova Camp/Quarry 23	Deterred
10 Apr	Wolf	1	Incinerator	Deterred
22 Apr	Wolf	1	Sana Crusher	Deterred
27 Apr	Caribou	7	Airport	Deterred (off airstrip)
1 May	Wolf	1	Fresh water barge / Sludge dump	Deterred
2 May	Arctic Fox	1	Vault Pit	Deterred
5 May	Caribou	15	Airport	Deterred (off airstrip – ineffective)
10 May	Arctic Fox	2	Vault Pit	Deterred (ineffective)
17 May	Geese	38	Tailings Pond	Deterred (ineffective)
19 May	Geese	30+	Tailings Pond	Deterred
21 May	Geese	100+	South Cell Tailings Pond	Deterred
21 May	Caribou	30	North Cell Tailings Pond	Deterred
2 June	Long-tailed Ducks	10	Tailings Storage Facility	Deterred

Date	Species	#	Location	Action
4 June	Long-tailed Ducks	20	Tailings Storage Facility	Deterred
6 June	Long-tailed Ducks	20	Tailings Storage Facility	Deterred
9, 11 June	Ducks	30	Tailings Storage Facility	Deterred (ineffective)
12 July	Arctic Fox	1	Unknown (hiding)	Deterred
23 Oct	Wolverine	2	Mine site	Deterred
30 Oct	Arctic Fox	5	Mine site, site services	Deterred (ineffective)
31 Oct	Arctic Fox	2	Mine site, site services	Deterred
14 Nov	Wolverine	1	Mine site	Deterred
5 Dec	Arctic Fox	1	Mine site	Deterred

6.5.3 Waterbird Monitoring

To minimize accidental waterbird confinement around the mine site, entrapment in the tailings, and mortality, regular inspections were completed throughout the migratory period and during weekly or daily inspections, as deemed necessary by environmental personnel. A large flock of geese frequenting the Tailings Pond in May were deterred, as well as a flock (perhaps the same flock) observed in the South Cell Tailings Pond. Bird deterrents (i.e., cannons) were installed around the Tailings Pond to deter migratory birds. Long-tailed Ducks (*Clangula hyemalis*) in the Tailings Storage Facility in early June were repeatedly but successfully deterred (**Table 6.1** and **Appendix A**). Technicians inspected the Tailings Storage Facility daily for waterbird presence in June.

A juvenile Merganser was killed when it became entangled in gill nets during the Phaser Lake fish-out operation. The Conservation Office was notified, and the specimen was brought to the Officer (**Table 6.2** and **Appendix C**).

6.5.4 Raptor Monitoring

Raptor monitoring was conducted as part of routine mine site inspections of the pit and other areas to ensure adequate bird protection and management (see **Appendix A**). Peregrine Falcons were observed around the mine site from May to August; one Peregrine Falcon was observed flying on a number of days in May around the West Diversion Ditch and Vault Road, and one falcon was observed at Portage Pit A (note that no Peregrine Falcon nests were observed at the mine site in 2016). Rough-legged Hawks were observed in May and June, flying in the vicinity of Portage Pit, Goose Pit, the Tailings Storage Facility, and the Vault area (note that a nest was observed at Goose Pit in 2016; see **Section 5.6**). Snowy Owls were sighted in June and October. One Bald Eagle was observed eating a carcass in May near the mine site, and another was seen flying overhead in August.

6.5.5 Caribou and Muskox Protection

Caribou were frequently observed in close proximity to the mine site in January and February, in particular around the Vault area (**Table 6.1** and **Appendix A**). The Conservation Officer was notified and agreed with the need for more active deterrence actions, which were implemented on a number of occasions in late January and early February. On one occasion, two Caribou narrowly escaped being hit by a pick-up truck on Vault Road at Vault Camp after running across the berm. Throughout this period, Agnico Eagle continued to advise the Conservation Officer of deterrence efforts. By March, Caribou presence had returned to seasonal norms. None of these animals were collared Caribou, as collar data did not indicate any animals present in the RSA in late winter (**Section 9.6**).

By August, an increasing number of Caribou were recorded in and around the mine site, with a steady number observed into September. During the first 10 days of October, a herd of 500 to 1,000 Caribou were observed walking and grazing near the mine site. These large numbers of Caribou were regularly monitored, but no deterrence actions were necessary. By 19 October, the larger herd appeared to have moved on, as only 100 Caribou were recorded walking nearby. Observations were used to advise specific areas of operation (e.g., airstrip) as well as general reminders on road safety (see **Appendix A** and **Section 7.6**).

Muskox herds were observed around the mine site in 2016. A herd of 15 to 30 individuals was present in the Vault area beginning in May until mid-June (**Appendix A**). This same herd appeared to have moved to the area around the AWAR in June (**Section 7.6**). In May, Muskox observed close to Vault Road resulted in road closure and notification of the Conservation Officer (**Appendix B**). A steady number of Muskox (15 to 30 individuals) was also observed throughout August and into September. In mid-November, 30 Muskox were again recorded grazing near the mine site, which were likely the same herd as reported earlier. No deterrence was needed for any of these observed animals.

6.5.6 Predatory Mammal Deterrence and Protection

Improved practices for waste segregation and incineration, the use of enclosed food waste facilities, and skirting around buildings have improved Arctic Fox protection and decreased fox-human interactions. Weekly inspections by environmental personnel provided monitoring data that indicated re-occurrences of Arctic Fox on-site, but no trapping was required in 2016 (**Appendix A**). A visually impaired fox was observed at East Dike in January, and the Conservation Officer was notified by phone, but this fox was not observed afterwards (**Appendix B**). In October and November, increased sightings of Arctic Fox around the front desk area prompted a memo to all employees and contractors concerning wildlife safety, and notification of the Conservation Officer (**Appendix B**). One nuisance Arctic Fox was euthanized in November following authorization by the Conservation Officer after deterrence methods were not effective (see **Appendix C** for Incident Report). Two other Arctic Fox were found dead of unknown causes (see **Table 6.2**). Relevant internal communications and notifications to the Conservation Officer are provided in **Appendix B**.

Less Wolverine deterrence was required throughout most of the year. Only one deterrence incident in the sewage sludge disposal area (historically an attractant for Wolverine during the winter) was required in March (see **Table 6.1** and **Appendix A**). Increased sightings of Wolverines around the mine site in November prompted a communication to all employees and contractors concerning wildlife safety, as well as active deterrence (**Appendix B**). Environmental personnel actively deterred Wolverines following the Bear Wise deterrence training. Well defined food-handling practices and employee awareness programs at the mine site appear to be minimizing Wolverine fatalities or Wolverine-human interactions.

Two Wolf packs were observed chasing Caribou in January; five Wolves on the east side of Vault Road, and seven Wolves near Bay Goose (**Appendix A**). Wolves were also recorded on a number of occasions in April, required deterrence actions in more than one instance, and prompted notification of the Conservation Officer (**Table 6.1** and **Appendix B**). Recorded observations continued throughout May and infrequently into the summer, but no further action was required. A Caribou carcass from a Wolf kill near South Cell Tailings Pond required removal and incineration in May; a report was sent to the Conservation Officer (**Table 6.2** and **Appendix C**).

Grizzly Bears were observed in the vicinity of the emulsion plant at the mine site in May 2016 (**Appendix B**), but no deterrence actions were required. Some Grizzly Bears were also observed along the AWAR (**Section 7.6** and **Appendix B**).

6.5.7 Wildlife Mortality – Mine Site

A summary of recorded wildlife fatalities near or within the mine site in 2016 is provided in **Table 6.2**, and a summary of fatalities to date from historical data is provided in **Table 6.3**. Copies of mortality incident reports can be found in **Appendix C**. All AWAR-related fatalities are tabulated and discussed in **Section 7.6.3**.

6.5.7.1 Caribou

No Caribou mortalities related to project activities were reported at the mine site in 2016. All incident reports, observations, deterrence activities, and environment team responses to Caribou sightings are included in **Appendix A**. Caribou mortalities along the AWAR are discussed in **Section 7.6.3**.

6.5.7.2 Predatory Mammals

No Wolf, Grizzly Bear, or Wolverine mortalities were reported related to activities at the mine site in 2016. All incident reports, observations, deterrence activities, and environment team responses to predatory mammal sightings are included in **Appendices A, B, and C**.

Table 6.2: 2016 Mine Site Wildlife Fatality Log.

Date	Species	Count	Location	Comments
13 Mar	Ptarmigan	1	Main camp	Flew into building window
27 May	Caribou	1	South Cell Tailings Pond	Wolf kill; carcass removed and incinerated
26 Sept	Duck	1	Phaser Lake	Caught in fishing nets during Phaser Lake fish-out program.
1 Nov	Arctic Fox	1	Mine site	Fox euthanized following unsuccessful deterrence
16 Nov	Arctic Fox	1	Mine site	Died of unknown causes
20 Nov	Arctic Fox	1	Mine site	Died of unknown causes; Red Fox eating carcass
5 Dec	Arctic Hare	1	Mine site	Died of unknown causes

Table 6.3: Summary of Mine Site Wildlife Fatality Records for Caribou and Predatory Mammals (2007 to 2016).

Year	Caribou	Grizzly Bear	Wolverine	Wolf
2007	0	0	0	0
2008	0	0	0	2
2009	0	0	0	4
2010	0	0	0	1
2011	0	0	1	4
2012	0	0	0	1
2013	0	0	1	0
2014	0	0	0	1
2015	4 ¹	0	0	1 ²
2016	1 ³	0	0	0

¹ One Caribou died of natural causes while three were killed by wolves.

² Naturally injured Wolf that needed to be euthanized.

³ One Caribou killed by wolves.

6.5.7.3 Other Wildlife

One waterbird mortality occurred on the Meadowbank site in 2016. A dead juvenile Merganser duck was caught in gill nets during the Phaser Lake fish-out program in September (see **Appendix C** for Incident Report). The carcass was given to the Conservation Officer. On 13 March, a Ptarmigan was killed when it flew into a window at the main camp site; the carcass was also provided to the Conservation Officer (**Appendix C**). One Arctic Fox had to be euthanized in 2016 (see **Table 6.2** and **Appendix C**).

6.6 ACCURACY OF IMPACT PREDICTIONS

Table 6.4 provides a summary of the impact predictions identified in the TEMP (Cumberland 2006) that are evaluated, in part, by the mine site ground surveys. Specifically, the 2016 mine site ground survey monitoring data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure.

6.7 MANAGEMENT RECOMMENDATIONS

The following are specific management recommendations for the mine site ground survey monitoring program:

- Continue to conduct informal daily and weekly mine surveys to verify that effects to wildlife are not occurring as a result of mine-related activities;
- Continue raptor nest monitoring around the mine site LSA and along the AWAR;
- Continue to apply the Wildlife Protection and Response Plan (Agnico 2014, and reviewed by GN DoE), which includes waste provisions, training, incident reporting, and protocols for problem wildlife;
- Continue training and re-education to ensure that incidental wildlife reporting is completed by all mine site personnel such that environmental personnel can remain informed of pertinent wildlife-related activity in the vicinity of the mine site;
- Monitor tailings ponds daily during the waterbird migration period, beginning in mid-May. Increase the frequency of deterrent use if required; and,
- Implement methods to avoid waterbird mortality during fish-out or other programs using fish nets (e.g., implement bird deterrence prior to net deployment, adjust timing of net deployment based on waterbird presence).

2016 WILDLIFE MONITORING SUMMARY

Table 6.4: Accuracy of Impact Predictions – Mine Site Wildlife Disturbances.

Potential Effect	Threshold	Threshold Exceeded (2016)	Adaptive Management Implemented	Status
Sensory Disturbance	Mine-related construction and operation activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 500 m of mine buildings, facilities and roads.	NO	NO	Daily / Weekly Systematic Mine Site Ground Surveys; Incidental Wildlife Reporting; Satellite-collaring Data
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by mine-related activities. Threshold is one nest failure per year.	NO	NO	Daily / Weekly Systematic Mine Site Ground Surveys; Incidental Wildlife Reporting; Dedicated Raptor Nest Surveys; AWAR Surveys
Healthy Prey Populations	Maintenance of healthy prey populations to ensure integrity and health of raptor habitats. Thresholds are qualitative, and can be achieved through management and maintenance of vegetation and healthy prey communities.	Not completed in 2016	NA	Annual PRISM Plot surveys; ELC Habitat Mapping
Disturbance of Nesting, Roosting or Moulting Waterfowl	Mine facilities and activities will not affect the breeding success of waterbirds occurring in the area or disturb large concentrations of roosting or moulting waterbirds. Threshold level is one nest failure per year.	NO	NO	Daily / Weekly Systematic Mine Site Ground Surveys; Waterbird Nest Surveys
Project-related Mortality	Destruction of one problem Grizzly Bear or Wolverine at Meadowbank Site per year.	NO	NO	Daily / Weekly Systematic Mine Site Ground Surveys
Project-related Mortality	One Caribou or Muskoxen mortality per year as a result of mine-related activities (e.g., falling into pits, tailing, sludge or other means)	NO	NO	Daily / Weekly Systematic Mine Site Ground Surveys
Project-related Mortality	Waterbirds will not be killed at the mine site. Threshold is one individual per year.	YES	YES More intensive monitoring during migratory period Special care should be taken during any future aquatic programs	Daily / Weekly Systematic Mine Site Ground Surveys
Project-related Mortality	Breeding birds will not be killed at the mine site. Threshold is 50 individuals per year.	NO	NO	Daily / Weekly Systematic Mine Site Ground Surveys

SECTION 7 • ALL-WEATHER ACCESS ROAD AND VAULT ROAD GROUND SURVEYS

7.1 OVERVIEW

The AWAR and Vault Road systematic ground survey monitoring program has been designed to evaluate sensory disturbance for wildlife, particularly Caribou and Muskoxen, utilizing habitats adjacent to the road. The program also monitors mortality of species with a potential to utilize habitats in the vicinity of the AWAR.

7.2 OBJECTIVES

The primary objectives of the AWAR and Vault Road ground survey monitoring program are to:

1. Document wildlife utilization along the AWAR and Vault Road corridors;
2. Evaluate wildlife trends along the AWAR and Vault Road corridors, including identifying areas where higher densities of wildlife are observed. Evaluate whether road-related operations preclude Caribou from using suitable habitats beyond 1,000 m. The threshold level along the AWAR is unnatural Caribou use patterns beyond 1,000 m;
3. Assess the need for adaptive mitigation, such as temporary road closures during peak Caribou migration periods; and
4. Confirm that Caribou are not killed through road-related mortality. The threshold level of mortality for ungulates and predatory mammals is one individual per year.

7.3 DURATION

The AWAR and Vault Road systematic ground surveys are ongoing and are to be conducted a minimum of once per week throughout the year, and twice per week during Caribou migration (contingent on weather, road access and personnel availability) over the operation phase of the mine. Monitoring of vehicle collisions and mortality is continual. Agnico Eagle is committed to conducting approximately 75 AWAR road surveys per year.

7.4 METHODOLOGY

Beginning in early 2016, road surveys were expanded beyond the AWAR to include the recently completed Vault Haul Road.

The terrain on both sides of the road (to a maximum horizontal distance of approximately 1 km perpendicular from the road edge) is surveyed as the vehicle progresses at a maximum speed of 30 km per hour. The survey team typically includes two observers, one being the driver. For each sighting, the vehicle is safely parked in a road pullout and UTM coordinates are recorded along with the estimated distance of the animal(s) from the road. Where animals are sighted close to roads and a risk of collision with vehicles is possible, the environmental monitor reports the number of animals, location, and direction of travel to the mine radio dispatcher who informs all vehicle operators. In addition, all vehicle operators report ungulates seen along the road to the dispatcher.

Regular data provided to mine site personnel from the Caribou satellite-collaring program (**Section 9**) are also used to track Caribou movement and potential migration towards the road and mine site.

7.5 HISTORICAL RESULTS

Ground surveys commenced shortly following the onset of AWAR construction (2007). Sampling intensity has been uniform along the entire length of the AWAR since 2009; whereas, surveys along the Vault Road have been irregular since its completion, but were included as part of regular surveys in 2016. Over the past nine years (to 2015), surveys have been completed along the AWAR every 3.9 to 6.1 days. Survey details are provided in **Table 7.1**.

7.6 2016 RESULTS

7.6.1 AWAR and Vault Road Surveys

The number of AWAR and Vault Road surveys completed each season in 2016 is provided in **Table 7.1**. The number of systematic road surveys completed in 2016 (n=78) is comparable to previous years with a survey conducted on average every 4½ days over the course of the year. Survey frequency was highest during months where Caribou movements are known to increase (e.g., eight surveys in June and October, nine surveys in September, and 12 surveys in November). Raw road survey data are provided in **Appendix D**.

Mammal species identified and observed during AWAR and Vault Road surveys in 2016 included Arctic Fox, Arctic Hare (*Lepus arcticus*), Caribou, Muskox, Wolf, and Wolverine. Bird species observed included Arctic Tern (*Sterna paradisaea*), Bald Eagle, Canada Goose (*Branta canadensis*), Common Loon (*Gavia immer*), Common Raven (*Corvus corax*), Greater White-fronted Goose (*Anser albifrons*), Herring Gull (*Larus argentatus*), King Eider (*Somateria spectabilis*), Long-tailed Duck, Northern Pintail (*Anas acuta*), Peregrine Falcon, Red-breasted Merganser (*Mergus serrator*), Rock Ptarmigan (*Lagopus muta*), Rough-legged Hawk, Sandhill Crane (*Grus canadensis*), Snow Goose (*Anser caerulescens*), and Snowy Owl.

Table 7.1: Details of AWAR Surveys from 2007 to 2016.

Season	Number of AWAR Surveys									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*
Spring (April to May)	13	15	15	9	10	14	9	11	17	10
Summer (June to July)	24	7	10	9	9	13	13	7	16	14
Fall (August to September)	8	15	8	12	11	12	10	11	11	16
Winter (Jan to Mar, Oct to Dec)	33	57	25	36	33	38	31	38	32	38
Year End Total	78	94	58	66	63	77	63	67	76	78
Duration	1-Mar to 31-Dec	2-Jan to 29-Dec	9-Jan to 16-Dec	21-Jan to 17-Dec	10-Jan to 30-Dec	4-Jan to 29-Dec	2-Feb to 27-Dec	12-Jan to 30-Dec	03-Jan to 18-Dec	02-Jan to 27-Dec
Average Frequency of Surveys (over duration)**	4.1 days	3.9 days	6.1 days	5.6 days	6.0 days	4.7 days	6.0 days	5.5 days	4.7 days	4.7 days

* Vault Haul Road included in all road surveys from 2016 forward

** Frequency refers to the number of days between surveys, on average over the year

Cumulative Caribou density along the AWAR for 2016 (all seasons) is provided in **Figure 7.1**. The highest Caribou densities in 2016 were around the Whitehills Lake area (Km 25 to Km 50), with sporadic higher densities observed at Km 60 and Km 75. Higher densities were also recorded at the very north end of the AWAR.

The 2016 Caribou occurrence data were added to the 2008 to 2015 datasets with the resulting cumulative Caribou numbers presented in **Figure 7.2**, which illustrates that over the last 10 years of surveys the highest cumulative Caribou abundances along the AWAR continue to be in areas closest to the Hamlet of Baker Lake between Km 0 to 5 and Km 5 to 10 (cumulative density of 1,707 and 1,529 Caribou/km, respectively), and south of Whitehills Lake between Km 25 to 30 (1,941 Caribou/km). High Caribou abundances were also observed from Km 50 to 55 (1,387 Caribou/km), and 70 to 75 (1,244 Caribou/km).

Lower Caribou numbers were recorded from AWAR surveys in 2016 compared to previous years. The average number of Caribou observed per survey trip was much lower in November 2016 than in previous years, however similar results were recorded in 2011 and observation data from AWAR surveys do fluctuate across the dataset (**Table 7.2**).

7.6.2 Road-related Mitigation

As in previous years, the security department assisted the environment department in preventing wildlife incidences along the AWAR and Vault Road by dispatching regular wildlife warnings. The road supervisors and operators also ensured protection of wildlife by assisting in surveillance and shutting down roads as needed (see **Appendix B**). Notices reminding operators of the appropriate speed limit were made frequently. During Caribou peak migration, notices were sent to all road occupants (**Appendix B**), wildlife consultants were notified, and AWAR and Vault Road wildlife survey efforts were increased to at least two times per week.

On a number of occasions, drivers were advised to slow down around the airstrip, AWAR, and Vault Road due to the presence of Caribou (and Muskox in one instance) as noted in the observation log (**Appendix A**). Caribou were observed around the mine site, including road areas, at higher frequency in January and February, resulting in a number of deterrence actions during this period (**Section 6.5**). The number of Caribou observed around the mine site and road areas also increased during April (100 to 500 animals).

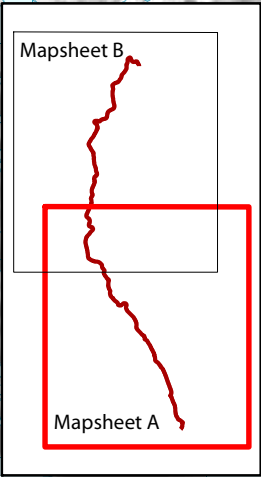
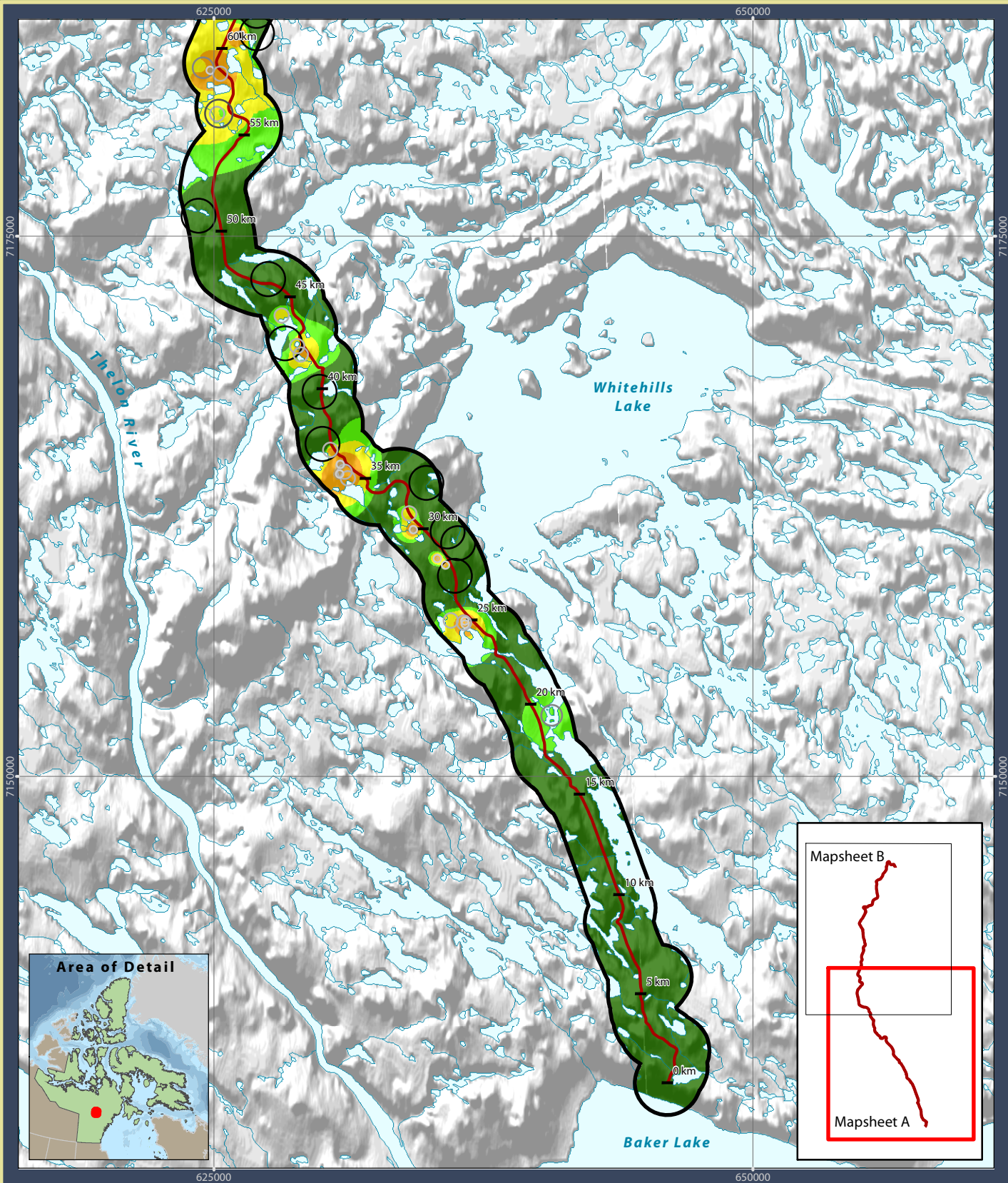
The following road closures were put in effect, with notification provided to the Conservation Officer (**Appendix B**):

- 18 April: Vault Road closed due to presence of Caribou (~25 individuals);
- 8 May: Vault Road closed due to presence of Muskox herd (~ 20 individuals);
- 13 May: Vault Road closed due to presence of Muskox (~20 individuals); and
- 23 June: AWAR closed due to presence of Muskox (29 individuals).

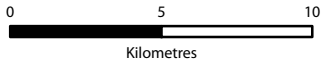
Table 7.2: Average Number of Caribou Observed Per Survey Trip from 2007 to 2016.

Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	0	14.3	12.0	5.3	3.0	5.1	0	3.2	5.8	3.7
February	0	11.5	10.7	4.1	1.0	5.3	68.1	10.5	7.0	2.3
March	11.4	11.4	16.7	6.7	6.0	6.0	39.8	10.5	14.4	6.0
April	14.0	12.7	11.4	10.8	34.0	15.2	0	27.2	22.4	23.8
May	15.4	12.1	13.0	18.0	25.3	14.2	11.0	8.4	14.1	13.2
June	7.1	3.5	8.2	9.0	12.5	3.1	5.3	1.5	6.3	6.9
July	1.5	13.3	0	1.1	1.0	0	0	0	2.0	0
August	1.1	5.4	3.6	5.6	63.0	1.0	1.0	1.0	3.0	2.7
September	10.8	12.5	8.5	4.8	10.3	1.0	6.5	33.1	12.3	3.3
October	18.4	44.3	25.4	197.2	71.6	60.0	6.0	101.8	41.5	73.0
November	72.4	90.7	13.0	106.0	2.3	116.5	455.2	48.4	148.9	2.0
December	18.4	10.3	11.0	7.9	7.8	169.7	16.8	17.6	275.0	15.7

Data show the average number of caribou observed for a particular month of the year, including data from all surveys done that month. Note that data are based on the observed number, which might be more inaccurate for larger groups or groups that are further away.



Legend			
	All-Weather Access Road		
	Local Study Area - All-Weather Road		
	Hydrology		
	Caribou / Ha	Observation Counts	
	0		0 - 5
	1 - 5		6 - 10
	5 - 10		11 - 15
	10 - 15		16 - 20
	15 - 20		> 20
	> 20		



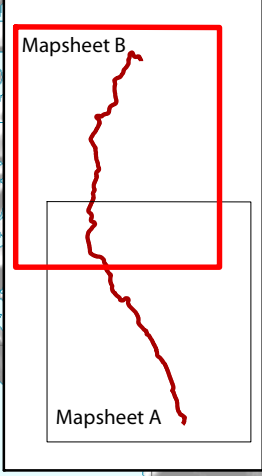
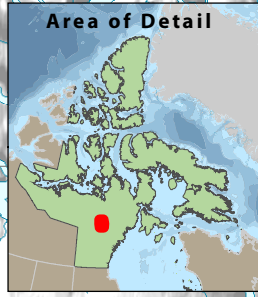
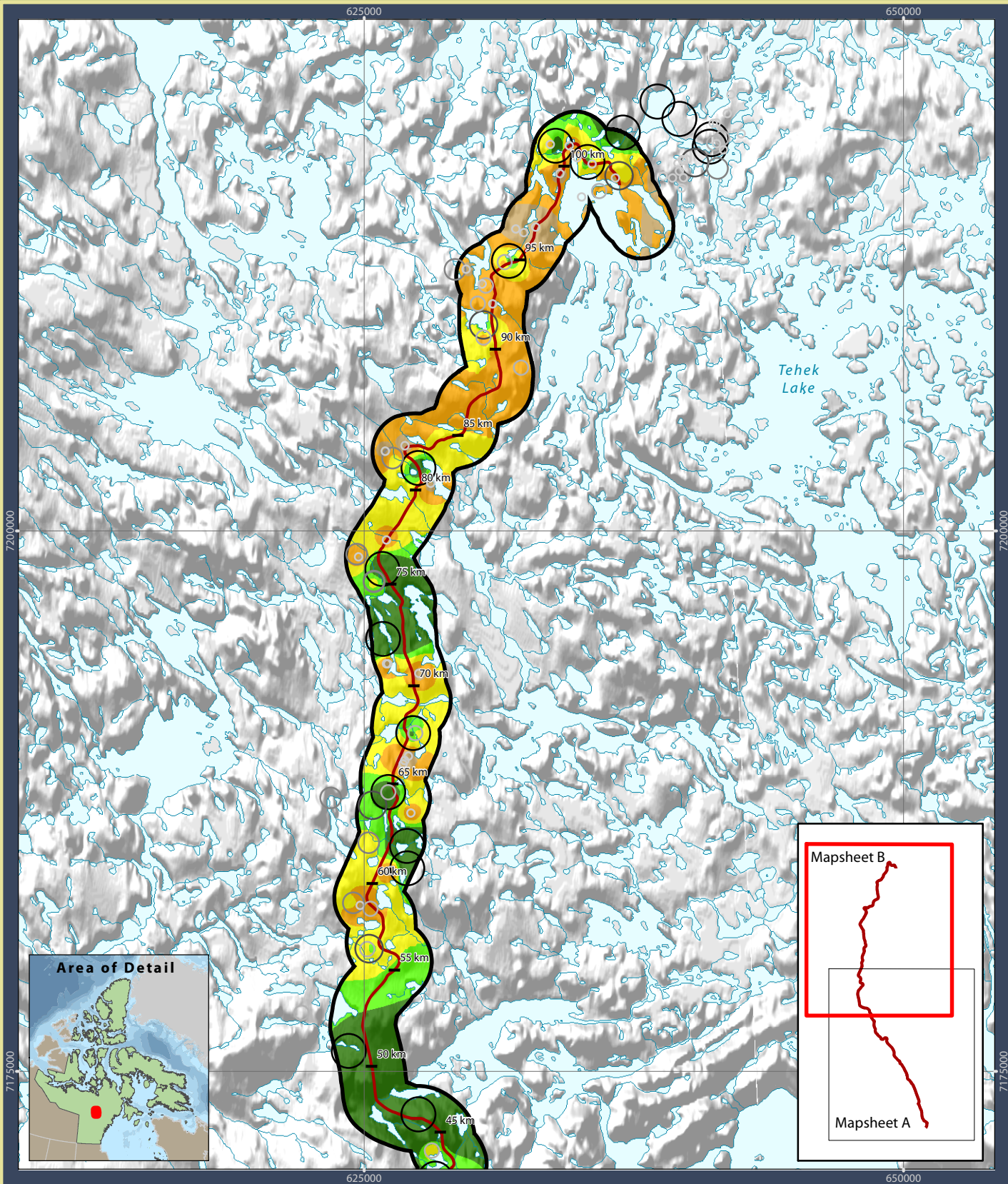
Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited
 Gebauer & Associates Ltd.

