Appendix G5

Report*: Meadowbank Mine 2012 Wildlife Monitoring Summary Report*

MEADOWBANK MINE

2012 WILDLIFE MONITORING SUMMARY REPORT

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SECTION 1 • EXECUTIVE SUMMARY

This Wildlife Monitoring Summary Report represents the seventh 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 (TEMP) (Cumberland 2006). The 2012 report provides the objectives, methodology, historical and current year results as well as the accuracy of impact predictors and management recommendations of each monitoring program in a standalone section.

The Meadowbank Gold Mine (the mine), with an expected operational life of eight years, is located approximately 70 km north of the Hamlet of Baker Lake, 300 km inland from the northwest coast of Hudson Bay. Construction of a 106.8 km All-Weather Access Road (AWAR) between the Hamlet of Baker Lake, the nearest community, and the mine was completed in March 2008.

Basic metrics (e.g., abundance, diversity, richness) are provided for breeding bird PRISM plots survey data up to 2012. Detailed analyses of the bird PRISM plot data are planned for the 2015 annual report, following an additional survey during the operational phase of the mine. In 2012, five active Peregrine Falcon (*Falco peregrinus*) nests were observed and monitored at quarry sites along the AWAR. A sixth nest was monitored at Portage Pit, and a management and protection plan was developed for this nest. Waterbird nest surveys were conducted at the mine site and along the AWAR. No project-related effects on nesting success were confirmed for falcons or waterbirds.

A Caribou collaring program (13 collars) was completed in April 2011 and tracking of Caribou movements continued in 2012 to assist in understanding caribou movements. The Hunter Harvest Study participation rates continued to increase (62 respondents in 2012); however, the overall reported number of Caribou harvested in 2012 was lower than reported in the past three years. In 2012, 35% of all reported Caribou harvests were within 5 km of the AWAR. As in previous years, the AWAR was temporarily closed during a peak Caribou migration period and speed limits were reduced in some sections. One Caribou and one Wolverine fatality did occur on the AWAR in 2012. To further reduce wildlife mortalities, Agnico-Eagle has implemented some adaptive management measures including increased monitoring frequency at the mine site and along the AWAR, improved waste handling, and implementation of an independent Wildlife Safety Site Audit (*Bear Wise*).

Each subsequent Wildlife Monitoring Summary Report builds on data presented in the previous year's report. Analyses of data from monitoring programs to date indicate that they are appropriate for comparing baseline conditions and reference areas to current conditions and the mine site. The monitoring programs will continue to meet the conditions of the NIRB Project Certificate but will evolve throughout the life of the mine, contingent on data quality objectives and the necessity for adaptive management strategy implementation and subsequent effectiveness monitoring. The ongoing collection of data will allow for increasingly robust statistical analyses each year, where warranted, that will build on an understanding of naturally occurring and potential mine-related effects.

SECTION 2 • OVERVIEW

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 certificate authorized 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 area) in the vicinity of the Hamlet of Baker Lake subject to the terms and conditions as stipulated in the Project Certificate[1].

The 2012 annual report is the seventh of a series of annual Wildlife Monitoring Summary Reports for the project. The purpose of this report is to summarize the 2012 data collected from the various wildlife monitoring programs, and to identify and communicate natural variation and potential mine-related changes in wildlife populations within and adjacent to the Meadowbank project area through the interpretation of accumulative monitoring datasets. The 2012 report provides the objectives, methodology, historical and current year results as well as the accuracy of impact predictors, mitigation activities and management recommendations based on the 2012 results of each monitoring program.

2.1 PROJECT DESCRIPTION

The project scope encompasses mine construction, operation, maintenance, reclamation, and closure, as well as associated monitoring activities. Gold will be extracted from open pits during the minimum eight-year operational lifespan of the mine. All construction and operating supplies for the project are transported on ocean freight to facilities in the Hamlet of Baker Lake, which include barge unloading facilities, a lay-down area, and fuel tank farm. An AWAR from the Hamlet of Baker Lake to the mine site provides primary mine site access and re-supply, while on-site mine access roads connect open pit areas to ancillary facilities. Mine site facilities currently include a mill, power plant, maintenance facilities, tank farm for fuel storage, water treatment plant, sewage treatment plant, airstrip, and accommodations for approximately 350 people.

Environmental baseline studies were conducted in the project area prior to mine approval and integrated into the current project design according to the Terrestrial Ecosystem Management Plan (TEMP). Valued Ecosystem Components (VECs) were identified in consultation with regulatory agencies and residents of Baker Lake. VECs pertaining to this report 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).

In 2008, construction of the AWAR and numerous Meadowbank camp infrastructure upgrades were completed while in 2009, principal mine site construction commenced. Mine operations commenced in early 2010. Presently, operations are focused on the development of the Portage and Goose pits, and construction of the haul road from the Vault Pit.

[1] Section 54 of the Project Certificate discusses the requirements of the Terrestrial Ecosystem Management Plan (TEMP) for the project, including the methodology and rationale for the numerous monitoring surveys and studies discussed in this report.


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.
160°W
140°W
120°W
100°W
80°W
60°W
40°W
20°W
80°N
70°N
60°N
Alert
Ellesmere Island Nat. Park
CANADA
Ellesmere Island
Arctic Ocean
Grise Fiord
Polaris
Resolute
Baffin Bay
Nanisivik
Pond Inlet
Arctic Bay
Victoria Island
N U N A V U T
Clyde River
Davis Strait
Qikiqtarjuaq (Broughton Island)
Baffin Island
Auyuittuq Nat. Park
Igloolik
Hall Beach
Kugluktuk (Coppermine)
Cambridge Bay
Taloyoak
Pangnirtung
Umingmaktok
Hope Bay
Gjoa Haven
Kugaaruk (Pelly Bay)
Bathurst Inlet
Foxe Basin
Jericho
George Lake
Repulse Bay
Lupin
Meadowbank Gold Project
IQALUIT
Ekati
Diavik
Cape Dorset
Kimmirut (Lake Harbour)
Coral Harbour
Hudson Strait
Baker Lake
Chesterfield Inlet
Northwest Territories
Rankin Inlet
Whale Cove
Arviat
Quebec
Cullaton Lake/Shear Lake
Alberta
Saskatchewan
Hudson Bay
Manitoba
Churchill
Ontario
0
250
500
Kilometres
Prepared for:
AGNICO-EAGLE
By:
CASLYS CONSULTING

2.2 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 km^2 (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 proposed AWAR for a total area of 5,106 km^2 (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.

2.3 MONITORING PROGRAM APPROACH – LOCAL AND REGIONAL STUDY AREAS

Wildlife monitoring is an essential tool in protecting and maintaining wildlife occurring in the vicinity of the project. Because of uncertainties associated with impact predictions and the effectiveness of mitigation, a comprehensive monitoring strategy has been implemented and, as required, is adapted to meet the objectives of the mitigation strategy set out in the TEMP (Cumberland 2006). Monitoring programs also serve to evaluate the effectiveness of implemented mitigation measures against baseline conditions and mine-related impact predictions (i.e., the annual report uses hypothesis testing to evaluate impact predications). Specific monitoring objectives for wildlife VECs are discussed in the following sections as outlined in Section 3 of the TEMP.

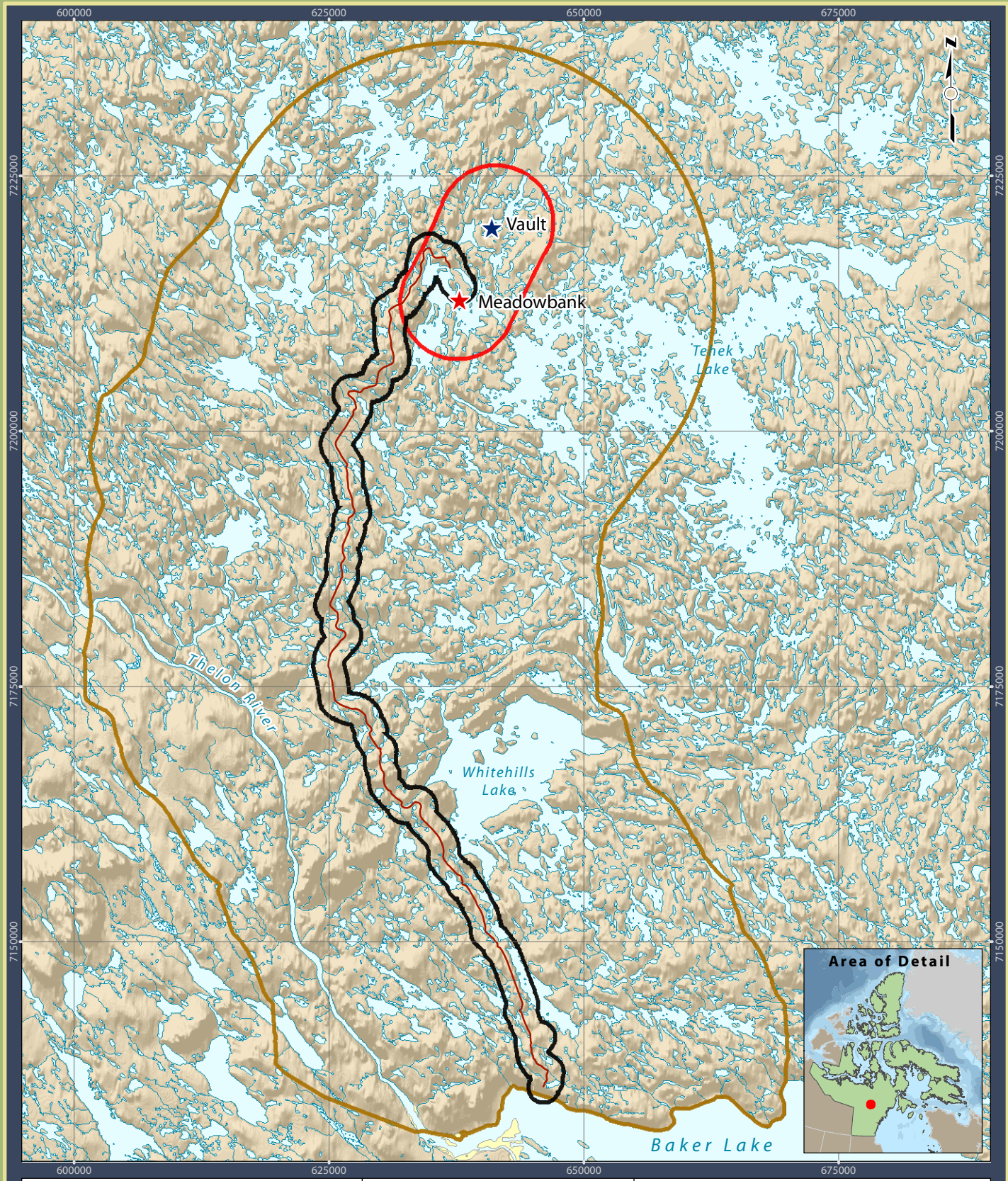
For all wildlife monitoring programs, there is a certain level of uncertainty or unpredictability. Significant residual effects identified during monitoring may require the implementation of adaptive management strategies, which is anticipated to be an iterative process over the life of the project.

2.3.1 Measurable Monitoring Indicators

To effectively evaluate the accuracy of impact predictions, a series of quantitative monitoring indicators have been developed for the project, which include habitat distribution, wildlife distribution, wildlife richness, diversity and abundance indices and environmental health. Each of these monitoring indicators has been described in detail in earlier annual reports.

2.4 MONITORING APPROACH – MINE SITE

Agnico-Eagle environmental personnel are present at the mine site at all times. Detailed reporting protocols (e.g., in the event of a dangerous animal frequenting the site) have been established and implemented. In addition, environmental personnel continue to monitor wildlife presence in close proximity to mine facilities on a daily and weekly basis (discussed in detail in Section 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).



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: AGNICO-EAGLE

By: CASLYS CONSULTING

2.5 OBJECTIVES OF THE SUMMARY REPORT

The primary objectives of the 2012 Wildlife Monitoring Summary Report include:

- Reporting the results of the 2012 wildlife monitoring programs;
- Summarizing the monitoring strategy implemented over the course of the year;
- Evaluating the function and validity of implemented monitoring strategies;
- Evaluating the accuracy of uncertain, weak, and/or significant impact predictions;
- Revising mitigation measures where monitoring activities identify unacceptable project-related impacts to the distribution, abundance, integrity, and health of vegetation communities or wildlife populations;
- Summarizing implemented adaptive management strategies used to further mitigate unforeseen impacts; and
- Providing management recommendations for 2013.

The annual Wildlife Monitoring Summary Report is designed to summarize annual wildlife and terrestrial monitoring data, and allow regulators and other stakeholders to contribute insight, expertise and suggestions for continually improving wildlife management activities within the local and regional study areas.

2.6 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.

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

Survey Description	Years Conducted (#)	Average # of Inuit Involved
RSA Aerial Survey	1999, 2002-2008 (8) – discontinued	2
LSA Aerial Survey	1999, 2002-2008 (8) – discontinued	2
Breeding Bird Plots	2003-2012 (10)	2 to 3
Breeding Bird Transects	2005-2011 (7) - discontinued	2
Waterfowl Nest Surveys	2004-2012 (9)	3
Raptor Nest Surveys	2004-2007, 2010-2012 (7)	4
AWAR Ground Surveys	2004-2012 (9)	4
Habitat Mapping	2004-2005, 2010, 2012 (4)	1 to 2
Phenology Plots	2003-2005 (3) - discontinued	2

Over the survey years, several Baker Lake residents have built up considerable experience in conducting baseline and monitoring surveys, affording them employment opportunities in the project as environmental personnel or in other capacities.

SECTION 3 • HABITAT MAPPING

3.1 MONITORING PROGRAM OVERVIEW

The habitat mapping monitoring program was developed to describe the overall area of different ELC units lost due to mine-related activities (i.e., during construction, operational, decommissioning and post-closure phases) at three primary locations: Main Site and Vault Site (mine site), and the AWAR.

3.2 MONITORING PROGRAM OBJECTIVE

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). A summary of each monitoring parameter, estimated losses and thresholds is included in Table 3.1.

Table 3.1: Habitat Mapping Monitoring Parameters, Estimated Footprint Losses and Thresholds

Monitoring Parameter	Mine Site Estimated Loss	AWAR Estimated Loss	Threshold
Terrestrial Habitat	703 ha	281 ha	>5% Predicted
Ungulate – High Suitability Habitat	239 ha (growing season) 145 ha (winter season)	63 ha (growing season) 188 ha (winter season)	>10% Predicted
Small Mammals – High Suitability Habitat	172 ha	156 ha	>10% Predicted
Waterfowl – High Suitability Habitat	386 ha	22 ha	>10% Predicted
Breeding Birds – High Suitability Habitat	288 ha	170 ha	>10% Predicted

3.3 MONITORING PROGRAM DURATION

The total areas of habitat disturbance associated with mine site and ancillary facility construction are to be mapped following significant construction completion (2010) and on an annual basis during the operations phase as detailed in the TEMP (Cumberland 2006). At the end of 2010, a detailed ELC habitat loss analysis found that actual habitat losses to date were substantially lower than predicted habitat losses and that no habitat loss thresholds for VECs were exceeded (AEM 2011). Given this outcome, the next detailed ELC habitat loss analysis was scheduled for the end of 2012 and is reported in this monitoring report.

Following mine site decommissioning, vegetation plots and mapping will be conducted in the first two years post-closure and every three years thereafter until Year 11 post-closure to verify that thresholds have been met.

3.4 METHODOLOGY

ELC units are calculated based on Agnico-Eagle as-built mine and road construction drawings and reports, aerial photographs and satellite imagery, and ground investigations. Newly disturbed areas are delineated using Global Positioning System (GPS) and Geographic Information System (GIS) mapping. Results are compared to baseline conditions (i.e., ELC from supervised classification conducted in 2005; refer to Cumberland 2005) and losses predicted in the EIS (Table 3.1).

3.5 HISTORICAL RESULTS

3.5.1 Mine Site

The majority of the main mine site construction was completed in 2010. In 2010, as-built drawings were compared to 2005 ELC baseline data available in the TEMP (Cumberland 2006). Excluding the Vault Pit operations, the actual habitat loss at the main site up to the end of 2010 was 87.17 ha less than predicted habitat loss. ELC habitat loss values for the mine site LSA in 2010 were compared to predicted high suitability habitat losses for Caribou (growing and winter season), waterbirds, other breeding birds and small mammals. In all cases, the actual habitat losses were significantly less than predicted losses and no thresholds were exceeded.

3.5.2 AWAR

The 2010 ELC results for the AWAR were compared to ELC unit losses predicted in the 2005 EIS report. For each ELC unit, actual habitat losses were less than predicted habitat losses for a total net habitat gain of 173.12 ha. Since construction of the AWAR required substantially less area than predicted in the 2005 EIS, ELC habitat loss analyses for the AWAR will not be conducted in subsequent years unless road widening occurs. ELC habitat loss values for the AWAR in 2010 were compared to predicted high suitability habitat losses for Caribou (growing and winter season), waterbirds, other breeding birds and small mammals. In all cases, the actual habitat losses were significantly less than predicted losses and no thresholds were exceeded. Subsequent analyses will not be conducted unless significant changes to the current road width and alignment occur.

3.6 2012 RESULTS

3.6.1 Mine Site

The 2012 ELC results for the mine site were compared to ELC unit losses predicted in the 2005 EIS report (Table 3.2). The total habitat loss for the mine site (Main Site and Vault Site) was predicted to be 703.30 ha. Including the Vault Pit operations, the actual habitat loss at the Main and Vault sites is currently 210.58 ha less than predicted habitat loss (i.e., a net habitat gain of 210.58 ha). Compared to the assessment in 2010, an additional 140.93 ha has been disturbed due to ongoing mine development over the last two years. Of all habitat types, only the Heath Tundra habitat type has been disturbed to a greater extent than predicted; however, overall the threshold has not been exceeded to date (i.e., 5% above predicted losses of the entire site). The values presented in Table 3.2 will continue to vary in future years as work at the Vault Site is completed and decommissioning occurs in some areas.