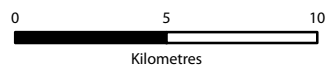
Figure 7.1: 2016 Ground Survey Observed Caribou Distribution within the LSA for the AWAR - All Seasons (Mapsheet A)

Meadowbank Gold Project

Prepared for: By:



Legend		
	All-Weather Access Road	
	Local Study Area - All-Weather Road	
	Hydrology	
	Caribou / Ha	
	0	
	1 - 5	
	5 - 10	
	10 - 15	
	15 - 20	
	> 20	



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited
 Gebauer & Associates Ltd.

Figure 7.1: 2016 Ground Survey Observed Caribou Distribution within the LSA for the AWAR - All Seasons (Mapsheet B)

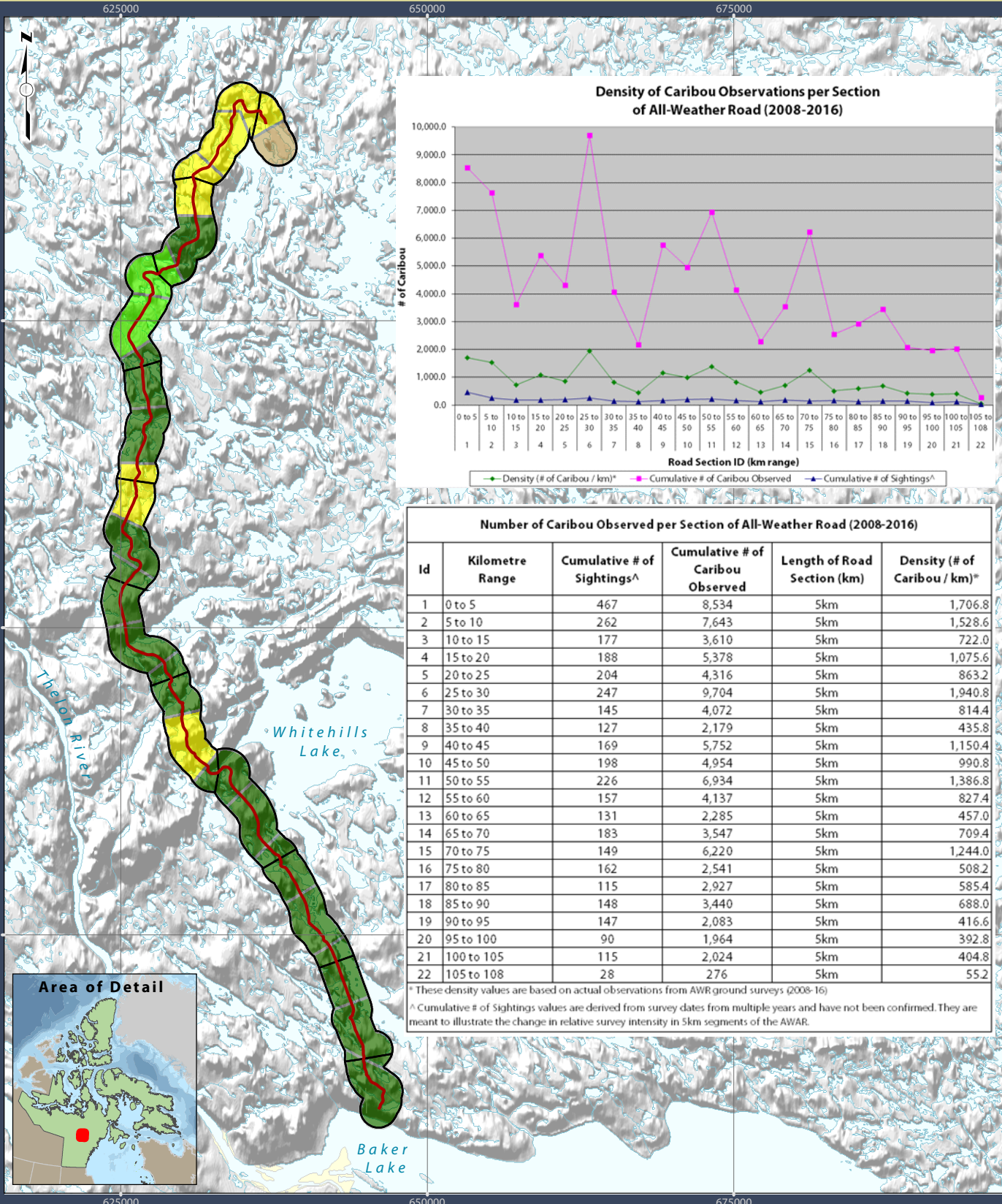
Meadowbank Gold Project

Prepared for:

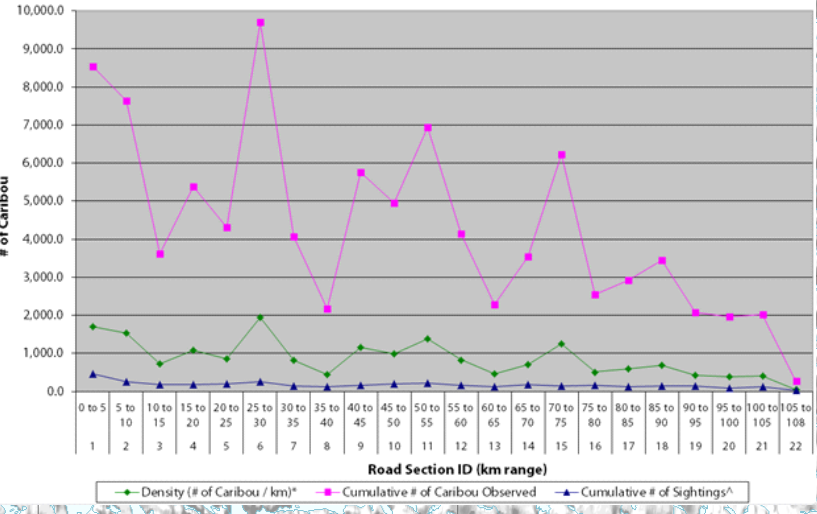


By:





Density of Caribou Observations per Section of All-Weather Road (2008-2016)



Number of Caribou Observed per Section of All-Weather Road (2008-2016)					
Id	Kilometre Range	Cumulative # of Sightings [^]	Cumulative # of Caribou Observed	Length of Road Section (km)	Density (# of Caribou / km)*
1	0 to 5	467	8,534	5km	1,706.8
2	5 to 10	262	7,643	5km	1,528.6
3	10 to 15	177	3,610	5km	722.0
4	15 to 20	188	5,378	5km	1,075.6
5	20 to 25	204	4,316	5km	863.2
6	25 to 30	247	9,704	5km	1,940.8
7	30 to 35	145	4,072	5km	814.4
8	35 to 40	127	2,179	5km	435.8
9	40 to 45	169	5,752	5km	1,150.4
10	45 to 50	198	4,954	5km	990.8
11	50 to 55	226	6,934	5km	1,386.8
12	55 to 60	157	4,137	5km	827.4
13	60 to 65	131	2,285	5km	457.0
14	65 to 70	183	3,547	5km	709.4
15	70 to 75	149	6,220	5km	1,244.0
16	75 to 80	162	2,541	5km	508.2
17	80 to 85	115	2,927	5km	585.4
18	85 to 90	148	3,440	5km	688.0
19	90 to 95	147	2,083	5km	416.6
20	95 to 100	90	1,964	5km	392.8
21	100 to 105	115	2,024	5km	404.8
22	105 to 108	28	276	5km	55.2

* These density values are based on actual observations from AWR ground surveys (2008-16)
[^] Cumulative # of Sightings values are derived from survey dates from multiple years and have not been confirmed. They are meant to illustrate the change in relative survey intensity in 5km segments of the AWAR.



Legend

- All-Weather Access Road
- Local Study Area - All-Weather Road
- Hydrology

Caribou Density (per km of AWAR)

- 21.0 - 137.8
- 137.9 - 304.0
- 304.1 - 480.8
- 480.9 - 679.6
- 679.7 - 2000.0

0 5 10 15
Kilometres
Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited.

Figure 7.2: Caribou Density along the AWAR (2008 to 2016)

Meadowbank Gold Project

Prepared for: By:

2016 WILDLIFE MONITORING SUMMARY

Increased numbers of Caribou were observed in the vicinity of the AWAR in September and October. During this period, migration memoranda were sent to all employees and contractors, daily monitoring of the AWAR was done by environment and road staff, and systematic road surveys were increased to twice per week. The AWAR was also closed to night traffic from 23 October to the end of the hauling season as a preventative measure. The largest estimated herd size observed during mine site surveys during this period was 1,000 animals, recorded in early October (**Appendix A**). Unlike previous years, no road closures were required as a result of large herds of Caribou migrating across the road during the fall season. In comparison, the road between the exploration camp and Baker Lake was closed for four days in mid-October 2015 because of Caribou on the road, and hundreds of Caribou were observed migrating across the AWAR for four days in late November 2015.

7.6.3 Wildlife Mortality – AWAR

Very few wildlife mortalities associated with the AWAR and Vault Road were recorded in 2016 (**Appendix C**):

- One Arctic Fox roadkill was found on the mine road on May 25, 2016. The carcass was removed and incinerated (no report available);
- One Arctic Fox roadkill was found on the AWAR on October 28, 2016; and
- One Rock Ptarmigan fatality was recorded on the AWAR on July 21, 2016.

No Caribou or large predatory mammal mortality was associated with the AWAR and Vault Road in 2016. Cumulative road kill data along the AWAR are provided in **Table 7.2**. No mortality thresholds were reached in 2016.

Table 7.3: Summary of AWAR-related Wildlife Fatality Records (2007 to 2016)

Year	Caribou	Grizzly Bear	Wolverine	Wolf	Fox	Small Mammals	Small Birds	Unidentified Small Animal
2007	3 ¹	0	0	0	0	3	3	0
2008	10 ²	0	0	2	13	7	17	0
2009	1 ³	0	0	0	1	6	2	0
2010	1	0	0	0	2	6	2	0
2011	2 ³	0	0	1	0	5	4	0
2012	2 ⁴	0	1	0	0	3	1	0
2013	5	0	0	0	1	1	1	0
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	1	4	2	1
2016	0	0	0	0	2	0	1	0

¹ Two confirmed roadkill cases
² Two apparent roadkill cases
³ Cause of death unconfirmed
⁴ One cause of death unknown

7.7 ACCURACY OF IMPACT PREDICTIONS

Table 7.3 provides a summary of the impact predictions identified in the TEMP (Cumberland 2006). The 2016 AWAR and Vault Road survey data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure.

Table 7.4: Accuracy of Impact Predictions – Sensory Disturbance and Mortality along the AWAR

Potential Effect	Threshold	Threshold Exceeded (2016)	Adaptive Management Implemented	Status
Sensory Disturbance	Mine-related construction and operation activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 1,000 m of the AWAR.	POSSIBLE	YES. Road closures and notices. Further analysis will be conducted by GN (in partnership with Agnico Eagle)	AWAR Road Surveys Satellite-collaring Data
Project-related Mortality	Caribou or Muskoxen will not be killed or injured by vehicle collisions. Threshold level of mortality is one individual per year.	NO	YES (speed limits, notices, road closures)	AWAR Road Surveys Security Surveys
Project-related Mortality	Predatory mammals will not be killed or injured by vehicle collisions. Threshold level of mortality is one individual per year.	NO	NO	AWAR Road Surveys Security Surveys
Project-related Mortality	Small mammals are susceptible to collisions with vehicles, and some mortality is unavoidable. The threshold level of mortality beyond which adaptive management will be required is 100 small mammals per year.	NO	NO	AWAR Road Surveys
Project-related Mortality	Raptors will not be killed along the access road. Threshold is one individual as a result of vehicle collision per year.	NO	NO	AWAR Road Surveys
Project-related Mortality	Waterbirds will not be killed along the access road. Threshold is one individual as a result of vehicle collision per year.	NO	NO	AWAR Road Surveys
Project-related Mortality	Songbirds and other birds are susceptible to collisions with vehicles and windows, and some mortality may occur. The thresholds level of mortality beyond which adaptive management will be required is 50 birds per year.	NO	NO	AWAR Road Surveys

7.8 MANAGEMENT RECOMMENDATIONS

The AWAR and Vault Road survey data are important for documenting time periods when the area near the road is utilized by various wildlife species and for evaluating the need, if any, for implementing adaptive management (e.g., temporary road closures and radio announcements). Moreover, Caribou density can be compared graphically across years, which can be used to track changes in density and preferential migration corridors. The sections of AWAR with higher use are prioritized for temporary road closures, speed reductions or additional adaptive management strategies. The AWAR data are used in conjunction with satellite-collaring and mortality data to successfully manage road operations during heavy wildlife use periods. For the 2017 AWAR systematic ground survey monitoring program, the Wildlife Protection and Response Plan (Agnico Eagle 2014), which outlines wildlife and vehicle interaction protocols and incident reporting, will continue to be applied.

The number and frequency of AWAR surveys in 2016 demonstrate Agnico Eagle's commitment to avoiding impacts to Caribou from the AWAR and Vault Road, and mitigation measures such as reduced speeds and road closures appear to be minimizing road-related mortality. However, the AWAR and Vault Road survey results for 2016 suggest that Caribou migration across the road was minimal in 2016, an observation supported by collar data (**Section 9.6**). Caribou movement patterns require close monitoring and analysis in 2017.

SECTION 8 • HUNTER HARVEST STUDY

As required in the TEMP (Cumberland 2006), the Baker Lake Hunter Harvest Study (HHS) was initiated in March 2007 by Agnico Eagle in association with the Baker Lake HTO to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches before and after construction of the AWAR.

After low participation during the first year of the study, methods were strategically adapted, participation increased steadily, and valuable information on harvest patterns in the Baker Lake area was collected. Data from the HHS were provided annually in monitoring reports from 2007 to 2015; however, declining participant rates in 2014 and 2015, likely due to participant fatigue, led to reconsideration of the HHS approach in 2016. Lower participant rates and reduced data made it increasingly difficult to determine hunting patterns in the Baker Lake area and along the AWAR, and to answer fundamental questions on the effect of the mine on regional Caribou populations. Agnico Eagle suspended the program for 2016, but has begun discussions with the Baker Lake HTO and GN representatives to interpret the findings of the study to date, explore other options for collecting hunting and fishing data in the Baker Lake area, and facilitate greater involvement of the local community, including the HTO, in future years of the study. The program should resume in 2017.

SECTION 9 • CARIBOU SATELLITE-COLLARING PROGRAM

9.1 OVERVIEW

Agnico Eagle is participating in the GN DoE Caribou satellite-collaring program that includes data collected within the Meadowbank RSA. The GN biologists discuss collar deployments with hunters and elders, and get approval prior to proceeding. Discussions are ongoing between Agnico Eagle, GN, and other partners on the best path forward to ensure caribou maps continue to integrate elders and local HTO input.

Information pertaining to the identification and location of various herds that use the RSA at different times of the year are important components of ongoing monitoring and management efforts at the mine site and along the AWAR.

9.2 OBJECTIVES

The satellite-collaring program was developed to provide information on the distribution of Caribou occurring within the Meadowbank RSA and contribute data to other ongoing satellite-collaring programs for the Ahiak, Qamanirjuaq, and other herds. The satellite-collaring program, along with GN DoE regional data, is an important monitoring and management tool that provides a regional perspective on Caribou activity near mine operations.

9.3 DURATION

The satellite-collaring program was initially designed to continue for five consecutive years in accordance with the TEMP (Cumberland 2006), but collar monitoring has continued beyond this period. Caribou in the Baker Lake area were collared in May 2008, November 2009, April 2011, April 2013, April 2015, and May 2016. Monitoring of collars will continue in 2017 (i.e., 10th year of collar monitoring). Agnico Eagle is committed to providing funding for this program moving forward as per the Memorandum of Understanding that is expected to be renewed early 2017.

9.4 METHODOLOGY

Caribou are carefully netted by the contracted satellite-collaring crew via helicopter and fitted with either an Advanced Research and Global Observation Satellite (ARGOS) GPS Type IV or Iridium satellite-collar. Collar data are regularly¹ retrieved electronically via satellite and distributed to GN DoE and Nunavut Environmental personnel by CLS America, the data-management company.

Deployed collar data were included in a population distribution analysis completed for the GN (Nagy et al. 2011). The clustering and movements of each collar were examined and assigned to the sub-population (i.e., Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay) that best fits that collar's movement characteristics.

¹ Data are often retrieved on a daily basis, but may vary depending on signal strength and weather conditions.

9.5 HISTORICAL RESULTS

Collaring was originally scheduled to commence in 2007, but was postponed for one year due to logistical constraints. Six deployments have been completed in the area around Baker Lake since Agnico Eagle became involved in the collaring program, with the following number of collars successfully deployed:

- 9 collars (Agnico Eagle) in May 2008;
- 21 collars (shared by Agnico Eagle and AREVA) in November 2009;
- 13 collars (Agnico Eagle) in April 2011;
- 15 collars (shared by Agnico Eagle and AREVA) in April 2013;
- 10 collars (Agnico Eagle) in April 2015; and,
- 13 collars (Agnico Eagle) in May 2016.

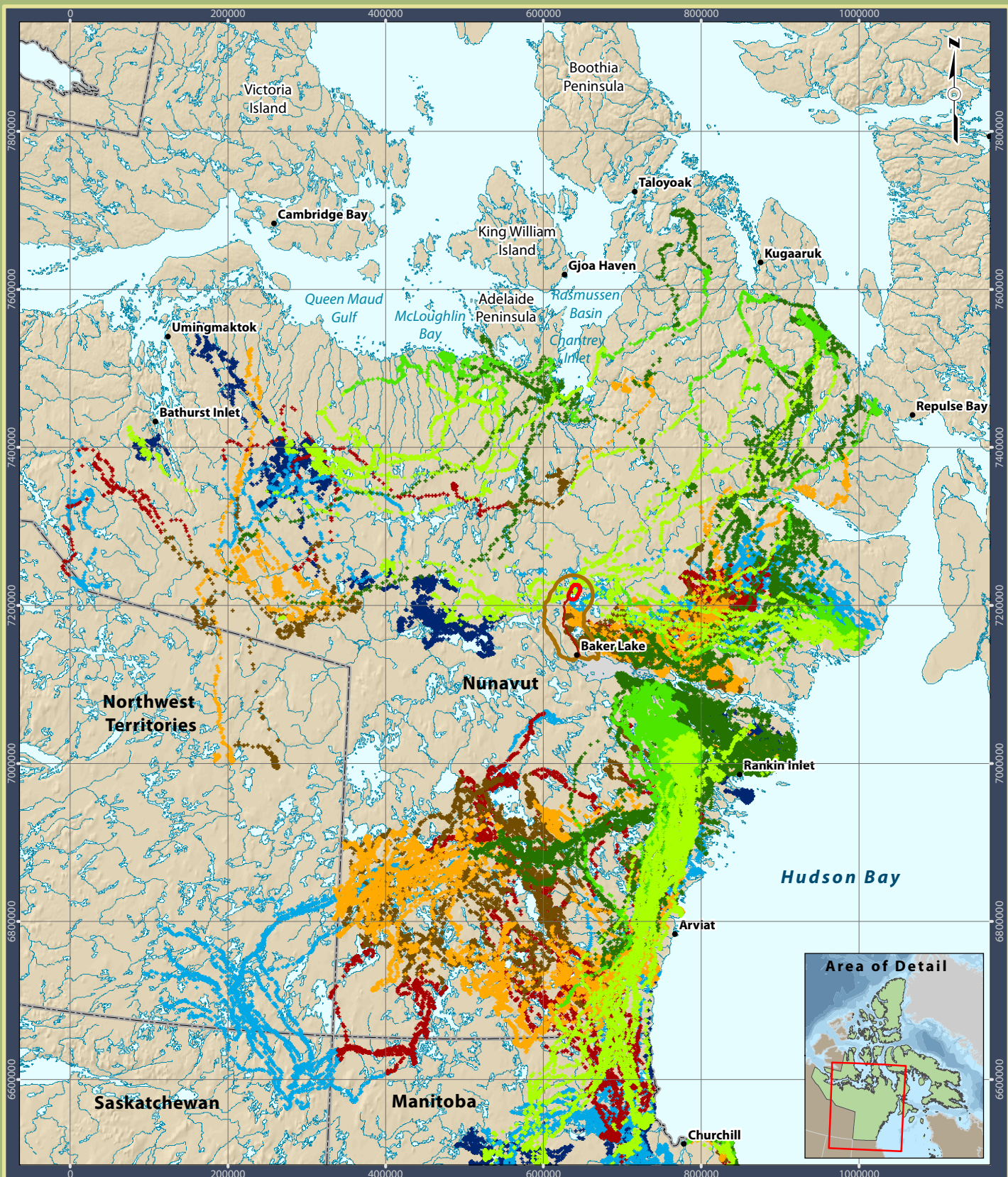
Historical collar data have all been assigned to one of the five major sub-populations, as discussed above. Also included in **Section 9** figures are collared Caribou from the Qamanirjuaq herd, which are part of a separate GN program. These telemetry data are included because of the proximity of animals of this herd to the Meadowbank RSA.

9.6 2016 RESULTS

As of December 2016, 24 collars were active, including six from the 2013 deployment, six from the 2015 deployment, and 12 from the 2016 deployment. From January to May 2016 (prior to the 2016 deployment), only 12 collars were active. A summary of 2016 locations and movement patterns for animals collared around Baker Lake is provided below and summarized in **Figure 9.1**. Movements for Qamanirjuaq herd collared animals, a program also supported by Agnico Eagle, are provided for context. Movements of collared Caribou in close proximity to the Meadowbank RSA and LSA in 2016 are shown in **Figure 9.2**. Seasonal movements are discussed below.

Late Winter (January 1 to March 31)

In late winter, collared Caribou were located around Rankin Inlet, northwest of Aberdeen Lake, in the southwest corner of the Queen Maud Sanctuary (around MacAlpine Lake), and south of Bathurst Inlet (**Figure 9.3**). These areas are historical wintering areas for Caribou from the Ahiak, Lorillard, and Wager Bay herds. Most collared animals from the Qamanirjuaq herd were in northern Manitoba during this period, presumably within the treeline (**Figure 9.3**). To date, no Caribou collared in the Baker Lake area have been present within the Meadowbank LSA or RSA during the late winter season; however, historical data for other satellite-collared animals have shown wintering Caribou from the Lorillard, Wager Bay, and Qamanirjuaq herds as occurring within the Meadowbank RSA. In 2016, mine site ground surveys observed more Caribou presence during the late winter season, requiring deterrence actions on a number of occasions (**Section 6.5** and **Appendix B**); however, these do not appear to have been collared animals.