Table 3.2: Mine Site ELC Unit Totals – 2005 EIS Predictions Including the Vault Site, 2010 and 2012 ELC Losses, and Respective Differences between Predicted and Actual Losses.

ELC Unit	EIS (with Vault)	2010	2012	Difference (EIS:2010)	Difference (EIS:2012)
Birch and Riparian Shrub	78.92	42.89	57.80	36.04	21.13
Heath Tundra	48.80	33.92	53.45	14.88	(4.65)
Lichen	67.39	28.32	35.97	39.07	31.41
Lichen-Rock	28.83	6.81	9.26	22.02	19.57
Ridge Crest / Esker / Avens	0.09	0.00	0.07	0.09	0.02
Rock & Boulder	94.51	26.03	32.38	68.48	62.13
Sedge	160.10	68.85	86.04	91.25	74.06
Water	224.66	144.98	217.75	79.69	6.91
Total Area	**703.30 ha**	**351.79 ha**	**492.72 ha**	**351.51 ha**	**210.58 ha**

2012 ELC values for the mine site were compared to predicted high suitability habitat losses for Caribou (growing and winter season), waterbirds, other breeding birds and small mammals (Table 3.3). In all cases, the actual habitat losses were significantly less than predicted losses. As such, no thresholds (>10% above predicted losses) were exceeded.

Table 3.3: Mine Site Predicted Threshold High Suitability Habitat Losses for Caribou, Waterbirds, Other Breeding Birds and Small Mammals.

	Caribou Growing Season	Caribou Winter Season	Waterbirds	Other Breeding Birds	Small Mammals
Predicted Loss	239 ha	145 ha	386 ha	288 ha	172 ha
2010 Value	118 ha	69 ha	214 ha	146 ha	67 ha
2012 Value	144 ha	99 ha	304 ha	197 ha	95 ha
% of Predicted Loss	60.2	68.1	78.7	68.5	55.3
Threshold (i.e., 10% above predicted Loss)	No	No	No	No	No

3.6.2 AWAR

The 2012 ELC results for the AWAR have not changed since the 2010 analysis. Construction of the AWAR required considerably less area (173 ha) than predicted in the 2005 EIS (281 ha). As well, actual high suitability habitat losses for Caribou (growing and winter season), waterbirds, other breeding birds and small mammals were significantly less than predicted losses, and no thresholds (i.e., >10% above predicted losses) were exceeded.

3.7 ACCURACY OF IMPACT PREDICTIONS

A summary of the impact predictions identified in the TEMP (Cumberland 2006) was provided in the 2010 monitoring report (see Table 3.6 in AEM 2011). A similar summary has been provided in this monitoring report following a second round of ELC habitat loss analyses for the mine site, which incorporates new developments at the Vault Site.

3.8 MANAGEMENT RECOMMENDATIONS

The overall habitat losses for the mine site LSA are anticipated to increase as the Vault Pit Site moves from construction to operations next year. A reassessment of the mine LSA habitat losses should be conducted for the 2014 annual report to confirm that thresholds have not been exceeded.

Actual habitat loss as a result of AWAR construction was only 38.5% of predicted habitat loss. Additional habitat loss over the operational and closure phases along the AWAR is anticipated to be marginal; therefore, ELC habitat loss analyses are not required for the AWAR in subsequent years.

SECTION 4 • BREEDING BIRD PLOTS

4.1 MONITORING PROGRAM OVERVIEW

The breeding bird plot monitoring program has been 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 that is removed or degraded by the project, and whether certain mine activities have resulted in reduced or compromised habitat function or effectiveness (i.e., zone of influence) for breeding birds.

4.2 MONITORING PROGRAM 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) Program for Regional and International Shorebird Monitoring (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 MONITORING PROGRAM 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 (2010-2012) in accordance with the TEMP (Cumberland 2006). The next PRISM plot survey is planned for 2015, following which detailed analyses of project effects will be undertaken. Only basic abundance and diversity metrics are provided in this report.

4.4 METHODOLOGY

4.4.1 Survey Methodology

The survey methodology involves a survey of twenty-five (25) control and mine site plots, measuring 400 x 400 m (16 ha) following the CWS PRISM protocols (CWS 2005). Specifically, two observers, spaced at 25 m intervals, walk slowly back and forth (north-south direction) across each plot (1.5 to 2.0 hours per plot) and record all birds and nests observed. Plots are surveyed by two teams, each consisting of two observers, and surveys alternate daily between control and mine plots. To reduce observer bias, teams also alternate between mine and control locations.

Based on the 25 m intervals, 17 transects need to be traversed to complete each survey plot. Orientation on the plot is accomplished with handheld GPS units. Sightings are recorded on plot maps using pre-determined codes for nests, probable nests, pairs, males, females, birds of unknown sex, and groups. Plot maps are oriented with the north direction at the top of the page. Direction of flight, interactions, and other behaviours are also recorded. Following each daily field survey, the total number of each bird species using each plot is determined and recorded on a separate datasheet.

4.4.2 Analytical Methodology

Bird community indices used to compare mine and control areas and consider temporal trends are summarized in Table 4.1. Details on statistical methods have been provided in previous wildlife monitoring summary reports.

Table 4.1: Indices of Bird Communities

Indicator	Statistics	Description
Species abundance	Mean count of all species	A general index of species abundance
Species richness	Count of species observed	Number of unique species counted in a plot
Species diversity	Shannon Weiner Function	Takes into account abundance and richness
Species evenness	Shannon Weiner Function/ log(species richness)	Evenness or equitability of species

4.5 HISTORICAL RESULTS

Mine site and control (reference) PRISM plots have been surveyed for 10 and eight (8) years, respectively. Specific date ranges for each annual survey of these plots are summarized in Table 4.2.

Table 4.2: Survey Years at Mine Site and Control (Reference) PRISM Plots

Survey Year	Survey Dates	
	Mine Site Plots	Control (Reference) Plots
2003	18 to 25 June	Not completed
2004	19 to 25 June	Not completed
2005	28 June to 17 July	28 June to 17 July
2006	12 to 25 June	12 to 25 June
2007	15 to 28 June	21 to 27 June
2008	18 June to 2 July	20 to 30 June
2009	17 to 30 June	18 to 28 June
2010	16 to 24 June	15 to 24 June
2011	18 to 29 June	19 to 25 June
2012	19 to 29 June	20 to 26 June

Prior to 2008, mine site construction had not commenced; therefore, the main objective of historical PRISM plot analyses was to evaluate proposed mine and control areas to ensure that they were comparable measures of baseline community metrics (i.e., richness and species relative abundance).

In addition, temporal trends in species community indices were summarized to document the natural temporal variability in bird populations. In 2008, existing ELC composition was compared for both control and mine site plots to evaluate the baseline similarity in habitat composition between areas. As intended, no significant statistical differences were identified between control and mine areas, thereby validating their use for comparative purposes during mine construction and operation.

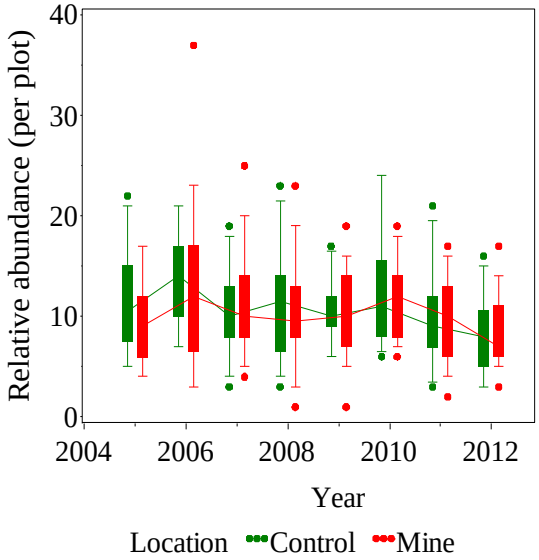
2009 marked the first year in which potential mine-related effects could be assessed as mine site construction was well underway at the time of the surveys. Results in 2009 indicated that bird species abundance, richness and diversity were not statistically different between mine and control plots. A trend of increasing species richness and diversity were also observed. The effect of distance from disturbance (i.e., construction or operation) on mine site plots did not significantly affect species richness. This trend continued in 2010 and 2011. Additional details pertaining to historical comparative analyses are summarized and available as appendices entitled Wildlife Monitoring Summary Report in previous AEM Annual reports.

4.6 2012 RESULTS

4.6.1 Species Relative Abundance

Lapland Longspur (LALO), Horned Lark (HOLA) and Savannah Sparrow (SAVS) were most commonly reported. Poisson regression was used to explore temporal trends in the abundance of Lapland Longspur. Determining whether there were temporal trends in abundance and whether trends were different between mine and control plot areas was important. Observation of the distribution of counts suggested similar trends in both control and mine plots. Similarly, Poisson regression analysis suggested that there were no temporal trends, or differences in abundance for Lapland Longspurs between control and mine sites or specific differences (impacts) of mine areas (after 2007) (Figure 4.1).

Figure 4.1: Temporal Trends in Relative Abundance of the Lapland Longspur for Mine Site and Control (Reference) PRISM Plots



Error Bars are 95% Confidence Intervals of Mean Estimates. Mine Plots were First Potentially Affected in 2008.

4.6.2 Species Richness

Species richness (the mean number of unique species counted at plots) has been compared graphically in previous monitoring reports (see Figure 4.2, AEM 2011). Species richness increased in 2009, decreased in 2010 and 2011, and then increased again in 2012 with trends similar between mine and control plots. Similar trends have been observed in the cumulative number of species and the number of unique species identified in mine and control plots by year in previous analyses (see Figure 4.3, AEM 2011). The number of new species detected each year has decreased over the duration of the monitoring program for both mine and control sites, which is expected since most species are observed in the first few years of a study (Table 4.3).

Table 4.3: Summary of New Species Detected by Survey Year at Mine Site and Control (Reference) PRISM Plots

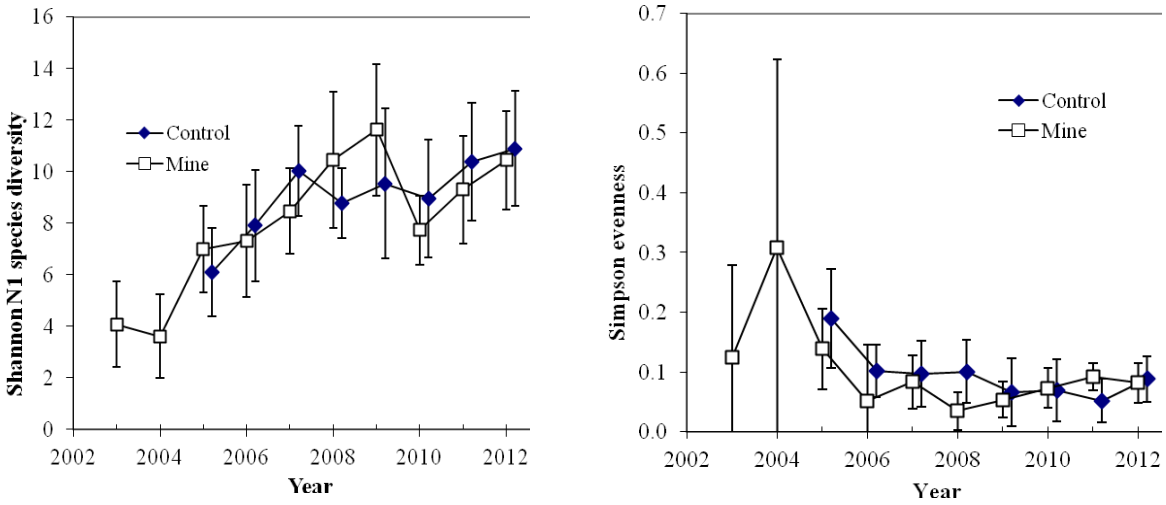
Year	New Species Recorded	
	Mine	Control
2005	(None recorded)	Canada Goose
2006	Long-tailed Jaeger, Unidentified Sandpiper, Semipalmated Plover	Hoary Redpoll, Pectoral Sandpiper, Red-breasted Merganser, Red-throated Loon
2007	Snow Bunting, White-crowned Sparrow	(None recorded)
2008	American Robin, Canada Goose, Lesser Sandpiper, Sandhill Crane	American Golden Plover
2009	American Golden Plover, Baird's Sandpiper, Dunlin, Herring Gull	Sandhill Crane, Unidentified Shorebird Semipalmated Plover
2010	(None recorded)	Long-tailed Jaeger, Northern Pintail, Snow Bunting
2011	(None recorded)	Dunlin, Greater White-fronted Goose
2012	Cackling Goose	(None recorded)

4.6.3 Species Diversity

Overall species diversity was compared for plots sampled in 2005, 2006, and 2007 to assess similarities between PRISM plots prior to mine development. A more diverse community should have a more even distribution of species. Both mine and control sites were heavily dominated by Lapland Longspur (LOLA), Horned Lark (HOLA), Savannah Sparrow (SAVS), Common Redpoll (CORE) and Rock Ptarmigan (ROPT). Most other species were only occasionally sighted on plots.

The Shannon N1 species diversity and evenness indices were used to compare species diversity trends across years for mine and control sites. Results suggest that there is no statistical difference in evenness and species diversity between control and mine plots in all years (Figure 4.2), as indicated by overlap of confidence intervals. Species diversity increased for both mine and control sites up to 2009 then decreased in 2010 before increasing again. Evenness was greatest in 2004; however, a large degree of variance around estimates makes interpretation difficult. Evenness declined slightly for the control sites and was relatively stable for the mine sites.

Figure 4.2: Species Diversity and Evenness Scores for Mine and Control Sites as a Function of Year Surveyed



The Shannon-Weiner N1 Value Represents the Number of Equally Common Species which Would Produce Similar Species Diversity Score. Whiskers Represent the 95% Confidence Limits.

4.7 ACCURACY OF IMPACT PREDICTIONS

The breeding bird plot monitoring program is a key component in accurately evaluating the wildlife abundance, richness and diversity impact predictions identified in the TEMP (Cumberland 2006) and presented in Table 4.4. The cumulative PRISM plot data set was 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. To date, no thresholds of bird abundance, richness and diversity have been exceeded, suggesting that significant project-related effects are not occurring.

Table 4.4: Accuracy of Impact Predictions (Based on PRISM Plot Analysis) – Local Breeding Bird Abundance and Diversity

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Changes in Breeding Bird Composition	Mine-related reduction in local breeding bird abundance and diversity will not occur. Threshold of >20% function between mine and reference plots.	NO	NO	Annual PRISM Plot surveys	4.3.2.3
Healthy Prey Populations	Maintenance of healthy prey populations (breeding birds and small mammals) 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.	NO	NO	Annual PRISM Plot surveys ELC Habitat Mapping	4.7.2.1

4.8 MANAGEMENT RECOMMENDATIONS

To date, PRISM plot data show that most community indices are variable with little difference in the overall trends of mine and control plots. Most metrics increased between 2003 and 2008 before reaching a plateau from 2010 to 2011. Initial variation in plots was potentially due to the fact that the actual plots changed in 2003 and 2004 for the mine sites; however, many of the trends are still evident in the 2005-2008 data in which the same plots were surveyed. Various factors such as seasonality, weather, and larger-scale trends in distribution and abundance could influence the community metrics.

As outlined in the TEMP, the 2012 surveys fulfill the obligation of conducting PRISM plot surveys for the first three years of mine operations (Cumberland 2006). The next set of PRISM plot surveys will be conducted in three years (2015), following which detailed statistical analyses will be conducted to investigate potential project effects.

SECTION 5 • RAPTOR NEST SURVEYS

5.1 MONITORING PROGRAM 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 walls and overhangs. Established nests within some of these quarries are monitored on an annual basis to evaluate occupancy.

5.2 MONITORING PROGRAM OBJECTIVE

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

1. Confirm that raptor nest failures will not be caused by mine-related activities. The threshold level is one nest failure per year; and

2. Confirm that no project-related mortality of raptors will occur. The threshold level of mortality is one individual per year.

5.3 MONITORING PROGRAM DURATION

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

5.4 METHODOLOGY

Prior to 2010, a dedicated raptor nest survey had not been conducted for the Meadowbank LSA with the exception of a raptor survey completed in 1999. Between 2000 and 2009, raptor observations 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 nest at Quarry 19 prompted the initiation of a dedicated raptor nest survey in 2010.

Surveys in 2011 and 2012 continued this work, focusing particularly on quarries along the AWAR. In 2012, known nesting sites were monitored in late June with routine visits in July and August as part of mine site ground surveys (see Section 7.5.3).

5.5 HISTORICAL RESULTS

Nesting pairs of Peregrine Falcon were recorded in 1996 and 2005 in the Mine RSA, but nests have only been routinely recorded since 2009 (at which time, dedicated nesting surveys were included in the monitoring program). Six Peregrine Falcon nesting sites have been recorded only in quarries since 2009 (Figure 5.1).

5.6 2012 RESULTS

Cumulative information on Peregrine Falcon nest presence/absence from 2009 to 2012 is summarized in Table 5.1. Details of raptor (primarily Peregrine Falcon) nest sites identified along the AWAR during the 2012 field season are provided in Table 5.2 and illustrated in Figure 5.1. No new active nest sites were identified in quarries in 2012. In 2012, a Peregrine Falcon pair successfully nested on the Portage Pit walls despite initial efforts to deter the pair from nesting. According to regular monitoring of the nest (see Appendix A), two chicks appear to have successfully fledged form the nest. Raptor Nest Management Plans were not warranted at any of the nest sites along the AWAR during the 2012 field season. A general mine site Peregrine Falcon management and protection plan was developed in accordance with the TEMP for the nest in Portage Pit. Observations can be found in Appendix A (also see Section 7.5.3).