Legend

— All-Weather Access Road □ Local Study Area □ Regional Study Area

2016 Satellite-collared Caribou by Season

- Spring
- Calving
- Post Calving
- Late Summer
- Fall
- Fall Rut
- Early Winter
- Late Winter

0 50 100 150
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database,
 Agnico-Eagle Mines Limited,
 Department of Environment
 (Gov't of Nunavut)
 Gov't of Northwest Territories




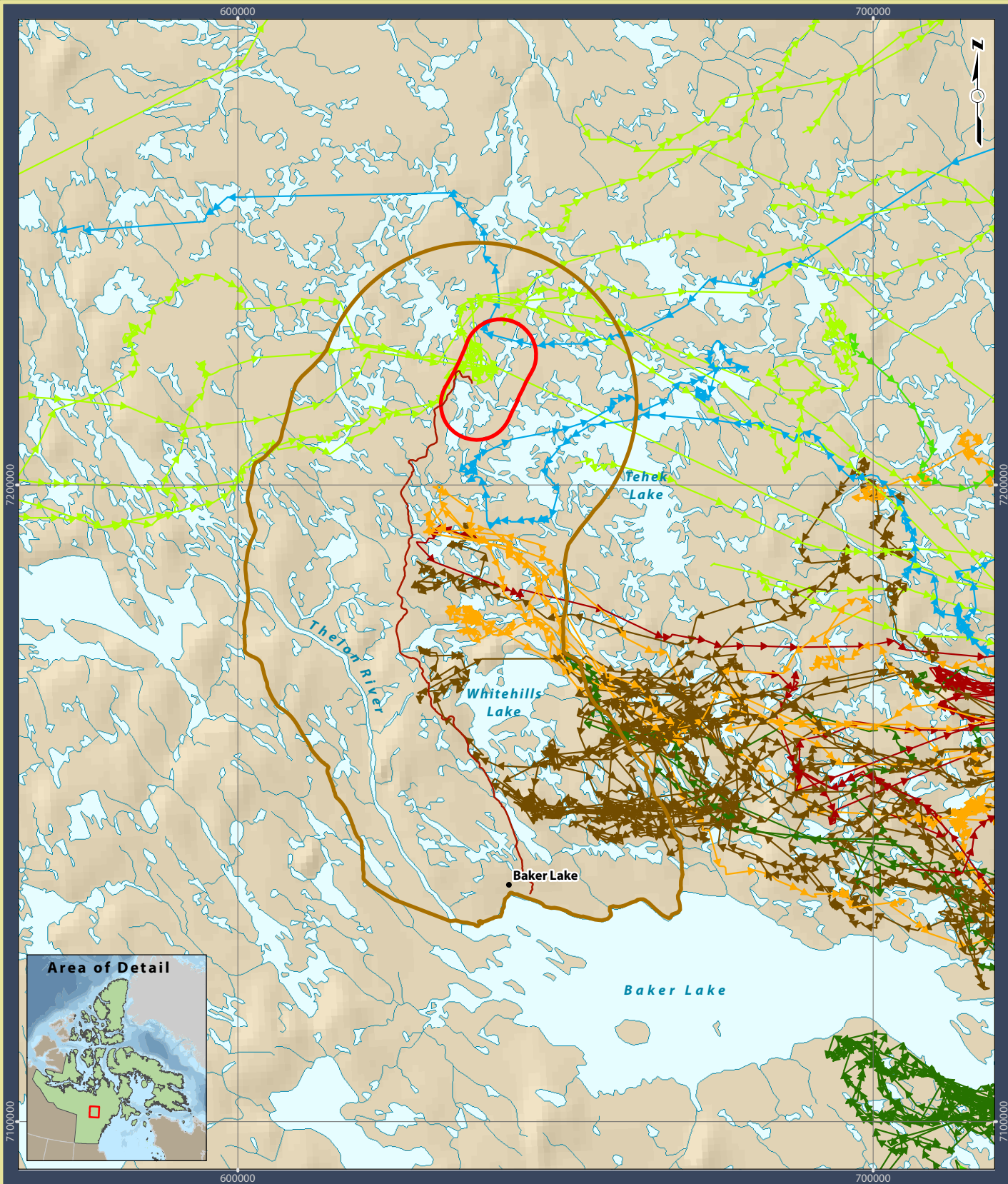


Figure 9.1: 2016 Government of Nunavut Telemetry Program Collar Locations

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Prepared for:  By: 



Legend

- All-Weather Access Road
- Local Study Area
- Regional Study Area

2016 Satellite-collared Caribou by Season

- Spring
- Fall
- Calving
- Fall Rut
- Post Calving
- Early Winter
- Late Summer
- Late Winter

0 10 20 30
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database,
 Agnico-Eagle Mines Limited,
 Department of Environment
 (Gov't of Nunavut)
 Gov't of Northwest Territories


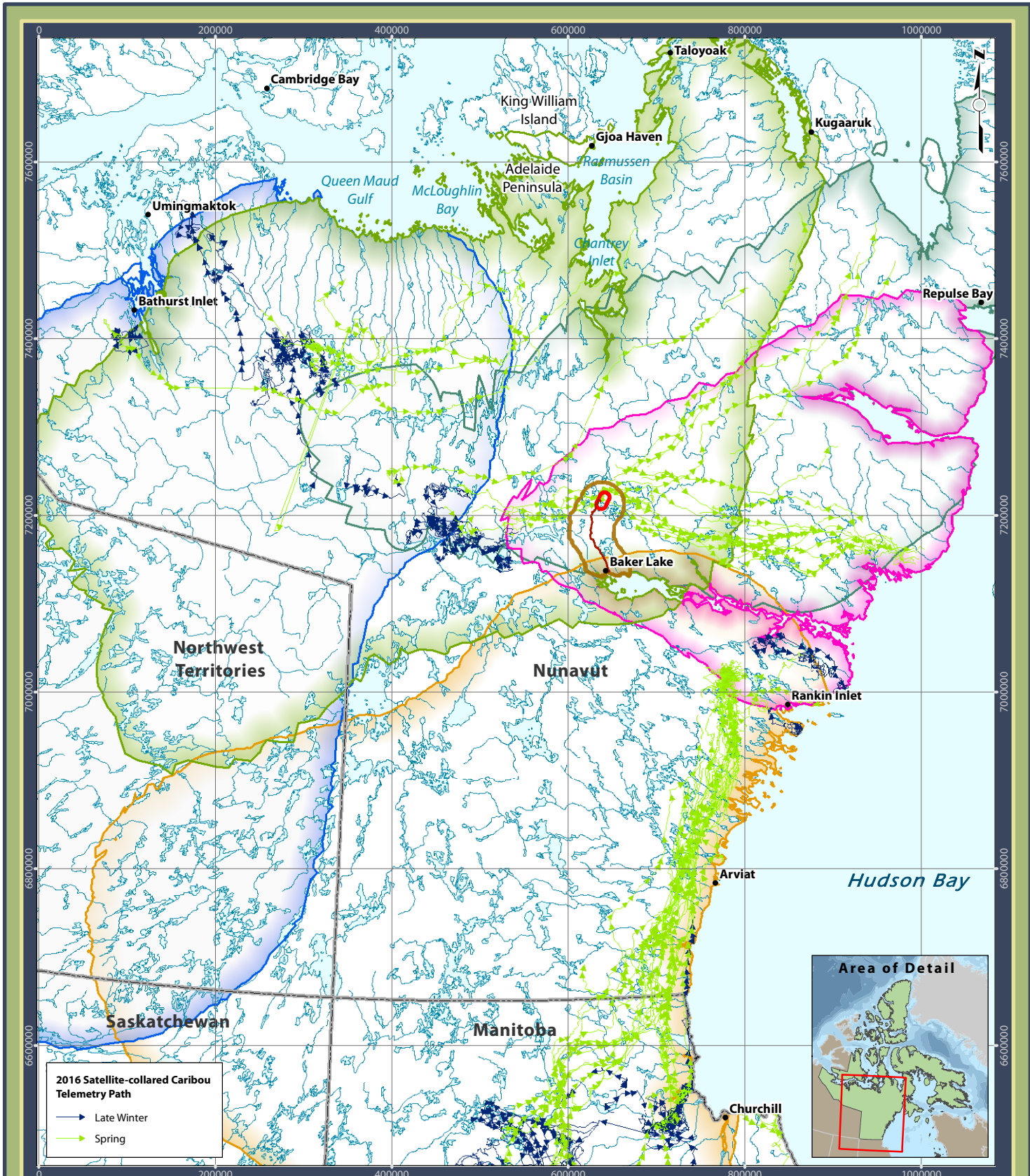


Figure 9.2: 2016 Caribou Telemetry Data – Collar Movements in the Meadowbank RSA

Meadowbank Gold Project

Prepared for:  By:  **CASLYS CONSULTING**



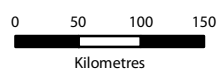
2016 Satellite-collared Caribou Telemetry Path

- > Late Winter
- > Spring

Legend

Annual Range*	Qamanirjuaq	All-Weather Access Road
Ahiaik	Wager Bay	Local Study Area
Beverly		Regional Study Area
Lorillard		

* Official home ranges and calving grounds are from the following publication: Nagy, J. A., D. L. Johnson, N. C. Larter, M. W. Campbell, A. E. Derocher, A. Kelly, M. Dumond, D. Allaire, and B. Croft. 2011. Subpopulation structure of caribou (*Rangifer tarandus* L.) in arctic and subarctic Canada. Ecological Applications [doi:10.1890/10-1410.1].



Projection: UTM Zone 14 NAD83
Data Sources: Natural Resources Canada, GeoBase®, National Topographic Database, Agnico-Eagle Mines Limited, Department of Environment (Gov't of Nunavut), Gov't of Northwest Territories



Figure 9.3: 2016 Caribou Telemetry Data – Late Winter and Spring Seasons (January 1 - May 25)

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Spring (April 1 to May 25)

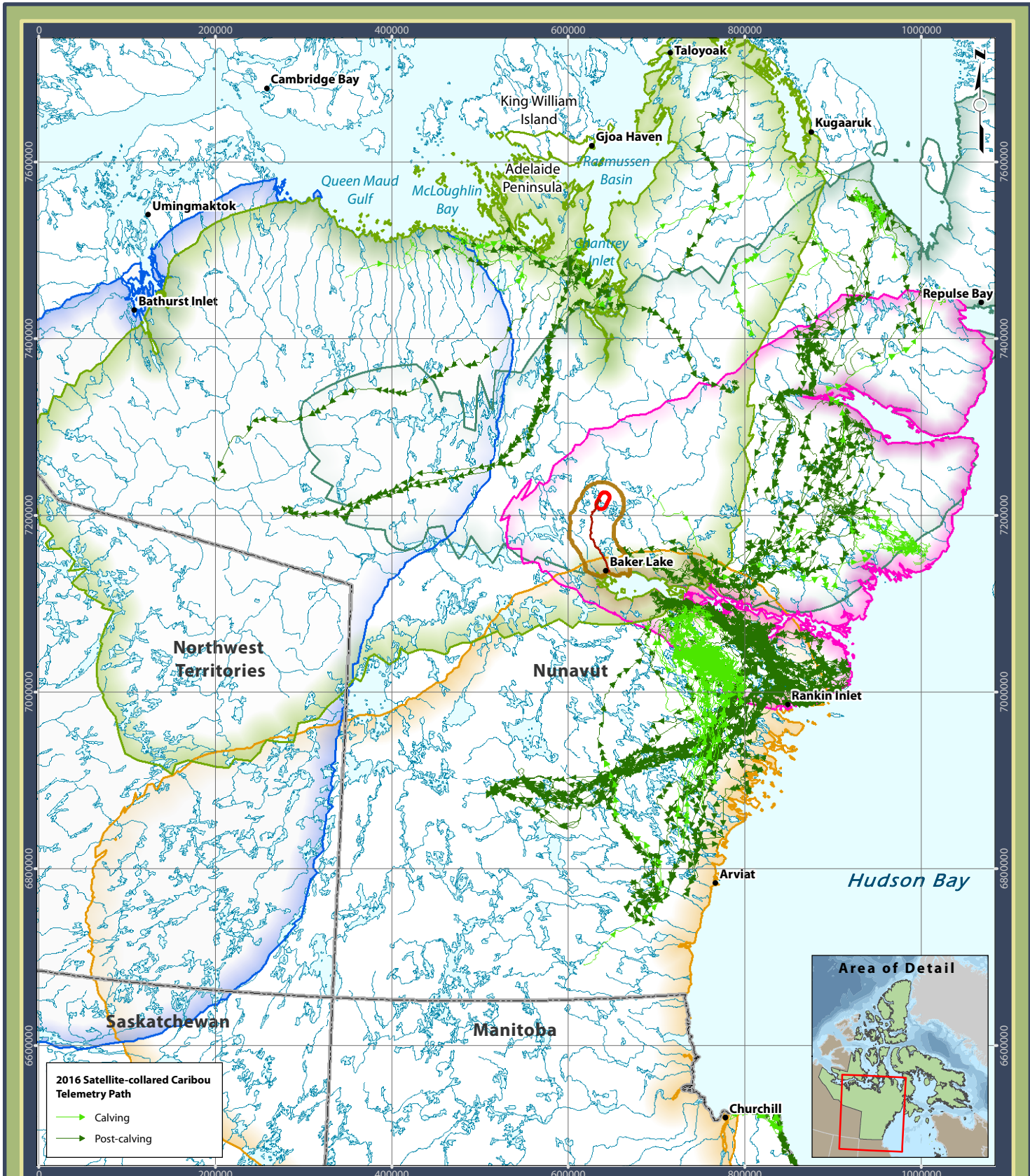
Seven Caribou migrated through the northern portion of the Meadowbank RSA (and LSA) during the spring period (**Figure 9.3**); the same number of collared animals was seen migrating through the RSA in 2015. These 2016 collared Caribou moved considerable distances from the Aberdeen Lake area towards Wager Bay and Lorillard calving grounds. During this time period, Meadowbank mine had one road closure because of Caribou presence near the AWAR (**Section 7.6** and **Appendix B**); a herd ranging in size from 100 to 500 Caribou was observed in the vicinity of the mine in mid- to late April. At least two collared individuals migrating through the RSA moved towards Wager Bay herd calving grounds northwest of Repulse Bay, while the remaining collared animals headed towards Lorillard herd calving grounds between Chesterfield Inlet and Wager Bay. One collared Caribou migrated north towards Adelaide Peninsula and the Ahiak calving grounds. Collared individuals wintering in the Bathurst Inlet area moved toward the Beverly and Ahiak calving grounds, but did not migrate near the Meadowbank RSA (**Figure 9.3**). Qamanirjuaq collared animals underwent an extensive northward migration from all wintering areas to calving grounds between Rankin Inlet and Arviat. Most Caribou collared in the Baker Lake area remained within areas frequented historically by Ahiak, Wager Bay, and Lorillard herds (see ranges in **Figure 9.3**).

Calving (May 26 to June 25)

No collared animals occurred within the Meadowbank RSA during the 2016 calving season. The greatest aggregation of collared Caribou during the calving season (excluding collared animals from the Qamanirjuaq herd) was on the Lorillard calving grounds between Chesterfield Inlet and Wager Bay (see **Figure 9.4**). A group of collared Caribou from the Wager Bay herd was observed at calving grounds between Repulse Bay and Kugaaruk. Most of the collared Caribou from the Qamanirjuaq herd remained near their traditional Qamanirjuaq calving grounds west of Rankin Inlet. Other collared Caribou (Ahiak herd) spent the calving season south of Adelaide Peninsula, in vicinity of Mcloughlin Bay and Chantrey Inlet (**Figure 9.4**).

Post-Calving (June 25 to July 31)

Collared Caribou in northern areas generally started moving south and west during the post-calving period. Collared animals from the more northern Wager Bay calving grounds moved south, joining Lorillard herd animals and remaining between Wager Bay and Chesterfield Inlet (**Figure 9.4**). Most collared animals from the Qamanirjuaq herd moved north along the southern edge of Chesterfield Inlet and Baker Lake, while some animals moved west into south central Nunavut and south to Arviat (**Figure 9.4**). No collared Caribou were situated within the Meadowbank LSA or RSA during most of the post-calving season, although three collared animals did reach the boundary of the RSA by the end of the season. Mine survey records indicate a herd of 20 Caribou near the Vault Area in early July (**Appendix A**)



2016 Satellite-collared Caribou Telemetry Path

- Calving
- Post-calving

Legend

 Annual Range* Ahiak	 Qamanirjuaq	 All-Weather Access Road
 Beverly	 Wager Bay	 Local Study Area
 Lorillard	 Regional Study Area	

0 50 100 150
Kilometres

Projection: UTM Zone 14 NAD83
Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database,
 Agnico-Eagle Mines Limited,
 Department of Environment
 (Gov't of Nunavut)
 Gov't of Northwest Territories

* Official home ranges and calving grounds are from the following publication: Nagy, J. A., D. L. Johnson, N. C. Larter, M. W. Campbell, A. E. Derocher, A. Kelly, M. Dumond, D. Allaire, and B. Croft. 2011. Subpopulation structure of caribou (*Rangifer tarandus* L.) in arctic and subarctic Canada. Ecological Applications [doi:10.1890/10-1410.1].



Figure 9.4: 2016 Caribou Telemetry Data – Calving and Post-calving Seasons (May 26 - July 31)

Meadowbank Gold Project

Prepared for: By:

Late Summer (August 1 to September 15)

Many collared animals continued to move south during this period. Individuals from the Lorillard and Wager Bay herds moved closer to Baker Lake but remained on the north side of Chesterfield Inlet and east of the AWAR. Four individuals from the Lorillard herd were present in the RSA during late summer, but not within the mine LSA. Qamanirjuaq collared animals spread out considerably during this period, occurring from the south side of Chesterfield Inlet to northern Manitoba (**Figure 9.5**).

Fall (September 16 to October 14)

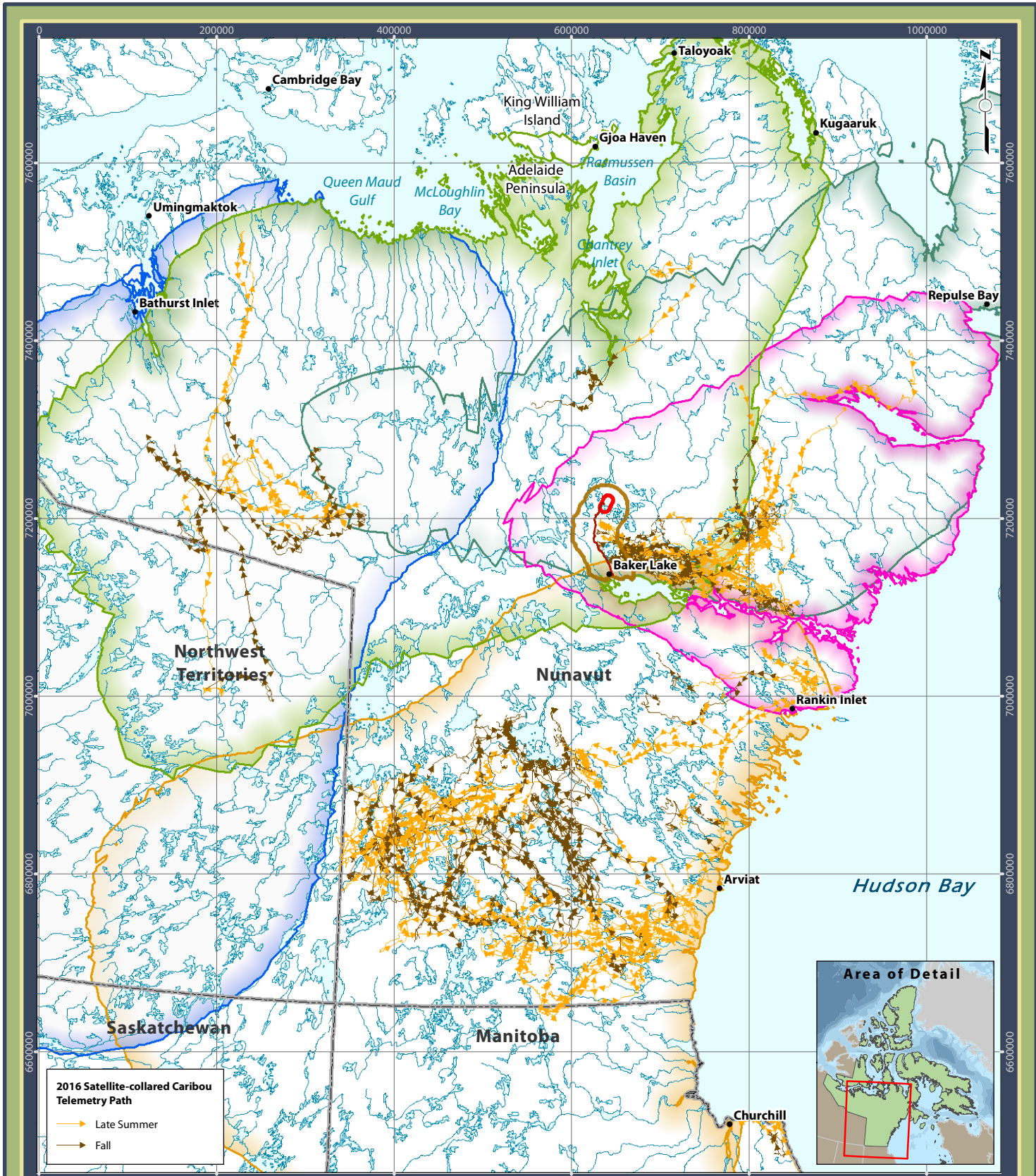
Ten collared Caribou, including three of four collared animals observed during the late summer period, remained within the RSA near Whitehills Lake on the east side of the AWAR before moving east to join collared Lorillard animals (see **Figures 9.2** and **9.5**). Only one collared animal briefly crossed the AWAR in early October before turning back and heading in this easterly direction. Increased numbers of Caribou were observed in the vicinity of the AWAR in September and October during mine and AWAR surveys. During the first 10 days of October, a herd of 500 to 1,000 Caribou was observed walking and grazing near the mine site (**Section 6.5** and **Appendix A**). One collared animal summering near Chantrey Inlet moved southwest towards other animals of the Ahiak herd (**Figure 9.5**). Collared Lorillard and Qamanirjuaq animals generally stayed in the same area as during the late summer period (**Figure 9.5**).

Fall Rut (October 15 to November 7)

In the fall rut season, individuals were generally distributed in four discrete areas: 1) east of Baker Lake and north of Chesterfield Inlet (Lorillard herd); 2) south and west of Bathurst Inlet and Umingmaktok (Ahiak herd); 3) south and east of Bathurst (possibly Ahiak or Beverley herd) and 4) in northern Manitoba and coastal areas around Rankin Inlet and Arviat (Qamanirjuaq herd) (**Figure 9.6**). One collared animal still remained within the Meadowbank RSA at the start of the fall rut.

Early Winter (November 8 to December 31)

In early winter, two collared animals from the Lorillard herd moved from east to west through the Meadowbank RSA (**Figures 9.6** and **9.7**). One collared individual (BL0450413) was moving west, then veered to the north in December (this same individual was observed near the AWAR in October, but did not cross the road, headed back towards the east and eventually moved up and around the mine). The second collared Caribou in the RSA in early winter (UK2016008) was moving in a west to south-west direction when its trajectory turned around close to the AWAR and headed back in an east to north-east direction. No collared animals crossed the AWAR during this period. Several collared individuals remained east and south of Bathurst Inlet (**Figure 9.6**). Most collared Caribou from the Qamanirjuaq herd split into two directions: 1) further south into northern Manitoba; and 2) further west into the Northwest Territories and Saskatchewan (**Figure 9.6**).



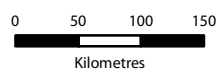
2016 Satellite-collared Caribou Telemetry Path

- > Late Summer
- > Fall

Legend

Annual Range*	Qamanirjuaq	All-Weather Access Road
Ahiak	Wager Bay	Local Study Area
Beverly		Regional Study Area
Lorillard		

* Official home ranges and calving grounds are from the following publication: Nagy, J. A., D. L. Johnson, N. C. Larter, M. W. Campbell, A. E. Derocher, A. Kelly, M. Dumond, D. Allaire, and B. Croft. 2011. Subpopulation structure of caribou (*Rangifer tarandus* L.) in arctic and subarctic Canada. Ecological Applications [doi:10.1890/10-1410.1].



Projection: UTM Zone 14 NAD83
Data Sources: Natural Resources Canada, GeoBase®, National Topographic Database, Agnico-Eagle Mines Limited, Department of Environment (Gov't of Nunavut), Gov't of Northwest Territories



Figure 9.5: 2016 Caribou Telemetry Data – Late Summer and Fall Seasons (August 1 - October 14)

Meadowbank Gold Project

Prepared for: By:



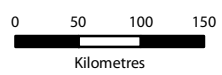
2016 Satellite-collared Caribou Telemetry Path

- Fall Rut
- Early Winter

Legend

Annual Range*	Qamanirjuaq	All-Weather Access Road
Ahiaik	Wager Bay	Local Study Area
Beverly		Regional Study Area
Lorillard		

* Official home ranges and calving grounds are from the following publication: Nagy, J. A., D. L. Johnson, N. C. Larter, M. W. Campbell, A. E. Derocher, A. Kelly, M. Dumond, D. Allaire, and B. Croft. 2011. Subpopulation structure of caribou (*Rangifer tarandus* L.) in arctic and subarctic Canada. Ecological Applications [doi:10.1890/10-1410.1].



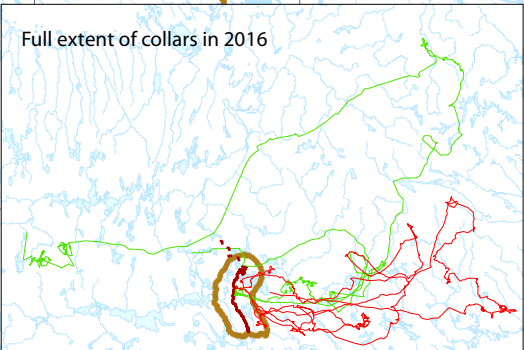
Projection: UTM Zone 14 NAD83
Data Sources: Natural Resources Canada, GeoBase®, National Topographic Database, Agnico-Eagle Mines Limited, Department of Environment (Gov't of Nunavut), Gov't of Northwest Territories



Figure 9.6: 2016 Caribou Telemetry Data – Fall Rut and Early Winter Seasons (October 15 - December 31)

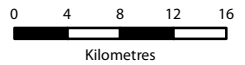
Meadowbank Gold Project

Prepared for: By:



Legend

Regional Study Area	Satellite-collared Caribou
Amaruk Proposed Access Road	BL0450413
Meadowbank AWR and Mineplan	UK2016008



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database,
 Agnico-Eagle Mines Limited,
 Department of Environment
 (Gov't of Nunavut)
 Gov't of Northwest Territories




Figure 9.7: Collar Trajectory of Two Collars in Early Winter 2016

Meadowbank Gold Project

Prepared for:  By:  **CASLYS CONSULTING**
 February, 2017

All Seasons

An overview of collared Caribou distribution in 2016 for all seasons is provided in **Figure 9.1**. These data include all remaining active collars from 2013, 2015, and 2016 deployments around the Baker Lake area. General trends in seasonal distribution are evident and are in most cases comparable to findings from previous years for animals collared in this area. Collared Caribou calved (medium green symbol) in four distinct areas: 1) McLoughlin Bay (Ahiak herd); 2) the base of the Boothia Peninsula, between Rasmussen Basin and Kugaaruk (Ahiak herd); 3) between Chesterfield Inlet and Wager Bay (Lorillard herd); and 4) south of Chesterfield Inlet in the traditional calving grounds of the Qamanirjuaq herd. As in most monitoring years to date, no collared Caribou were found within the Meadowbank RSA during the calving or post-calving seasons. In winter, animals were either north of the Thelon River system from east of Baker Lake to east of Bathurst Inlet, or on Qamanirjuaq wintering grounds (see discussion below).

Within the Meadowbank RSA, collared Caribou were present during the spring, late summer, fall, and early winter, but their movements appeared more restricted than in previous monitoring years (**Figure 9.2**). Collared Caribou moved across the northern edge of the Meadowbank RSA (and LSA) during spring migration, moving up and around the mine site but not across the AWAR. Limited to no movement of collared Caribou across the Meadowbank RSA and AWAR was observed during the fall migration (see **Figure 9.2**), and some collared animals displayed a deflection pattern away from the AWAR during this period (**Figure 9.7**). Agnico Eagle continues to work with the GN to evaluate the collaring and monitoring data to ensure the protection of regional caribou movements.

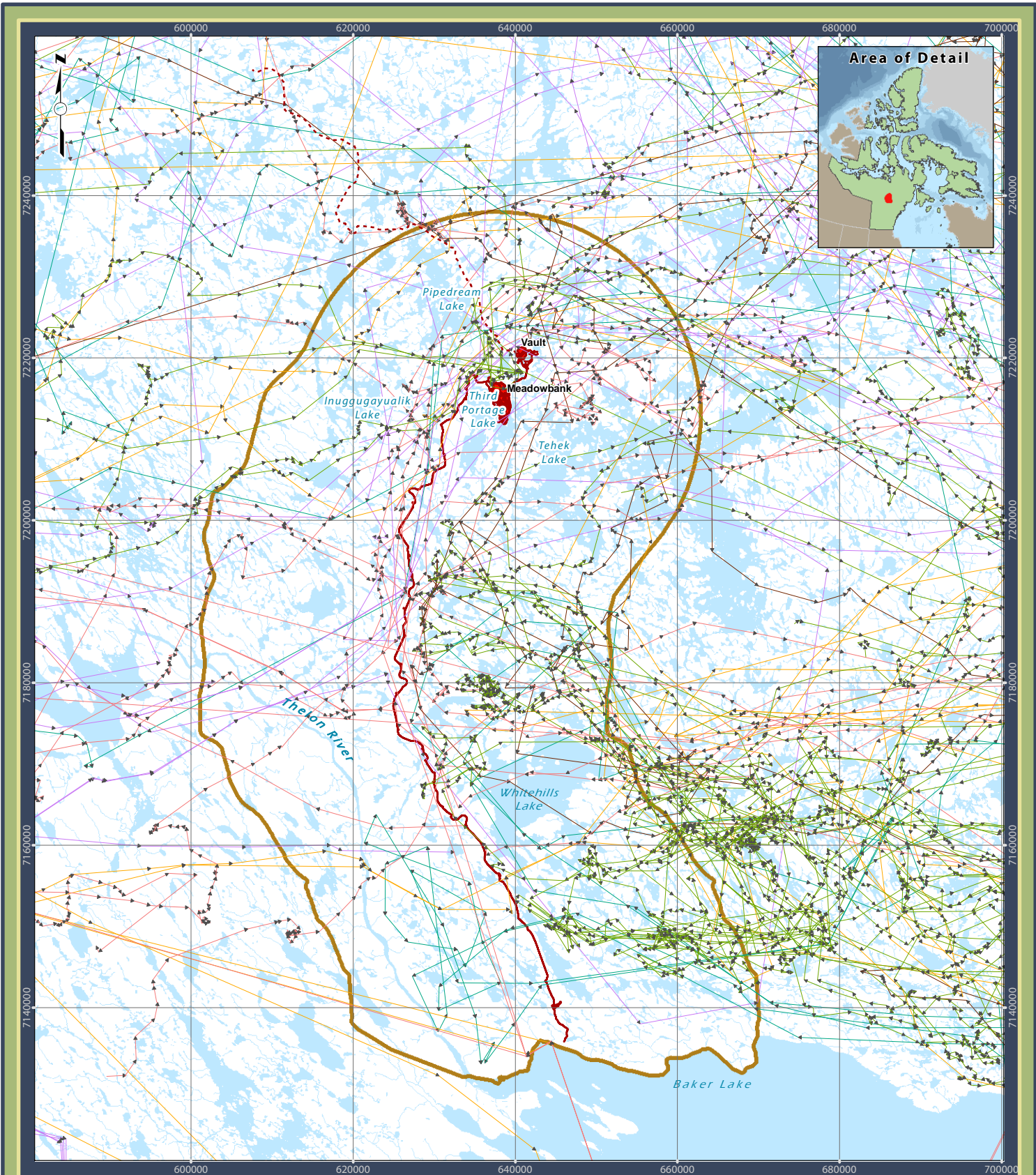
At the end of 2016, 24 satellite collars originally deployed near Baker Lake continued to be active and tracked, with results being downloaded on a regular basis. Caribou collaring maps are posted at the Meadowbank mine site for staff to observe; however, maps are slightly out of date and do not depict current locations.

9.7 CARIBOU MIGRATION PATTERNS

A summary of Caribou migration patterns, which synthesizes migration information from satellite-collaring data to 2012 and was developed by the GN for the spring and fall migrations, was provided in the 2014 annual report. As these figures have not been updated, they are not discussed in this year's report.

Figure 9.8 shows all walk lines of collared Caribou within the Meadowbank RSA since 2011 (six years of data). Collared animals are observed throughout the RSA (typically around spring and fall migratory periods), but more movement has been recorded on the western side of the AWAR since data collection began in 2011. A pattern of animals being deflected from the AWAR appears to be evident. This pattern can be seen in **Figure 9.2**, which includes all 2016 data, and **Figure 9.9**, which highlights 2016 movement in the RSA to comparable historic data.

In 2017, Agnico Eagle will discuss within the HTO the best path forward to ensure caribou data continue to integrate elders and local HTO input.