Table 5.1: Assessment and Ranking of Peregrine Falcon Nesting Potential at Quarries and Other Locations along the AWAR

Quarry #	Nest in 2009	Nest in 2010	Nest in 2011	Nest in 2012	Comments
1	No	No	No	No	Shallow quarry.
2	No	**Yes**	**Yes**	**Yes**	Good cliff faces for nesting. Assume nest failure in 2011. Active nest in 2012.
3	No	**Yes**	**Yes**	**Yes**	Nest Management Plan in 2010. Nest with 3 eggs found in 2011 (assume nest success). Active nest in 2012.
4-6	No	No	No	No	Shallow quarry and/or flooded.
7	No	No	No	No	Old CORA nests. Lots of fractured rock forming cliff faces but limited ledges.
8	No	No	No	No	No cliff faces.
9	No	Yes (CORA)	Yes (CORA)	No	CORA stick nest with 3 chicks in 2011. Old CORA nest. Lots of fractured rock forming cliff faces but limited ledges.
10-15	No	No	No	No	Shallow quarry and/or flooded.
16	No	No	No	No	Moderate depth with good cliff faces but no ledges. Old fallen stick nest, likely CORA. Old PEFA(?) nest observed in 2011, lots of whitewash in quarry.
17	No	No	No	No	Very shallow quarry. PEFA present but not nest.
18	No	**Yes**	**Yes**	**Yes**	Good, high cliff face but no ledges. Nest at top lip. Assume nest failure in 2011. Active nest in 2012.
19	**Yes**	No	**Yes**	**Yes**	Good, vertical cliff face and some suitable ledges. Assume nest success in 2011. Active nest in 2012.

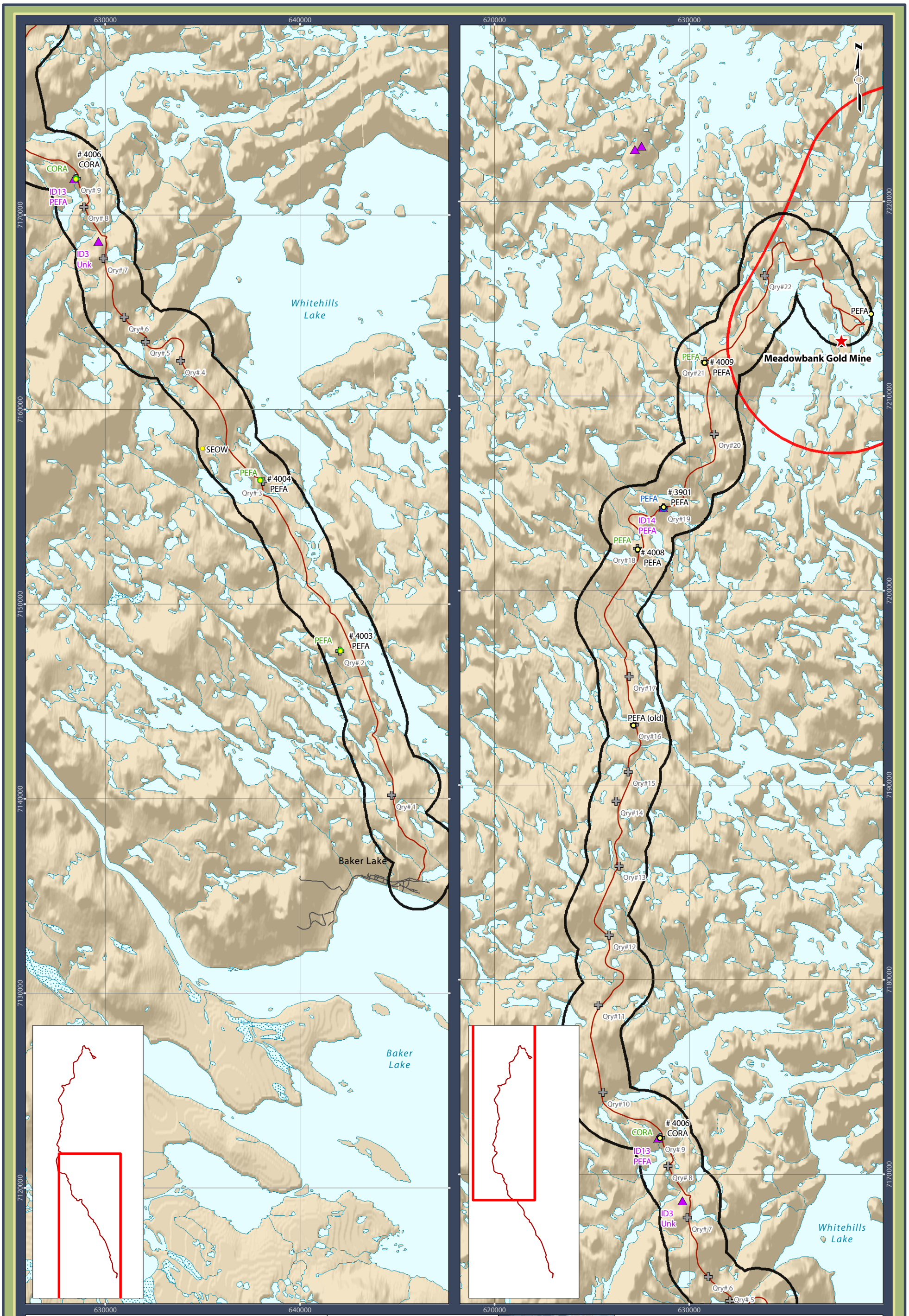
Table 5.1 Continued.

Quarry #	Nest in 2009	Nest in 2010	Nest in 2011	Nest in 2012	Comments
20	No	No	No	No	Very shallow quarry. Partially filled with snow. Lots of whitewash on north end of quarry, adult observed (2011).
21	No	**Yes**	**Yes**	**Yes**	Good, high cliff face but no ledges. Nest at top lip in 2010, but close to road in 2011. Assume nest success in 2011. Active nest in 2012
22	No	No	No	No	Good, high cliff face. Currently used as tire/metal dump, which may deter nesting.
Portage Pit	No	No	No	**Yes**	Active nest in 2012 on wall of Portage Pit

Table 5.2: 2012 Raptor and Raven Nests Identified and Monitored at the Mine Site and along the AWAR between Baker Lake and the Meadowbank Mine Site

Date First Observed	Species	Location (UTM)	Location	GN Site #[1]	Comments
02 July 2012	Peregrine Falcon	14W 0642068 7147616	Quarry 2	4003	Nest with 4 eggs on 02 July; 2 adults and 3 chicks on 23 July
02 July 2012	Peregrine Falcon	14W 0637952 7156371	Quarry 3	4004	Nest with 4 eggs on 02 July; 1 adult and 3 chicks on 18 July; 1 adult and 2 chicks on 23 July
30 June 2012	Peregrine Falcon	14W 627351 7202109	Quarry 18	4008	Nest with 4 eggs on 30 June
30 June 2012	Peregrine Falcon	14W 628686 7204285	Quarry 19	3901	Nest with 4 eggs on 30 June; 2 adults and 2 chicks on 23 July.
29 June 2012	Peregrine Falcon	14W 0630781 7211705	Quarry 21	4009	Nest with 4 eggs on 29 June
07-June-2012	Peregrine Falcon	14W 0639109 7213617	Portage Pit wall	Not Determined	Nest with 2 chicks

[1] Government of Nunavut Raptor Database site number



Legend

Raptor Nest Location
- 2011 - 2012
- 2010
- 2009
- 1999 - 2006
- 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.

Area of Detail

Figure 5.1: Raptor Nest Locations and Associated Quarries along the AWAR (2009 to 2012)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING

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 2012 raptor 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.

Table 5.3: Accuracy of Impact Predictions – Healthy Prey Populations (for Raptors) and Disturbance to Nesting Raptors along the AWAR

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Healthy Prey Populations	Healthy raptor prey populations (small mammals and breeding birds) will be maintained at the Meadowbank site by ensuring that the integrity and health of habitats are maintained.	NO	NO	Annual PRISM Plot Surveys ELC Habitat Classification	4.7.2.1
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by mine-related activities. Threshold is one nest failure per year.	NOT OBSERVED (No nests present prior to quarry development)	NO	AWAR Surveys Waterbird Nesting Surveys Dedicated Raptor Nest Surveys Daily / Weekly Systematic Mine Site Ground Surveys	4.7.2.2

5.8 MANAGEMENT RECOMMENDATIONS

Quarry mining activities along the AWAR corridor have created moderate to high potential raptor nesting habitat. Raptors are expected to continue to use select quarries for the foreseeable future, which may necessitate the implementation of a formal nest management plan for raptor nests, as was done in 2012 for the Portage Pit nest. Another raptor nest survey should be conducted in 2013 at each of the quarries along the AWAR early in the nesting season (mid-late June) to confirm the activity status of previously confirmed raptor nests, assess for the presence of new raptor nests and determine the need, if any, for development and implementation of nest-specific management plans. Informal raptor and raptor nest monitoring should continue around the mine site LSA and along the AWAR during road surveys, and daily and weekly mine-site ground surveys.

Ongoing monitoring of the pits and waste rock piles need to be conducted at the mine site to avert nesting attempts by raptors (e.g. Peregrine Falcon). If a nest is established, a nest management plan needs to be developed, which manages activity and mine-related disturbance at the nest until the nest is deemed as inactive. Furthermore, AEM recently involved Dr. Alastair Franke from the University of Alberta as a consultant. Dr. Franke has been conducting research on raptors in Nunavut since 2003. He has extensive knowledge of falcon behavior and is recognized by the Government of Nunavut, Department of Environment (DoE) as a raptor expert for the territory. In the future, if falcon activity is observed near mine operations, AEM will immediately consult with Alastair to discuss site-specific protective measures and, if needed, deterrence recommendations to ensure falcon protection.

SECTION 6 • WATERBIRD NEST SURVEYS

6.1 MONITORING PROGRAM OVERVIEW

The waterbird nest survey monitoring program has been designed to evaluate potential changes in nesting distribution of waterbirds utilizing ponds, wetlands, lake shorelines and islands within 200 m of mine facilities (200 m considered to be the approximate 'zone of influence' for waterfowl). Given the low numbers of nesting waterfowl observed within the mine site and AWAR during nest surveys to date, the number of waterfowl nesting within 200 m of mine facilities within any given year is predicted to be very small; however, potential changes in waterfowl nesting distribution may occur and should be documented and monitored.

6.2 MONITORING PROGRAM OBJECTIVE

The primary objective of the waterbird nest survey monitoring program is to verify that mine facilities and activities do not impact the breeding success of waterbirds occurring in the area or disturb large concentrations of roosting or moulting waterbirds. The threshold level is one nest failure per year.

6.3 MONITORING PROGRAM DURATION

The waterbird nest survey monitoring program duration was not explicitly stated in the TEMP (Cumberland 2006); however, to fully evaluate the potential for impacts and accuracy of impact predictions, a final year of monitoring was conducted in 2012. Given the very limited number of waterbird nests recorded each year, and the lack of evidence of mine-related effects, the waterbird nest survey program has been discontinued.

6.4 METHODOLOGY

6.4.1 Mine Site

Ponds, wetlands, lake shorelines and islands within 200 m of mine site facilities were surveyed on foot between 2006 and 2012 to determine the occurrence and frequency of nesting waterbirds. Similar, less intensive surveys were also conducted in 2004 and 2005. The survey protocol consists of two observers walking around the edges of islands, wetlands or shorelines, with one observer 5 m from the water's edge and the second observer 15 m from the water's edge (10 m between observers). Areas are assessed for indications of nesting waterbirds (i.e., ducks, swans, geese, jaegers) in potentially suitable sites within the mine site. Observers use maps and UTM coordinates for orientation. The UTM locations (taken with handheld GPS units) of all observed waterbirds as well as any nests and/or broods are recorded on datasheets. An attempt is made to conduct the surveys within the first two weeks of July, when most waterbird species are expected to be nesting. The total survey length along wetland within the mine site is 51,500 m (51.5 km).

6.4.2 All-Weather Access Road

Waterbird nest surveys have been conducted along the lakes and ponds within 200 m of the AWAR since 2007. In 2007, surveys were limited to recently completed sections of the AWAR, whereas since 2008, surveys have been conducted along the entire length of the AWAR between Baker Lake and the mine site. Protocols are akin to those outlined above for the mine site. The total survey length around lakes and ponds within 200 m of the AWAR is 37,839 m (37.8 km).

6.5 HISTORICAL RESULTS

6.5.1 Mine Site

Waterbird nest surveys have been conducted within the Meadowbank mine site LSA on an annual basis since 2004. Historical mine site survey results (including 2012 results) for nests observed are summarized in Table 6.1, while detailed results can be found in previous annual monitoring reports. Nest numbers include sightings of nests, nests with eggs, and broods away from nests. Results indicate that the lakes and ponds in the Mine LSA are used to a limited extent by breeding waterbirds.

Table 6.1: Summary of Waterbird Nest Survey Results for Mine Site Facilities (2005 to 2012).

Bird Species	2005	2006	2007	2008[1]	2009	2010	2011	2012
Canada Goose	0	1	0	0	0	0	0	0
Common Loon	0	0	0	0	1	0	0	0
Long-tailed Duck	1	0	0	0	0	0	0	0
Northern Pintail	1	0	0	0	0	0	0	0
Semipalmated Plover	0	1	0	0	0	0	0	0
Semipalmated Sandpiper	0	4	0	0	0	1	1	0
TOTAL WATERBIRD NESTS	**2**	**6**	**0**	**0**	**1**	**1**	**1**	**0**

[1]Less intensive surveys completed in this year

6.5.2 All-Weather Access Road

A summary of active nests observed during the 2007-2012 waterbird nest surveys along the AWAR is provided in Table 6.2, while detailed results can be found in previous annual monitoring reports. Nest numbers include sighting of nests, nests with eggs, and broods away from nests.

Historical results suggest that the lakes and ponds within 200 m of the AWAR have been utilized by waterbird species each year since surveys were initiated in 2007. Moreover, nest sites observed in previous years are often utilized again in subsequent years. In 2011, the highest number of Long-tailed Duck (*Clangula hyemalis*) nests was recorded (this tally includes observations of broods off nest, which is evidence of nearby nesting).

Table 6.2: Summary of Waterbird Nest Survey Results for the AWAR (2007 to 2012)

Bird Species	2007	2008	2009	2010	2011	2012
Cackling Goose	0	0	0	0	0	1
Canada Goose	3	4	6	2	4	3
Greater White-fronted Goose	1	0	0	0	0	0
Herring Gull	1	2	1	0	0	0
Long-tailed Duck	1	4	2	0	5	0
Parasitic Jaeger	0	2	1	1	0	0
Red-breasted Merganser	0	0	0	0	0	1
Semipalmated Sandpiper	0	1	5	0	0	1
Dunlin	0	0	0	1	0	0
Northern Pintail	0	0	0	1	0	0
Unidentified Shorebird	0	0	0	0	1	0
TOTAL WATERBIRD NESTS	**6**	**13**	**15**	**5**	**10**	**6**

6.6 2012 RESULTS

6.6.1 Mine Site

Waterbird nests were not observed at the mine site in 2012. The 2012 survey marked the eighth consecutive year that waterbird nest surveys were conducted at the mine site and the seventh year of the more intensive protocols established in 2006. The intensive protocol resulted in a more comprehensive dataset relative to previous years; however, counts, nest locations and species continued to vary between years. Waterbird nest density in the mine site continues to remain very low.

6.6.2 All-Weather Access Road

The 2012 waterbird nest data for ponds and lakes within 200 m of the AWAR are provided in Table 6.3. Four active nests, one recently occupied nest (predated), and one likely nest were observed in 2012. 2012 marked the sixth consecutive year that waterbird nest surveys were conducted along the AWAR. Overall the density is very low and; therefore, statistically, these data are not reliably able to predict impacts related to AWAR activities.

Table 6.3: 2012 Waterbird Nest Survey Results for Ponds and Lakes within 200 m of the AWAR

Date	Species	Pond ID	UTM Coordinates	Comments
29 June	Canada Goose	P52	14W 634138 7216168	Nest with 3 eggs on islet
30 June	Cackling Goose	L44	14W 627715 7204071	Recently predated nest on islet
30 June	Canada Goose	L17	14W 642899 7146376	Nest with 3 eggs
30 June	Canada Goose	P43	14W 627682 7202117	Nest with 3 eggs on islet
30 June	Red-breasted Merganser	L23	14W 630114 7168200	Nest with 1 egg
30 June	Semipalmated Sandpiper	P42	14W 627182 7203559	Probable nest site

6.7 ACCURACY OF IMPACT PREDICTIONS

A summary of the impact predictions identified in the TEMP (Cumberland 2006) is provided in Table 6.5. The 2012 and cumulative waterbird nest dataset was 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. No threshold levels were exceeded in 2012.

Table 6.3: Accuracy of Impact Predictions – Disturbance of Nesting, Roosting or Moulting Waterfowl along the AWAR and for the Mine Site LSA

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Disturbance of Nesting, Roosting or Moulting Waterfowl	Mine facilities and activities will not impact the breeding success of waterfowl occurring in the area or disturb large concentrations of roosting or moulting waterbirds. Threshold level is one nest failure per year.	NO	NO	Waterbird Nest Surveys Daily / Weekly Systematic Mine Site Ground Surveys	4.8.2.2

6.8 MANAGEMENT RECOMMENDATIONS

Given the low densities of waterbird nests identified at the mine site and along the AWAR since 2005 (i.e., too low to determine whether changes in nest abundance or success have occurred), and the absence of data suggesting that mine or road-related effects are occurring, the waterbird nest survey program has been discontinued.

SECTION 7 • MINE SITE GROUND SURVEYS

7.1 MONITORING PROGRAM 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 for mortality of various wildlife groups with a potential to utilize 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.

7.2 MONITORING PROGRAM OBJECTIVES

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

1. Evaluate whether mine-related construction and operations 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;

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 or Wolverines will need to be destroyed at the mine site. The threshold level of mortality is one individual per year;

4. Verify that the footprint of the mine facilities (i.e., plant, storage areas, tailings impoundments, waste rock piles, camp sites) is minimized;

5. Verify that main mine facilities are consolidated in one area, and temporary workplaces and material lay-down areas are designated and clearly delineated; and

6. Verify that high value habitats (e.g., sedge meadows) are avoided, and all activities within 100 m of a nest site during the latter part of the nest stage (fledgling) are avoided.