Legend

	Regional Study Area		Satellite-collared Caribou by Year
	Amaruq Proposed Access Road		→ 2011
	Meadowbank AWR and Mineplan		→ 2012
			→ 2013
			→ 2014
			→ 2015
			→ 2016

0 4 8 12 16
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database,
 Agnico-Eagle Mines Limited,
 Department of Environment
 (Gov't of Nunavut)
 Gov't of Northwest Territories


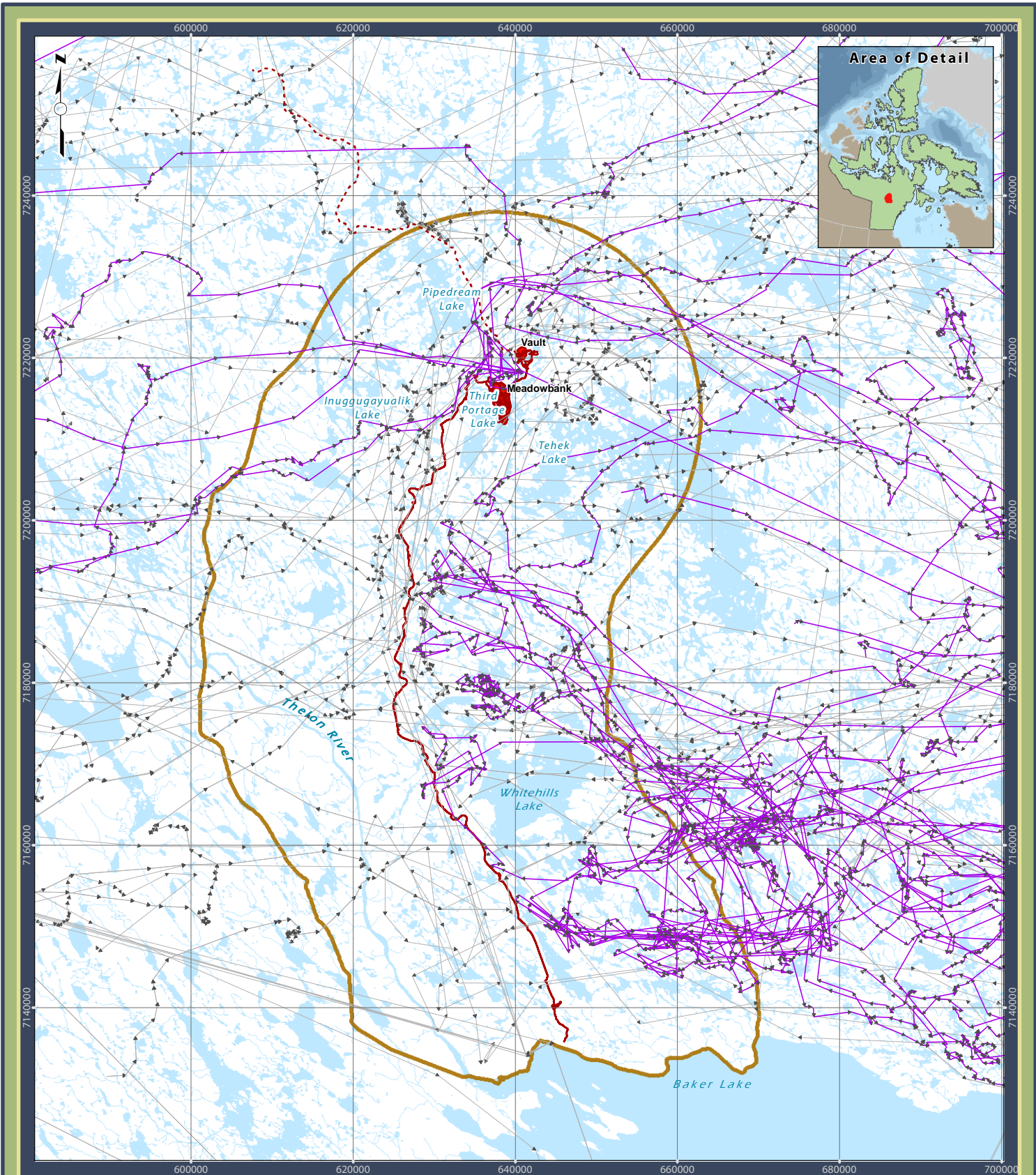


Figure 9.8: 2011- 2016 Caribou Telemetry Data – Nunavut Caribou Road Interaction

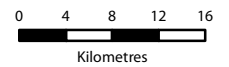
Meadowbank Gold Project

Prepared for:  By: 

CASLYS CONSULTING
February, 2017



- Legend**
- Regional Study Area
 - Meadowbank AWR and Mineplan
 - Amaruq Proposed Access Road
 - Satellite-collared Caribou 2016
 - Satellite-collared Caribou 2011-2015



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database,
 Agnico-Eagle Mines Limited,
 Department of Environment
 (Gov't of Nunavut)
 Gov't of Northwest Territories




Figure 9.9: 2016 Caribou Telemetry Data - Early Winter - Spring and Late Summer, Fall and Rut

Meadowbank Gold Project

Prepared for:  By:  **CASLYS CONSULTING**
 February, 2017

9.8 ACCURACY OF IMPACT PREDICTIONS

A summary of the impact predictions identified in the TEMP is provided in **Table 9.1**. The 2016 satellite-collaring data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure.

Table 9.1: Accuracy of Impact Predictions – Satellite-collaring Data

Potential Effect	Threshold	Threshold Exceeded (2016)	Adaptive Management Implemented	Status
Sensory Disturbance	Mine-related construction and operation activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 500 m of mine buildings, facilities and roads. Threshold is unnatural caribou use patterns beyond 1,000 m.	POSSIBLE	YES. Road closures and notices. Further analysis will be conducted by GN (in partnership with Agnico Eagle)	Satellite-collaring data Daily and weekly mine-site ground surveys AWAR Road Surveys
Hunting by Baker Lake Residents	Caribou herds will not be significantly affected by year-round access to the RSA.	Not Completed in 2016	NA	Satellite-collaring data Hunter Harvest Study

9.9 MANAGEMENT RECOMMENDATIONS

The satellite-collaring data depict Caribou movements within and through the Meadowbank RSA and LSA during the spring, late summer, fall, and early winter seasons with no occurrences during the other seasons. As observed in 2015, the AWAR may be altering natural movements patterns by collared Caribou (see **Figures 9.2, 9.7, 9.8 and 9.9**). A more detailed analysis of Caribou monitoring, collar data, hunter harvest activity, and other potential influences on Caribou movement and migration will be conducted in 2017 to determine whether project-related effects are occurring.

Agnico Eagle environment department should continue to closely monitor Caribou movement in the weeks leading up to spring and fall migrations using the latest available satellite-collaring and AWAR survey data as well as incidental reports from staff utilizing the AWAR on a regular basis (e.g., security personnel). Notification and announcements, staff re-education, specific dispatch protocols, and temporary road closures should continue to be implemented, as in previous years, as a proactive adaptive management strategy.

SECTION 10 • SUMMARY

The 2016 Wildlife Monitoring Summary Report describes the data collected to date from the various monitoring programs, and describes natural and mine-related variability and potential mine-related effects within wildlife populations.

In 2016, monitoring efforts continued to focus on areas immediately around the mine site and AWAR and Vault Road. At this local scale and within this year's work plan, emphasis was on monitoring presence and success of raptors, as well as monitoring and management of wildlife presence near the mine facilities and infrastructure. More regional-scale monitoring efforts focused on Caribou movement through ongoing satellite-collaring studies.

Available data up to 2016 indicate a possible effect from mine-related activities, especially the AWAR, to migrating Caribou. No collared Caribou crossed the AWAR from east to west during fall migration in 2016, and deflection patterns were observed. Further studies will be conducted in 2017 to determine if project-related effects have occurred. No proactive closure of the AWAR was required in the fall of 2016 since no large herds of Caribou were observed to be approaching the road, further supported by lower than typical Caribou numbers recorded along the AWAR during regular surveys.

A Muskox herd of 15 to 30 individuals was observed around the LSA from May to mid-June, and along AWAR for the remainder of June. Road closures were required as a proactive protective measure for Muskox on three occasions during this period, which is not a pattern previously observed.

In 2016, the threshold level of one mortality was exceeded for mine-related waterfowl mortality. In addition, possible disruption of Caribou movement patterns may have occurred; therefore, discussions with HTO and GN personnel will be planned in 2017 to address the need for more targeted monitoring or analysis of Caribou movement in the area around Meadowbank, including hunter harvest activity, and possibly more effective management and mitigation strategies. A summary of potential project effects, threshold levels, and the 2016 monitoring results is provided in **Table 10.1**.

Monitoring programs will continue to evolve throughout the life of the mine, contingent on data quality objectives and the necessity for adaptive management strategy implementation and subsequent effectiveness monitoring. Adjustments to the intensity and frequency of monitoring and the extent of statistical analyses will vary between years depending on observed trends to date, data gap analysis, and determinations of effect.

Table 10.1: Potential Project Effects, Thresholds, and Results of Monitoring in 2016.

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2016	Threshold Exceeded (2016)
Vegetation (Wildlife Habitat)					
Habitat Loss	Mine Site – 867 ha AWAR – 281ha	Ground Surveys, Mapping, GIS Analysis	Every three years (next is 2017)	NO	NA
Habitat Degradation by Contamination	See SLRA 2014	Vegetation and Soil Samples	Every three years	NO	NA
Habitat Reclamation following Mine Closure	NA	Ground Surveys, Vegetation Plots, Mapping	Every three years to 11 years post-closure	NO	NA
Ungulates					
Habitat Loss and Degradation	Growing – 240 ha of High Suitability Habitat Winter – 191 ha of High Suitability Habitat	Ground Surveys, Mapping, GIS Analysis	Every three years (next in 2017)	NO	NA
Sensory Disturbance	Mine Site - 500m AWAR – 1,000m	Ground Surveys, Satellite-collaring	Daily / weekly	YES	POSSIBLE Indication of disturbance (follow up work by GN on road-related effects)
Vehicle Collisions	1 individual	Ground surveys, Collision Reporting System	Mine site – daily AWAR - >1/week	YES	NO No mortality in 2016
Hunting by Baker Lake Residents	20% Change in Harvest Patterns in RSA from Historic	Hunter Harvest Study	Yearly	NO	NA
Other Mine-related Mortality	1 individual	Ground surveys	Daily	YES	NO No mortality at mine to date
Exposure to Contaminated Water or Vegetation	See SLRA 2014	Vegetation and Soil Samples	Every three years	NO	NA

Table 10.1: Continued.

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2016	Threshold Exceeded (2016)
Predatory Mammals					
Project-related Mortality	1 individual	Ground Surveys, Collision Reporting System	Mine site – daily AWAR - >1/week	YES	NO
Small Mammals					
Habitat Loss and Degradation	178 ha of High Suitability Habitat	Ground Surveys, Mapping, GIS Analysis	Every three years (next in 2017)	NO	NA
Project-related Mortality	100 Individuals	Ground Surveys, Collision Reporting System	Mine site-daily AWAR - >1/week	YES	NO
Exposure to Contaminated Water or Vegetation	See SLRA 2014	Vegetation and Soil Samples	Every three years	NO	NA
Raptors					
Healthy Prey Populations	See SLRA 2014	Vegetation and Soil Samples	Every three years	NO	NA
Disturbance of Nesting Raptors	1 Nest Failure	Active Nest Monitoring	Nests within 200 m - daily Nests from 200 to 1000 m - weekly	YES	NO
Project-related Mortality	1 individual	Ground Surveys, Collision Reporting System	Mine site - daily AWAR - >1/week	YES	NO

Table 10.1: Continued.

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2016	Threshold Exceeded (2016)
Waterbirds					
Habitat Loss and Degradation	518 ha of High Suitability Habitat	Ground Surveys, Mapping, GIS Analysis	Every three years (next in 2017)	NO	NA
Disturbance of Nesting Waterfowl	1 Nest Failure	Waterfowl Nest Surveys	Yearly - for active nests within 200 m	YES	NO
Exposure to Contaminated Water or Vegetation	See SLRA 2014	Vegetation and Soil Samples	Every three years	NO	NA
Project-related Mortality	1 individual	Ground Surveys, Collision Reporting System	Mine site - daily AWAR - >1/week	YES	YES 1 dead juvenile Merganser during Phaser Lake fish-out
Other Breeding Birds					
Habitat Loss and Degradation	322 ha of High Suitability Habitat	Ground Surveys, Mapping, GIS Analysis	Every three years (next in 2017)	NO	NA
Project-related Mortality	50 Individuals Per Year	Ground Surveys, Collision Reporting System	Mine site - daily AWAR - >1/week	YES	NO
Exposure to Contaminated Water or Vegetation	See SLRA 2014	Vegetation and Soil Samples	Every three years	NO	NA
Changes in Breeding Bird Populations	20% Change from Natural	Breeding Bird Plots and Transects	PRISM – every three years (next in 2018) Transects - suspended	NO	NA

SECTION 11 • LITERATURE CITED

- Agnico Eagle Mines Ltd. (AEM) 2014. Meadowbank Gold Mine Project. Wildlife Protection and Response Plan. Version 3.
- Cumberland Resources Ltd. 2006. Meadowbank Gold Mine Project Terrestrial Ecosystem Management Plan (TEMP). Final Report, December 2006.
- Final Environmental Impact Statement (FEIS). 2005. Environmental Impact Statement – Meadowbank Gold Project. Cumberland Resources Ltd.
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MEADOWBANK GOLD MINE PROJECT
2016 WILDLIFE MONITORING SUMMARY

APPENDIX A

2016 Wildlife Observation Records

Meadowbank Wildlife Log - January 2016

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-01-06	10:30	Observation	Arctic Hare	1	Meadowbank Dispatch	Running	Randy S.	None
2016-01-06	9:30	Observation	Raven	4	Sludge Dump	Eating	Randy S./Tom T.	None
2016-01-07	9:30	Observation	Caribou	8	Near Vault Camp on the Road	Grazing	Randy S./Tom T.	Caribou were 100+ meters from the road.
2016-01-07	10:00	Observation	Caribou	2	Vault Ring Road	Walking on Haul Road	Randy S./Tom T.	Blocked access to Vault pit and slowly deterred Caribou away from Vault Haul Roads.
2016-01-09	10:30	Observation	Caribou	2	Vault Ring Road	Walking on Haul Road	Martin T.	Blocked access to Vault pit and slowly deterred Caribou away from Vault Haul Roads.
2016-01-10	9:00	Observation	Fox	1	Site Services area	Walking on road going to Nova Camp	Randy S.	None
2016-01-10	12:00	Observation	Fox	2	Incinerator area	Running	Randy S.	None
2016-01-10	16:00	Reported	Caribou	2	Vault Ring Road	Running	Mine Dispatch	Scouted the area around Vault including the ring road, nothing was observed.
2016-01-11	14:00	Reported	Caribou	2	Vault Ring Road	Grazing	Mine Dispatch	Checked area, and deterred caribou away from haul truck road
2016-01-14	10:00	Reported	Caribou	2	Vault Ring Road	Grazing	Mine Dispatch	Checked area, and deterred caribou away from haul truck road
2016-01-15	9:00	Observation	Caribou	2	Vault parking area	Grazing	Ian B.	Pushed them away following with truck behind them. Caribou are persistent. They were going away and then coming back.
2016-01-15	11:00	Observation	Caribou	2	Vault Ring Road	Grazing	Ian B.	Deterred them off haul road. Could not see where they went as weather was deteriorating.
2016-01-15	11:20	Observation	Caribou	8	Wally Lake area	Grazing	Jamie K.	Caribou were about 20 meters from the road. Environmental technician observed them for few minutes. Looks like they will not go anywhere inside the Mining area.
2016-01-16	17:00	Observation	Caribou	2	Vault Ring Road	Grazing	Ian B.	Looked for them. It is hard to see them in the dark.
2016-01-17	9:00	Observation	Fox	1	East dike	Walking in circles	Jean-Michel D.	Monitored the area. Fox look blind and possibly injured. Upon inspecting fox - it is blind but not injured.
2016-01-17	13:30	Deterring	Caribou	2	Vault WTP	Not known	Jamie K./Robin A.	Deterred them from Vault parking area. Caribous are coming back.
2016-01-17	16:15	Others	Fox	1	East dike	Not known	Jamie K.	Environmental Technician monitored the area. Fox could not be seen.
2016-01-19	17:00	Observation	Fox	3	Meadowbank Landfill	Walking around	Randy S.	They ran off when technician pulled in with truck.
2016-01-20	11:00	Deterring	Caribou	2	Vault Ring Road	Walking	Robin A./Randy S.	Used flares and screamers to deter them towards WTP
2016-01-21	10:00	Observation	Caribou	8	Vault parking area	Walking	Ian B.	Caribou were at Vault parking, worker used truck to pushed them towards Phaser Lake.
2016-01-21	10:00	Observation	Caribou	2	Vault Camp	Grazing	Robin A./Randy S.	None
2016-01-22	8:00	Observation	Caribou	2	Vault Camp	Grazing	Mine Dispatch	None
2016-01-22	11:40	Observation	Caribou	5	Vault Camp	Grazing	Randy S./Victor U.	None
2016-01-22	14:44	Reported	Wolverine	1	Dogleg Lake area	Running	Randy S.	Wolverine observed chasing a caribou.
2016-01-23	3:51	Reported	Caribou	15	Vault road	Grazing	Mine Dispatch	Went to area, no caribou were observed - heading back when the sun is out.
2016-01-23	9:45	Reported	Wolverine	1	EMR	Running	Daniel A.	None
2016-01-24	11:00	Observation	Fox	1	Hazmat area	Running	Randy S.	None
2016-01-24	14:15	Observation	Caribou	2	Vault Ring Road	Grazing	Randy S.	Caribou deterred when Environmental Technician pulled in area with truck.
2016-01-25	16:00	Observation	Wolf	5	Vault road (east side)	Running	Randy S./Jason B.	Wolf was chasing caribou
2016-01-25	16:25	Observation	Caribou	2	Vault parking area	Running	Randy S./Tom T./Robin A.	Deterred onto tundra with pick up trucks

2016-01-27	10:00	Observation	Caribou	2	Vault Camp area	Grazing	Tom T.	Stayed in the area. Caribou tried to cross road to get to Vault Camp. Shot 2 deterrents in the air to keep them on tundra. Caribou went approximately 100 yards away from the road but stayed in the area.
2016-01-28	9:30	Reported	Caribou	1	Bay Goose	Running	NB - Dewatering	Caribou was seen running away from 7 wolves.
2016-01-28	9:30	Reported	Wolf	7	Bay Goose	Running	NB - Dewatering	Wolf was chasing Caribou from Bay Goose towards the Lake.
2016-01-29	11:30	Observation	Caribou	2	Vault Camp area	Grazing	Tom T.	None - Caribou were 100+ yards from the road
2016-01-31	15:00	Reported	Caribou	2	Vault Camp	Running	MA - Mine	Mine Dept called Environmental Department to report a near miss with Caribou and pick up. Environmental technicians went to assess the area. Pick up truck was travelling on Vault Road near the Vault Camp when 2 Caribou ran across the berm at Vault Camp and onto the tundra
2016-01-31	15:30:00	Observation	Caribou	2	Across from Vault Camp	Lying down	Tom T./Martin T.	Environmental technicians stayed in the area for approximately 30 mins. Fired 4 scare cartridges to move Caribou away from road

Meadowbank Wildlife Log - February 2016

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-02-02	9:45	Observation	Caribou	2	Vault Camp	Grazing	Tom T	Stayed in the area for approximately 15mins. Fired 4 scare cartridges when caribou moved close to the road
2016-02-02	15:00	Reported	Wolverine	1	Near Vault Road	Running North	Mine HTR driver	No action - reported that animal was quite far from the road
2016-02-02	18:15	Observation	Fox	1	Warehouse row 7	Crossing road	Tom T/ Martin T	Waited until animal crossed the road - animal was heading towards TPL
2016-02-06	8:22	Reported	Caribou	2	Entrance to Vault road	Grazing, walking SE	Mine Dispatch	Monitored caribou, steadily heading Southeast of Vault road. Observed when caribou were about 200 m from the Vault road
2016-02-06	17:00	Observation	Caribou	2	Kitchen at Vault camp	Unknown	Eric R	Environmental Dept monitored the area but didn't see caribou.
2016-02-06	17:03	Observation	Fox	1	Pit E Dump	Walking	Peter U	Monitored the Pit E dump area and part of East dike.
2016-02-07	14:00	Observation	Caribou	2	Kitchen at Vault camp	Grazing, walking SE	Jamie K	Deterred them by walking towards them
2016-02-09	10:00	Observation	Caribou	2	Kitchen at Vault camp	Grazing, walking SE	Jamie K	Deterred them by walking towards them
2016-02-09	14:03	Reported	Caribou	2	Ring road by Phase 2	Grazing, walking SE	Mine Dispatch	Checked around the area where they were reported, did not observe.
2016-09-10	9:00	Reported	Caribou	2	Ring road	Walking	Mine Dispatch	Environmental Dept monitored the area but didn't see caribou.
2016-02-10	16:50	Reported	Caribou	2	Kitchen at Vault camp	Walking	Unknown	Environmental Dept monitored the area but didn't see caribou.
2016-02-15	0:27	Reported	Caribou	2	Kitchen at Vault camp	Walking	Mine Dispatch	None
2016-02-15	8:30	Reported	Caribou	2	Tower at vault	Walking	Mine Dispatch	Were by the tower but off the road. Monitored for a while kept away from road.
2016-02-16	10:30	Observation	Caribou	2	Vault Explosive Area	Walking, grazing	Manon T	Were on the road. Walked away when approached them with pick up. Grazing at 100m from the road.
2016-02-16	11:00	Observation	Caribou	2	East of Vault Road halfway to Vault	Grazing	Manon T	Were 200m from the road. No action.
2016-02-17	8:45	Reported	Caribou	2	Crossing Vault Road to Vault Camp	Walking	Mine Dispatch	Environmental Dept monitored the area but didn't see caribou.
2016-02-21	9:00	Observation	Caribou	2	Crossing Vault Road to Vault Camp	Running	Tom T/Randy S	Deterred them by walking towards them
2016-02-22	8:30	Observation	Caribou	2	Crossing Vault Road to Vault Camp	Walking	Tom T/Randy S	Deterred them by walking towards them
2016-02-22	15:00	Reported	Arctic hare	8	East Dike	Grazing	Orest/Dewatering	None
2016-02-23	8:00	Observation	Caribou	3	Vault road (east side)	Grazing	Tom T/Randy S	Monitored caribou. They are 1km away from road.
2016-02-25	6:00	Reported	Ptarmigan	1	Push back	Hiding	Mine Dispatch	Environmental Dept was informed that a ptarmigan was injured and hiding under Drill #1
2016-02-25	8:00	Observation	Ptarmigan	1	Push back	Hiding	Erika V	Checked under drill #1 and the ptarmigan flew out of the pit (bird was not injured). Ptarmigan was not seen afterwards.
2016-02-27	14:20	Reported	Wolves	2	AWAR km 86	Walking	Ronnie N	None
2016-02-27	15:00	Observation	Caribou	3	Crossing Vault Road to Vault Camp	Walking	Tom T/Randy S	No action needed as caribou were far from the road
2016-02-29	7:34	Reported	Wolverine	1	Across from Airstrip near Fresh Water Barge road	Walking	Site Services	No action. Wolverine was reported turning away from camp and going towards TPL
2016-02-29	15:00	Observation	Caribou	3	Crossing Vault Road to Vault Camp	Grazing	Tom T/Randy S	No action; far from vault road

Meadowbank Wildlife Log - March 2016

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-03-01	4:34	reported	wolverine	1	AWAR km 103	running	Phillippe	None
2016-03-01	9:00	observation	Caribou	6	Fresh Water Barge road	grazing	Tom T/Randy S	None.Caribou were far from the road.
2016-03-01	15:30	reported	Caribou	6	AWAR km 105	grazing	BL Dispatch	None.Caribou were far from the road.
2016-03-08	9:00	observation	Caribou	5	Fresh water barge hill	grazing	Unknown	None.Caribou were far from the road.
2016-03-09	8:00	observation	Caribou	4	AWAR km 104	grazing	Jamie K/Fanny L	None.Caribou were far from the road.
2016-03-10	5:30	observation	wolverine	1	Sludge Dump	grazing	Jamie K/Fanny L	Deterred.
2016-03-10	5:45	observation	Caribou	5	Fresh water barge hill	grazing	Jamie K/Fanny L	Were scared away by the wolverine.
2016-03-12	14:10	observation	Arctic Hare	3	Baygoose Dyke	Running away	Jamie K/Fanny L	None
2016-03-13	9:00	observation	Caribou	6	China sump	grazing	Jamie K/Robin A	None
2016-03-13	9:22	observation	Caribou	4	Fresh water barge hill	grazing	Jamie K	None
2016-03-16	13:30	observation	Caribou	12	Saddle Dam area	grazing	Randy S	None.Caribou were far from the road.
2016-03-16	15:25	reported	Caribou	12	Saddle Dam area	grazing	Jay	None.Caribou were far from the road.
2016-03-16	16:30	observation	Arctic Hare	2	Incinerator area	Running	Randy S	None
2016-03-17	10:45	observation	Caribou	10	Saddle Dam area	grazing	Randy S	None.Caribou were far from the road.
2016-03-17	11:10	observation	Arctic Fox	1	Incinerator area	running	Randy S	None. They ran away from the area.
2016-03-18	15:00	observation	Caribou	3	Vault camp	running	Randy S	Parked truck on left side of the road opening to prevent caribou from running on the haul truck road; Caribou ran on to the tundra and started grazing
2016-03-19	9:40	observation	Arctic Fox	1	Incinerator area	running	Randy S/Robin A	None
2016-03-19	8:45	observation	Arctic Fox	1	East dike	running	Randy S	None
2016-03-20	19:00	observation	wolverine	1	Site service building	running	Randy S	Monitored where the Wolverine was moving until it was a safe distance from camp
2016-03-22	13:00	observation	Caribou	4	Fresh water barge hill	Laying down	Randy S/Tom T	None
2016-03-22	14:00	reported	Musk-Ox	5	EMR	grazing	Peters expediting	None
2016-03-23	9:00	observation	Caribou	10	Saddle Dam area	grazing	Tom T/Randy S	None.Caribou were far from the road.
2016-03-24	9:00	observation	Caribou	4	EMR Hill	walking	Tom T/Randy S	None.Caribou were far from the road.
2016-03-24	20:05	reported	Caribou	10+	AWAR km 83	grazing	BL Dispatch	None
2016-03-25	15:00	observation	Arctic fox	1	Incinerator area	running	Randy S	Drove toward ash bin and the fox ran over berm leading to lake.
2016-03-25	10:30	observation	Caribou	12	EMR Hill	grazing	Tom T	None
2016-03-26	10:30	observation	Caribou	30	Between Np-2 and emulsion	grazing	Tom T	None
2016-03-28	9:20	observation	Arctic Hare	2	Airstrip	running	Tom T/Randy S	None
2016-03-28	18:00	reported	Caribou	5	Airstrip	running	Dewatering Dept	Caribou were moving toward lake/ no action needed/no planes landing or leaving.
2016-03-29	7:05	reported	Caribou	3	EMR Hill	walking	Unknown	None
2016-03-29	8:30	reported	Caribou	12	AWAR km 61	walking	Unknown	None
2016-03-29	15:40	reported	Caribou	30	AWAR km 60	Grazing	Donald G	None.Caribou were far from the road.
2016-03-29	15:00	observation	Arctic Hare	2	FGL air sampler	grazing	Fanny L/Tom T	None
2016-03-29	14:00	reported	Caribou	2	Airport tower	running	Airport Controller	Deterred them off the airstrip.
2016-03-29	17:30	observation	Caribou	3	3rd portage lake	crossing	Fanny L/Tom T	None
2016-03-30	9:00	observation	Caribou	5	East of vault road	grazing	Fanny L/Tom T	None
2016-03-30	10:45	observation	Caribou	8	WTP	grazing, then walking away	Fanny L	Deterred them.
2016-03-30	11:40	observation	Caribou	8	EMR hill	Laying down	Fanny L	None

Meadowbank Wildlife Log - April 2016

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-04-03	12:00	observation	Caribou	7	Between storm water dike and airstrip	grazing	Jerome C	None
2016-04-03	21:05	observation	Caribou	100	AWAR Km 4	grazing	Thomas E	None
2016-04-04	11:40	observation	Caribou	30	Vault Road	grazing	Jamie K/Fanny L	Informed Vault supervisor. He will let Enviro Dept know when caribou get too close to the road
2016-04-04	17:00	observation	Caribou	30	Vault Road	grazing	Jamie K/Fanny L	Informed Vault supervisor. He will let Enviro Dept know when caribou get too close to the road
2016-04-05	9:45	Deterring	Caribou	2	airstrip	walking	airport tower	Deterred. They left northwest of the airstrip.
2016-04-05	9:45	Deterring	Caribou	3	NW of airstrip	Laying down	Fanny L	Deterred
2016-04-05	9:45	Deterring	Caribou	3	NW of airstrip	grazing	Fanny L	Deterred
2016-04-05	12:45	Deterring	Caribou	2	airstrip	walking	airport tower	Deterred
2016-04-05	14:00	Observation	Fox	1	Outside the kitchen	sleeping	Richard Jackson	Monitored the area. Not seen.
2016-04-05	11:50	Observation	Caribou	10	west of Saddle dam on the lake	Lying down	Fanny L	None
2016-04-05	15:00	Observation	wolverine	1	TPL	running away	Jamie K/Fanny L	None
2016-04-06	10:00	observation	Caribou	100	Vault Road	grazing	Jamie K/Fanny L	Kept monitoring. Mine dispatch notified.
2016-04-06	15:30	observation	Caribou	100	MBK Waste Dump	grazing	Jamie K/Fanny L	Kept monitoring. Mine dispatch notified.
2016-04-07	16:30	Deterring	wolf	1	Fuel farm/Core shack/Nova Camp/Quarry 23	walking around	Jamie K/Fanny L	Deterred
2016-04-07	9:30	observation	caribou	100	MBK Waste Dump	grazing/sleeping	Jamie K/Fanny L	Kept monitoring. Mine dispatch notified.
2016-04-09	18:15	observation	Caribou	10	North cell TSF	walking	Jamie K/Fanny L	Monitored the area to assess where they are heading out.
2016-04-09	21:15	reported	wolf	1	Outside Front Desk	walking	Jamie K/LO	Monitored the area. Followed him to Goose pit.
2016-04-09	21:00	monitoring	Caribou	10	EMR Hill	walking	Robin A	None.
2016-04-10	13:10	reported	wolf	1	Secondary Crusher	walking	Unknown	Followed wolf towards Third Portage Lake and Fresh water barge
2016-04-10	21:00	observation	wolf	1	Bay Goose area	lying down	Jamie K/Robin A	Has not moved since last deterring
2016-04-10	9:00	Observation	caribou	50	Vault road	walking, grazing, lying down	Jamie K/Fanny L	Reported to Mine dispatch to inform their drivers to use caution when on the Vault road.
2016-04-10	15:35	reported	wolf	1	incinerator area	walking, sniffing	Unknown	Was spotted near the Incinerator than towards Assay lab, Contractor FGL area, than back to the Incinerator area. Left the FGL area passing behind Overpad to Bay Goose area and lied down by a Waste rock. Deterred him.
2016-04-11	13:25	reported	wolf	1	Vault road heading north	walking and observing	Nelson B	Followed him to Vault magazine and away from mine site.
2016-04-11	13:00	reported	caribou	10	Between Quarry 23 and South cell	grazing	Unknown	Monitored the area.
2016-04-11	14:10	observation	caribou	50	SW of Vault camp	grazing and lying down	Jamie K/Fanny L	None.
2016-04-11	7:45	monitoring	wolf	1	Bay Goose area	Unknown	Jamie K/Fanny L	Was not in the area where we last observed it from the night before
2016-04-13	18:00	observation	wolf	1	secondary crusher	walking	Joe SS	Followed it.
2016-04-13	18:35	observation	wolf	1	AWAR km 105	walking	Security	None.
2016-04-14	8:00	observation	caribou	500	vault road turn lake	grazing	Tom T	None.

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-04-14	9:30	observation	caribou	30	west side of Vault road	grazing	Tom T/Robin A	None.
2016-04-15	16:00	observation	Caribou	200+	Drill Trail Lake near Vault Road	grazing	Tom T	None. Continue monitoring the area.
2016-04-16	10:00	reported	Fox	2	Bottom of Pit A Ramp	walking	Tom T	Monitored the area. Waited for fox to head off site to leave.
2016-04-16	11:00	observation	Caribou	300+	Between NP2 and Drill Trail/Turn Culverts	grazing and lying down	Tom T	None. Continue to monitor area in the event Haul Truck road needs to be closed if Caribou want to cross.
2016-04-17	15:00	observation	Caribou	100+	Vault Road	grazing and lying down	Brian I	None.
2016-04-18	10:25	reported	wolverine	1	KM5 Amaruq Rd	walking and observing	Jean-Francois B	None.
2016-04-20	10:00	monitoring	caribou	7	South of Vault Refuge	grazing and lying down	Brian I	None
2016-04-22	16:30	reported	Wolf	1	Primary Crusher ramp	walking towards FGL	Tom T	Followed it.
2016-04-22	9:00	observation	Caribou	50+	KM2 Vault Road	grazing and lying down	Tom T	None
2016-04-22	9:15	observation	Caribou	100+	Vault Camp	grazing and lying down	Tom T	None
2016-04-22	13:20	observation	wolf	1	AWAR km 15	walking on Tundra	Randy S	None
2016-04-22	17:35	reported	Caribou	12	Airstrip	Walking towards TPL	Tom T	Responded to call and stayed in the area until the plane left site.
2016-04-22	15:00	reported	Wolf	1	Sana Crusher	lying down	Tom T	Responded to call. Wolf appears sick. Deterents used - wolf did not respond. The wolf eventually moved and crossed over to the central dike
2016-04-23	8:30	observation	Caribou	12	Airstrip	Grazing on top of the hill across the lake at the airstrip	Tom T/Randy S	None
2016-04-23	9:15	observation	Caribou	100+	Saddle Dam area	Grazing	Tom T/Randy S	None
2016-04-23	9:00	observation	Caribou	100+	Vault Road	grazing/laying down	Tom T/Randy S	None
2016-04-24	9:45	observation	Caribou	100+	Vault Road	grazing/laying down	Tom T/Randy S	None
2016-04-24	10:10	observation	Fox	1	Incinerator area	Running	Randy S	None
2016-04-24	15:00	observation	Wolverine	1	Tailings Pond	Running	Tom T/Randy S	None
2016-04-25	8:30	observation	Caribou	1	Airstrip	grazing/walking	Tom T/Randy S	None
2016-04-25	12:30	observation	Caribou	3	On lake near Bay Goose Dike	walking SE	Tom T/Randy S	None
2016-04-25	18:00	reported	Caribou	4	Emulsion Plant	Walking towards Third Portage Lake	Nick - Dyno	None
2016-04-26	15:00	observation	Caribou	7	Small Lake between NP2 and Turn Lake	grazing/walking	Tom T/Randy S/Fanny L	None
2016-04-26	18:10	reported	Caribou	25-30	AWAR km 20	walking	Peter T	None
2016-04-27	11:25	observation	Caribou	7	Airstrip	grazing/walking	Tower/ Fanny L	Deterred away from airstrip
2016-04-27	9:41	observation	Caribou	7	Airstrip	grazing/walking	Tom T/Randy S	None
2016-04-27	10:00	Observation	wolves	3	China sump/tailings	Unknown	Unknown	None
2016-04-27	14:40	observation	wolf	1	China sump/tailings	Unknown	Jerome C	Wolf not seen during patrol
2016-04-28	10:30	Monitoring	Caribou	2	Vault Road	grazing	Jamie K/Fanny L	Monitored the area.
2016-04-28	5:30	observation	caribou	300	Vault road	grazing/walking	Levi Q	None
2016-04-28	10:34	observation	Caribou	15	Km 57 AWAR	Unknown	Alex A	None
2016-04-28	11:45	observation	Caribou	8	TPL Outside kitchen	grazing	Jamie K/Fanny L/Martin T	None
2016-04-28	13:22	observation	Caribou	7 to 9	AWAR km 18	Unknown	Unknown	None
2016-04-28	7:15	Observation	Caribou	2	Vault Road	grazing	Jamie K/Fanny L	Patrol following reported observation.

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-04-29	7:45	observation	Caribou	14	Fresh water barge hill	grazing	Jamie K/Fanny L	None
2016-04-29	10:15	observation	caribou	~150	Emulsion plant	grazing	Jamie K/Fanny L	None
2016-04-29	10:28	observation	caribou	9	Fresh water barge hill	grazing	Jamie K/Fanny L	None
2016-04-29	15:00	observation	Caribou	50	Vault Road	walking/running south	Fanny L	None
2016-04-29	16:30	Observation	Caribou	35	Vault Road	walking west	Martin T	None
2016-04-29	8:00	observation	Caribou	13	Vault Road	walking/grazing	Jamie K/Fanny L	None. Monitored the area.
2016-04-29	14:07	observation	caribou	12	AWAR Km 94	grazing	Jamie K/Victor U	Stopped when caribou were observed, notified Baker Lake Dispatch to inform drivers using the AWAR to slow down when they observe caribou near the road
2016-04-30	9:20	observation	Caribou	20	Vault Road	walking away, west	Fanny L	Monitored the area.
2016-04-30	8:50	observation	Caribou	15	Airstrip	grazing	Tower/ Fanny L	None
2016-04-30	8:50	observation	arctic hares	3	Airstrip	running	Fanny L	None
2016-04-30	8:42	observation	wolf	1	China sump/tailings	walking	Junior K	Notified Environment Department.

Meadowbank Wildlife Log - May 2016

Date	Time	Categorie	Wildlife Species	Quantity	Location	Behavior	Observer Name	Action
2016-05-01	7:50	Detering	Wolf	1	Fresh water barge	walking and chasing caribou	Fanny L, Jamie K	Deterred
2016-05-01	8:00	observation	Caribou	15	Airstrip	being chased by wolf, walking north west	Fanny L, Jamie K	None
2016-05-01	8:20	observation	Caribou	10	Tailings Pond	walking NW and away from wolf	Fanny L, Jamie K	None
2016-05-01	11:00	observation	Wolf	1	China sump/tailings	came into sludge dump	Fanny L, Jamie K	Deterred
2016-05-01	11:25	observation	Caribou	8	Airstrip	grazing	Fanny L, Jamie K	None
2016-05-02	7:49	observation	Caribou	?	EMR hill	Unknown	Shannon R	None
2016-05-02	7:49	observation	Caribou	16	AWAR Km 33	Unknown	Ronnie N	None
2016-05-02	10:30	observation	Fox	1	Vault Pit	running	Fanny L	Deterred
2016-05-02	10:35	observation	Caribou	15	Vault Road	grazing	Fanny L	None
2016-05-02	17:06	observation	Caribou	12	AWAR Km 105	grazing and lying down	Site Services	None. Advised drivers to slow down.
2016-05-03	9:35	Reported	Caribou	1	AWAR Km 86	staying in the middle of the road	Ernie	None. Advised drivers to slow down.
2016-05-03	10:00	observation	Caribou	20	Tailings Pond	grazing	Fanny L	None. Advised airport controller.
2016-05-03	15:40	observation	Wolverine	1	Airstrip	running	Nolan A	None
2016-05-04	8:45	observation	Arctic hare	2	Airstrip	Running	Fanny L, Jamie K	None
2016-05-04	8:50	observation	Caribou	12	Tailings Pond	laying down / grazing	Fanny L, Jamie K	None. Advised airport controller.
2016-05-04	9:15	Reported	Caribou	?	AWAR km 91	grazing	Nolan A	None. Advised drivers to slow down.
2016-05-04	3:15	reported	Wolf	1	China sump/tailings	walking	Ray C	Reported, not seen.
2016-05-04	3:20	observation	Caribou	15	Airstrip	laying down	Fanny L	None
2016-05-05	10:15	observation	Caribou	15	Airstrip	grazing	Airport controler	Deterred. Not effective.
2016-05-05	11:20	Detering	Caribou	15	Airstrip	running	Airport controler Fanny L/Jamie K	None
2016-05-05	11:30	observation	Wolverine	1	Tailings Pond	running away	Fanny L, Jamie K	None
2016-05-06	11:45	Observation	Caribou	19	Airstrip	laying down / grazing	Fanny L/ Mickael BA	None
2016-05-06	13:40	Reported	Wolverine	1	Fresh water barge	running	Joe	Reported, not seen.
2016-05-07	11:20	observation	Musk-Ox	~30	Vault Road	running	Fanny L/ Mickael BA	None
2016-05-07	11:50	observation	Caribou	19	Tailings Pond	grazing	Fanny L/ Mickael BA	None
2016-05-07	13:10	reported	Musk-Ox	?	Vault road	going towards Vault road	Ian C	None
2016-05-07	13:46	observation	Musk-Ox	~30	Vault road	running	Fanny L/ Mickael BA/Jamie K	Monitored the area.
2016-05-08	8:00	reported	Musk-Ox	16	Vault Road	grazing	Unknown	Monitored the area.
2016-05-08	8:05	observation	Caribou	2	Vault Road	grazing	Fanny L, Jamie K	None
2016-05-08	11:20	reported	Musk-Ox	16	Vault Road	laying down / grazing / walking	Dispatch call	Monitored the area.
2016-05-08	21:00	reported	Grizzly	1	AWAR km 102	walking	Chesley F	Reported, not seen.
2016-05-09	5:20	reported	Musk-Ox	15	Portage RSF	walking	Roch C	None
2016-05-09	9:00	observation	Ptarmigan	30	EMR	flying west	Fanny L, Jamie K	None
2016-05-09	10:00	Observation	Musk-Ox	18	Camp	walking/grazing	dispatch, Fanny L	Monitored the area.
2016-05-09	13:00	Observation	Musk-Ox	18	Camp	walking/grazing	Fanny L	None
2016-05-10	7:30	observation	Fox	2	Vault Pit	walking	Fanny L/ Mickael BA	Deterred. Not effective.
2016-05-10	8:30	observation	Caribou	2	Vault camp area	grazing	Fanny L/ Mickael BA	none
2016-05-10	9:30	observation	Caribou	100+	AWAR km 49	grazing	Randy S/Alex	None
2016-05-10	10:00	observation	Caribou	50+	AWAR km 89	grazing	Randy S/Alex	None
2016-05-10	10:40	observation	Ptarmigan	8	AWAR km 103	walking	Randy S/Alex	None
2016-05-10	11:15	observation	Caribou	26	EMR hill	walking	Randy S/Alex	None
2016-05-10	11:50	observation	Ptarmigan	13	Exploration camp	walking	Randy S/Alex	None
2016-05-11	9:45	observation	Caribou	3	Vault road	grazing	Chesley F	None
2016-05-11	10:00	observation	Musk-Ox	20	Vault camp area	walking	Randy S/Mickael BA	None
2016-05-11	14:30	observation	Caribou	10	West diversion ditch	walking	Randy S/Mickael BA	None
2016-05-11	16:15	observation	Musk-Ox	20	Vault camp area	Grazing	Randy S/Mickael BA/Tom T	None
2016-05-11	16:45	observation	Wolf	1	Fresh Water Barge	Walking	Randy S/Mickael BA/Tom T	Monitored the area.
2016-05-12	11:30	observation	Musk-Ox	22	Vault Parking	Grazing	Randy S/Mickael BA/Tom T	None
2016-05-12	15:45	observation	Caribou	20	Vault Road	Grazing	Randy S/ Tom T	None
2016-05-12	15:55	observation	Musk-Ox	22	Vault camp area	laying down	Randy S/ Tom T	None
2016-05-13	8:00	observation	Musk-Ox	22	Vault camp area	laying down	Randy S/ Tom T/Mickael BA	None

2016-05-13	9:30	reported	Caribou	9	Vault RSF	grazing	Randy S/Mickael BA	None
2016-05-13	16:00	observation	Peregrine falcon	1	West diversion ditch	flying north	Randy S/Mickael BA	Monitored the area.
2016-05-14	9:30	observation	Ptarmigan	15	East dike	walking	Randy S/Tom T	None
2016-05-14	13:50	observation	Ptarmigan	12	EMR hill	sitting in the tundra	Randy S/Mickael BA	None
2016-05-14	15:00	observation	Caribou	9	Vault camp area	grazing	Randy S/Mickael BA	None
2016-05-14	15:00	observation	Musk-Ox	22	Vault camp area	sitting in the tundra	Randy S/Mickael BA	Monitored the area.
2016-05-15	14:55	reported	Caribou	10	Vault camp area	grazing	Mine dispatch	None
2016-05-15	13:50	observation	Caribou	5	Thrid Portage Lake	walking	Randy S/Mickael BA	None
2016-05-16	15:00	observation	Musk-Ox	22	Vault parking	grazing	Randy S/Mickael BA	None
2016-05-16	16:00	observation	Caribou	10	Vault Road	grazing	Randy S/Mickael BA	Monitored the area.
2016-05-17	8:00	observation	Caribou	20	Old WTP	grazing	Randy S/Tom T	None
2016-05-17	8:30	observation	Geese	100+	Freshwater barge	flying	Randy S/Tom T	None
2016-05-17	9:00	observation	Geese	38	Tailings Pond	swimming	Randy S/Tom T/Robin A	Deterred. Not effective.
2016-05-17	13:00	observation	Musk-Ox	22	Vault camp area	grazing	Randy S/Mickael BA	None
2016-05-17	15:00	observation	Rough legged hawk	1	Portage pit	flying	Randy S/Mickael BA	None
2016-05-18	9:20	observation	Ptarmigan	10	Vault camp area	walking	Randy S/Mickael BA	None
2016-05-18	10:30	observation	Musk-Ox	24	Vault camp area	lying down	Randy S/Mickael BA	None
2016-05-18	11:00	observation	Caribou	4	Airstrip	walking	Randy S/Mickael BA	None
2016-05-18	12:10	observation	Caribou	5	Assay Lab	grazing	Randy S/Mickael BA/Robin A/Tom T	Monitored the area.
2016-05-18	13:15	observation	Caribou	7	Vault Road	grazing	Randy S/Mickael BA	None
2016-05-18	15:30	observation	Gyrfalcon	1	Vault Road	flying	Randy S/Mickael BA	None
2016-05-19	8:00	observation	Musk-Ox	24	Vault camp area	grazing	Randy S/Mickael BA	None
2016-05-19	8:30	observation	Geese	30+	Tailings Pond	swimming	Randy S/Mickael BA	Deterred
2016-05-19	8:50	observation	Caribou	6	EMR hill	grazing	Randy S/Mickael BA	None
2016-05-19	9:00	observation	Caribou	9	Geology core shack	grazing	Randy S/Mickael BA	None
2016-05-21	10:35	observation	Musk-Ox	24	Vault camp	grazing	Randy S/Erika V	None
2016-05-21	10:00	Observation	Caribou	8	Vault road	grazing	Randy S	None
2016-05-21	16:10	observation	Geese	100+	South Cell Tailings Pond	floating	Randy S	Deterred
2016-05-21	17:00	observation	Caribou	30	North Cell tailings pond	grazing	Randy S	Deterred
2016-05-22	9:00	observation	Musk-Ox	24	Vault Camp	grazing	Randy S/Patrick A	None
2016-05-22	13:30	Observation	Caribou	30	Vault road	walking	Randy S	Monitored the area.
2016-05-22	14:00	observation	Peregrine falcon	1	Vault road	flying	Randy S	None
2016-05-22	16:00	observation	Caribou	12	Tailings Pond	walking	Randy S	None
2016-05-23	8:00	observation	Caribou	11	Vault Road	grazing	Randy S	None
2016-05-23	9:15	observation	Musk-Ox	24	Vault Camp	lying down/grazing	Randy S/Patrick A	None
2016-05-23	10:40	observation	Caribou	16	NP2 Lake	lying down	Randy S	None
2016-05-23	16:00	observation	Snow owl	1	Sludge dump	sitting on top of pump	Randy S	None
2016-05-25	8:00	Reported	Caribou	~20	Airstrip	grazing	Air traffic tower	None
2016-05-25	8:30	observation	Caribou	8	Vault Road	grazing	Jamie K	Advised driver to slow down.
2016-05-25	8:30	observation	Musk-Ox	18	Vault Road	grazing and lying down	Jamie K	Advised driver to slow down.
2016-05-26	7:00	Reported	Caribou	1	Portage Pit A	walking	Mine supervisor	Reported, not seen.
2016-05-26	7:10	Reported	Wolf	1	Third Portage lake	walking	Airport Tower Controller	None
2016-05-26	10:45	observation	Wolf	2	Third Portage lake	walking then lying down	Jamie K/Patrick A	None
2016-05-26	10:45	observation	Canada geese	12	Airstrip	grazing	Jamie K/Patrick A	None
2016-05-26	11:15	observation	Caribou	10	China sump/tailings	grazing	Jamie K/Patrick A	None
2016-05-27	8:30	observation	Eagle	1	Old DWP plant	eating a cracass	Patrick A	None
2016-05-27	5:10	observation	Wolf	2	North Tailings pond	walking	Ronald - Site Services	None
2016-05-27	7:30	observation	Caribou	?	Vault Road	walking/grazing	Mine Supervisor	None
2016-05-28	10:00	observation	Wolverine	1	EMR	walking	Warehouse student	None
2016-05-28	10:00	observation	Grizzly	1	EMR	walking	Warehouse student	None
2016-05-28	10:00	observation	Caribou	?	EMR	grazing	Warehouse student	None
2016-05-29	13:10	observation	Snow geese	?	Unknown	flying	Jamie K/Patrick A	None
2016-05-29	13:45	observation	Peregrine falcon	1	Vault road	flying	Jamie K	None
2016-05-30	7:45	observation	Snow geese	30	EMR	grazing/walking	Jamie K/Patrick A	None
2016-05-30	10:15	observation	Caribou	7	Vault road	walking	Patrick A	None
2016-05-30	10:25	observation	Musk-Ox	21	Vault road	lying down	Patrick A	None

Meadowbank Wildlife Log - June 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
6/1/2016	7:30:00 AM	Vault Area	Musk-ox	21	Resting	Jamie K		No action required
6/1/2016	9:00:00 AM	Vault Area	Canada geese	15	Grazing	Jamie K	Patrick A	No action required
6/1/2016	8:30:00 AM	Vault Area	Musk-ox	24	Resting	Jamie K	Patrick A	No action required
6/2/2016	8:30:00 AM	Tailings Storage Facility	Long tailed ducks	10	Swimming	Jamie K		Deterred. Successful
6/4/2016	9:00:00 AM	Tailings Storage Facility	Long tailed ducks	20	Swimming	Jamie K		Deterred. Successful
6/5/2016	4:30:00 PM	Goose Pit	Rough legged hawk	1	Flying	Tom T		No action required
6/5/2016	11:00:00 AM	AWAR	Musk-ox	30	Grazing	Security		No action required
6/5/2016	10:30:00 AM	AWAR	Sandhill cranes	3	Walking	Tom T		No action required
6/6/2016	9:00:00 AM	Tailings Storage Facility	Long tailed ducks	20	Swimming	Tom T	Mickael BA	Deterred. Successful
6/8/2016	3:00:00 PM	Portage Rock Storage Facility	Canada geese	4	Swimming	Randy S		No action required
6/8/2016	11:00:00 AM	Tailings Storage Facility	Rough legged hawk	1	Flying	Randy S		No action required
6/8/2016	8:30:00 AM	AWAR	Canada geese	40	Flying	Randy S		No action required
6/9/2016	9:30:00 AM	Tailings Storage Facility	Duck	30	Swimming	Tom T		Deterred. Unsuccessful
6/11/2016	9:00:00 AM	Vault Area	Canada geese	30	Flying	Randy S	Mickael BA	No action required
6/11/2016	1:00:00 PM	Portage Pit	Canada geese	20	Flying	Randy S	Mickael BA	No action required
6/11/2016	11:00:00 AM	Camp	Fox	1	Walking	Tom T	Randy S	Monitored the area
6/11/2016	10:00:00 AM	Tailings Storage Facility	Duck	30	Swimming	Randy S	Tom T	Deterred. Unsuccessful
6/12/2016	3:00:00 PM	Airstrip	Wolf	1	Running	Security		Monitored the area but no sight
6/13/2016	2:00:00 PM	Vault Area	Rough legged hawk	1	Flying	Randy S	Mickael BA	No action required
6/13/2016	2:00:00 PM	Portage Rock Storage Facility	Canada geese	3	Swimming	Randy S	Mickael BA	No action required
6/13/2016	11:00:00 AM	Portage Rock Storage Facility	Canada geese	5	Swimming	Randy S	Mickael BA	No action required
6/15/2016	10:00:00 AM	Camp	Fox	1	Running	Randy S	Mike A	No action required
6/17/2016	11:30:00 AM	AWAR	Caribou	7	Unknown	PEL David Kautaq		No action required
6/17/2016	1:30:00 PM	AWAR	Musk-ox	2	Unknown	AFS Paul Diego		No action required
6/18/2016	2:30:00 PM	Vault Area	Wolf	1	Walking	Patrick A	Derek O	Monitored the area
6/20/2016	3:30:00 PM	AWAR	Musk-ox	20	Unknown	Stephane		No action required
6/21/2016	12:00:00 PM	AWAR	Musk-ox	29	Grazing	Timothy A	Patrick Ahern	Monitored the area
6/21/2016	8:00:00 AM	Unknown	Wolf	1	Unknown	Ronnie N		No action required
6/22/2016	12:30:00 PM	AWAR	Musk-ox	25	Resting	Fanny Laporte	Patrick Ahern	No action required
6/23/2016	8:30:00 AM	AWAR	Musk-ox	29	Unknown	Jamie K		No action required
6/23/2016	9:30:00 AM	AWAR	Musk-ox	29	Grazing	Fanny Laporte	Jamie Kataluk	Monitored the area
6/24/2016	9:00:00 AM	AWAR	Caribou	3	Walking	Paul Niego - Arctic Fuel driver		No action required
6/24/2016	9:00:00 AM	AWAR	Musk-ox	29	Grazing	Dino Stagg		Monitored the area
6/24/2016	9:00:00 AM	AWAR	Musk-ox	1	Grazing	Thomas Elytok		No action required
6/25/2016	12:00:00 PM	AWAR	Musk-ox	6	Unknown	Donald G		No action required
6/25/2016	12:00:00 PM	AWAR	Caribou	12	Unknown	Donald G		No action required
6/25/2016	11:30:00 AM	AWAR	Wolf	1	Unknown	Donald G		No action required
6/26/2016	9:00:00 AM	AWAR	Caribou	6	Unknown	Deno S		No action required
6/26/2016	10:00:00 AM	AWAR	Grizzly	1	Unknown	Joshep H		No action required
6/27/2016	4:30:00 AM	Unknown	Musk-ox	4	Grazing	Randy P		No action required

Meadowbank Wildlife Log - July 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
7/3/2016	6:30:00 PM	Unknown	Musk-ox	30	Unknown	Fanny L		Monitored the area
7/4/2016	2:30:00 PM	Unknown	Fox	1	Walking	Genevieve L		No action required
7/5/2016	3:00:00 PM	Portage Rock Storage Facility	Caribou	1	Walking	Randy S	Bryan I	No action required
7/6/2016	7:00:00 PM	Camp	Fox	2	Walking	Randy S	Robin A	Monitored the area
7/6/2016	12:00:00 AM	Unknown	Wolf	1	Unknown	Shannon M		Monitored the area but no sight
7/6/2016	7:00:00 PM	Quarry	Wolf	1	Walking	Shannon M		No action required
7/6/2016	8:00:00 AM	Vault Area	Caribou	20	Walking	Randy S	Bryan I	Monitored the area
7/7/2016	1:30:00 PM	Unknown	Musk-ox	3	Grazing	Robin A	Mickael B	No action required
7/8/2016	8:30:00 AM	Vault Area	Caribou	11	Walking	Randy S	Bryan I	Monitored the area
7/10/2016	8:00:00 AM	AWAR	Grizzly	1	Unknown	Baker Lake Dispatch		Monitored the area
7/12/2016	7:00:00 AM	Unknown	Fox	7	Hiding	Randy S	Bryan I	Deterred. Successful
7/13/2016	12:00:00 PM	Unknown	Grizzly	1	Unknown	Gatehouse dispatch		No action required
7/19/2016	12:00:00 PM	Camp	Musk-ox	1	Unknown	Andre R		No action required
7/21/2016	10:30:00 AM	Diversion ditches	Musk-ox	2	Grazing	Jamie K		No action required
7/21/2016	10:00:00 AM	AWAR	Caribou	1	Walking	Jamie K		No action required
7/25/2016	11:00:00 AM	Unknown	Tundra swan	1	Flying	Stephane P		No action required
7/25/2016	4:00:00 PM	Unknown	Wolf	1	Unknown	Mine night shift worker		No action required
7/26/2016	9:30:00 AM	Tailings Storage Facility	Caribou	1	Fleeing	Nelson B	Patrick A	Deterred. Successful