7.3 MONITORING PROGRAM DURATION

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

7.4 METHODOLOGY

7.4.1 Mine Site Inspections

In 2012, environmental technicians conducted daily 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. The results of these formal inspections were scored and weighted as part of the mine operations productivity bonus as an incentives program for achieving on-site environment management performance targets.

As part of the weekly inspections, technicians completed:

- Regular monitoring of Caribou and Muskox in the vicinity of the facilities. If risks to animal health were perceived, efforts were made to avoid the wildlife and provide them the right of way;
- Regular monitoring of all large mammals on the site;
- Regular monitoring of breeding birds (especially in the spring); and
- Inspections of waste management areas, bins and hazardous material storage.

During these inspections and ground surveys in 2012, many incidences related to waste management and notifications of Arctic Fox, Wolf and Wolverine presence were provided to Environment staff and followed up as needed by environment technicians. As well, daily and weekly inspections ensured mine activity met the following goals:

- The footprint of the mine facilities (i.e., plant, storage areas, tailings impoundments, waste rock piles, camp site infrastructure) is minimized;
- Main mine facilities are consolidated in one area. Temporary workplaces and material lay-down areas to be designated and clearly delineated; and
- High value habitats (e.g., sedge meadows) are avoided. If a nest is identified, all activity within 100 m of a nest site during the latter part of the nest stage (fledgling) is to be avoided.

In 2012, a road was completed to Vault Pit operations and site preparation near Vault Lake began in the fourth quarter of 2012. Stripping and quarrying activity began within a small zone of the Vault Pit in October 2012 to supply road material near the Vault Operations. As well, a water management diversion system that involved the construction of ditches and small berms was completed in the north cell of the tailings storage facility. A waste rock extension to the northwest of the Portage Waste Rock facility was operational which extended the waste rock pile to the northwest. Furthermore, operations began in Goose Pit in early 2012. There were no other significant mine footprint changes in the main mine site area in 2012. No ancillary construction activity was undertaken without environmental notification and all activities were within the predicted mine footprint as confirmed through environmental inspections, ground surveys, and coordination with engineering and site services on the mine site.

7.4.2 Incidental Mine Site Wildlife Observations

All mine site personnel, including construction and support personnel, were required to document and report wildlife observed within the boundaries of the Meadowbank mine as well as ancillary areas. The protocol involved filling out a wildlife log form located in a designated area and was 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 were collected from designated areas on a regular basis for review by environmental personnel. Pertinent data from these forms as well as the daily and weekly mine site inspection reports were consolidated and entered into a database (results discussed in Section 7.5).

7.4.3 Waste Management and Landfill

Operation and management of on-site waste is an important component of wildlife management at Meadowbank. In 2012, on-site waste management and segregation improved from previous years. Following internal and external audits in 2011 and 2012, no significant changes were made on the system of sorting, segregation and incineration. In general, the centralized waste management area for segregation and hazardous waste management prevented access for wildlife through the use of covered garbage bins for disposal of waste designated for the incinerator, which limited the access to food waste by animals. Weekly formal inspections and daily inspections of the mine facilities were conducted to ensure that garbage was being handled appropriately, aromatic substances were not left in the open, personnel were not feeding animals and the incinerator was working efficiently. Tool Box meetings, which increased in 2012 from 2011, were held with operational staff at least weekly to discuss environment issues including waste management. Any areas of concern were noted and responded to. If the item was considered non-conforming, the appropriate mine staff were guided on the respective procedures, and a follow-up inspection was completed to ensure the issue was appropriately handled.

7.5 2012 RESULTS

7.5.1 Breeding Bird Nest Surveys

During daily and weekly mine site inspections, no upland breeding bird nests were identified in 2012 that had the potential to be impacted by mine operations; therefore, no mitigative measures were necessary at the mine site to protect breeding birds.

A Common Raven nest was found on the stairway of one of the bulk fuel storage tanks at the Meadowbank fuel storage facility in Baker Lake. Meadowbank environment personnel requested a visit from the Government of Nunavut (GN) Conservation Officer to assist in relocating the nest to allow maintenance personnel to complete fuel storage reconciliation as part of the fuel tank environmental protection and performance monitoring. On 11 May 2012 the GN DoE Wildlife Director provided an exemption to the GN Officer. The GN Conservation Officer confirmed the nest presence and shortly thereafter removed or destroyed the nest as per the exemption letter.

In collaboration with DoE, Agnico-Eagle has installed owl decoys at the Baker Lake fuel farm to deter birds, particularly Common Ravens, from continuing to nest and will be sure to continue to monitor these potential nest sites during routine fuel inventory monitoring and Baker Lake site inspections. Agnico-Eagle personnel will continue to discourage raven nesting at the fuel storage area by inspecting the stairs and other facilities on a regular basis. If a nest is observed, Agnico-Eagle will immediately contact the DoE.

7.5.2 Waterbird Monitoring

To avoid accidental waterbird confinement around the mine site and trapping in the tailings, regular inspections were completed throughout the migratory period and during weekly or daily inspections, as deemed necessary by the environment coordinator. Beginning in early May until late June 2012, technicians routinely inspected the tailings storage facility and as required, used deterrents, and if safe, boated in the reclaim pond to discourage waterfowl from landing and potentially becoming trapped in the tailings storage facility. No high risk waterfowl incidences or mortalities were reported in 2012.

7.5.3 Raptor Monitoring

During AWAR surveys, daily and weekly mine-site inspections of raptors were monitored. Similar to 2010 and 2011, during AWAR wildlife monitoring, Nunavut Environmental and environmental technicians observed Peregrine Falcons nesting at Quarry 2, 3, 18, 19 and 21 (see details in Section 5). Weekly non-disruptive monitoring was conducted by wildlife surveyors and by environmental technicians to ensure nests were protected and undisturbed by mine operations. Data recorded by mine-site technicians are provided in Appendix A and additional information was provided by Nunavut Environmental during road surveys. The operations near Quarries 2, 3, 7, 18, 19 and 21 will continue to be carefully monitored in the future.

Throughout the year, Meadowbank environment staff routinely monitored the pit and other areas on the mine site for birds to ensure their protection and adequate management. In June 2012, Peregrine Falcons were observed nesting in the Portage Pit directly within mine operations. In response, a general mine site Peregrine Falcon management and protection plan was developed in accordance with the TEMP. The purpose of the plan was to protect Peregrine Falcons from mine activities by firstly preventing them from nesting within the perimeter of active mining pits (Portage, Goose, or Vault pits) during operation. If nesting were to occur in the mine pits, operations will be adapted according to the management plan and monitoring will increase to ensure protection of the falcons and their nest(s).

Furthermore, Agnico-Eagle recently involved Dr. Alastair Franke from the University of Alberta. Dr. Franke has been conducting research on raptors in Nunavut since 2003. He has extensive knowledge of falcon behavior and is recognized by the DoE as a raptor expert for the territory. In the future, if falcon activity is observed near mine operations, Agnico-Eagle will immediately consult with Dr. Franke to discuss site-specific protective measures and, if needed, deterrence recommendations to ensure falcon protection.

7.5.4 Caribou and Wildlife Protection along the AWAR

As in previous years, the security department assisted the environment department in preventing wildlife incidences along the AWAR by dispatching regular wildlife warnings. The AWAR supervisors and operators also ensured protection of wildlife by assisting in surveillance and were involved in shutting down the road as needed. Notices reminding operators of the AWAR speed limit were made frequently. During caribou peak migration along the AWAR, notices were sent to all road occupants, wildlife consultants were notified and AWAR wildlife survey efforts were increased to at least two times per week. Environment technicians completed, at a minimum, monitoring of the AWAR every other day during peak migration crossing.

Larger herds of caribou were observed along the AWAR beginning in early November 2012. As in the past, in mid-October and early November notices were sent to all employees reminding all those travelling along the AWAR to be aware of the caribou migration. On 4 November, many caribou were observed and at this time a notice was distributed to all road operators, security and the DoE. Hundreds of caribou were observed migrating across the road, prompting the environment department and road operations team to regularly close the road throughout the week. These measures were enforced from approximately 4 to 25 November until all of the caribou completed their migration in the vicinity of the AWAR.

7.5.5 Arctic Fox Deterrence and Protection

As in previous years, Arctic Fox were found denning near the mine site and appeared to be habituated to mine activities. Despite improved deterrence, waste segregation, incineration, enclosed food waste facilities and infrastructure skirting the buildings, Arctic Fox appear to have become dependent on scavenging for food near the mine site. Weekly on-site inspections by environmental technicians provided monitoring data that indicated re-occurrence of Arctic Fox on-site and many employees reported sightings.

In February 2012, fox activity appeared to slightly increase near the mine site and many of the foxes seemed to be overly aggressive and excessively approaching mine employees. In accordance with the Bear Wise deterrence training, which was completed by all environment technicians in 2011, the foxes were routinely deterred from areas around the mine site and a reminder was sent to all employees to not feed animals and to ensure waste was properly sorted. In March, an employee was bitten by an unconfirmed rabid fox. Shortly thereafter, the DoE was contacted and in collaboration with the DoE, six (6) fox were euthanized on 2 and 3 March. The foxes were tested for rabies and the results showed the foxes were not rabid. All of these incidences involved or were reported directly to DoE.

7.5.6 Incidental Wildlife Observations

Mine site incidental observations are consolidated from the daily and weekly inspection reports and observations collected by mine personnel. Agnico-Eagle environmental personnel are committed to maintaining awareness of wildlife reporting and will continue to convey the importance of managing wildlife through employee education. Observational results are used by environmental personnel to monitor wildlife activity within the camp, mine site and ancillary areas, evaluate the effectiveness of adaptive management and identify potential problem animals.

7.5.7 Wildlife Mortality

A summary of recorded wildlife fatalities near the mine site in 2012 is provided in Table 7.1, and a summary of fatalities to date from historical data is provided in Table 7.2. Caribou and Wolverine road fatalities have been included here with copies of incident reports for Caribou and Wolverine provided in Appendix B. AWAR-related fatalities are also discussed in Section 8.6.

Table 7.1: 2012 Wildlife Fatality Log

Date	Species	Count	Location	Comments
26-Feb-2012	Arctic Fox	1	Mine Site	Found dead caught between stair railings
12-Mar-2012	Arctic Fox	6	Mine Site	Euthanized because of rabies concerns
22-Mar-2012	Ptarmigan	1	Mine Pit	Found injured and euthanized
22-Mar-2012	Wolf	1	Mine Site	Euthanized by DoE
21-Apr-2012	Arctic Fox	1	Mine Site	Euthanized after found trapped and injured in kitchen roll off
22-May-2012	Arctic Fox	1	Mine Site	Found dead
26-May-2012	Ptarmigan	1	Mine Site	Found dead near airstrip
24-Nov-2012*	Caribou	1	Km 32 of AWAR	Ran into grader and killed
31-Dec-2012*	Wolverine	1	Along AWAR	Ran out of ditch and killed by tanker

* Caribou and Wolverine fatalities were along the AWAR, but are included here because incidence reports were completed by mine environmental staff

Table 7.2: Summary of Mine-related Wildlife Fatality Records for Caribou and Predatory Mammals (2007 to 2012)

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

* Caribou and Wolverine fatalities were along the AWAR and are discussed in the following section on AWAR survey results.

7.5.7.1 Caribou

On 24 November 2012, a caribou was reported to have been accidentally killed near Km 32 along the AWAR. A grader operator immediately reported the incident to the environment department. According to this report, the grader operator tried to reduce speed after two Caribou were observed approximately 200 m ahead. Before the grader could slow down, a Caribou appeared from the west side of the road and collided with the grader. Despite the best effort from the grader operator to avoid the Caribou, the animal collided with the blade, was trapped and died. The carcass was taken to the

Meadowbank mine site for incineration, and salvaged meat was taken to a Baker Lake Elder. The incident was reported to the Hunting and Trappers Organization, Kivalliq Inuit Association representatives and GN Conservation Officer. This incident occurred during a period of increased caribou activity along the AWAR (Section 7.5.4). The incident report, dated 24 November 2012, is found in Appendix B.

On 11 April 2012, a dead Caribou was found at Km 32 of the AWAR, but cause of death could not be determined. No other caribou misses, near misses or additional mortalities were related to mine activities along the AWAR or at the mine site in 2012.

7.5.7.2 Predatory Mammals

Wolverine

The environment department confirmed numerous reports from employees of Wolverines near dorm facilities and mine operations in 2012. From February to May 2012 the environment department actively deterred Wolverines following the Bear Wise training; however, the sludge dump (an area within the tailings storage facility where sewage sludge is deposited) and less frequently, the dump (an area within the waste rock storage facility), continued to commonly attract Wolverines. On many of these occasions, Wolverines were successfully deterred and left the mine site area.

On 31 December, 2012, a Wolverine was accidentally killed by a tanker truck. The GN Conservation Officer was contacted and the carcass was provided to the GN DoE. The incident report, dated 3 January 2013, is found in Appendix B.

Wolf

Fewer wolf sightings and incidents were recorded from January to June 2012. The sludge dump (an area within the tailings storage facility where sewage sludge is deposited) and less frequently, the landfill (an area within the waste rock storage facility) commonly attracted wolves, especially in the warmer months. In early February, it was apparent that an emaciated wolf, which was consistently roaming near the sludge dump and mine operations, presented a potential danger mine employees. Despite numerous attempts at deterring the animal using the best available methods (i.e., 12 gauge rubber bullets, bangers and flares) and upgraded surveillance, the wolf persisted near the mine site. The DoE was contacted and a representative came to the mine site on 2 February 2012. The wolf's behaviour and tendencies continued to cause concern with the environment department and presented an apparent danger to operations personnel. The DoE was kept informed and on 12 March 2012, the GN Conservation Officer visited the mine site and euthanized the wolf. No other wolf fatalities were reported in 2012.

Arctic Fox

As reported in Section 7.5.5, six (6) Arctic Fox were euthanized by environmental technicians and GN Conservation Officer Rob Harmer during his site visit on 12 March 2012, and one dead fox was collected on 22 May. A dead fox was found on 26 February having been caught between the railings on a stair and a landing. Another fox had to be euthanized on 21 April when it was trapped and injured in the kitchen's red roll-off.

7.5.7.3 Other Wildlife

On 22 March, 2012 a ptarmigan was found injured at the north pit and subsequently euthanized. On 26 May, a dead ptarmigan was found near the airstrip.

7.6 ACCURACY OF IMPACT PREDICTIONS

Table 7.3 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 2012 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.

7.7 MANAGEMENT RECOMMENDATIONS

The following are specific management recommendations for the 2013 mine site ground survey monitoring program that may discussion with GN DoE:

- Continue to conduct informal daily mine surveys and weekly formal mine surveys to verify that impacts to wildlife are not occurring as a result of mine-related activities;
- Continue to apply the Wildlife Protection and Response Plan (AEM 2011 and reviewed by GN DoE), which includes waste and garbage 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 remained informed of pertinent wildlife-related activity in the vicinity of the mine site; and
- Monitor tailings ponds daily during the waterbird migration period. Increase the frequency of deterrent use if required.

Table 7.3: Accuracy of Impact Predictions – Mine Site Wildlife Disturbances

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Sensory Disturbance	Mine-related construction and operations 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	4.4.2.2
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by mine-related activities. Threshold is one nest failure per year.	NOT OBSERVED	YES Management Plan Implemented for Peregrine Falcon Common Raven (not a raptor) nest was removed under an Exemption Permit	Daily / Weekly Systematic Mine Site Ground Surveys Incidental Wildlife Reporting Dedicated Raptor Nest Surveys AWAR Surveys	4.7.2.2
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.	NO	NO	Annual PRISM Plot surveys ELC Habitat Mapping	4.7.2.1
Disturbance of Nesting, Roosting or Moulting Waterfowl	Mine facilities and activities will not impact 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.	NOT OBSERVED	NO	Daily / Weekly Systematic Mine Site Ground Surveys Waterbird Nest Surveys	4.8.2.2
Project-related Mortality	Destruction of one problem Grizzly Bear or Wolverine at Meadowbank Site per year.	NO (Wolverine Mortality is Discussed under AWAR Mortality)	YES	Daily / Weekly Systematic Mine Site Ground Surveys	4.5.2.1
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 (Caribou Mortality is Discussed under AWAR Mortality)	NO	Daily / Weekly Systematic Mine Site Ground Surveys	4.4.2.3
Project-related Mortality	Waterbirds will not be killed at the mine site. Threshold is one individual per year.	NO	YES; continued inspections of tailings facilities and use of deterrents	Daily / Weekly Systematic Mine Site Ground Surveys	4.8.2.4

SECTION 8 • ALL-WEATHER ACCESS ROAD SYSTEMATIC GROUND SURVEYS

8.1 MONITORING PROGRAM OVERVIEW

The AWAR systematic ground survey monitoring program has been designed to evaluate sensory disturbance for wildlife, particularly Caribou and Muskoxen, utilizing habitats adjacent to the road.

8.2 MONITORING PROGRAM OBJECTIVES

The primary objectives of the AWAR systematic ground survey monitoring program are to:

1. Document wildlife utilization along the AWAR corridor;
2. Evaluate wildlife trends along the AWAR corridor, including areas where higher densities of wildlife are observed;
3. Assess the need for adaptive mitigation, such as temporary road closures during peak Caribou migration periods; and
4. Assess for wildlife mortality.

8.3 MONITORING PROGRAM OVERVIEW

The AWAR systematic ground surveys are to be conducted a minimum of once per week and twice per week during Caribou migration (contingent on road access and personnel availability) over the operational phase of the mine.

8.4 METHODOLOGY

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 one driver and one observer. 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. The same information is collected during the AWAR Systematic Ground Surveys as has been indicated for mine site inspections. AWAR Systematic Ground Surveys are ongoing at an average frequency of 1.5 surveys per week, contingent on weather conditions. Beginning in 2010, a specific survey schedule was developed by Agnico-Eagle personnel and distributed to the survey team to standardize monitoring effort across years.