Meadowbank Wildlife Log - August 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
8/5/2016	11:30	EMR	Musk-ox	20	Grazing	Ray C	Tom T	No action required
8/8/2016	8:30	EMR	Wolverine	3	Running	Nelson B		Monitored the area
8/10/2016	15:00	AWAR	Musk-ox	1		Matthew.U		No action required
8/13/2016	9:30	AWAR	Caribou	1	Walking	Ronnie N		No action required
8/13/2016	9:30	AWAR	Wolf	1	Walking	Ronnie N		No action required
8/14/2016	8:30	AWAR	Musk-ox	12		Erine.L		No action required
8/14/2016	9:30	AWAR	Caribou	2	Unknown	Ronnie N		
8/14/2016	15:00	AWAR	Caribou	1	Walking	Victor C		No action required
8/15/2016	18:30	Third Portage Lake	Caribou	1	Running	Nelson B		Monitored the area but no sight
8/15/2016	11:30	AWAR	Caribou	1	Walking	Nolan A		No action required
8/16/2016	12:00	Camp	Fox	6	Playing	Randy S		Monitored the area
8/17/2016	15:00	Vault Area	Caribou	1	Grazing	Randy S	Aaron P	Monitored the area
8/18/2016	12:30	AWAR	Musk-ox		Unknown	Randy Pidgeon		No action required
8/18/2016	12:00	Vault Area	Caribou	3	Resting	Jamie K		No action required
8/18/2016	16:30	AWAR	Musk-ox		Walking	Gabriel Cote		No action required
8/19/2016	9:00	Vault Rock Storage Facility	Caribou	16	Grazing	Randy S	Patrick A	Monitored the area
8/19/2016	9:00	Vault Area	Wolf	1	Walking	Bryan I	Jeremy B	Monitored the area
8/20/2016	15:50	AWAR	Caribou	2		Robert P		No action required
8/20/2016	16:45	AWAR	Musk-ox	1		Donald G		No action required
8/20/2016	15:30	AWAR	Musk-ox	30		Paul B		No action required
8/20/2016	6:00	Second Portage Lake	Caribou	16	Unknown	Jason G		Monitored the area
8/20/2016	16:30	Vault Area	Caribou	15	Grazing	Martin T		Monitored the area
8/21/2016	14:30	AWAR	Musk-ox	3		Donald G		No action required
8/21/2016	12:55	AWAR	Caribou	3		Kyle P		No action required
8/22/2016	12:00	AWAR	Caribou	20	Grazing	Randy Pidgeon		Monitored the area but no sight
8/22/2016	14:30	AWAR	Caribou	12	Grazing	Donald Gauthier		No action required
8/22/2016	9:00	Vault Area	Wolf	1	Walking	Kevin Champagne		Monitored the area
8/23/2016	9:00	AWAR	Musk-ox	15	Grazing	Randy Pidgeon		No action required
8/23/2016	14:30	AWAR	Caribou	10	Grazing	Alexander Attungala		No action required
8/24/2016	6:00	Vault Area	Fox	9		Roch C		
8/24/2016	17:00	Vault Area	Caribou	6	Walking	Jamie K		Monitored the area
8/24/2016	17:00	AWAR	Caribou	4	Walking	Paul Boudreau		No action required
8/24/2016	11:30	AWAR	Caribou		Walking	Steve Paquin		No action required
8/25/2016	11:00	Vault Area	Caribou	6	Eating	Fanny Laporte		No action required
8/25/2016	18:00	Vault Area	Caribou	5	Walking	Fanny Laporte		No action required
8/28/2016	17:00	AWAR	Bald eagle	1	Flying	Fanny Laporte	Johanne Ferron	No action required

Meadowbank Wildlife Log - September 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
02/09/2016	11:00:00 AM	Vault Area	Caribou	5	Walking	Joe Q		No action required
05/09/2016	8:00:00 AM	Vault Area	Caribou	8	Resting	Randy S		Monitored the area
07/09/2016	12:30:00 PM	Inug	Caribou	18	Walking	Tom T	Randy S	No action required
08/09/2016	12:00:00 PM	AWAR	Musk-ox	20		Tim C		No action required
14/09/2016	6:00:00 PM	Vault Area	Caribou	2	Grazing	Fanny Laporte		
15/09/2016	11:30:00 AM	Vault Area	Wolverine	1	Crossing the road	Jason Larouche		
19/09/2016	9:30:00 AM	Vault Area	Caribou	6	Grazing	Fanny Laporte		Monitored the area
22/09/2016	11:30:00 AM	Vault Area	Fox	1	Running	dispatch call		Monitored the area
23/09/2016	6:00:00 AM	Vault Area	Wolverine	1	Crossing the road	Fanny Laporte		Monitored the area
26/09/2016	12:00:00 PM	Vault Area	Duck	1	Dead	Patrick A		
27/09/2016	9:00:00 AM	Second Portage Lake	Caribou	11	Resting	Patrick Ahern		Monitored the area
27/09/2016	9:30:00 AM	Portage Rock Storage Facility	Wolverine	1	Running	Mark Paradis		No action required
28/09/2016	3:00:00 PM	Vault Area	Caribou	9	Grazing	Pat A		Monitored the area
29/09/2016	9:30:00 AM	Vault Area	Caribou	8	Grazing	Randy S	Patrick A	Monitored the area

Meadowbank Wildlife Log - October 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
01/10/2016	12:00:00 PM	Meadowbank	Caribou	1000	Walking	Tom T		Monitored the area
01/10/2016	8:30:00 AM	Meadowbank	Caribou	28	Grazing	Randy S		Monitored the area
02/10/2016	9:00:00 AM	Meadowbank	Caribou	16	Grazing	Randy S		Monitored the area
06/10/2016	11:00:00 AM	Meadowbank	Caribou	500	Migrating	Randy S		Monitored the area
08/10/2016	11:30:00 AM	Meadowbank	Caribou		Migrating	Dispatch		No action required
08/10/2016	10:00:00 AM	Meadowbank	Wolverine	1	Walking	Randy S		Monitored the area
09/10/2016	2:00:00 PM	Meadowbank	Caribou	1	Grazing	Arctic Fuel		No action required
09/10/2016	11:30:00 AM	Meadowbank	Ptarmigan	8	Resting	Randy S		No action required
09/10/2016	11:00:00 AM	Meadowbank	Arctic hare	2	Running	Randy S		No action required
09/10/2016	12:00:00 PM	Meadowbank	Caribou	1000	Walking	Randy S		Monitored the area
11/10/2016	11:30:00 AM	Meadowbank	Caribou	100	Grazing	Baker Lake Dispatch		No action required
11/10/2016	10:30:00 AM	Meadowbank	Wolf	3	Walking	Baker Lake Dispatch		No action required
12/10/2016	4:30:00 PM	Meadowbank	Caribou	6	Walking	Trucker		
13/10/2016	10:00:00 AM	Meadowbank	Caribou	30	Crossing the road	Tommy Mariq AFS driver		
18/10/2016	4:30:00 PM	Meadowbank	Fox	1	Crossing the road	Fanny Laporte	Martin Therriault	No action required
18/10/2016	5:00:00 AM	Meadowbank	Caribou		Walking	Tommy Mariq		
18/10/2016	4:00:00 PM	Meadowbank	Caribou		Walking	Dino Stagg		
18/10/2016	1:30:00 PM	Meadowbank	Caribou	50	Walking	Ronnie Nagyougalik		No action required
19/10/2016	11:30:00 AM	Amaruk - Meadowbank	Wolverine	1	Unknown	Amaruq operator		No action required
19/10/2016	2:30:00 PM	Amaruk - Meadowbank	Wolf	2	Unknown	Amaruq operator		No action required
19/10/2016	12:00:00 PM	Meadowbank	Fox	1	Sick or wounded	Martin Caza		Monitored the area but no sight
19/10/2016	10:30:00 AM	Meadowbank	Wolf	4	Hunting	Tommy Mariq		
19/10/2016	9:30:00 AM	Meadowbank	Wolf	1	Walking	Dino Stagg		
19/10/2016	9:30:00 AM	Meadowbank	Caribou	100	Walking	Ronnie Nagyougalik		
21/10/2016	12:00:00 PM	Meadowbank	Fox	1	Walking	Mike		Monitored the area but no sight
23/10/2016	10:30:00 AM	Meadowbank	Wolverine	2	Fleeing	Jamie K	Fanny L	Deterred. Successful
26/10/2016	2:00:00 PM	Meadowbank	Fox	4	Playing	Randy S		No action required
29/10/2016	1:00:00 AM	Assay Lab Process Plant Meadowbank	Fox	1	Unknown	MikaelA		No action required
29/10/2016	10:00:00 AM	Camp Meadowbank	Fox	2	Eating	Tom T	Randy S	No action required
30/10/2016	6:30:00 PM	Site Services Meadowbank	Fox	5	Unknown	TomT	RandyS	Deterred. Unsuccessful
30/10/2016	10:00:00 AM	Energy and Infrastructure Meadowbank	Fox	2	Running	Randy S	Tom T	Monitored the area
31/10/2016	9:00:00 AM	Meadowbank	Snow owl	1	Flying	Tom T	Randy S	No action required
31/10/2016	4:00:00 PM	Amaruk - Meadowbank	Fox	1	Walking	Randy S		No action required
31/10/2016	10:30:00 AM	Site Services Meadowbank	Fox	2	Unknown	NowdlakE	TomT	Deterred. Successful
31/10/2016	10:30:00 AM	Site Services Meadowbank	Wolverine	1	Walking	RayC		No action required

Meadowbank Wildlife Log - November 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
01/11/2016	11:30:00 PM	Meadowbank	Wolverine	1	Walking	Douglas W		No action required
01/11/2016	5:00:00 PM	Meadowbank	Fox	1	Dead	Robin A	Tom T	Distpatch with GN WO approval
02/11/2016	5:00:00 PM	Amaruk - Meadowbank	Wolf	1	Walking	Amaruq Operator		No action required
02/11/2016	4:30:00 PM	Meadowbank	Wolverine	1	Eating	Randy S	Putuaq N	Monitored the area
02/11/2016	2:30:00 PM	Meadowbank	Fox	2	Eating	Randy S		Monitored the area
02/11/2016	8:00:00 AM	Meadowbank	Wolverine	1	Walking	Paul Q		Monitored the area but no sight
02/11/2016	7:00:00 AM	Meadowbank	Wolverine	1	Unknown	Douglas W		Monitored the area but no sight
03/11/2016	4:00:00 PM	Amaruk - Meadowbank	Fox	1	Walking	Randy S	Tom T	Monitored the area
03/11/2016	6:00:00 PM	Meadowbank	Wolverine	1	Eating	Putuaq K		Monitored the area but no sight
03/11/2016	2:00:00 PM	Meadowbank	Wolverine	1	Walking	Joseph H		Monitored the area but no sight
03/11/2016	1:00:00 AM	Amaruk - Meadowbank	Wolf	1	Unknown	Yan C		No action required
04/11/2016	9:00:00 AM	Meadowbank	Fox	1	Walking	Randy S		Monitored the area
05/11/2016	6:30:00 PM	Meadowbank	Fox	3	Playing	Randy S	Tom T	Monitored the area
05/11/2016	8:00:00 AM	Meadowbank	Fox	1	Walking	Randy S		No action required
06/11/2016	4:00:00 PM	Meadowbank	Fox	1	Walking	Randy S		Monitored the area but no sight
06/11/2016	11:00:00 AM	Meadowbank	Wolverine	1	Walking	Dabuek A		Monitored the area
06/11/2016	9:30:00 AM	Meadowbank	Fox	2	Running	Randy S		No action required
08/11/2016	5:00:00 PM	Meadowbank	Wolverine	1	Running	Site service operator (Aaron)		Monitored the area
09/11/2016	2:30:00 PM	Mine Meadowbank	Wolverine	1	Running	Dispatcher		Monitored the area but no sight
10/11/2016	5:30:00 PM	Meadowbank	Wolverine	1	Running	Warehouse (Caleb)		Monitored the area but no sight
11/11/2016	1:30:00 AM	Amaruk - Meadowbank	Wolf	2	Walking	amaruq road crew		
11/11/2016	5:00:00 PM	Meadowbank	Musk-ox	30	Grazing	Fanny Laporte		Monitored the area
11/11/2016	12:00:00 PM	Meadowbank	Wolf	1	Unknown	Paul Boudreau		No action required
11/11/2016	1:00:00 AM	Meadowbank	Wolverine	1	Crossing the road	Nicholas Gillespie (Dyno)		No action required
12/11/2016	11:00:00 AM	Meadowbank	Wolverine	1	Walking	Site service operator	Ghislain Beaudoin	No action required
14/11/2016	12:30:00 PM	Meadowbank	Wolverine	1	Eating	Stephane Valcourt	Fanny Laporte	Deterred. Successful
16/11/2016	3:30:00 PM	Meadowbank	Fox	1	Dead	Haul truck driver	Patrick Ahern	Cause unkown
16/11/2016	6:00:00 PM	Meadowbank	Fox	1	Threatened	Nightshift worker		Monitored the area but no sight
18/11/2016	11:00:00 AM	Amaruk - Meadowbank	Wolverine	1	Walking	Amaruq road crew		
19/11/2016	7:00:00 PM	Meadowbank	Wolverine	2	Fleeing	Patrick Ahern		
19/11/2016		Amaruk - Meadowbank	Caribou	6		Amaruq road crew		
20/11/2016	12:00:00 PM	Amaruk - Meadowbank	Wolverine	1	Walking	Amaruq Operator		No action required
20/11/2016	4:30:00 PM	Meadowbank	Fox	1	Dead	Fanny Laporte	Sarah Anirmiq	Red fox eating white fox
20/11/2016	3:30:00 PM	Meadowbank	Wolverine	1	Running	Patrick Ahern	Fanny Laporte	
20/11/2016	12:00:00 PM	Meadowbank	Caribou	3	Walking	Sarah Anirmiq		
21/11/2016	12:30:00 PM	Amaruk - Meadowbank	Wolverine	1	Walking	Amaruq road crew		No action required
21/11/2016	9:30:00 AM	Meadowbank	Arctic hare	1	Dead	Fanny Laporte		Cause unkown
24/11/2016	10:30:00 AM	Meadowbank	Caribou	3	Walking	Randy S		Monitored the area
25/11/2016	2:00:00 PM	Meadowbank	Musk-ox	18	Grazing	BL Dispatch		No action required
25/11/2016	12:00:00 PM	Meadowbank	Fox	1	Walking	Randy S		Monitored the area
25/11/2016	9:00:00 AM	Meadowbank	Fox	1	Grazing	Randy S		No action required
27/11/2016	12:30:00 PM	Meadowbank	Fox	2		Randy S	Tom T	Monitored the area
28/11/2016	8:00:00 AM	Meadowbank	Fox	1	Crossing the road	Randy S		Monitored the area
29/11/2016	9:00:00 AM	Meadowbank	Fox	1	Walking	Randy S		No action required
30/11/2016	2:30:00 PM	Meadowbank	Wolverine	1	Running	Natasha N		Monitored the area

Meadowbank Wildlife Log - December 2016

Date	Time	Location	Wildlife Species	Quantity	Behavior	Observer Name #1	Observer Name #2	Action
02/12/2016	12:30:00 PM	Amaruk - Meadowbank	Caribou	1	Unknown	Amruq Operator		No action required
02/12/2016	8:30:00 AM	Meadowbank	Red fox	1	Eating	Randy S	Chris T	Monitored the area
04/12/2016	8:00:00 AM	Meadowbank	Fox	2	Crossing the road	Randy S		No action required
04/12/2016	10:00:00 AM	Meadowbank	Wolverine	1	Walking	Joe T		Monitored the area but no sight
05/12/2016	4:30:00 PM	Amaruk - Meadowbank	Fox	1	Crossing the road	Patrick Ahern	Randy Schwandt	No action required
05/12/2016	1:00:00 PM	Meadowbank	Fox	1	Walking	Randy S	Martin T	Deterred. Successful
05/12/2016	8:00:00 AM	Maintenance Meadowbank	Fox	3	Eating	Tom T	Randy S	Monitored the area
05/12/2016	10:30:00 AM	Meadowbank	Arctic hare	1	Dead	Ronnie N		No action required
06/12/2016	10:00:00 AM	Meadowbank	Fox	4	Eating	Patrick Ahern		Monitored the area
06/12/2016	9:30:00 AM	Meadowbank	Wolverine	2	Eating	Patrick Ahern	Randy Schwandt	No action required
06/12/2016	10:00:00 AM	Meadowbank	Fox	4	Eating	Patrick Ahern	Randy Schwandt	Monitored the area
08/12/2016	11:00:00 AM	Meadowbank	Red fox	1	Eating	Patrick Ahern	Fanny Laporte	No action required
10/12/2016	3:30:00 PM	Amaruk - Meadowbank	Wolf	1	Walking	Amaruq Operator		No action required
10/12/2016	5:00:00 AM	Meadowbank	Red fox	1	Running	Fanny L.	Jamie K.	No action required
12/12/2016	11:00:00 AM	Amaruk - Meadowbank	Wolverine	1	Walking	Amaruq operator		No action required
14/12/2016	2:30:00 PM	Meadowbank	Wolverine	1	Walking	Sam Sevoga	Jamie K. Fanny L.	Monitored the area
15/12/2016	3:30:00 PM	Amaruk - Meadowbank	Wolverine	1	Running	Amaruq operator		No action required
16/12/2016	3:00:00 PM	Meadowbank	Caribou	1	Walking	Steve Paquin		
16/12/2016	3:00:00 PM	Meadowbank	Caribou	1	Walking	Steve Paquin		
17/12/2016	12:00:00 PM	Meadowbank	Caribou	9	Grazing	Fanny Laporte		No action required
17/12/2016	12:00:00 PM	Meadowbank	Caribou	16	Grazing	Fanny Laporte		Monitored the area
17/12/2016	12:30:00 PM	Meadowbank	Musk-ox	8	Resting	Fanny Laporte		No action required
17/12/2016	12:00:00 PM	Meadowbank	Caribou	20	Resting	Fanny Laporte		No action required
20/12/2016	9:30:00 AM	Meadowbank	Wolverine	1	Running	Fanny L.	Jamie K.	No action required
21/12/2016	2:30:00 PM	Meadowbank	Caribou	1	Grazing	Randy S	Ian B	Monitored the area
24/12/2016	5:00:00 PM	Meadowbank	Caribou	3	Walking	Randy S		Monitored the area
26/12/2016	8:30:00 AM	Meadowbank	Fox	3	Running	Robin A	Randy S	No action required
26/12/2016	8:30:00 AM	Meadowbank	Wolverine	1	Walking	Randy S	Robin A	No action required
26/12/2016	8:30:00 AM	Meadowbank	Red fox	1	Running	Robin A	Randy S	Monitored the area
26/12/2016	2:00:00 AM	Meadowbank	Wolverine	1	Crossing the road	Darcy P		Monitored the area but no sight
26/12/2016	1:00:00 PM	Meadowbank	Fox	1	Eating	Randy S	Jay C	Monitored the area
27/12/2016	9:00:00 PM	Meadowbank	Wolverine	1	Walking	Douglas W		Monitored the area but no sight
27/12/2016	2:00:00 AM	Amaruk - Meadowbank	Wolverine	1	Walking	Troy O		No action required
28/12/2016	6:00:00 PM	Meadowbank	Wolverine	1	Walking	Randy S		Monitored the area
28/12/2016	5:00:00 PM	Meadowbank	Fox	2	Eating	Ken M	Randy S	Monitored the area
28/12/2016	7:00:00 AM	Meadowbank	Wolverine	1	Running	Timothy K		Monitored the area
28/12/2016	10:00:00 AM	Meadowbank	Caribou	7	Walking	Randy S	Tom T	Monitored the area
31/12/2016	3:00:00 PM	Meadowbank	Wolverine	1	Running	Nelson B		Monitored the area but no sight
31/12/2016	11:30:00 AM	Meadowbank	Fox	2	Eating	Tom T	Randy S	Monitored the area



MEADOWBANK GOLD MINE PROJECT
2016 WILDLIFE MONITORING SUMMARY

APPENDIX B

2016 Wildlife Mitigation Documentation

From: Erika Voyer
To: [Meadowbank AEM](#); [Meadowbank Contractors](#)
Subject: Reminder_Wildlife around site
Date: January 3, 2016 8:48:23 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Hi all,

It is this time of year when our local wildlife (especially fox, wolf or wolverine) may start being seen on a more frequent basis, such as it is every winter.

As always, we ask that no one attempts to feed or get close to wildlife. Naturally, these animals will not attack humans, and will be more afraid of than we are of them. If precaution is taken, there is no need to be afraid of these animals. However, if protecting a food source, if surprised, or if cornered in a location they cannot get out of, these creatures, like any other wild animal, will defend itself. We again ask everyone on site to be sure to keep all sea cans and doorways closed to avoid allowing access to animals.

Please be sure to properly dispose of all food in the appropriate waste containers to ensure there are no food attractants for wildlife. When leaving a doorway and travelling outside, ensure to have a look around and proceed with caution to avoid walking up to an animal and startling it.

Here are some simple rules to follow in the case of an encounter:

- Respect them – they are wild
- Be alert at all times
- If you encounter one, back away slowly
- Make noise – don't surprise animals
- Travel in groups when possible
- Be cautious in noisy areas
- Do not approach them and never feed animals

Any person caught feeding animals or disposing of food related waste in an improper manner, including not disposing of food waste in the proper containers or disposing at the landfill, will be met with disciplinary measures.

If wildlife is seen please do not approach or chase it. Call the Environment Department on channel 9 or at extension 6747/ 6759 or contact Meadowbank Mine Dispatch on radio or extension 6949.

Supervisors please review with your crews. Thanks for your usual cooperation.

Érika Voyer, Eng., M.Sc.
Senior Environmental Coordinator - Interim

erika.voyer@agnicoeagle.com

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From: Toolooktook, Russell [<mailto:rtoolooktook@GOV.NU.CA>]

Sent: Monday, January 18, 2016 9:17 AM

To: Robin Allard

Subject: Caribou and Fox

Good morning Robin,

Please provide an update of the deterrent effort of the caribou and how it went... and the fox that may be blind; any sign of him?

Thanks,

Russell Toolooktook

A/Conservation Officer III

Kivalliq Region

Department of Environment - Wildlife Management Division

Government of Nunavut

P.O. Box 9

Baker Lake, NU X0C 0A0

☎ 867-793-2944

☎ 867-793-2514

Cell: 867-793-1692

✉ rtoolooktook@gov.nu.ca

From: Robin Allard
To: [Toolooktook, Russell](#); bakerhto@giniq.com; landsbaker@kivalliqinuit.ca
Cc: [Harmer, Rob](#); [Meadowbank Environment](#)
Subject: Meadowbank Vault Road Closure January 23rd
Date: January 23, 2016 3:25:19 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good day,

Caribou (+/- 12) were observed on or close to the Vault road at Meadowbank during night shift. It was decided to close the Vault road as precautionary measure. Closure was effective from 1:00 am to 3:00 am, January 23rd.

Be assured that AEM will continue to monitor the situation and will keep you informed of any change and/or development.

If you have any questions, please do not hesitate,

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

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From: Martin Theriault
To: [Toolooktook, Russell](#)
Cc: [Meadowbank Environment](#)
Subject: Caribou and Fox
Date: February 1, 2016 7:42:21 PM
Attachments: [image006.jpg](#)
[image007.jpg](#)
[image008.jpg](#)
[image009.jpg](#)
[image010.png](#)

Hi Russell,

Here is an update regarding the situations addressed by Robin last week;

First, we haven't seen the fox or received any notice about it.

Regarding the two Caribou near Vault, they are still around and are reported on a steady base.

Deterring effort occurred on the 20th, 25th, 27th and 31st but they keep coming back. We will keep you advised on our deterring efforts. Manon will send you the wildlife log with the details in the near future.

If you have any input/suggestions, don't hesitate.

Regards

Martin Theriault
Environmental - Acting Coordinator

martin.theriault@agnicoeagle.com

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Description: agnicoeagle.com



From: Robin Allard
To: [Meadowbank Contractors](#)
Cc: [Meadowbank Environment](#)
Subject: Wildlife at Meadowbank Memo
Date: April 10, 2016 8:51:18 PM
Attachments: [Wildlife safety and protection.pdf](#)
[image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good day all,

Wildlife has been reported on a more frequent basis on site.

We ask that no one attempts to feed, take close-up pictures, or get close to these wild creatures. Naturally, these animals will not attack humans, and will be more afraid of us than we are of them. If precaution is taken, there is no need to be afraid of these animals.

However, if protecting a food source, if surprised, or if cornered in a location they cannot get out of, these creatures, like any other wild animal, will defend itself. We again ask everyone on site to be sure to **keep all sea cans, and doorways closed** to avoid allowing access.

Please be sure to properly dispose of all food in the appropriate waste containers to ensure there are no food attractants for wildlife. When leaving a doorway and travelling outside, ensure to have a look around and proceed with caution to avoid walking up to an animal and startling it.

Please find more information in the Meadowbank Wildlife Pamphlet at [Wildlife Memo](#)

If wildlife is seen please **DO NOT APPROACH IT OR CHASE IT!!!**

Call the Environment Department on channel 9 or at extension **6747** or **6759** or contact Meadowbank Mine Dispatch on channel 11 or extension **6949**.

Supervisor, please share with your respective crews.

If you have any questions or would like a member of the Environment team to attend your tool box meetings to discuss this further, please don't hesitate to contact the Environmental department.

Thank you for your cooperation,

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6747

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From: Robin Allard
To: [Toolooktook, Russell; bakerhto@qiniq.com; landsbaker@kivalliqinuit.ca](#)
Cc: [Harmer, Rob; Meadowbank Environment; Meadowbank Environment Supervisors](#)
Subject: Meadowbank Vault Road Closure April 18th
Date: April 19, 2016 10:37:48 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good day,

Caribou (+/- 25) were observed on or close to the Vault road at Meadowbank during day shift. It was decided to close the Vault road as precautionary measure. Closure was effective from 13:00 to 13:30, April 18th 2016.

Be assured that AEM will continue to monitor the situation and will keep you informed of any change and/or development.

If you have any questions, please do not hesitate,

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6744

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From: Toolooktook, Russell
To: [Martin Theriault](#)
Cc: [Meadowbank Environment Supervisors](#); [Meadowbank Environment](#)
Subject: RE: wolf at Meadowbank
Date: April 29, 2016 5:23:08 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)
[image006.jpg](#)
[image007.jpg](#)
[image008.jpg](#)
[image009.jpg](#)
[image010.png](#)
[image011.jpg](#)
[image012.jpg](#)
[image013.jpg](#)
[image014.jpg](#)
[image015.png](#)
[image016.png](#)

Good day Martin,

Thanks for the email; keep me posted if it is the same wolf from the first report or another wolf.

Russell

From: Martin Theriault [mailto:martin.theriault@agnicoeagle.com]
Sent: April 29, 2016 11:18 AM
To: Toolooktook, Russell
Cc: Meadowbank Environment Supervisors; Meadowbank Environment
Subject: RE: wolf at Meadowbank

Good day Russell,

A lonely wolf was reported on the 27th north area of the mine site. Jamie Kataluk went to inspect but couldn't see it so we can't tell if it was the same wolf. We will keep you inform of any further development.

Regards

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

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From: Robin Allard
Sent: 22 avril 2016 16:56
To: Toolooktook, Russell
Cc: Meadowbank Environment Supervisors; Meadowbank Environment
Subject: RE: wolf at Meadowbank

Good day Russell,

The wolf was spotted again today at camp at 15h00 then again at 16h30. He looked in the same state as last time.

He walked around our crusher area and then when towards our tankfarm area towards Third Portage Lake.

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

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From: Toolooktook, Russell [<mailto:rtoolooktook@GOV.NU.CA>]
Sent: Monday, April 11, 2016 11:14 AM
To: Robin Allard
Cc: Meadowbank Environment Supervisors; Meadowbank Environment
Subject: RE: wolf at Meadowbank

Thanks Robin for the update; if you or the Technician's see him again, give me another call at work or on my cell phone anytime.

Russell

From: Robin Allard [<mailto:robin.allard@agnicoeagle.com>]
Sent: April 11, 2016 9:48 AM
To: Toolooktook, Russell

Cc: Meadowbank Environment Supervisors; Meadowbank Environment
Subject: RE: wolf at Meadowbank

Good day Russell,

We monitored again this morning and did not see him around the camp area. Nor was he seen at the location he was last spotted last night.

We will keep monitoring today.

You can call me at 6838.

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

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From: Toolooktook, Russell [<mailto:rtoolooktook@GOV.NU.CA>]
Sent: Monday, April 11, 2016 9:45 AM
To: Robin Allard
Cc: Meadowbank Environment Supervisors; Meadowbank Environment
Subject: RE: wolf at Meadowbank

Good morning Robin,

Please provide an update on the wolf this morning; I will then give you a call.

Thanks, Russell

From: Robin Allard [<mailto:robin.allard@agnicoeagle.com>]
Sent: April 10, 2016 9:55 PM
To: Toolooktook, Russell
Cc: Meadowbank Environment Supervisors; Meadowbank Environment
Subject: wolf at Meadowbank

Good evening Russell,

As we discussed here are a couple of photos of the wolf on site.

He was reported around our front desk area and the smoke shack around 20:45 on April 9th. Passing by people around the area.

He was reported and monitored today around 13:00 by our secondary crusher and around camp. We led the animal towards Third Portage lake using our pick-ups. He ended up north towards EMR hill. That's when we first called you.

He was then also monitored around 17:00 around our incinerator area. He kept going back and forth towards that area. We pushed him towards the Bay Goose area when the wolf rolled-up as you see in one of the photo (#17). That's when we called you again. It was still there around 21:00.

Jamie thinks the animal is not well and he was a bit lethargic.

Let me know what you think our next steps could be.

Thanks for your help,

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

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From: Jamie Kataluk
To: [Gatehouse Baker Lake](#)
Cc: [Meadowbank Environment](#)
Subject: Caribou along the AWAR
Date: May 3, 2016 3:45:15 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good morning Mellow

Please advise drivers using the AWAR to slow down to 20 km/hr and shut off their headlights and strobe lights if there is caribou close by the road. Use extra caution when they see caribou as well.