Where animals are sighted in close proximity to roads and a risk of collision with vehicles is possible, the environmental monitor will report the number of animals, location and direction of travel to the mine radio dispatcher who will inform all vehicle operators. In addition, all vehicle operators will be required to report Caribou or Muskoxen seen in close proximity to roads to the mine radio dispatcher.

8.5 HISTORICAL RESULTS

Ground surveys commenced shortly following the onset of AWAR construction (2007). 2009 marked the first year in which sampling intensity was uniform along the entire length of the AWAR. Over the past five years, the surveys have been completed along the AWAR every 3.9 to 6.1 days. Survey details are provided in Table 8.1.

Table 8.1: Details of AWAR Surveys from 2007 to 2012

Season	Number of AWAR Surveys					
	2007	**2008**	**2009**	**2010**	**2011**	**2012**
Spring (April to May)	13	15	15	9	10	14
Summer (June to July)	24	7	10	9	9	13
Fall (August to September)	8	15	8	12	11	12
Winter (Jan to Mar, Oct to Dec)	33	57	25	36	33	38
Year End Total	**78**	**94**	**58**	**66**	**63**	**77**
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
Average Frequency of Surveys (over duration)	4.1 days	3.9 days	6.1 days	5.6 days	6.0 days	4.7 days

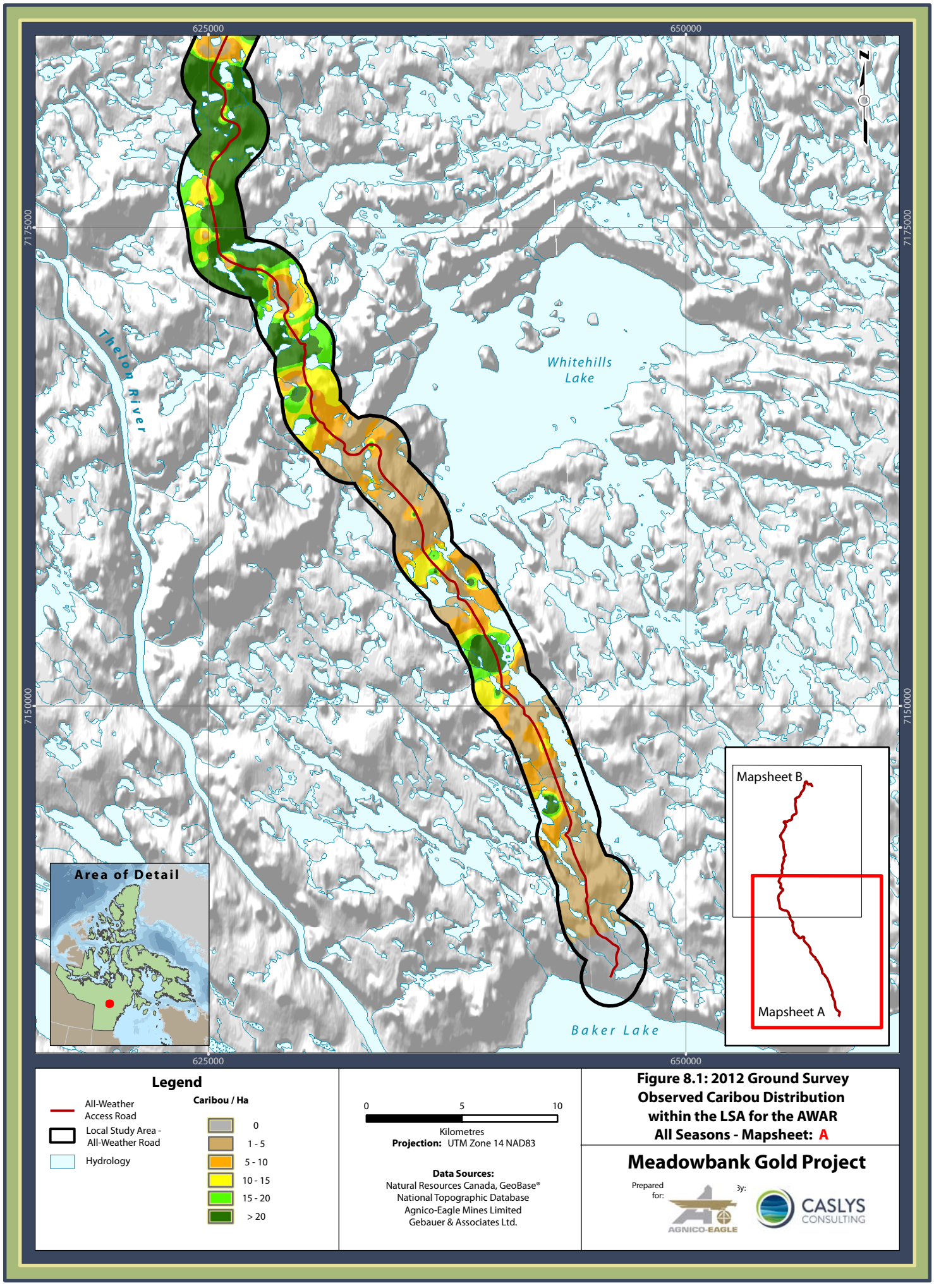
In 2009, the total number of AWAR surveys decreased relative to prior years due to frequent road closures in 2009 (i.e., blowing snow or unfavourable/unsafe driving conditions) and personnel scheduling limitations. The number of AWAR surveys has steadily increased since this low year and in 2012 almost the same number of AWAR surveys were completed as in the first year of the program.

8.6 2012 RESULTS

8.6.1 AWAR Surveys

The number of AWAR surveys completed each season in 2012 is provided in Table 8.1. The AWAR surveys completed in 2012 (n=77) are comparable to 2007 with a survey conducted on average every four to five days over the course of the year. Raptor nesting areas were monitored at quarries along the AWAR (discussed in Section 7.5.3).

Cumulative Caribou density along the AWAR for 2012 (all seasons) is provided in Figure 8.1. The highest densities observed in 2012 were in the northern half of the AWAR Road (Figure 8.1 - Mapsheet B), including an area immediately north of the mine site and an area to the east of Tehek Lake, and north of Whitehills Lake. Unlike in previous years, highest densities of Caribou were not observed in the portions of the AWAR closest to the Hamlet of Baker Lake. The 2012 Caribou density data were added to the 2008 to 2011 datasets with the resulting cumulative Caribou density presented in Figure 8.2. This figure illustrates that over the last five years of surveys, the highest Caribou densities along the AWAR are in areas closest to the Hamlet of Baker Lake between Km 0-5 and Km 5-10 (> 1,400 Caribou/km of AWAR). High Caribou densities were also observed between Km 25-30, 40-45 and 70-75 (> 900 Caribou/km of AWAR).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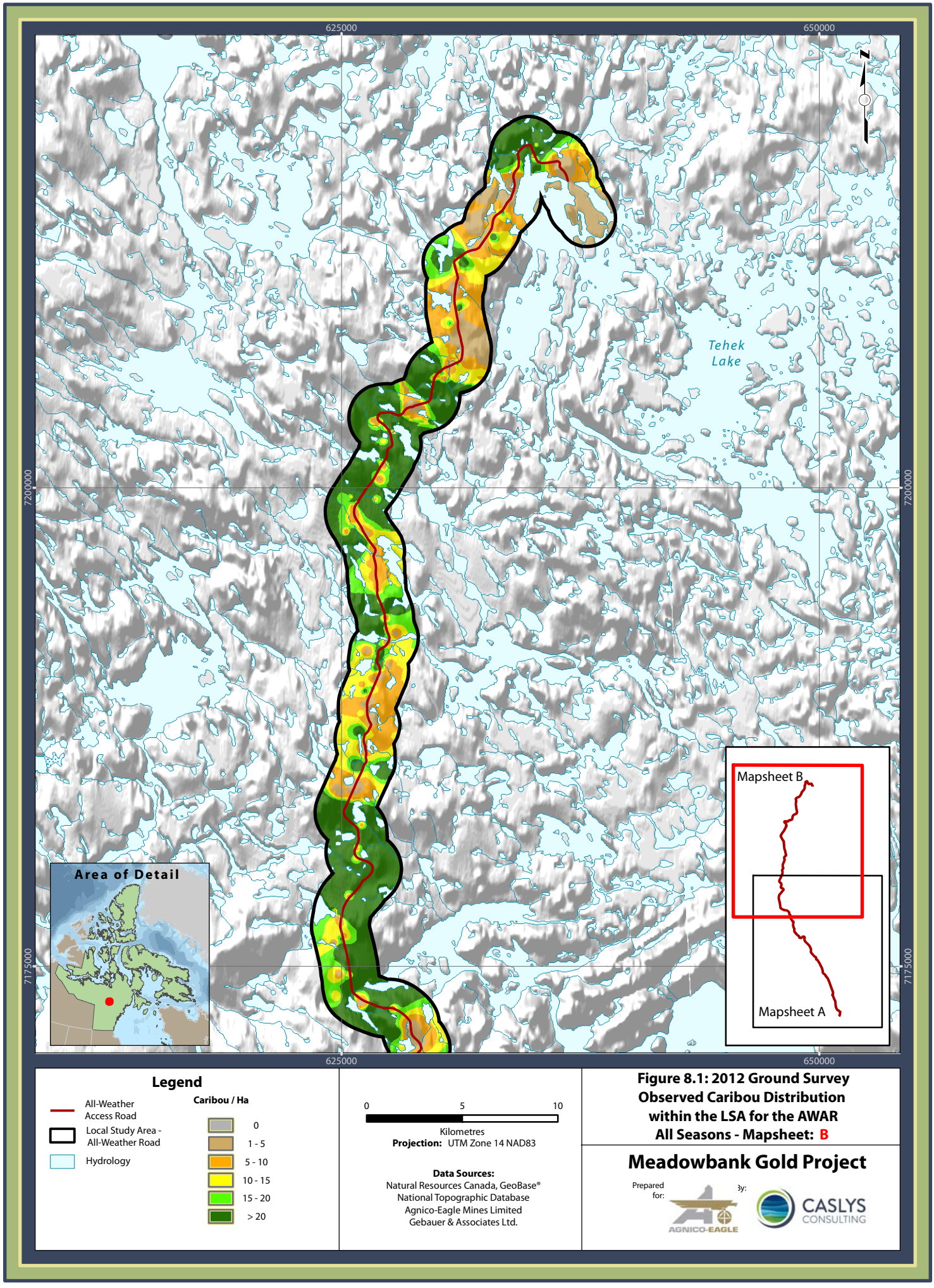
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited
Gebauer & Associates Ltd.
Figure 8.1: 2012 Ground Survey Observed Caribou Distribution within the LSA for the AWAR All Seasons - Mapsheet: A
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
CASLYS CONSULTING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Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
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Agnico-Eagle Mines Limited
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Figure 8.1: 2012 Ground Survey Observed Caribou Distribution within the LSA for the AWAR All Seasons - Mapsheet: B
Meadowbank Gold Project
Prepared for:
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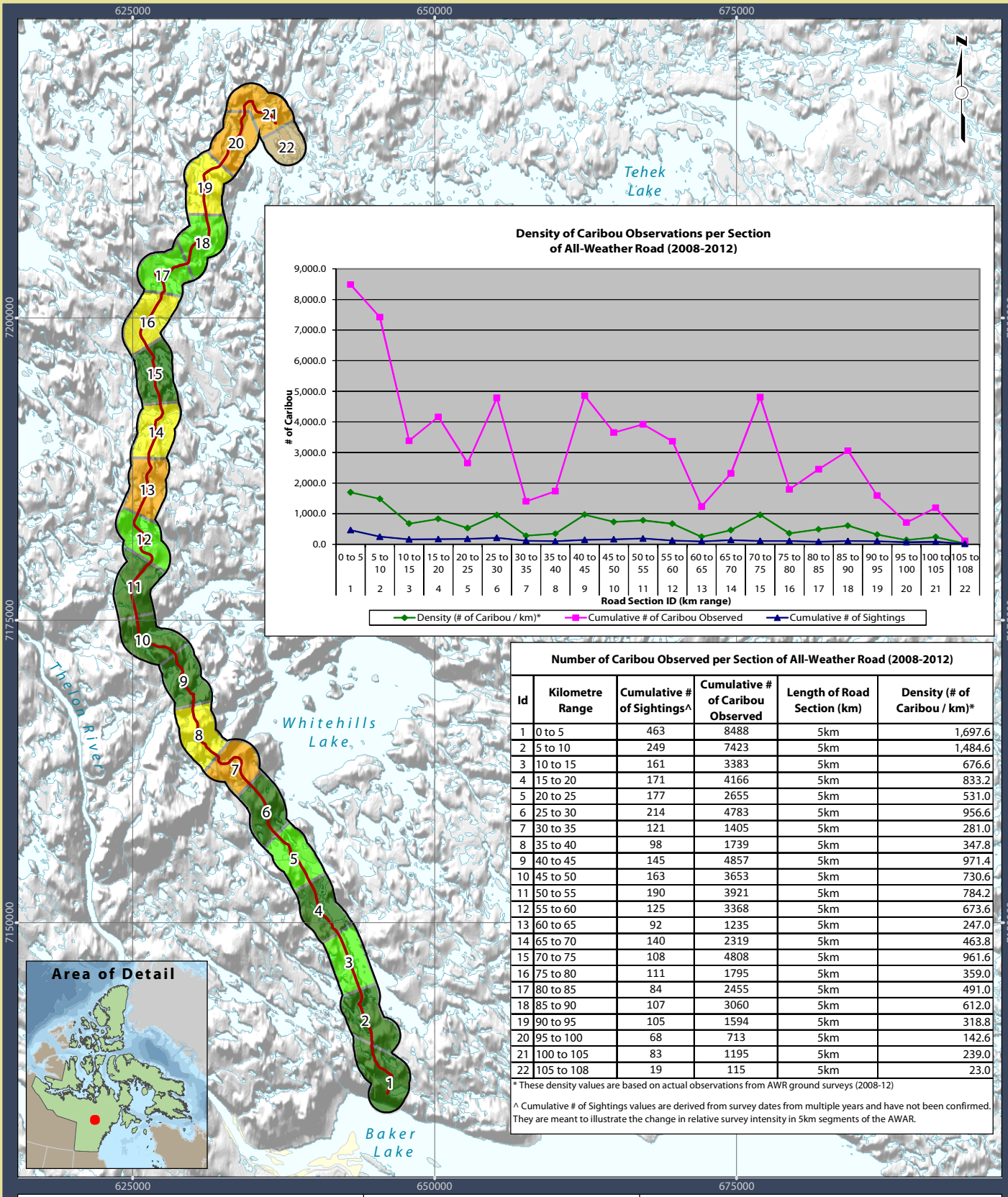
CASLYS CONSULTING



Number of Caribou Observed per Section of All-Weather Road (2008-2012)

Id	Kilometre Range	Cumulative # of Sightings^	Cumulative # of Caribou Observed	Length of Road Section (km)	Density (# of Caribou / km)*
1	0 to 5	463	8488	5km	1,697.6
2	5 to 10	249	7423	5km	1,484.6
3	10 to 15	161	3383	5km	676.6
4	15 to 20	171	4166	5km	833.2
5	20 to 25	177	2655	5km	531.0
6	25 to 30	214	4783	5km	956.6
7	30 to 35	121	1405	5km	281.0
8	35 to 40	98	1739	5km	347.8
9	40 to 45	145	4857	5km	971.4
10	45 to 50	163	3653	5km	730.6
11	50 to 55	190	3921	5km	784.2
12	55 to 60	125	3368	5km	673.6
13	60 to 65	92	1235	5km	247.0
14	65 to 70	140	2319	5km	463.8
15	70 to 75	108	4808	5km	961.6
16	75 to 80	111	1795	5km	359.0
17	80 to 85	84	2455	5km	491.0
18	85 to 90	107	3060	5km	612.0
19	90 to 95	105	1594	5km	318.8
20	95 to 100	68	713	5km	142.6
21	100 to 105	83	1195	5km	239.0
22	105 to 108	19	115	5km	23.0

* These density values are based on actual observations from AWR ground surveys (2008-12)

^ 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 - 1700.0

0 5 10 15
Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 8.2: Caribou Density along the AWAR (2008 to 2012)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING

8.6.2 Road-related Mitigation and Mortality

As in previous years, the security department assisted the environmental department in preventing wildlife incidences along the AWAR by dispatching regular wildlife warnings and recording wildlife observations in their daily reports. New speed limit signs were installed along the AWAR and notices reminding operators of the AWAR speed limit were made frequently. During caribou peak migration along the AWAR, notices were sent to all road occupants, wildlife consultants were notified, and AWAR systematic survey efforts were increased to at least two times per week. Environment technicians completed, at a minimum, monitoring of the AWAR every other day during peak migration crossing.

Larger herds of caribou were observed along the AWAR in early November 2012. As in the past, in mid-October and early November notices were sent to all employees reminding all those travelling along the AWAR to be aware of the caribou migration. On 4 November, many caribou were observed and at this time a notice was distributed to all road operators, security and the DoE. Hundreds of caribou were observed migrating across the road, prompting the environment department and road operations team to regularly close the road throughout the week. These measures were enforced from approximately 4 to 25 November until all of the caribou completed their migration in the vicinity of the AWAR.

One incidence of road-related Caribou mortality was reported during this period on 24 November 2012 when a Caribou ran towards and collided with a grader, despite the grader operator slowing down (see details in Section 7.5.7.1; Appendix B). In December 2012, a Wolverine was hit and killed by a tanker along the AWAR (Appendix B). Road kill data along the AWAR for 2012 are provided in Table 8.2. Road kill counts for 2012 were similar to 2011.