Thank you

Jamie Kataluk
Environment Technician

jamie.kataluk@agnicoeagle.com

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Baker Lake, Nunavut, Canada
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From: Jamie Kataluk
To: rtoolootook@gov.nu.ca; bakerhto@qiniq.com; landsbaker@kivalliqinuit.ca
Cc: [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: Meadowbank Vault road closure May 8
Date: May 8, 2016 4:21:50 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good morning

About 20 musk ox were observed by the Vault road on the west side at 8:00. We went over to the Vault road to go observe the musk ox. During the observation they began to walk towards the Vault road so we advised the Mine supervisor to close the road for precautionary measures till the musk ox crossed the road. We stayed on the road to observe the musk ox, during observation the musk ox began to move away from the road and waited till the Musk ox were a safe distance from the road to re-open the road.

Also, musk ox were observed close to the Amaruq road at Km 3 and 10 meters away from the road. We advised the Amaruq crew to close the road until the musk ox move away from the road.

We will keep monitoring the roads on an hourly basis or any changes/developments occur.

If you have any questions please do not hesitate to contact us

Jamie Kataluk
Environment Technician

jamie.kataluk@agnicoeagle.com

T: 819.759.3555 x6747

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From: Robin Allard
To: [Meadowbank AEM](#); [Meadowbank Contractors](#)
Cc: [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: Wildlife at Meadowbank
Date: May 13, 2016 11:15:03 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good day all,

With wildlife being observed around our site lately, and specifically around the Vault area, we want to remind everybody that concerning wildlife :

- **no one attempts to feed**
- **no one attempts to take close-up photos**
- **no one attempts to get close**

These creatures are wild and are unpredictable. For your own safety and for the safety of the animals, it is important that these rules are followed at all times.

Not following these simple rules will cause serious animal disturbance and could also potentially impact our operations at Meadowbank.

Supervisor, please share with your respective crews.

Thank you for your cooperation,

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

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From: Robin Allard
To: [Toolooktook, Russell](#); bakerhto@qiniq.com; landsbaker@kivalliqinuit.ca
Cc: [Harmer, Rob](#); [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: Meadowbank Vault Road Closure May 13th
Date: May 14, 2016 2:11:36 AM
Attachments: [image006.jpg](#)
[image007.jpg](#)
[image008.jpg](#)
[image009.jpg](#)
[image010.png](#)

Good day,

Muskoxen (+/- 20) were observed on or close to the Vault road at Meadowbank during day shift. It was decided to close the Vault road to Heavy traffic as precautionary measure. Closure was effective from 9:15 to 16:00, May 13th 2016.

Be assured that AEM will continue to monitor the situation and will keep you informed of any change and/or development.

If you have any questions, please do not hesitate,

Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com

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From: Tom Thomson
To: rtooloook@gov.nu.ca
Cc: [Meadowbank Environment](#); [Erika Voyer](#); [Jamie Quesnel](#)
Subject: Grizzly Bear
Date: May 19, 2016 9:32:41 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good afternoon Russell,

Just wanted to advise you that today around 14:45 the helicopter pilot reported a grizzly bear approximately 3 miles north of the Meadowbank airstrip. We have asked the pilots to keep us updated on any additional sightings. ENV techs patrolled the AWR out to KM101 as well as the Vault road but no further sightings were observed.

Please don't hesitate to call or email if you have any questions.

Regards,

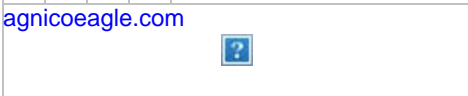
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From: Randy Schwandt
To: [Meadowbank AEM](#)
Subject: Bird cannon placement on central dike
Date: May 22, 2016 10:33:30 PM
Attachments: [2016-05-22 Bird Canon placement.JPG](#)
[image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good evening,

Environment placed a bird cannon on central dike today; the bird cannon is ran on propane and pushes a loud bang every 45 minutes; do not be alarmed if you hear it. The placement of this canon was strategically put in place to deter geese off of tailings that have been recently spotted.

I attached a photo to show its current location as well to show the appearance of what it looks like.

If you have any questions or concerns please don't hesitate to contact environment.

Randy Schwandt
Environmental Technician

randy.schwandt@agnicoeagle.com

T: 819.759.3555 x6747

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Meadowbank Division
Baker Lake, Nunavut, Canada
X0C 0A0

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Description: agnicoeagle.com



From: Martin Theriault
To: [Toolooktook, Russell](#); bakerhto@qiniq.com; landsbaker@kivalliqinuit.ca
Cc: [Harmer, Rob](#); [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: Muskox situation
Date: May 23, 2016 3:00:57 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)
[IMG_4021.jpg](#)

Good day,

Just to follow up on the Muskoxen situation, they are still in the surrounding of the Vault road (about 150 meters from the road). All operators and supervisors for the Vault area are aware of the situation and we continue to monitor closely the situation.

We will keep you informed of any change and/or development.

If you have any questions, please do not hesitate,

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

T: 819.759.3555 x6744

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From: Martin Theriault
To: rtoolootook@gov.nu.ca
Cc: [Meadowbank Environment](#); [Erika Voyer](#); [Jamie Quesnel](#)
Subject: RE: Grizzly Bear
Date: May 29, 2016 8:43:56 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Hi Russell,

A grizzly bear was reported again yesterday near the Emulsion plant. We will keep monitoring the area.

Please don't hesitate to call or email if you have any questions.

Regards,

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

T: 819.759.3555 x6744

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From: Tom Thomson
Sent: 19 mai 2016 15:32
To: rtoolootook@gov.nu.ca
Cc: [Meadowbank Environment](#); [Erika Voyer](#); [Jamie Quesnel](#)
Subject: Grizzly Bear

Good afternoon Russell,

Just wanted to advise you that today around 14:45 the helicopter pilot reported a grizzly bear approximately 3 miles north of the Meadowbank airstrip. We have asked the pilots to keep us updated on any additional sightings. ENV techs patrolled the AWR out to KM101 as well as the Vault road but no further sightings were observed.

Please don't hesitate to call or email if you have any questions.

Regards,

Tom Thomson
Sr. Environmental Technician
tom.thomson@agnicoeagle.com
T: 819.759.3555 x6759

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From: Martin Theriault
To: [Meadowbank Environment](#)
Cc: [Erika Voyer](#)
Subject: falcon
Date: May 30, 2016 5:04:25 PM
Attachments: [06172012 Peregrine Falcon Management and Protection Plan on the Meadowbank Gold Project Site v2 final.pdf](#)
[image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Hi,

Pete Henry told me a falcon nest was seen in Portage pit A. He said going down the ramp heading to pit A (right after the portable washroom near the west road), there is a green c-can on the left for dewatering purpose. The nest is supposedly in line with that c-can. I went there and didn't see anything. Please inspect and report inspections in that area. It's far away from blasting path (more than 150m) but still, we need to pay attention.

I attached the plan that was put in place in 2012.

Thanks

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

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From: Jamie Kataluk
To: [Meadowbank Environment](#)
Cc: [Meadowbank Environment Supervisors](#)
Subject: Peregrine falcon landing location
Date: May 31, 2016 11:21:42 PM
Attachments: [2016-05-31 001 \(Small\).jpg](#)
[2016-05-30 021 \(Small\).jpg](#)
[image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Landing area circled in pink. Been checking it since it was reported, seen it once flying above Pit A.
Any questions do not hesitate to contact me

Jamie Kataluk
Environment Technician

jamie.kataluk@agnicoeagle.com

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From: Jamie Kataluk
To: [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: Peregrine falcon
Date: May 31, 2016 12:08:11 AM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)
[2016-05-30 021 \(Small\).JPG](#)
[2016-05-30 023 \(Small\).JPG](#)
[2016-05-30 019 \(Small\).JPG](#)

Attached photo's of the location where the peregrine falcon was landing. Going to Pit A down the ramp there is a pump, its about 100m from the pump.

Third photo taken in front of the pump and I was facing south. Will take another photo tomorrow with the pump showing for better idea of where the falcon was landing

Jamie Kataluk
Environment Technician

jamie.kataluk@agnicoeagle.com

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From: Jamie Kataluk
To: rtoolootook@gov.nu.ca; rtoolootook@gov.nu.ca; bakerhto@qiniq.com
Cc: [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: road closure
Date: June 23, 2016 4:14:14 PM
Attachments: [image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good morning

This is to inform you that we had to close the road between Exploration camp and Meadowbank camp due to musk-ox by the All-weather Access road. 29 Musk-ox were observed by the road and reported to Environment. Musk ox were monitored until they moved a safe distance away from the road and will keep monitoring. We will keep you informed as the day progresses.

Thank you for your time and please do not hesitate to contact us

Jamie Kataluk
Environment Technician

jamie.kataluk@agnicoeagle.com

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From: Martin Theriault
To: [Meadowbank AEM; Meadowbank Contractors](#)
Cc: rtoolooktook@gov.nu.ca
Subject: Caribou near Vault area
Date: August 21, 2016 3:50:57 PM
Attachments: [Wildlife Protection Protocol Caribou Migration Oct 6 2011 \(Rev. April 17....pdf](#)
[image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Hi all,

Recently we noticed an increase of caribou observations near the Vault road area. Please review the attached procedure with your crew as the procedure also apply to the Vault road. All observations must be reported to the environment department.

Don't forget, **wildlife has the right-of-way.**

Don't hesitate to contact us if you have any concerns.

Regards

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

T: 819.759.3555 x6744

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From: Robin Allard
To: [Meadowbank AEM](#); [Meadowbank Contractors](#)
Cc: [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#); bakerhto@qiniq.com; landsbaker@kivalliqinuit.ca; rtoolooktook@gov.nu.ca
Subject: Caribou migration
Date: October 1, 2016 10:33:28 PM
Attachments: [Migration Memorandum 2016.pdf](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.jpg](#)
[image015.png](#)

Good day all,

With the increased number of Caribou in the vicinity please review the attached memorandum. It can also be found on the Intranet main page.

If you have any questions or concerns, please feel free to contact the Environment Department on channel 9 or at extensions 6759/6747/6744.

Thanks,

Robin Allard
Environmental Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6744

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From: Robin Allard
To: rtoolooktook@gov.nu.ca; bakerhto@qiniq.com; landsbaker@kivalliqinuit.ca
Cc: [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#); [Karen Yip](#); [Stephane Larose](#); [Alexandre Arcand](#)
Subject: Meadowbank AWAR closed - nights
Date: October 24, 2016 2:42:00 AM
Attachments: [image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.jpg](#)
[image015.png](#)

Good day,

This is just to advise you that in this migration season, we have decided to stop hauling traffic during night on the AWAR to limit potential, if any, impacts on caribou.

Therefore, hauling on the AWAR will begin after 6h00 am and stop around nightfall, until further notice.

Be assured that AEM will continue to monitor the road regularly and will keep you informed of any change and/or development.

If you have any questions, please do not hesitate,

Robin Allard
Environmental Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6744

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Meadowbank Division
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From: Robin Allard
To: [Meadowbank Contractors](#)
Cc: [Meadowbank Environment](#)
Subject: Wildlife at Meadowbank
Date: October 24, 2016 3:21:46 PM
Attachments: [Wildlife safety and protection.pdf](#)
[image001.jpg](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.png](#)

Good day all,

Wildlife has been reported on a more frequent basis on site.

We ask that **no one attempts to feed, take close-up pictures, or get close to** these wild creatures. Naturally, these animals will not attack humans, and will be more afraid of us than we are of them. If precaution is taken, there is no need to be afraid of these animals.

However, if protecting a food source, if surprised, or if cornered in a location they cannot get out of, these creatures, like any other wild animal, will defend itself. We again ask everyone on site to be sure to keep all sea cans, and doorways closed to avoid allowing access.

Please be sure to properly dispose of all food in the appropriate waste containers to ensure there are no food attractants for wildlife.

Please find more information in the attached Meadowbank Wildlife Pamphlet

If wildlife is seen please **DO NOT APPROACH IT OR CHASE IT!!!**

Call the Environment Department on channel 9 or at extension **6747, 6759** or **6744** or contact Meadowbank Mine Dispatch on channel 11 or extension **6949**.

Supervisor, please share with your respective crews.

If you have any questions or would like a member of the Environment team to attend your tool box meetings to discuss this further, please don't hesitate to contact the Environmental department.

Thank you for your cooperation,

Robin Allard
Environmental Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6744

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Meadowbank Division
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From: Robin Allard
To: [Toolooktook, Russell](#)
Cc: [Harmer, Rob](#); [Meadowbank Environment](#); [Meadowbank Environment Supervisors](#)
Subject: RE: fox at MBK
Date: November 2, 2016 1:44:01 AM
Attachments: [2016-11-01 - Wildlife Mortality Report.pdf](#)
[image007.jpg](#)
[image009.jpg](#)
[image011.jpg](#)
[image013.jpg](#)
[image015.png](#)
[image026.jpg](#)
[image027.jpg](#)
[image028.jpg](#)
[image029.jpg](#)
[image030.png](#)

Good evening Russell,

You will find attached a report for the fox that was dispatched at the Meadowbank site, as we discussed.

The carcass will be brought to Baker on Friday, November 4th.

If you have any questions, please do not hesitate,

Robin Allard
Environmental Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6744

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From: Toolooktook, Russell [<mailto:rtoolooktook@GOV.NU.CA>]
Sent: Monday, October 31, 2016 11:04 AM
To: Robin Allard
Cc: Harmer, Rob
Subject: RE: fox at MBK

Robin,

Our Dept. agrees to put the fox down; in saying this please remind workers that it is the time of year were foxes and other animals will be coming into the mine site attracted to food scent (kitchen cooking), food waste (coffee cups, wrappers) and even cigarette butts, and that they keep the

Russell

From: Robin Allard [<mailto:robin.allard@agnicoeagle.com>]

Sent: October 31, 2016 8:57 AM

To: Toolooktook, Russell

Subject: fox at MBK

Good day Russell,

We are having concerns about a fox that seems to have become habituated to human presence and have lost his natural fears around camp.

He was reported following workers outside our frontdesk area. He is not aggressive in any way but our deterring efforts are not effective at this point because he keeps coming back.

Encounters are being more frequent.

Do you have any suggestions about further steps that could be taken?

Thanks for your help,

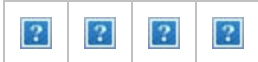
Robin Allard
Environmental Coordinator

robin.allard@agnicoeagle.com

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From: Martin Theriault
To: [Meadowbank Contractors](#)
Cc: [Meadowbank Environment](#)
Subject: Wildlife at Meadowbank
Date: November 7, 2016 8:23:04 PM
Attachments: [Wildlife safety and protection.pdf](#)
[image006.jpg](#)
[image007.jpg](#)
[image008.jpg](#)
[image009.jpg](#)
[image010.png](#)

Good day all,

Wildlife has been reported on a more frequent basis on site.

We ask that **no one attempts to feed, take close-up pictures, or get close to** these wild creatures. Naturally, these animals will not attack humans, and will be more afraid of us than we are of them. If precaution is taken, there is no need to be afraid of these animals.

However, if protecting a food source, if surprised, or if cornered in a location they cannot get out of, these creatures, like any other wild animal, will defend itself. We again ask everyone on site to be sure to keep all sea cans, and doorways closed to avoid allowing access.

Please be sure to properly dispose of all food in the appropriate waste containers to ensure there are no food attractants for wildlife.

Please find more information in the attached Meadowbank Wildlife Pamphlet

If wildlife is seen please **DO NOT APPROACH IT OR CHASE IT!!!**

Call the Environment Department on channel 9 or at extension **6747, 6759** or **6744** or contact Meadowbank Mine Dispatch on channel 11 or extension **6949**.

Supervisor, please share with your respective crews.

If you have any questions or would like a member of the Environment team to attend your tool box meetings to discuss this further, please don't hesitate to contact the Environmental department.

Thank you for your cooperation,

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

T: 819.759.3555 x6744

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From: Martin Theriault
To: [Meadowbank Contractors](#)
Cc: [Meadowbank Environment](#)
Subject: Wildlife at Meadowbank
Date: December 10, 2016 4:30:09 PM
Attachments: [Wildlife safety and protection.pdf](#)
[image006.jpg](#)
[image007.jpg](#)
[image008.jpg](#)
[image009.jpg](#)
[image010.png](#)

Good day all,

Wildlife has been reported on a more frequent basis on site.

We ask that **no one attempts to feed, take close-up pictures, or get close to** these wild creatures. Naturally, these animals will not attack humans, and will be more afraid of us than we are of them. If precaution is taken, there is no need to be afraid of these animals.

However, if protecting a food source, if surprised, or if cornered in a location they cannot get out of, these creatures, like any other wild animal, will defend itself. We again ask everyone on site to be sure to keep all sea cans, and doorways closed to avoid allowing access.

Please be sure to properly dispose of all food in the appropriate waste containers to ensure there are no food attractants for wildlife.

Please find more information in the attached Meadowbank Wildlife Pamphlet

If wildlife is seen please **DO NOT APPROACH IT OR CHASE IT!!!**

Call the Environment Department on channel 9 or at extension **6747, 6759** or **6744** or contact Meadowbank Mine Dispatch on channel 11 or extension **6949**.

Supervisor, please share with your respective crews.

If you have any questions or would like a member of the Environment team to attend your tool box meetings to discuss this further, please don't hesitate to contact the Environmental department.

Thank you for your cooperation,

Martin Theriault
Environmental Coordinator

martin.theriault@agnicoeagle.com

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APPENDIX C

2016 Wildlife Mortality Reports

Wildlife Incident Report

Date: 2016-03-13

From: Robin Allard

Incident Description:

On March 13th at 9:30 am, the Meadowbank Security officer advised the Environment department that a Ptarmigan came into contact with one the front windows of the front desk area. Window was broken on impact and bird was found to be bloodied on the walkway.



Action and Recommendations:

Once on location the Environment staff confirmed the Ptarmigan was dead. The carcass was collected and brought to the Incinerator facility for disposal. The area was inspected to assess if any attractant was present. None was found. The animal could have gotten scared by the activity in the vicinity front desk area.

The Environment department will keep monitoring the area in the next days to make sure no more birds and/or animals are present.



Robin Allard
Environmental - Acting Coordinator

robin.allard@agnicoeagle.com
T: 819.759.3555 x6744

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Wildlife Incident Report

Date: 2016-05-27 **From:** *Jamie Kataluk, Senior Environment Technician*

Incident Description:

On May 27th, the Environmental department was informed by a worker that there is a Caribou carcass between Quarry 23 and Tailings pond South cell. The workers stayed close to the carcass until Environment has arrived on the scene. Once Environment arrived, we began to observe the area as to what may have been the cause of death. Paw prints were observed around the area where the caribou had been killed, the wolves had moved the carcass before they began to devour it. Once the wolves were done eating, birds such as seagulls and raven began to eat until we arrived to do our investigation. When we arrived to the carcass, bones and some skin were left and some other parts such as the hind leg and front leg were missing

Action and Recommendations:

We tried to contact the Conservation officer in Baker Lake at his office and cell phone with no success. After couple of days, to avoid safety issue for both wildlife and workers, we decided to remove and incinerate the carcass to prevent other predators and scavengers being attracted to the area.

Caribou carcass was split apart, removed and placed in heavy durable plastic bags and brought to the Incinerator to be incinerated

We trust that the above details described appropriately the wildlife incident that occurred at the Meadowbank site on May 27th, 2016 and the remediation activities that followed. Please contact the undersigned should you have any questions

Jamie Kataluk
Senior Environment Technician
Meadowbank Division
Agnico Eagle Mines Ltd.
Jamie.kataluk@agnicoeagle.com
(867)793-4610 extension 6759



Photo 1: Spot where wolves' tracks were observed



Photo 2: Carcass leftover, mostly bones.



Photo 2: Carcass location

Wildlife mortality Report

Date: 2016-09-25

From: *Jamie Kataluk*

Description:

On the 25th of September 16:30 the Environment team was notified of a juvenile merganser was attached to gill nets at the Phaser Lake during a fishout program. Upon discovering the merganser, it was already deemed dead by the crew checking the gill nets. Once removed from the nets, bird was placed in a freezer to prevent attraction of scavengers until discretion of the Conservation officer.

Action and Recommendations:

Action: notified Conservation officer in Baker Lake, officer requested the bird be brought to Baker Lake when Environment crew are going to Baker Lake on the 30th of September

Please contact the undersigned should you have any questions.

Jamie Kataluk
Sr. Environmental Technician

jamie.kataluk@agnicoeagle.com

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Wildlife mortality Report

Date: 2016-11-01

From: Robin Allard

Description:

Since October 23rd 2016 an increase of sightings of a fox was noted around the front desk area of the Meadowbank camp. A memo was sent on October 24th to all AEM employees and contractors on site mentioning the importance of not feeding wildlife and safety concerns. Sightings were still increasing in the next days. The environmental department staff did frequent patrol in the area, noticing a fox that was not showing any signs of fear towards humans sometimes following workers moving around the front desk area. This animal seemed to have become habituated to the traffic in the area and was showing an increased tendency at accessing the main stairs and smoke shack. The environmental staff tried to deter the animal by using several methods (pickup, scare cartridges (screamers, whistlers) and foot patrol). The area was deemed not safe to shoot any other types of deterrents.

On October 31st the Conservation officer in Baker Lake was contacted for assistance and guidelines on this matter. Authorization was given on the same day to dispatch the problematic animal.

Action and Recommendations:

Traps were set in the area of the front desk to enable the Environment staff to safely move the animal away from high traffic areas. 2 foxes were caught in the morning of November 1st. One animal was showing no signs of stress and seemed to be the animal that was observed in the past days. It was dispatched using a 223 caliber rifle with a single shot to the head by Tom Thomson, Senior Environmental technician. The other animal was showing more resolve and aggressiveness. Since it was showing no signs of being habituated, it was released farther away, northbound of the mine site.

As requested, the carcass of the dispatched animal will be brought to the Conservation officer Baker Lake office on Friday November 4th by the Environmental department staff. The area was inspected to assess if any attractant was present, apart from the smoke shack, none was found.



The Environment department will keep monitoring the area in the next days to make sure no other problematic animal is observed.

Another memo concerning wildlife will be sent at the end of the week to cover staff that were not on site at the time of the first memo was sent. Also, our staff will put emphasis on wildlife and waste management with departments at “tool-box” meetings held on site.

I trust that the above details and report will be satisfactory. Please contact the undersigned should you have any questions



Robin Allard
Environmental Coordinator

robin.allard@agnicoeagle.com

T: 819.759.3555 x6744

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Wildlife mortality Report

Date: 2016-11-16

From: Patrick Ahern

Description:

On the 16th of November the environment team was made aware of a dead fox sighted around the Vault lookout. Upon arrival, there was indeed a fox carcass which was then disposed of at the incinerator.

Action and Recommendations:

After arriving at the suspected location, the on-site Environment staff, technician Fanny Laporte and assistant Patrick Ahern, safely moved the deceased animal to the incinerator for disposal. Cause of death unknown. The area was inspected to assess if any attractant was present- none were found.



I trust that the above details and report will be satisfactory. Please contact the undersigned should you have any questions.

Patrick Ahern
Student Bachelor Spec. - 3

patrick.ahern@agnicoeagle.com

T: 819.759.3555 x6747

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Wildlife mortality Report

Date: 2016-11-20

From: *Fanny Laporte*

Description:

On the 20th of November 15:30 the environment team was made aware of the presence of a red fox eating a dead white fox on the Vault road. The red fox dragged his prey further in the tundra and the environment team picked up the organs left behind by the red fox, put it in a garbage bag and disposed of it at the incinerator.

Action and Recommendations:

Action: Disposed of the remains at the incinerator.

Recommendation: Reminder to all to dispose properly of waste in a manner to avoid attracting wildlife.

Please contact the undersigned should you have any questions.

Fanny Laporte
Environmental Technician

fanny.laporte@agnicoeagle.com

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AGNICO EAGLE



Wildlife Mortality report

Date: December 5th 2016

From: *Randy Schwandt*

Description:

Environment was informed of an arctic hare lying on the ground on the All-weather access road at Km 45 by the Arctic fuel driver Ronnie at 09:30. Environment personnel went to Km 45 during a routine wildlife survey and did not observe any mortality at km 45; no scuffs of fur or blood were present during inspection of the area (possible that a raven/fox took the Arctic hare).

Actions and Recommendations:

Get the road supervisor to meet with their employees and inform them of the road rules and need to enforce.

Inform all employees that wildlife have a right of way at all times – stop vehicle and wait for wildlife to cross the road

Report all incidents with wildlife immediately to Environment

Photos of the carcass were not taken due to the carcass not being found at km 45 on the All-weather access road

I trust that the above details and report will be satisfactory. Please contact the undersigned should you have any questions.

Randy Schwandt

Environmental Technician

randy.schwandt@agnicoeagle.com

T: 819.759.3555 x6747

Agnico Eagle Mines Limited

Meadowbank Division

Baker Lake, Nunavut, Canada

XOC OAO

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APPENDIX D

2016 Road Survey Forms



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Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: January 08 2016 Time Started: 08:00 a.m. Time Ended: _____

Temperature: -26°C Wind Speed: 28 km/h Wind Direction: NW

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. Utatrag, R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
8:23	Raven	3	bridge ¹	perch	—	—	2		14W	0643825	7143397



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AWAR - MEADOWBANK

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: April 15, 2016 Time Started: 08:00 a.m. Time Ended: 11:00 a.m. / 03:30 p.m.
Temperature: -15°C Wind Speed: 10 Km/h Wind Direction: NE
Visibility (check): [] 100m [] 500m [] 1 km Precipitation:
Field Team: V. Utatney, B. Allard

Table with 12 columns: Time, Species, Qty, Habitat Type, Behaviour, Direction of Travel, Direction from Road, Distance from Road (m), K M, GPS Zone, Easting, Northing. Contains 6 rows of handwritten data.



Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: April 26 2016 Time Started: 08:00 a.m. Time Ended: 10:45 a.m.

Temperature: -18°C Wind Speed: 4-11 km/hr Wind Direction: NW

Visibility (check): 100m 500m 1 km Precipitation: Blowing snow

Field Team: V. Utahay R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
9:33	RaTa	3	H5	fo, stand	-	W	500m			0625327	7182670
9:42	RaTa	30	"	"	S	W	300m			0626421	7187911
9:43	RaTa	7	H7	walk	S	W	300m			11	71
9:46	RaTa	4	H11	stand	S	W	"			0626584	7189370
10:08	RaTa	1	H5	stand	-	W	600m			0627493	7203935
10:18	M.O.	29	H5	stand	-	W	600m			0631161	7208094
10:20	RaTa	9	H11	stand	-	W	500m			0631037	7208945
10:24	RaTa	8	Hillside	running	NE	W	700m			0630972	7210513
10:26	RaTa	3	H5	walk	N	W	500m			0630974	7211419
10:43	RaTa	7	H06	stand fo	-	W	1km			0636899	7215713

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: April 29, 2016 Time Started: 08:00 a.m. Time Ended: 04:30 p.m.
 Temperature: -10°C Wind Speed: 2 km/h Wind Direction: N
 Visibility (check): 100m 500m 1 km Precipitation: _____
 Field Team: V. Utatnag Passenger Van, J. Kataluk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
9:37	RaTa	15	Rzky Tundra	stand, fo	-	E	700m		14W	0639974	7152822
9:43	"	10	HT	walk	SE	W	500m			0637108	7157102
10:04	"	10	HT	walk	SE	W	600m			0628747	7171336
10:24	RaTa	20	HT	walk, stand	S	W	600m			0625831	7180679
1:48	RaTa	30	HT	stand, fo	-	W	1 km		14W	0636362	7217060
1:54	RaTa	45	HT	stand, fo	-	W	700m			0624584	7217815
2:15	"	24	Hillside	stand, fo	-	W	400m			0632114	7212479
2:30	M.D.	50	Hillside	rest, stand	-	W	2 km			0630908	7210052
2:56	RaTa	20	HT	walk	N	W	1 km			0626396	7187309
3:52	"	2	Ridge	walk	W	W	500m			0634748	7161417

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

 Date: May 20, 2016 Time Started: 08:00 Time Ended: 10:50 a.m.

Temperature: _____ Wind Speed: _____ Wind Direction: _____

 Visibility (check): 100m 500m 1 km Precipitation: _____

 Field Team: V. utahensis, R. Schwarz

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
8:08	SaCr	2		rest, fly	W	W	100m	3	15W	0255892	7137818
8:13	ArHq	3	Hq	Rest, sit	—	E	20m		14W	0644789	7139921
"	Raven	1	"	fly over	S	—	—		"	"	"
8:42	ArHq	1	"	sit, hop	E	E	20m	23	14W	0638031	7156123
8:44	PeFa	1	Quarry 3	fly	—	E	100m	23		0637914	7156444
8:59	CaGo	12		rest	—	W	100m			0631090	7164562
9:08	SaCr	2		stand, walk	—	W	50m	41		0629522	7169395
9:12	SaCr	2		"	—	W	50m	43		0628718	7171382
9:14	SaCr	4	Lake	stand	—	W	150m	46		0628206	7172519
9:14	PeFa	2	Hill	fly	—	E	"	"	"	"	"
9:51	SaCr	2	Quarry	(stand) walk	—	W	100m			0627286	7193012
"	ArHq	2	"	hop	variable	W	50m			"	"
"	PeFa	1	"	fly	"	W	100m			"	"
10:13	SaCr	4	Hq	stand walk	—	E	100m	84		0628930	7204312
10:38	Harm	50	AWAR	sit, fly	variable	E	50m	94		0633957	7215361



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Vault

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: May 20, 2016 Time Started: 10:50 am Time Ended: 11:30 am

Temperature: Wind Speed: Wind Direction:

Visibility (check): 100m 500m 1 km Precipitation:

Field Team: V. V. Johnson, R. Schwardt

Table with 12 columns: Time, Species, Qty, Habitat Type, Behaviour, Direction of Travel, Direction from Road, Distance from Road (m), K M, GPS Zone, Easting, Northing. Contains 3 rows of handwritten data.

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: May 26, 2016 Time Started: 13:15 Time Ended: 16:45
 Temperature: -4°C Wind Speed: 12 km/h Wind Direction: S
 Visibility (check): 100m 500m 1 km Precipitation: —
 Field Team: V. Utatneg, J. Kataluk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
13:40	ArWo	1	HT	rest, stand	—	W	100m	86	14W	0636843	7216028
13:42	KaTa	16	HT	rest	—	E	100m	86	14W	0636724	7216429
13:59	KaTa	10	HT	stand, fo	—	W	350m	93	14W	0630988	7211341
14:47	SaCr	2	HT	walk, stand	—	E	100m	64	14W	0626334	7187222
14:48	KaTa	11	HT	walk	S	W	1km	63	14W	0626216	7185571
15:13	SaCr	2	HT	stand, walk	—	W	100m	47	14W	0625543	7173784
15:27	CaGo	7	HT	stand	—	W	75m	44	14W	0629057	7170120
15:28	M.O.	22	Hillside	rest	—	W	700m	44	W	W	W
15:40	KaTa	9	Lake	stand, run, walk	S	W	800m	34	14W	0632019	7163801
15:44	PcFa	1	AWAR	perch	variable	W	—	33	14W	0633333	7162614
16:10	CaGo	2	wet tundra	stand, walk	W	W	75m	16	14W	0640979	7150448
16:17	RakeHa	1	AWAR	fly across	E	W-E	—	13	14W	0642831	7147160

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: June 03, 2016 Time Started: 8:00 a.m. Time Ended: 16:15
 Temperature: 0°C Wind Speed: 20 km/h Wind Direction: ESE
 Visibility (check): 100m 500m 1 km Precipitation: Risk of freezing drizzle
 Field Team: V. Utstane, Fanny

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
11:14	RATA	5	HT	fo. stand	—	W	1 km	71	14W	0627102	7193848
13:35	AWD	1	lake	walk	NE	W	1 km	93	14W	0630923	7210175
13:51	SNGO	14	HT	Rest	—	W	100m	84	14W	0628717	7204216
13:59	PeKa	1	Quarry 18	Perch	—	W	75m	80	14W	0627489	7202094
14:01	SNGO	28	HT	rt. fo	—	W	75m	80	14W	0627391	7201903
14:08	RATA	11	HT	walk	W	W	1 km	76	14W	0625668	7198919
14:25	SNGO	17	"	Rest	—	E	50m	65	14W	0626335	7188208
14:25	GWFG	2	"	Rest	—	E	50m	65	"	"	"
14:35	SNGO	14	"	"	W	W	75m	59	14W	0625374	718396
14:36	SNGO	22	"	Rest	—	S	50	59	14W	0625185	7183283
14:36	SNGO	2	"	"	—	E	"	59	"	"	"
14:39	RATA	6	Rock Tund	walk	W	W	200m	58	14W	0625495	7182522
15:04	SNGO	71	HT	Rest	—	E	100m	45	14W	0629007	7170250
15:05	RATA	9	"	fo. stand	—	W	300m	45	"	0629168	7169910
15:10	SNGO	18	Switchback	Rest	—	E	75m	39	"	0630032	7168282
15:13	RATA	6	HT	walk	SE	W	200m	38	"	0630603	7165105



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Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: June 03, 2016 Time Started: 08:00 Time Ended: 16:15
Temperature: 0°C Wind Speed: 20 km/h Wind Direction: ESE
Visibility (check): 100m 500m 1 km Precipitation: Risky drizzle
Field Team: V. J. Hodney, Fanny

Table with 12 columns: Time, Species, Qty, Habitat Type, Behaviour, Direction of Travel, Direction from Road, Distance from Road (m), K M, GPS Zone, Easting, Northing. Contains two rows of handwritten data.

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: June 08, 2016 Time Started: 13:02 Time Ended: 14:30
 Temperature: -2°C Wind Speed: 13 km/h Wind Direction: ESE
 Visibility (check): 100m 500m 1 km Precipitation: _____
 Field Team: V. Utner, M. Allard

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
14:12	CaGo	2	creeks	stand, fly	variable	W	250 m	69	14W	0627496	7192084
14:18	CaGo	8	Lake	stand, swim	—	W	150 m	66	14W	0626753	7189788
14:25	Ptarmigan	1	AWPR	walk, stand	variable	—	—	63	14W	0626259	7185913
14:33	SaCr	2	Hillside	stand	—	W	150 m	59	14W	0625157	7183233
15:09	PeFa	1	AWPR	fly over	NE	W-E	—	40	14W	0630044	7168366
15:17	LoTaD	5	Pond	swim	—	E	75 m	37	14W	0630812	7164873
15:21	RaTa	2	Lake	stand	—	W	900 m	35	14W	0631736	7163994
15:29	CaGo	2	pond	swim	—	W	50 m	30	14W	0633919	7162542
15:41	RaTa	10	Lake	walk	south	W	1 km	24	14W	0636992	7157214
15:44	ArHa	2	swamp	rest	—	E	50 m	23	14W	0632932	7156403
15:44	Reven	1	"	"	—	W	"	"	"	"	"
16:16	SaCr	2	puddle	stand	—	E	100 m	7	14W	0644664	7141173

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AWAR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: June 14, 2016 Time Started: 08:00 a.m. Time Ended: 15:00
 Temperature: 1°C Wind Speed: 19 gust 31 km/h Wind Direction: E
 Visibility (check): 100m 500m 1 km Precipitation: showers
 Field Team: V. Utatnag, R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
12:22	ReBrMe	1	AWPR	fly over	E	-	-	103	14W	636773	7216293
12:29	Salr	2	"	Rest, Fly	W	W	50m	100	V	634278	7217086
12:43	Ptarm	1	AWPR	Perch	-	E	50m	92	"	630923	7210182
12:46	"	2	"	Perch, Fly	N	E	75m	89	"	631076	7208732
12:49	"	1	"	rest	-	W	75m	89	"	631154	7208082
12:57	Siberia rd bill	2	AWPR	w/2 seabill	-	-	-	83	"	628277	7204001
"	HcGu	2	"	w/rd bill	-	-	-	83	V	"	"
"	Ptarm	1	"	watch	-	-	-	83	"	"	"
13:01	Salr	2	HT	stand	-	E	400m	82	V	627264	7203254
13:03	HcGu	5	AWPR	fly over	-	-	-	81	"	627580	7202710
13:09	RaTa	5	Tundra	rest	-	E	450m	77	"	626044	7199577
13:23	CoGo	2	Ricky HT	stand, walk	-	E	"	67	"	626869	7191087
13:31	PeFa	1	Lake	fly hover	variable	W	250m	63	"	626144	7186816
13:42	ArPo	1	AWPR	walk across	W-E	W-E	-	53	"	626603	7179963
13:48	CoGo	2	"	walk	E	E	50m	53	"	625414	7178596
13:55	CoLo	2	Lake	swim	-	W	250m	46	"	628539	7172177

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: June 17, 2016 Time Started: 12:30 p.m. Time Ended: 16:00
 Temperature: 2°C Wind Speed: 17 km/h Wind Direction: ESE
 Visibility (check): 100m 500m 1 km Precipitation:
 Field Team: V. Utatony, P. Ahern

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
12:45	MO	3	EMK	stand, FO	—	W	400m	103	14W	0635993	7217613
13:08	Raptor	1	Rocky tundra	Fly over	variable	W-E	—	85	14W	0629925	7205860
13:13	CaGo	6	AWAR	Fly over	N	E	—	93	14W	0629050	7204340
13:16	CaGo	1	HT	stand	—	W	250m	84	14W	0627728	7203859
13:37	RaTa	12	Rocky Tund	stand fo	—	W	700m	76	14W	0626170	7197638
13:45	CaGo	6	AWAR	Fly over	W	E	—	71	14W	0626791	7195156
13:58	RaTa	1	HT	fo, stand	—	E	400m	66	14W	0626660	7189571
14:55	M.O.	2	HT	Rest	—	W	350m	29	14W	634718	7161446
15:28	HeGu	1	Bridge	Rest, fly	—	—	—	9	14W	643798	7142384

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AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: July 13, 2016 Time Started: 08:00 Time Ended: 10:45 am

Temperature: _____ Wind Speed: _____ Wind Direction: _____

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. Utahy, R. Schwenk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
8:32	Arfo	1	H/T	Stand	—	E	100m	16	14W	641492	7149900
8:32	HeGu	2	AWPA	Fly over	U	S-W	—	"	"	"	"
8:38	M.O	1	Rocky Ar	stand	—	W	400m	19	"	646095	7152535
8:48	S.c.r	1	HT	stand	—	W	300m	24	"	636919	7157285
9:05	M.O.	1	"	Rest	—	W	400m	37	"	631663	7164041
9:35	M.O.	2	"	FO, stand	—	W	750m	50	"	625196	7175978
9:55	ArHq	1	AWPR	stop	—	—	—	—	"	626435	7189029
10:10	S.c.r	2	HT	stand FO	—	W	750m	77	"	626209	7199818
10:20	M.O.	5	Rocky	leat FO	—	W	300m	92	"	630941	7211546

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VAULT

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: July 13, 2016 Time Started: 10:45 am Time Ended: 11:15 am

Temperature: _____ Wind Speed: _____ Wind Direction: _____

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. W. F. H. J., R. Schwindl

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
	No WILDLIFE SIGHTED										

AWAR $\frac{7}{1}$ $\frac{18}{BS}$

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$\frac{2, 3, 12, 13, 15, 16, 19, 21}{BS}$
 $\frac{0}{0}$ $\frac{0}{0}$ $\frac{0}{0}$ $\frac{0}{0}$ $\frac{0}{0}$

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: 2016-07-17 Time Started: 06:40 Time Ended: 09:46

Temperature: 10 Wind Speed: 36km - gust 50 Wind Direction: NW

Visibility (check): 100m 500m 1 km Precipitation: N/A

Field Team: Randy S / Martin T

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
06:51	Eider duck	20	lake	Swimming	S	W	150	2	15	0356322	7136005
06:55	Arctic hare	1	tundra	running	N	E	25	4	15	0355819	7137614
07:01	Arctic hare	1	tundra	running	S	E	25	6	14	0644518	7141283
07:22	sandhill crane	1	tundra	walking	S	W	50	18	14	0640339	7151428
07:29	Arctic hare	1	tundra	grazing	S	W	50	23	14	0638085	7155831
07:38	canadian goose	1	tundra flying	flying	E	E	200	25	14	0636274	7157889
07:51	Arctic hare	2	tundra	running	SE	E	50	36	14	0631475	7163985
07:58	Arctic hare	3	tundra	running	NE	E	25	40	14	0629996	7167458
08:02	Muskox	1	tundra	grazing	NE	E	900m	41	14	0629343	7169479
08:02	sandhill crane	2	tundra	walking	SW	W	50	46	14	0629343	7169479
08:06	Muskox	1	tundra	grazing	NE	E	500m	47	14	0628924	7170984
08:06	Muskox	10	tundra	walking	SW	W	150m	45	14	0628603	7171937
08:20	Muskox	11	tundra	grazing	SE	E	2000m	59	14	0625099	7177697
08:30	Muskox	3	tundra	laying down	E	E	100m	55	14	0625797	7182065
08:42	Sandhill crane	4	tundra	walking	SW	W	150m	65	14	0626400	7187857
08:49	Arctic hare	1	tundra	flying	E	E	50m	68	14	0627194	7191421

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AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: July 21, 2016 Time Started: 08:30 a.m. Time Ended: 11:18

Temperature: _____ Wind Speed: _____ Wind Direction: _____

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: _____

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
8:41	RoPt	1	AWPR	walk	—	—	—	100	14W	0634278	7217101
8:53	Pefa	2	Quarry	Perch/roosting	—	W	75m	93	14W	630886	7211743
8:58	RoPt roadkill	1	AWPR	—	—	—	—	91	"	630917	7208541
9:4	RoPt	8	"	cross road	—	—	—	82	"	627151	7203915
9:24	ArHa	1	"	—	W	—	—	80	"	627523	7202710
9:24	ArHa	1	"	hop along rd	—	—	—	73	"	62748	7196524
9:32	"	1	"	"	S	—	—	65	"	626340	7188206
9:44	SaCr	2	Brushy Tundra	str. walk	—	E	200m	"	"	625561	7184107
9:50	"	6	Rocky Tundra	walk	—	W	150m	56	"	625690	7181070
10:12	ArHa	1	AWPR	hop	—	—	—	45	"	627941	7172703
10:42	Raccoon	5	Bridge 3	perch	—	—	—	"	"	638084	7155847
10:47	SaCr	1	rocky tundra	—	—	E	100m	22	"	639304	7054134

AGNICO EAGLE

AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: August 19, 2016 Time Started: 07:00 am Time Ended: 11:15 am

Temperature: 7°C Wind Speed: 34 km/h Wind Direction: N

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. Utatung, J. Katsluk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
8:21	mo	12	LIT	Rest	—	W	400m	6	14W	0644212	714212
8:27	mo	3	HT	Rest	—	W	"	17	"	640669	7150725
8:45	SuGo	50	HT	Rest	—	E	350	22	"	638754	7155101
9:19	SuGo	40	HT	Fly	W	W	900m	45	"	628799	7171288
9:51	CaGo	60	Ridge	Rest, walk	—	W	150m	60	"	625289	7183500
10:18	SuGo	45	Rocky HT	Rest	—	W	150m	74	"	626003	7198073
10:18	SuGo/CaGo	100	"	Fly	N	W	250	74	"	"	"
10:42	mo	8	Rocky HT	Fe, St	—	E	450m	89	"	631322	7206956
10:53	tefa	1	Quarry 2L	Fly	—	W	100m	93	"	632965	7214045
10:55	RaTa	1	Hill	walk	S	W	150	94	"	"	"
11:04	RaTa	1	AT	Fe, St	—	E	350m	100	"	634520	7217811

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: August 30, 2016 Time Started: 13:07 Time Ended: 15:05

Temperature: 8°C Wind Speed: 13 km/h Wind Direction: NW

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. Utatnaz, R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
13:17	RgTa	1	Hill top	Asst	-	W	450m	100	14W	634078	7216521
13:19	SnGo	50	HT	Rest	-	E	100m	99	11	634061	7215814
13:21	"	125	HT	Rest	-	W	100m	99	"	633904	7215226
13:23	CaGo	7	Hillside	Rest, Fly	S	E	100m	98	"	633122	7214251
13:29	DeFa	1	Quarry 2L	Fly, dive	-	W	"	93	"	630819	7211751
13:32	SnGo	200	Grassy HT	Rest	-	E	350m	92	"	631059	7211080
13:41	SnGo	250+	"	"	-	E-W	variable	85	14W	629421	7204446
13:48	DeFa	1	Quarry 18	Fly, dive	-	W	150m	81	14W	627452	7202074
13:53	SnGo	150	HT	Rest	-	W	400m	75		625786	7198315
13:57	"	200	HT	"	-	E	100m	73		626667	7196449
13:59	"	500	HT	"	-	E	"	73		626797	7195324
14:02	DeFa	1	Quarry 15	Perch	-	W	100m	71		627202	7193108
14:02	ArHa	1	"	hop	-	W	"	71		"	"
14:05	SnGo	100		Rest	-	E	100m	69		627459	7191992
14:15	"	40	HT	Rest	-	S	200m	63		626165	7185527
14:40	"	100	HT	"	-	E	"	41		629080	7170057

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: Sept. 02, 2011 Time Started: 12:50 p.m. Time Ended: 15:45

Temperature: 5°C Wind Speed: 9 km/h Wind Direction: NE

Visibility (check): 100m 500m 1 km Precipitation:

Field Team: V. Kettner, T. Thomson, R. Schwanitz

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
12:54	RgTg	4	AWPR	wk	SE	wp	wp	103	14W	635576	7216965
13:02	SuGo	100	HT	rest	-	E	100m	92	"	633396	7214475
13:06	"	35	Rocky HT	rest, wk	-	W	50m	96	"	632342	7212749
13:15	"	12	HT	rest, wk	-	E	100m	90	"	631101	7208276
13:21	"	50	HT	"	-	W	50m	86	"	630122	7206038
13:25	Pefa	2	Quarry 19	Perk Fly	-	W	200m	84	"	628698	7204225
13:26	SuGo	60	Grassy HT	rest, wk	-	W	300m	83	"	628263	7203997
13:32	Pefa	1	Quarry 18	Perk	-	W	200m	79	"	627446	7202067
13:35	SuGo	200	HT	Rest	-	E	150m	78	"	626844	7200766
13:40	"	25	"	"	-	E	250m	74	"	626048	7197896
13:43	"	125	"	"	-	E	300m	73	"	625783	7196707
13:46	"	75	Rocky HT	"	-	E	100m	72	"	626823	7195209
13:48	"	11	"	"	-	E	"	71	"	625888	7194356
14:02	"	150	"	"	-	W	250m	69	"	626282	7186069
14:05	"	20	"	"	-	W	150m	61	"	625889	7184834
14:15	"	100	"	"	-	E	200m	66	"	626596	7179948

AGNICO EAGLE

AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: Sept 06/2014 Time Started: 12:25 p.m. Time Ended: 15:50

Temperature: 5°C Wind Speed: 16 km/h Wind Direction: S

Visibility (check): 100m 500m 1 km Precipitation:

Field Team: V. Utatnang, P. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
12:24	BaEa	1	Pond	fly	SW	W	300m	101	14W	634750	7217909
12:28	SnGo	5	HT	Rest, St.	-	E	100m	101	"	"	"
12:32	SnGo	100	Hillside	"	-	E	1 km	100	"	634257	7216791
12:34	GAGO	25	"	Rest, fly	E	E	100m	100	"	"	"
12:47	SnGo	58	HT	"	-	E/W	50m	91	"	630901	7209759
12:50	SnGo	850	"	"	-	E/W	100m	90	14W	631191	7207944
12:52	"	20	"	"	S	E	"	90	"	631335	7207152
12:55	"	25	"	"	variable	W	50m	89	"	630185	7206113
12:57	"	82	HT	Rest	-	E/W	150m	86	"	629795	7205449
12:58	"	42	"	"	-	E/W	75m	86	"	629711	7204958
13:00	"	60	"	"	-	W	300m	85	"	629402	7204141
13:02	"	100	Grassy HT	"	-	W	"	84	"	628365	7204119
13:05	"	500	Lake shore	rest	-	W	600m	82	"	627442	7203939
13:11	PcAa	5	HT	chase Heby	variable	E	"	82	"	627299	7201502
13:15	SnGo	1000	HT	rest fly	S	W	1 km	76	"	625886	7299307
13:21	S.G.	22	"	rest	-	E	900m	73	14W	626799	7195583

AGNICO EAGLE

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: Sept 06, 2016 Time Started: 12:45 Time Ended: 1:00

Temperature: _____ Wind Speed: _____ Wind Direction: _____

Visibility (check): 100m 500m 1 km Precipitation:

Field Team: V. Utterby, R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
13:27	S. G. O.	40	HT	Rest	—	W	100m	69	14W	627289	7192910
13:30	"	4	Q. area 15	"	—	W	50m	68	"	626947	7190721
13:45	S. G. O.	85	HT	"	—	E/W	100m	58	"	625853	7182124
13:47	C. G. O.	3	HT	rest, fly	W	W	50m	57	"	625733	7180779
13:52	C. G. O.	15	AWPR	rest	S	—	—	52	"	625200	7178281
13:56	M. O.	8	HT	rest	—	E	400m	50	"	625314	7175402
14:06	S. G. O.	2	AWPR	fly	S	—	—	46	"	626208	7172983
14:14	"	2	"	"	SW	W	500m	43	"	629098	7170013
14:21	"	10	HT	Rest, wk	—	E	400m	39	"	629983	7167495
14:30	"	50	"	"	—	W	50m	37	"	6334826	7163591
14:35	"	350	HT	"	—	E	500m	28	"	635436	7160667

AGNICO EAGLE

Awar

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: 2016-09-09 Time Started: 12:00am Time Ended: 14:40
 Temperature: 5°C Wind Speed: 15km N/E Wind Direction: N/E
 Visibility (check): 100m 500m 1 km Precipitation: Rain
 Field Team: TT/RS

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
12:09	Snow Geese	50	tundra	Feeding	N/A	W	80	103	14W	0637371	7215248
12:12	Snow Geese	90	tundra	Feeding	N/A	E/W	100	102	14W	0635581	7216962
12:14	Snow Geese	30	tundra	Feeding	N/A	W	50	101	14W	0635078	7217459
12:22	Snow Geese	100	"	Feeding	N/A	N/E	50	93	14W	0635078	7212234
12:23	Persine Falcon	1	Quarry	Flying	N/A	N/A	75	219	14W	0630888	7211745
12:25	Snow Geese	25	tundra	Feeding	N/A	E/W	50	90	14W	0630960	7210582
12:28	Snow Geese	30	tundra	Feeding	N/A	W	100	88	14W	0631288	7207553
12:30	Snow Geese	150	tundra	Feeding	N/A	N/E	50	87			
12:33	Snow Geese	20	tundra	Feeding	N/A	E	50	86			
12:34	Snow Geese	40	tundra	Feeding	N/A	E	25	219			
12:35	Snow Geese	5	tundra	Flying	N/E	E	50	83			
12:38	Snow Geese	100+	tundra	Flying	SW	W	300	81			
12:39	Persine Falcon	1	Quarry	Flying	N/A	W	50	217			
12:41	Snow Geese	500	tundra	Feeding	N/A	N/E	250	76			
12:44	Snow Geese	60	tundra	Feeding	N/A	N/E	25	75			
12:47	"	600	tundra	"	"	N/E	50	70			

AGNICO EAGLE

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: 2016-09-09 Time Started: 12:00 Time Ended: 14:10

Temperature: 6^{cc} Wind Speed: 15 km/hr Wind Direction: North East

Visibility (check): 100m 500m 1 km Precipitation: Rain/Fog

Field Team: _____

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
	Pergine ^{Falcon}	1	Quarry	Resting	N/A	E	50	Q16			
	Snow geese	100	tundra	Feeding	N/A	E/W	25	70			
	Snow geese	30	tundra	Feeding	N/A	W	25	69			
	Snow geese	1000 ⁺	tundra	Flying	S/E	E	500m	68			
	Snow geese	100 ⁺	"	Feeding	S/E N/A	W	500m	65			
	"	200 ⁺	"	Feeding	N/A	E/W	100m	62			
13:20	Snow geese	80	tundra	Feeding	N/A	E/W	100	45			
13:21	Snow geese	40	tundra	Feeding	N/A	W	25	43			
13:23	Snow geese	100	tundra	Feeding	N/A	E/W	100	41			
13:25	Snow geese	30	tundra	Feeding	N/A	E	100	40			
13:28	Snow geese	27	tundra	Feeding	N/A	E/W	100	38			
13:38	"	100 ⁺	"	Feeding	N/A	W	150	30			
13:40	"	150	"	"	N/A	E	500	29			
13:42	"	180	tundra	Flying	S/E	E	500	28			
13:50	"	250	tundra	Flying	E	E	300	25			
14:10	"	110	tundra	Flying	S/E	E	100	15			
14:12	Sandhill crane	4	tundra	walking	W	W	50	5			

AGNICO EAGLE

AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: Sept. 13, 2016 Time Started: 13:30 Time Ended: 16:30
 Temperature: 6°C Wind Speed: 24 km/h Wind Direction: SW
 Visibility (check): 100m 500m 1 km Precipitation: Drizzle, rain, snow
 Field Team: V. Utatonez, F. Laporte

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
14:53	CaGo	4	HT	Rest, fly	S	E	100m	59	14W	625296	7183523
14:56	"	13	"	"	S	E/W	—	58	14W	625707	7182341
15:01	"	6	"	"	Variable	E/W	100m	53	14W	625916	7179152
15:05	"	25	"	"	"	"	50m	50	14W	625083	7176427
15:15	SnGo	40	Hill side	Rest, wk	—	E	200m	46	14W	626893	7172945
15:17	"	32	"	"	—	E/W	100m	45	14W	627625	7172825
15:22	"	"	Lake	Swim	—	W	150m	42	14W	629066	7170100
15:24	"	300	HT	Rest fly	S	W	400m	38	"	6293480	7169345
15:28	"	250	"	"	Variable	E/W	200m	38	"	630272	7166687
15:35	Peta	1	HT	Fly, hover	variable	W	300m	34	"	632732	7163145
15:52	CaGo	5	HT	Rest, fly	E	W	100m	23	"	638907	7154789
15:58	SaLi	2	HT	Wk, sit	—	W	100m	17	"	640352	7151030
16:07	CaGo	4	AWPR	Rest, wk	—	—	—	10	"	643812	7144471
16:10	SnGo	15	HT	"	—	W	200m	9	"	643725	7143324
16:12	SnGo	350	"	Rest, fly	S	E	200m	8	"	644435	7141623
16:16	M.O.	1	HT	Rest	—	E	300m	4	"	644782	7139836
16:17	SnLi	3	HT	Rest, wk	—	W	50m				

AGNICO EAGLE

Vault

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: Sept 14, 2016 Time Started: 8H20 Time Ended: 8H54

Temperature: 6°C Wind Speed: 17 km/h Wind Direction: NW

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. Ulatnas, F. Laporte

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
8H49	Arctic Hare	1	tundra	Running	east-south		on Road	4	14W	0640687	7217402

AGNICO EAGLE

AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: October 21, 2016 Time Started: 08:00 a.m. (13:25) Time Ended: 16:30

Temperature: -5°C Wind Speed: 34 km/h Wind Direction: ESE

Visibility (check): 100m 500m 1 km Precipitation: Periods of snow

Field Team: V. Utatnaq, J. Kataluk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
11:01	Wolverine	1	HT	walk	E	E	150m	60	14W	625264	7183484
16:19	RoPT	25	Road Side	rest, walk	-	W	10m	1	15W	0356263	7136199

AGNICO EAGLE

VAULT

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: October 21, 2016 Time Started: 12:50 Time Ended: 13:25
 Temperature: -5°C Wind Speed: 34 km/h Wind Direction: ENE
 Visibility (check): 100m 500m 1 km Precipitation: _____
 Field Team: K. Utetnag, J. Kotaluk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing	
			NO WILDLIFE SIGHTED									

AGNICO EAGLE

AWPR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: November 08 2016

Time Started:

13:25

Time Ended:

15:45

Temperature:

-13°C

Wind Speed:

5 km/h

Wind Direction:

N

Visibility (check):

100m

500m

1 km

Precipitation:

Field Team:

R. Utation, P. Ahern

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS lone	Easting	Northing
			No WILDLIFE SIGHTED								

AGNICO EAGLE

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: 2016/11/19 Time Started: 10H30 Time Ended: 11H00
Temperature: -17°C ^{10km} Wind Speed: 36km/h Wind Direction: N/O 36km/h
Visibility (check): 100m 500m 1 km Precipitation:
Field Team: FANNY LAPORTE / PATRICK AHERN

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing

AGNICO EAGLE

VAULT

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: November 23, 2016 Time Started: 12:30 Time Ended: 13:00

Temperature: -21°C Wind Speed: 42 km/h Wind Direction: W

Visibility (check): 100m 500m 1 km Precipitation: _____

Field Team: V. Utterby, R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
			NO WILDLIFE SIGHTED								

AGNICO EAGLE

AWAR

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: December 02, 2016 Time Started: 12:30 Time Ended: 15:00

Temperature: -18 Wind Speed: 5 km/h Wind Direction: SW

Visibility (check): 100m 500m 1 km Precipitation: Fog

Field Team: V. Utatnery, R. Schwandt

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
12:54	M.O.	17	H5	fo, stand.	-	E	100m	90	14W	631002	7210719
13:34	ArH4	1	Bridge	Rest	-	E	50m	69	14W	626224	7185596
14:22	Arfo	1	H5	walk	S	E	100m	29	14W	636015	7159737
14:46	Raven	2	Bridge	Perch	N	-	-	10	14W	643807	7143389

AGNICO EAGLE

Vault

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: December 06, 2016 Time Started: 12:45 Time Ended: 13:15

Temperature: -13 Wind Speed: 35 km/h Wind Direction: N

Visibility (check): 100m 500m 1 km Precipitation:

Field Team: V. Utatnag, Pat Ahern

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing	
			NO WILDLIFE SIGHTED									

AGNICO EAGLE

Vault

Meadowbank Access Road Wildlife Survey Field Sheet

This form is for collaborative systematic monitoring of the access; it is important all fields in the table below are completed

Date: Dec 16, 2016 Time Started: 12:40 Time Ended: 13:10
 Temperature: -26°C Wind Speed: 29 km/h Wind Direction: NW
 Visibility (check): 100m 500m 1 km Precipitation: Blowing Snow
 Field Team: V. Utotnam, S. Kataluk

Time	Species	Qty	Habitat Type	Behaviour	Direction of Travel	Direction from Road	Distance from Road (m)	K M	GPS Zone	Easting	Northing
			NO WILDLIFE SIGHTED								