Table 8.2: 2012 AWAR Wildlife Mortality Data

Dates	Species	Count	Comments
18 January	Snowshoe Hare	1	Hit by vehicle at Km 33
22 January	Arctic Hare	1	Found dead on road at Km 33
31 January	Arctic Hare	1	Found dead on road at Km 45
26 March	Caribou	1	Wolf kill with four wolves nearby at Km 53 – 350m from road
28 March	Arctic Hare	1	Found dead on road at Km 36
11 April	Caribou	1	Found dead at Km 32. Cause of death unknown.
01 May	Caribou	1	Hunter or wolf kill near Km 37 – 80m from road
05 June	Ptarmigan	1	Found dead on road
07 June	Sik Sik	1	Found dead on road at Km 44
28 June	Ptarmigan	1	Found dead on road
28 June	Sik Sik	2	One dead at Km 41, the other at Km 49
04 July	Sik Sik	1	Found dead on road
23 July	Sik Sik	1	Found dead on road
31 July	Ptarmigan	1	Along AWAR
06 September	Arctic Hare	1	Found dead on road
02 October	Ptarmigan	2	Found dead on road
24 November	Caribou	1	Ran towards and collided with grader at Km 32
31 December	Wolverine	1	Ran out of ditch and hit by tanker

8.7 ACCURACY OF IMPACT PREDICTIONS

Table 8.3 provides a summary of the impact predictions identified in the TEMP (Cumberland 2006). The 2012 AWAR 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. Mortality thresholds for Caribou and Wolverine were exceeded in 2012.

Table 8.3: Accuracy of Impact Predictions – Sensory Disturbance and Mortality along the AWAR

Measurable Parameter	Threshold	Threshold Exceeded[1]	Adaptive Management Implemented	Status	TEMP Ref.
Sensory Disturbance	Mine-related construction and operations activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 1,000 m of the AWAR.	NO	YES	AWAR Road Surveys Satellite-collaring Data	4.4.2.2
Project-related Mortality	Caribou or Muskoxen will not be killed or injured by vehicle collisions. Threshold level of mortality is one individual per year.	**Yes – 2012** NO - 2011 YES - 2010 NO – 2009 YES – 2007 & 2008	YES	AWAR Road Surveys Security Surveys	4.4.2.3
Project-related Mortality	Predatory mammals will not be killed or injured by vehicle collisions. Threshold level of mortality is one individual per year.	**Yes – 2012**	YES	AWAR Road Surveys Security Surveys	4.4.2.3
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	4.6.2.2
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	4.7.2.3
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	4.8.2.4
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	4.9.2.2

[1] Where 'No' is indicated, thresholds have not been exceeded to date.

8.8 MANAGEMENT RECOMMENDATIONS

The AWAR survey data are useful for documenting time periods in which the area near the road is utilized by various wildlife species and is important for evaluating the need, if any, for the implementation of adaptive management (e.g., temporary road closures and radio announcements). Moreover, Caribou density can continue to 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 data and mortality data to successfully manage road operations during heavy wildlife use periods. For the 2013 AWAR systematic ground survey monitoring program, continue to apply the Wildlife Protection and Response Plan (AEM 2011), which outlines wildlife and vehicle interaction protocols and incident reporting.

SECTION 9 • HUNTER HARVEST STUDY

9.1 MONITORING PROGRAM OVERVIEW

In March 2007, a harvest study was initiated by Agnico-Eagle in association with the Baker Lake Hunters and Trappers Organization (HTO) to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches both before and after construction of the Meadowbank AWAR.

The study was strategically revised at the end of 2007 as a result of the generally low participation rates. Participation has continued to increase since 2008 as a result of HTO participation, word-of-mouth, building rapport with local hunters, and an increased check-in frequency. Both Inuit and non-Inuit residents of Baker Lake, at least 16 years of age, are eligible to participate in the harvest survey.

9.2 MONITORING PROGRAM OBJECTIVES

The primary objectives of the Meadowbank Harvest Study are to:

1. Gather information on Caribou, Muskox and Wolverine harvest (i.e., animals retrieved) rates and Inuit-use patterns in the Baker Lake area;

2. Support creel surveys by gathering information on Arctic Char, Lake Trout, Lake Whitefish and Arctic Grayling catch rates and Inuit-use patterns in the Baker Lake area;

3. Understand regional distribution of hunting and fishing activity;

4. Investigate seasonal timing of hunting and fishing activity;

5. Determine whether increased harvest and catch rates are associated with the AWAR;

6. Assess overall impacts of project-related facilities on Caribou, Muskox, Wolverine and fish populations; and

7. Help make informed decisions regarding fish and wildlife management in the Baker Lake area to verify that the key species are adequately protected.

9.3 METHODOLOGY

Detailed survey methods, survey timing and promotional strategies are available in previous annual monitoring reports. Briefly, the harvest study administrator currently visits with hunter harvest study participants on a quarterly basis, documenting harvests (which are written on the provided annual hunter harvest calendar) and discussing general hunting trends and observations. The harvest study administrator also conducts radio addresses and posts promotional material around the Hamlet of Baker Lake during the quarterly visits. Participation has continued to increase steadily since 2007 and the dataset is becoming increasingly robust with increasing participation.

9.4 HISTORICAL RESULTS

The Baker Lake HTO member list (provided by Ms. Joan Scottie [HTO Board Member] in 2008) consisted of 683 local area hunters/trappers/fishermen (collectively termed 'hunter' for the remainder of this memo), a number that has likely changed since then. The 2008 member count is anticipated to be a highly conservative (i.e., high) estimate of the number of individuals that hunt, trap or fish in the community as the list typically includes entire families. If just the heads of each household are counted, there were 389 potential hunters within the Baker Lake community in 2008. Although this value is still likely conservative (given that many of these individuals do not actively hunt or fish), the number is more comparable to the comprehensive 5-year Nunavut Wildlife Harvest Study (NWMB 2005) in which 336 Baker Lake hunters were contacted / interviewed.

In 2008, 296 Caribou were reported as being harvested by Baker Lake HHS study participants. This number increased to 587 Caribou in 2009, 628 Caribou in 2010, and 680[2] in 2011. Assuming that approximately 10% of all Baker Lake hunters are actively participating in the study (refer to Section 9.5 for rationale), extrapolation of historical HHS values suggests approximately 3,000 to 6,000 Caribou are harvested each year in the Hamlet of Baker Lake. These estimates are in general agreement with historical harvest studies. Specifically, using the upper limit of the standard error in the Nunavut Wildlife Harvest Study, between 2,230 and 3,116 Caribou were harvested each year between 1996 and 2001 (NWMB 2005). Similarly, the Interdisciplinary Systems (IDS) report (IDS 1978) estimated an annual Caribou harvest in Baker Lake of 4,100 during the 1970s. Based on the results of these other studies, the annual HHS results are anticipated to be a relatively accurate predictor of total Caribou harvested each year.

The average number of participants per month has been increasing over time, from 2008 (n=7.1) to 2011 (n=16.4), which reflects both improved reporting practices (as a result of regular visits and instruction) and increased participation rates. The average Caribou harvested per month appears to be fairly constant in data ranging from n=3.0 to 3.5 over all five years of data.

Between 1996 and 2001, 18% (n=1,188) of Caribou harvests were within 5 km of the AWAR alignment (prior to construction) (NWMB 2005). Based on HHS results:

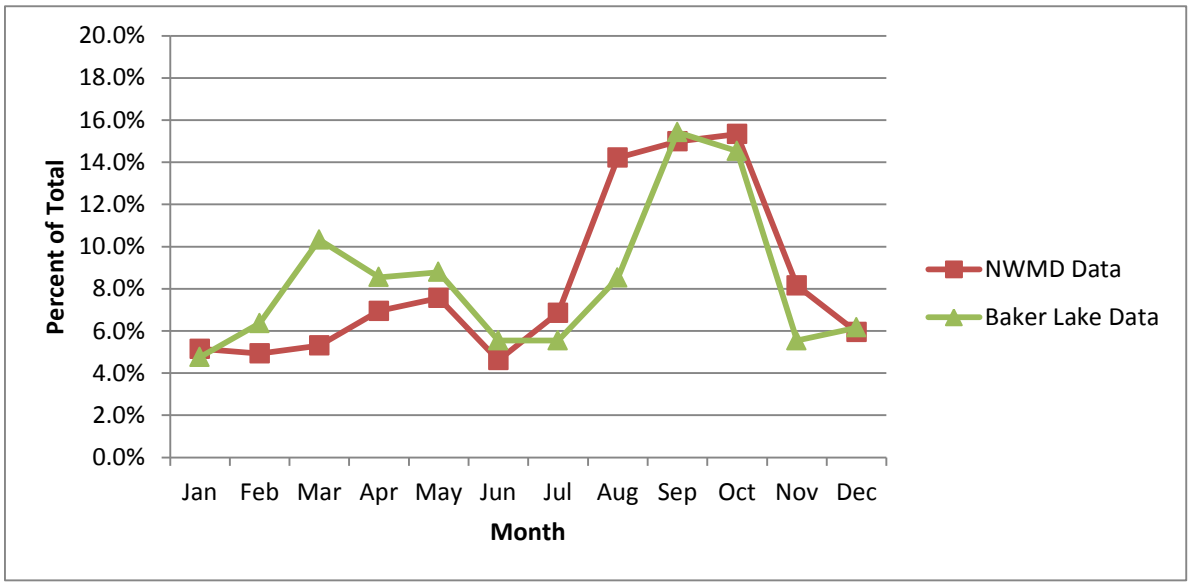
- In 2007, 82 (34% of total) Caribou were harvested within 5 km of the AWAR alignment (which was under construction until March 2008).
- In 2008, 110 Caribou were harvested within 5 km of the AWAR (37% of total).
- In 2009, 213 Caribou were harvested within 5 km of the AWAR (36% of total).
- In 2010, 241 Caribou were harvested within 5 km of the AWAR (38% of total)
- In 2011, 283 Caribou were harvested within 5 km of the AWAR (42% of total)

The percentage of harvested Caribou adjacent to the road relative to the total Caribou harvested each year is an accurate indicator of annual variability (as compared to total kill counts along the road), as its value is assumed to be independent of the number of study participants (i.e., continuous random sampling of the total population). During the 2005 NWMB study, hunting within 5 km of the AWAR (pre-construction), was 18%, or approximately half of the current harvest levels. Of note, although local area residents are being hired by mining companies, many continue to hunt during their time off (as discussed during interviews).

[2] Note that a total of 688 Caribou were harvested but eight of these records were incomplete and not included in final dataset.

Based on the NWMB (2005) and HHS results (2007-2011), highest Caribou harvests have occurred in September and October, with a second smaller peak in Spring (Figure 9.1; Table 9.1). The similar pattern between the studies indicates that seasonal hunting preferences have not changed markedly in the last decade.

Figure 9.1: Percent of Annual Caribou Harvest for the NWMB (2005) and Baker Lake HHS (2007-2012)



9.5 2012 RESULTS

At the end of 2012, hunting data had been collected from 62 participants (an increase from 2011 when data were collected from 46 participants). The estimated 10% of Baker Lake hunters participating in the HHS continues to be used as the estimate of overall participation based on the 2008 HTO member list and an assumption that there is an increase in overall number of hunters in the community.

The hunters participating in the HHS appear to be representative of the hunting population in Baker Lake, consisting of male, female, casual, regular and intensive hunters. Estimates from HHS data to-date suggest that the 10% of hunters participating in the HHS account for 10-15% of total Caribou harvests in the Hamlet of Baker Lake, assuming that the participating hunters are likely those that are more actively involved in hunting. The 2005 NWMB study reported a decreasing number of Caribou harvests over time (refer to Table 9.1), which was attributed to a decline in the number of hunters interviewed and a declining response rate (i.e., 81% in 1996/97 to 55% in 2000/01). For the Baker Lake HHS, although the overall number of hunters interviewed was initially low with each subsequent study year, overall numbers of hunters interviewed, response rates, and reported harvests have increased steadily. In 2012, 62 participants were interviewed at least once, the most in a single year since the beginning of the HHS. Quarterly visits to study participants' residences, building a rapport with prospective and current study participants, and awarding prizes at the end of each year have likely contributed to the current study's success.

Table 9.1: Hunter Caribou Harvest Statistics from the NWMB (2005) Study and Baker Lake HHS (2007 to 2012)

Baker Lake Wildlife Harvest Study - Agnico-Eagle Mines Ltd. and AREVA Canada Resources Inc.

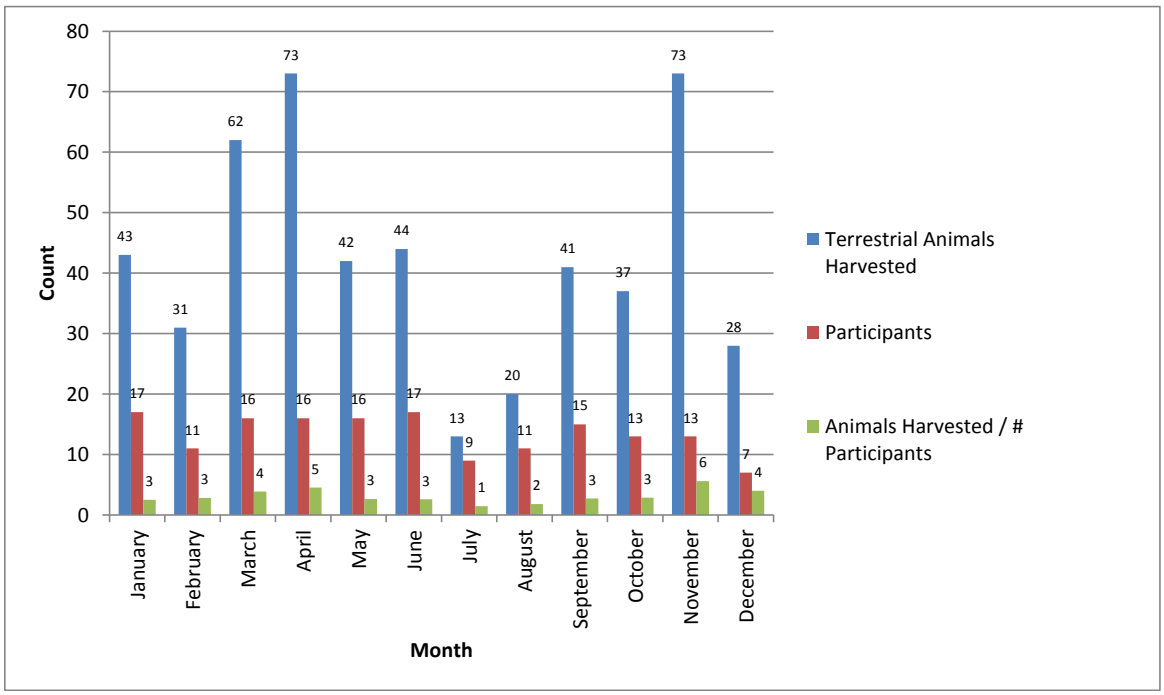
Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
2007		7	89	22	44	6	6	6	37	14	5	2	238
2008	13	15	14	10	19	14	25	34	56	47	24	25	296
2009	42	52	41	28	28	18	30	88	114	102	11	33	587
2010	27	35	34	66	47	41	46	67	82	117	48	18	628
2011	14	47	64	53	78	39	42	35	123	108	2	75	680
2012	43	30	60	71	41	44	13	19	39	37	72	27	496
Total #	139	186	302	250	257	162	162	249	451	425	162	180	2,925
Average	27.8	31	50.3	41.7	42.8	27	27	41.5	75.2	70.8	27	30	488
% of Total	4.8%	6.4%	10.3%	8.5%	8.8%	5.5%	5.5%	8.5%	15.4%	14.5%	5.5%	6.2%	100.0%

Nunavut Wildlife Harvest Study - Nunavut Wildlife Management Board (NWMB)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
1996						141	190	490	428	435	202	178	2,064
1997	118	144	146	167	217	159	162	354	322	553	295	196	2,833
1998	137	124	192	193	159	85	163	153	272	407	254	135	2,274
1999	137	131	99	211	222	111	148	433	528	409	74	66	2,569
2000	96	86	75	135	213	76	187	333	309	98	186	163	1,957
2001	150	126	146	156	127								705
Total #	638	611	658	862	938	572	850	1,763	1,859	1,902	1,011	738	12,402
Average	127.6	122.2	131.6	172.4	187.6	114.4	170	352.6	371.8	380.4	202.2	147.6	2,067
% of Total	5.1%	4.9%	5.3%	7.0%	7.6%	4.6%	6.9%	14.2%	15.0%	15.3%	8.2%	6.0%	100.0%

A similar pattern as previous years was observed, with peak harvest periods happening in the Spring and Fall of 2012. In 2012, peak months were in April and November, a slight change from 2011 (Figure 9.2). The average number of participants (recording harvests) per month was less 2012 (n=13.4) than in 2011 (n=16.4) but has increased since 2008 (n=7), which reflects both improved reporting practices (as a result of regular visits and instruction) and increased participation rates. In total, 507 animals were harvested in 2012, consisting of 496 Caribou, seven Wolverines and four Muskoxen. These results are below the totals recorded in the last three years; total animals harvested from 2009 to 2011 ranged from 600 to 695. Caribou harvested per month per participant was generally slightly lower in 2012, most noticeably in the peak months from August to September (Figure 9.3). The average Caribou harvested per month in 2012 (n=3.1) has remained fairly constant through the HHS, ranging from n=3.0 to n=3.5 in previous years.

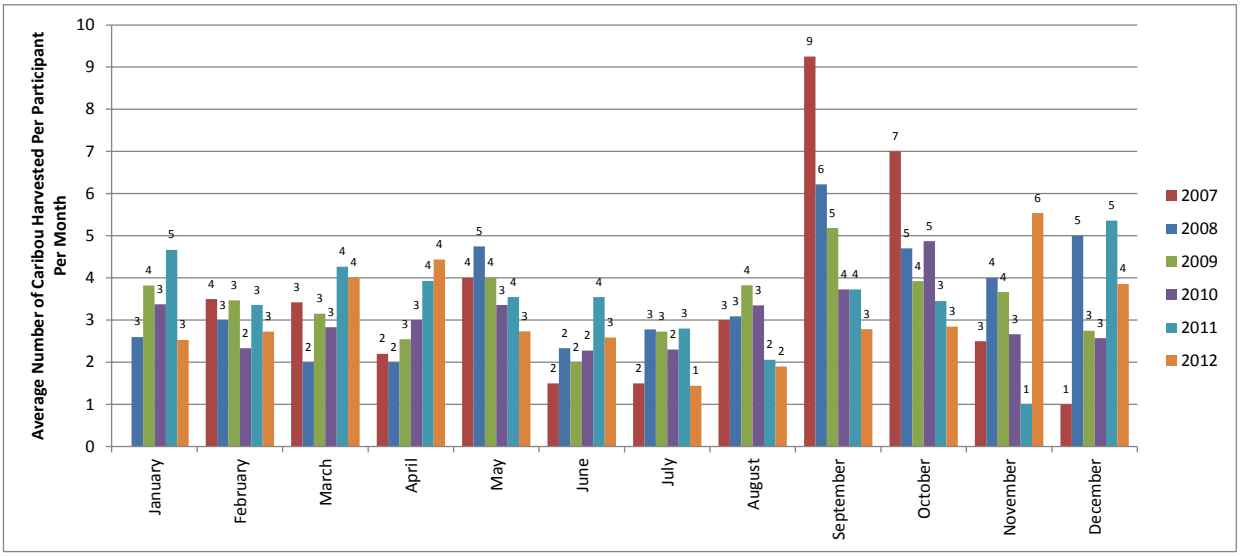
Figure 9.2: Terrestrial Animals Harvested per Month and by Participant in 2012



Note: Results are rounded to the nearest whole number.

Caribou harvests within the study area are illustrated in Figure 9.4. Annual variation in harvest location and intensity is attributable to numerous factors. For instance, many hunters have stated during informal discussions that they have a 'favorite' hunting area that they frequent each year. Some hunters have stated that they prefer hunting in 'convenient' locations, whereas other hunters prefer remote locations well away from frequented areas. A percentage of hunters also enjoyed partaking in long distance hunting trips over multiple days.

Figure 9.3: Average Number of Caribou Harvested per Month, per Participant (2007 to 2012)



In 2012, 174 Caribou (35% of total) were harvested within 5 km of the AWAR, a similar proportion as most previous years. Total harvests per participant within 5 km of the AWAR have decreased as compared to the past (Figure 9.5), as it was at its lowest in 2012 at 5.6 Caribou per participant. In the historical NWMB study, Caribou harvests within 5 km of the road were lower at 18% of total harvest; in the HHS data set, harvest along the AWAR has been around 36% of total harvest (Table 9.2). The total number of Caribou harvested along the AWAR showed a decrease, likely related to an overall decrease in harvest, but an increase in total harvest numbers along the road in the winter season (Figure 9.5). The road appeared to be important to hunters in the winter season, despite relatively unrestricted access to unroaded areas in the Baker Lake area. The harvest peak observed in November 2012 may be related to larger herds of Caribou observed along the AWAR during this time period (see Section 7.5 and 8.6).

Counts remained low for Muskox and Wolverine, precluding any interpretation of potential mine-related effects. Low densities of Muskox and Wolverine and general aversion to human activities require hunters to explore areas well outside areas occupied by the AWAR; therefore, the AWAR is anticipated to have little effect on Muskox and Wolverine hunting patterns. Wolverine harvest was half of the number recorded in 2010.

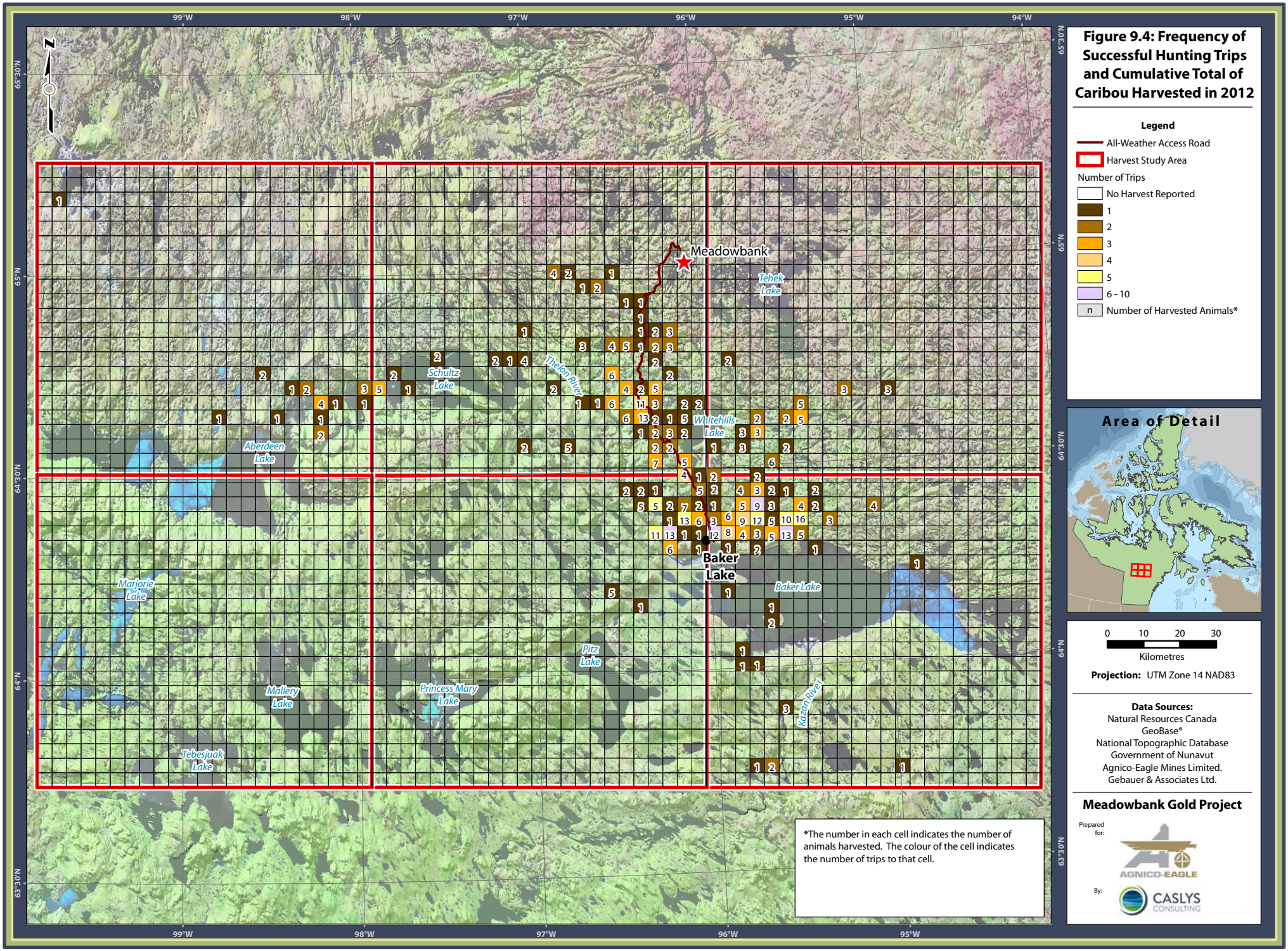


Figure 9.4: Frequency of Successful Hunting Trips and Cumulative Total of Caribou Harvested in 2012

Legend

- All-Weather Access Road
- Harvest Study Area

Number of Trips

- No Harvest Reported
- 1
- 2
- 3
- 4
- 5
- 6 - 10
- n Number of Harvested Animals*

Area of Detail

0 10 20 30

Kilometres

Projection: UTM Zone 14 NAD83

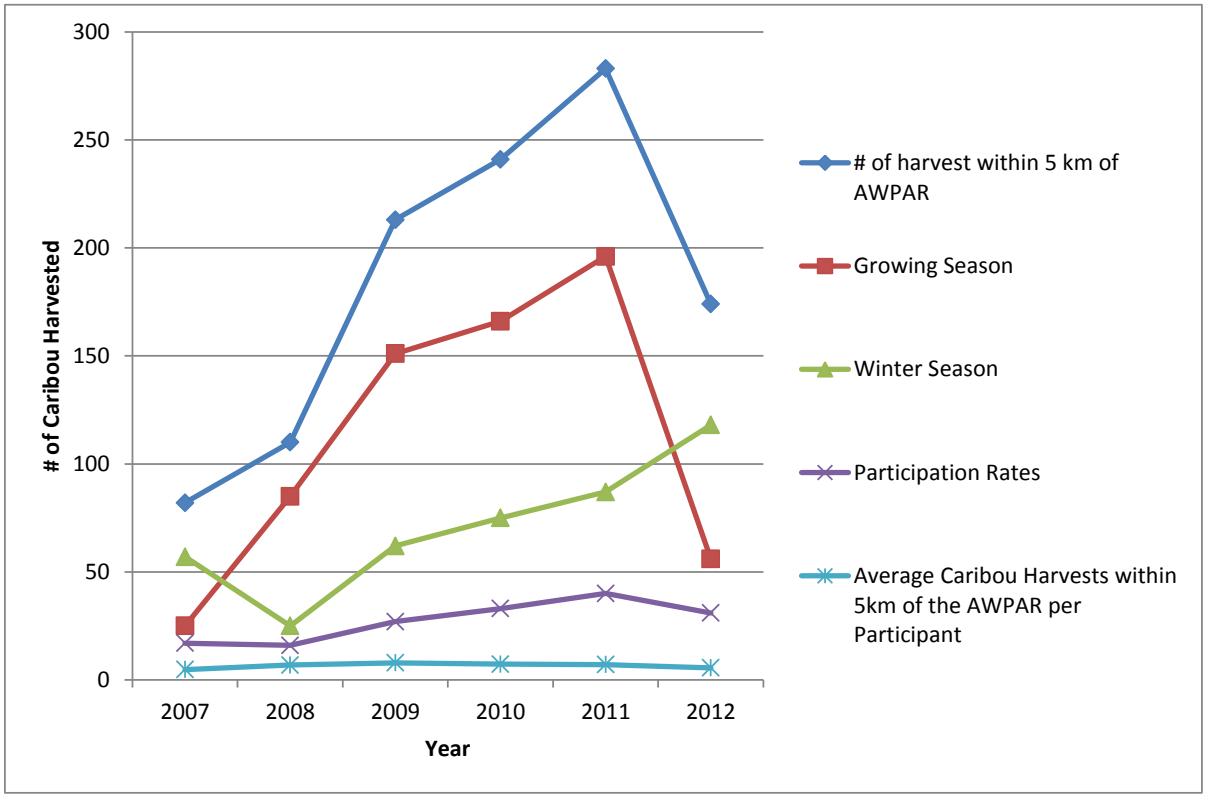
Data Sources:
Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Limited.
Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING

Figure 9.5: Caribou Harvests (Total Harvest and Average by Participant) Along the AWAR (2007 to 2012).



Note that sharp decreases in 2012 data points reflect lower overall harvest totals

Table 9.2: Caribou Harvest Distribution along the AWAR and within the Meadowbank LSA and RSA (1996/2001, and 2007 to 2012)

Study	% of harvest within 5 km of Meadowbank Road	% of harvest within Meadowbank LSA	% of harvest within Meadowbank RSA
NWMB 1996 - 2001	18%	7%	67%
Baker Lake HHS 2007	34%	12%	79%
Baker Lake HHS 2008	37%	28%	73%
Baker Lake HHS 2009	36%	20%	78%
Baker Lake HHS 2010	38%	22%	73%
Baker Lake HHS 2011	42%	25%	74%
Baker Lake HHS 2012	35%	20%	80%

9.6 ACCURACY OF IMPACT PREDICTIONS

Table 9.3 provides a summary of the impact predictions identified in the TEMP (Cumberland 2006). The 2012 HHS 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 9.3: Accuracy of Impact Predictions – Baker Lake Hunter Harvest Study

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Hunting by Baker Lake Residents	The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of caribou kills by Baker Lake hunters. Changes will not exceed 20% of current harvest activities correlated to use by the road.	NO	Road access regulated, safety measures enforced and training required. No shooting zone instated around the AWAR.	Hunter Harvest Study	4.4.2.3
Hunting by Baker Lake Residents	Caribou herds will not be significantly affected by year-round access to the RSA.	NO	YES; AWAR Access Protocols	Satellite-collaring Data Hunter Harvest Study	

9.7 MANAGEMENT RECOMMENDATIONS

As stated in the TEMP (Cumberland 2006), the HHS was established to monitor the spatial distribution, seasonal patterns and harvest rates both prior to and following construction of the AWAR. Hunting along the road is anticipated to remain relatively constant in future years given the current access and hunting arrangement between Agnico-Eagle, the HTO and NIRB; however, ongoing monitoring will be required to confirm this assumption and to evaluate additional increases over time, if any.

SECTION 10 • CARIBOU SATELLITE-COLLARING PROGRAM

10.1 MONITORING PROGRAM OVERVIEW

Agnico-Eagle is participating in the GN DoE-led Caribou satellite-collaring program which includes data collected within the Meadowbank RSA. 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.

10.2 MONITORING PROGRAM OBJECTIVE

The joint 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 Beverly and Qamanirjuaq herds. The satellite-collaring program has become increasingly important as both a monitoring and management tool in recent years. The satellite-collaring program, along with GN DoE regional data, is also serving to provide a regional perspective on Caribou activity near mine operations and natural changes in Caribou populations in the region.

10.3 MONITORING PROGRAM DURATION

The satellite-collaring program was designed to continue for five consecutive years in accordance with the TEMP (Cumberland 2006). Caribou were collared in May 2008, November 2009 and April 2011 with monitoring scheduled to continue to 2014. An additional collar deployment is planned for April 2013.

10.4 MONITORING PROGRAM METHODOLOGY

Prior to each satellite-collaring deployment event, GN DoE representatives conduct an aerial reconnaissance survey of the RSA to document the location of Caribou herds, which are recorded as UTM waypoints on the onboard GPS. The UTM waypoints are forwarded to the satellite-collaring crew, which mobilize once Caribou presence has been confirmed. Caribou are carefully netted by the satellite-collaring crew via helicopter and are fitted with an Advanced Research and Global Observation Satellite (ARGOS) GPS Type IV radio-collar. Collar data are regularly[3] retrieved electronically via satellite and distributed to GN DoE and Nunavut Environmental personnel by CLS America, the data-management company.

10.5 HISTORICAL RESULTS

An initial commitment of 15 collars was made by Agnico-Eagle in 2007, followed by an additional commitment of 10 more collars to replace the indefinite suspension of RSA and LSA aerial surveys. In 2009, AREVA committed to a 15 collar satellite-collaring program. Cameco joined the joint monitoring program with a commitment of an initial three (3) collars in 2011.

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

Collaring was originally scheduled to commence in 2007, but was postponed for one year due to logistical constraints. Three deployments have been completed since Agnico-Eagle became involved in the collaring program:

- Nine (9) collars in May 2008 (one collar had a deficiency);
- 21 collars in November 2009; and
- 13 collars in April 2011.

All satellite-collaring results (2008 to 2012) are included in Figure 10.1.

10.6 2012 RESULTS

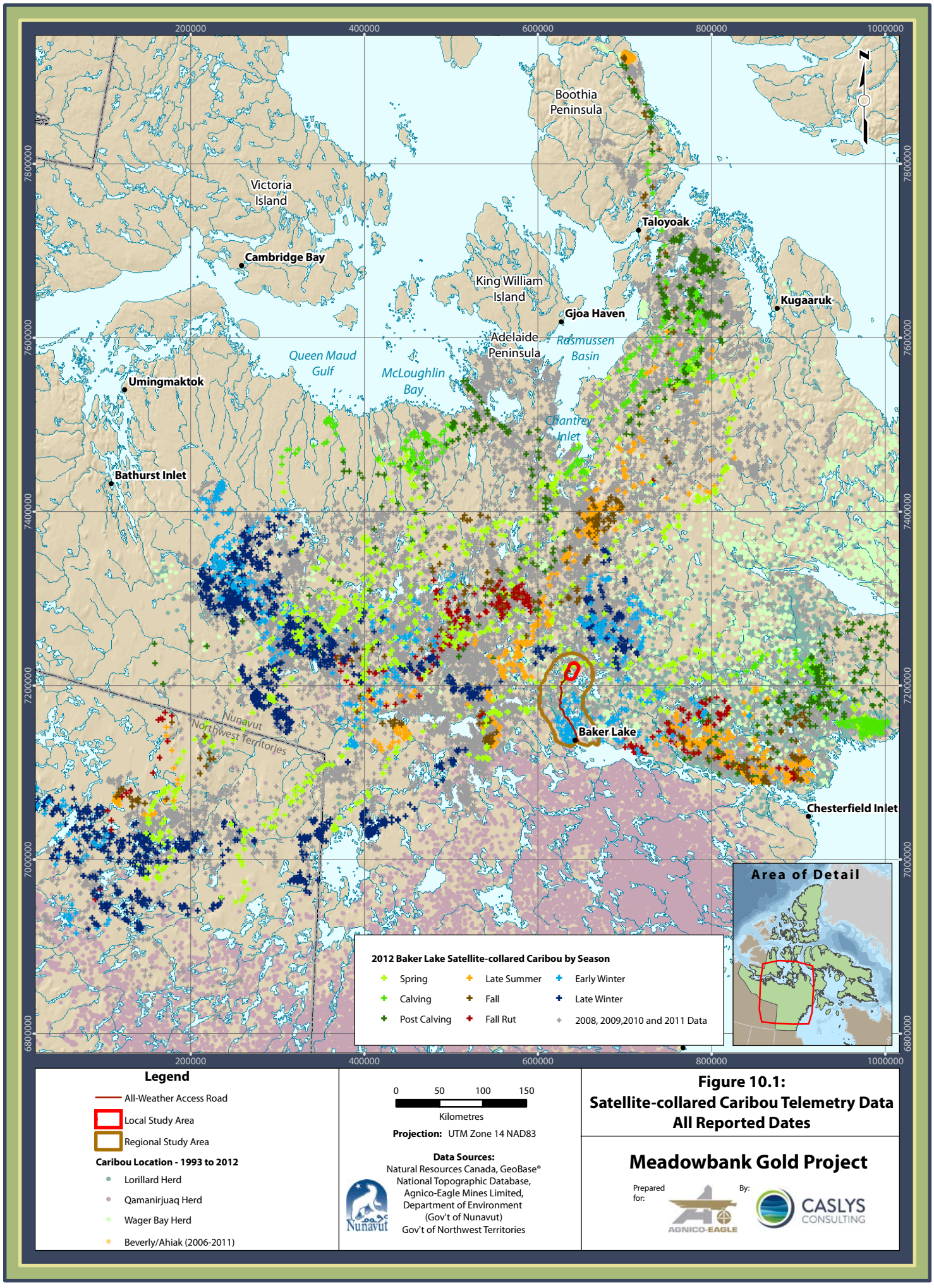
As of December 2012, 15 collars were still active and transmitting signals (none from 2008 deployment, seven from 2009, and eight from 2011). A summary of 2012 locations and movement patterns is provided below and summarized in Figure 10.1.

Late Winter (January 1 – March 31)

In late winter, daily Caribou movements were limited. Collared Caribou were located in four general areas: 1) north of the Meadowbank LSA (one caribou from each of the 2009 and 2011 deployments); 2) northwest of Aberdeen Lake (2009 and 2011 collared animals); 3) in the vicinity of Dubawnt Lake (two animals from the 2011 deployment); and 4) the northeastern corner of the Northwest Territories, portions of which are within the tree line (several animals from the 2009 deployment). To date, no collared Caribou have been present within the Meadowbank LSA or RSA during the late winter season. Animals collared in the May 2008 and November 2009 deployments wintered in the same general area as previously collared animals from the Lorillard, Wager Bay and Ahiak herds. Beverly collared animals have also been documented as occurring in this area between 1 January and 31 March.

Spring (April 1 – May 25)

In spring, all collared Caribou from the November 2009 deployments migrated northeast either towards the Beverly calving grounds along the Queen Maud Gulf, or to the Adelaide Peninsula and Kuggaruk area (Ahiak calving grounds), some covering upwards of 500 km. Five collared caribou from the April 2011 deployment moved eastward towards Hudson's Bay and the traditional calving grounds of the Lorillard herd, while two individuals from the April 2011 deployment moved in a northeast direction towards Chantrey Inlet and Kuggaruk (i.e., Ahiak calving grounds). Two collared Caribou migrated through the northern part of the Meadowbank RSA (in the vicinity of the mine site) during this period.



Legend

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

Caribou Location - 1993 to 2012

- Lorillard Herd
- Qamanirjuaq Herd
- Wager Bay Herd
- Beverly/Ahiak (2006-2011)

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 10.1:
Satellite-collared Caribou Telemetry Data
All Reported Dates

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: CASLYS CONSULTING

Calving (May 26 – June 25)

Four collared Caribou from the 2009 deployment spent the calving season tracking to the vicinity of the Adelaide Peninsula and Chantrey Inlet with one moving a considerable distance up the Boothia Peninsula (Ahiak herd). Another four Caribou from the 2009 deployment remained in calving grounds southwest of the Adelaide Peninsula in the traditional calving grounds of the Beverly herd. Five collared animals from the 2011 deployment moved eastward to the Lorillard calving grounds, and two individuals migrated to an area west of Kuggaruk. No collared Caribou were situated within the Meadowbank LSA or RSA during the calving season.

Post-Calving (June 25 – July 31)

Most post-calving caribou remained in relatively close proximity to the calving areas (e.g., Lorillard animals) although considerable southward movements of some individuals were noted, particularly those that calved (presumably) in the Beverly calving grounds. Ahiak animals in the Rasmussen Basin and Kuggaruk area began moving southward, with the exception of one individual that moved further up the Boothia Peninsula. No collared Caribou were situated within the Meadowbank LSA or RSA during the post-calving season.

Late Summer (August 1 – September 15)

Most Caribou collared in the Baker Lake area migrated significant distances to the south and southwest during the late summer period, with the exception of animals collared in April 2011. These animals remained together and in a relatively discrete area along the north side of Chesterfield Inlet. At least one animal crossed the Thelon River system during this period, moving southward along the east side of Aberdeen Lake. One individual remained at the far northern end of the Boothia Peninsula. No collared Caribou were situated within the Meadowbank LSA or RSA during the late summer season.

Fall (September 16 – October 14)

In the fall season, collared Caribou continued to migrate south and southwest with most occurring in a wide area north of the Thelon River system. The individual west of Aberdeen Lake remained in the area for this period. One individual moved into the Northwest Territories and another individual was still well to the north in the Adelaide Peninsula and Kugaaruk area at the beginning of this season, but migrated southward at a rapid pace. Individuals from the Lorillard herd remained in approximately the same area as in late summer. Collared animals did not migrate through the Meadowbank LSA and RSA during this period in 2012.

Fall Rut (October 15 – October 31)

In the fall rut season, individuals from the November 2009 deployments were generally well distributed north of Aberdeen Lake, although at least two individuals were in the Northwest Territories (Beverly herd). Most individuals from the Lorillard herd (April 2011 deployment) were still east of the Meadowbank RSA but migrating to the west. One individual entered the Meadowbank RSA in late October just north of the Hamlet of Baker Lake.

Early Winter (November 1 – December 31)

In early winter, the majority of collared Caribou had congregated northwest of Aberdeen Lake and south of Garry Lakes over a very broad geographic area. Two Caribou remained in the Northwest Territories. Individuals from the Lorillard herd, which had been concentrated east of Baker Lake in the previous few seasons, moved to the west to winter to the east and within the Meadowbank RSA (approximately between Baker Lake and Whitehills Lake).

All Seasons

An overview of collared Caribou distribution from all deployments in all seasons is provided in Figure 10.1. General trends in seasonal distribution are evident. Collared Caribou calved (dark green symbol) in three distinct areas: Adelaide Peninsula, the base of the Boothia Peninsula (between Rasmussen Basin and Kugaaruk), and between Chesterfield Inlet and Wager Bay. In winter, animals were either broadly distributed north of the Thelon River system from around Baker Lake west to southeast of Bathurst Inlet or in the northeast corner of the Northwest Territories. Within the Meadowbank LSA and RSA, collared Caribou were primarily present during the early winter period although some presence during spring migration also occurred. Calving or post calving has not been documented within the Meadowbank study area to date.

At the end of 2012, 15 satellite-collars were being tracked with results being downloaded on a regular basis.

10.7 CARIBOU MIGRATION PATTERNS

A summary of Caribou migration patterns, which synthesizes migration information from satellite-collaring data, has been developed by the GN for the spring and fall migrations (Figures 10.2a and 10b).

To generate the maps, satellite-collaring data was first used to generate ‘walk lines’ for each animal, and then a ‘density’ analysis was run on the walk lines for Caribou in spring and fall migration (on a per year and subpopulation basis). This path-derived analysis assesses continuous corridors rather than points, which can artificially elevate density estimates for an area. The approach generates spatial patterns of migration and compares areas by relative intensity of use. Higher use areas represent more intense use by multiple animals within a particular year and/or regions of repeated use occurring over multiple years. One limitation of the data is that areas outside of defined migration corridors do not necessarily indicate it is unimportant to, or uninhabited by, caribou, but instead could be an area where collared animals have not been located (i.e., and could potentially be an area of high density for non-collared animals).

Figure 10.2a: Spring Migration Corridors in Relation to Meadowbank Regional Study Area (RSA)

Legend

- All-Weather Private Access Road
- Mine footprint
- Regional Study Area

Spring Migration Corridor (April-June)*

Increasing use

* Migration corridors based on telemetry data collected up to 2011.

Area of Detail

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada, GeoBase®, National Topographic Database, Agnico-Eagle Mines Limited., Caslys Consulting Ltd., Department of Environment (Government of Nunavut)

Meadowbank Gold Project

Prepared for:

AGNICO-EAGLE

By:

CASLYS CONSULTING

March 15, 2013

Caribou Migration Corridors
The map identifies key wildlife migration corridors for sub-populations centred in the Kivalliq region of Nunavut based on satellite and GPS survey data: Eastern Kitikmeot, Lorillard, Wager Bay and Qamanirjuaq sub-populations. Migration corridor map layers were derived from kernel densities for individual sub-populations (broken down by season).

Background
Telemetry data collected between 1993 and 2011.

Data Limitations
The migration corridor map datasets are best suited for use at a regional or territory-wide scale and are not intended for local or site-specific planning.

It is important to note that the data are limited to the movement of animals that have been collared. Data deficiencies exist, and as a result, an area outside of a migration corridor does not necessarily indicate it is unimportant to, or uninhabited by, caribou. It could simply be an area where collared animals have not been located (i.e., it could potentially be an area of high density for non-collared animals).

Due to variation in survey type and sampling intensity, absolute density values are not established. The density layers and their derivative migration corridors cannot be directly linked to population size or duration of use.

Meadowbank Mine
Baker Lake
Schultz Lake
Whitehills Lake
Baker Lake

400000 450000 500000 550000 600000 650000 700000 750000
7400000 7350000 7300000 7250000 7200000 7150000

Figure 10.2b: Fall Migration Corridors in Relation to Meadowbank Regional Study Area (RSA)

Legend

- All-Weather Private Access Road
- Mine footprint
- Regional Study Area

Fall Migration Corridor (September-November)*

Increasing use

* Migration corridors based on telemetry data collected up to 2011.

Area of Detail

0 5 10 15 20
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada, GeoBase®, National Topographic Database, Agnico-Eagle Mines Limited., Caslys Consulting Ltd., Department of Environment (Government of Nunavut)

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Due to variation in survey type and sampling intensity, absolute density values are not established. The density layers and their derivative migration corridors cannot be directly linked to population size or duration of use.

Meadowbank Mine
Schultz Lake
Wolverine River
Whitehills Lake
Baker Lake
Baker Lake

400000 450000 500000 550000 600000 650000 700000 750000
7400000 7350000 7300000 7250000 7200000 7150000

10.8 ACCURACY OF IMPACT PREDICTIONS

A summary of the impact predictions identified in the TEMP is provided in Table 10.1. The 2012 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 10.1: Accuracy of Impact Predictions – Satellite-collaring Data

Measurable Parameter	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Sensory Disturbance	Mine related construction and operations 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.	NO	YES	Satellite-collaring data Daily and weekly mine-site ground surveys AWAR Road Surveys	4.4.2.2
Hunting by Baker Lake Residents	Caribou herds will not be significantly affected by year-round access to the RSA.	NO	YES; AWAR Access Protocols	Satellite-collaring data Hunter Harvest Study	

10.9 MANAGEMENT RECOMMENDATIONS

The satellite-collaring data depicts Caribou movements in the vicinity of the Meadowbank RSA and LSA during the spring and fall/fall rut period with fewer movements during the other seasons. As such, the Agnico-Eagle environmental department should continue to closely monitor Caribou movement in the weeks leading up to these annual migrations using 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 may be implemented as in previous years as a proactive adaptive management strategy.

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SECTION 11 • ADDITIONAL STUDIES

11.1 BIRD CHECKLIST SURVEYS

Environment Canada's Canadian Wildlife Service (Yellowknife) collects bird checklist survey information on an annual basis. In 2013, online submission of records to 'e-bird' will replace the forms used to date. The checklist surveys are completed to assist the federal government's efforts in assessing bird distribution and abundance across the Arctic, and are not part of Agnico-Eagle's long-term management or monitoring plans. The survey requires that the total number of birds observed in an approximate 10 km x 10 km area within a 24 hour period be tallied. Information on bird breeding behaviour, weather, habitat characteristics, and snow conditions are also recorded. Additional details can be found online at: http://ww.wpnr-rpn.ec.gc.ca/checklist.

Checklist survey effort between 2003 and 2012 is provided in Table 11.1. Numbers refer to the number of checklists (surveys) completed for each particular month. On some days (especially in June and July) more than one survey was conducted.

Table 11.1: Checklist Survey Effort per Month (2003-2012)

Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
February	-	-	-	-	2	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-
May	4	-	-	-	3	1	-	-	-	-
June	12	12	17	27	32	13	25	32	28	19
July	-	-	26	11	6	7	8	7	13	1
August	-	4	6	-	1	1	-	-	1	-
September	-	-	-	4	2	-	-	-	-	-
October	-	-	-	-	-	2	-	-	-	-
November	-	-	-	-	1	-	-	-	-	-
Year End Total	**16**	**16**	**49**	**42**	**47**	**24**	**33**	**39**	**42**	**20**
Total # Species Recorded	**34**	**26**	**38**	**40**	**41**	**32**	**34**	**45**	**35**	**34**
Total # Birds Recorded	**1,321**	**2,414**	**2,972**	**3,826**	**9,711[a]**	**4,166[b]**	**2,829**	**3,254**	**2,632**	**1,216**
Average # Birds per Survey Day	**83**	**151**	**60**	**91**	**207[a]**	**173[b]**	**86**	**83**	**63**	**61**

[a] large flocks of Snow Goose and Herring Gull observed in 2007
[b] large flock of Snow Bunting observed in 2008

SECTION 12 • SUMMARY

The 2012 Wildlife Monitoring Summary Report describes the data collected to date from the various monitoring programs, investigates the suitability of monitoring programs in assessing trends in wildlife abundance and diversity, and describes (preliminarily) natural and mine-related variability and potential mine-related impacts within wildlife populations.

In 2012, monitoring efforts continued to focus on areas immediately around the mine site and AWAR. At this local scale, emphasis was on monitoring presence and success of breeding birds, waterbirds and 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, while hunter harvest surveys collected information on the use of wildlife (mostly Caribou) by the community.

In 2012, two threshold levels were surpassed, namely for the road-related mortality of one Caribou and one Wolverine. A summary of potential project effects, threshold levels, and the 2012 monitoring results is provided in Table 12-1.

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 12.1: Potential Project Effects, Thresholds and Results of Monitoring in 2012.

Measureable Parameter	Thresholds	Monitoring Methods	Frequency	Completed in 2012	Summary of Results	Comments
Vegetation (Wildlife Habitat)						
Habitat Loss	Mine Site – 703ha AWAR – 281ha	Ground Surveys, Mapping, GIS Analysis	Every Two Year	Yes	Below Threshold: Mine Site – 211 ha < predicted (Heath Tundra exceeds) AWAR – 173ha < predicted	See Section 3.6
Habitat Degradation by Contamination	TBD - SLRA	Vegetation and Soil Samples	Every 3 Years	In 2011	NA	See 2011 Annual Report
Habitat Reclamation following Mine Closure	NA	Ground Surveys, Vegetation Plots, Mapping	Every 3-11 Years Post-Closure	NA	NA	NA
Ungulates						
Habitat Loss and Degradation	Growing - 239ha of High Suitability Winter – 145ha of High Suitability	Ground Surveys, Mapping, GIS Analysis	Every Two Years	Yes	Below Threshold: Growing - 144ha of High Suitability Habitat (60% of Predicted) Winter – 99ha (68%)	See Section 3.6
Sensory Disturbance	500m	Ground Surveys, Satellite-collaring	Daily/Weekly	Yes	NA	See ground survey section
Vehicle Collisions	1 individual	Ground surveys	Daily	Yes	Threshold Exceeded – 1 Caribou Mortality	See Section 8.6.2 (Same Individual as Above)
Hunting by Baker Lake Residents	20% Change from Historic	Hunter Harvest Study	Yearly	Yes	Below Threshold	See Section 9.5
Other Mine-related Mortality	1 individual	Ground surveys	Daily	No	Below Threshold	See Section 8.6.2
Exposure to Contaminated Water or Vegetation	TBD - SLRA	Vegetation and Soil Samples	Every 3 Years	In 2011	NA	See 2011 Annual Report

Predatory Mammals						
Project-related Mortality	1 individual	Ground Surveys	Daily	Yes	Threshold Exceeded – 1 Wolverine Mortality	See Section 8.6.2
Small Mammals						
Habitat Loss and Degradation	172ha of High Suitability	Ground Surveys, Mapping, GIS Analysis	Every Two Years	Yes	Below Threshold- 95ha of High Suitability Habitat (55% of Predicted)	See Section 3.6
Project-related Mortality	100 Individuals	Ground Surveys, Collision Reporting System	Mine Site- Daily AWAR - 2x/Week	Yes	Below Threshold - 18 Mortalities	See Sections 7.5.7 and 8.6.2 (Arctic Fox, Arctic Hare and Sik Sik)
Exposure to Contaminated Water or Vegetation	TBD - SLRA	Vegetation and Soil Samples	Every 3 Years	In 2011	NA	See 2011 Annual Report
Raptors						
Healthy Prey populations	TBD - SLRA	Vegetation and Soil Samples	Every 3 Years	In 2011	NA	See 2011 Annual Report
Disturbance of Nesting Raptors	1 Nest Failure	Active Nest Monitoring	Nests within 200m - Daily Nests from 200-1000m - Weekly	Yes	Below Threshold	See Section 5.6
Project-related Mortality	1 individual	Ground Surveys, Collision Reporting System	Mine Site- Daily AWAR - 2x/Week	Yes	Below Threshold	See Sections 7.5.7 and 8.6.2
Waterbirds						
Habitat Loss and Degradation	386ha of High Suitability	Ground Surveys, Mapping, GIS Analysis	Every Two Years	Yes	Below Threshold: 304ha of High Suitability Habitat (79% of Predicted)	See Section 3.6
Disturbance of Nesting Waterfowl	1 Nest Failure	Waterfowl Nest Surveys	Yearly - For Active Nests within 200m	Yes	Below Threshold	See Section 6.6
Exposure to Contaminated Water or Vegetation	TBD - SLRA	Vegetation and Soil Samples	Every 3 Years	In 2011	NA	See 2011 Annual Report
Project-related Mortality	1 individual	Ground Surveys, Collision Reporting System	Mine Site- Daily AWAR - 2x/Week	Yes	Below Threshold	See Sections 7.5.7 and 8.6.2

Other Breeding Birds						
Habitat Loss and Degradation	288ha of High Suitability	Ground Surveys, Mapping, GIS Analysis	Every Two Years	Yes	Below Threshold: 197ha of High Suitability Habitat (69% of Predicted)	See Section 3.6
Project-related Mortality	50 Individuals Per Year	Ground Surveys, Collision Reporting System	Mine Site-Daily AWAR - 2x/Week	Yes	Below Threshold (7 Individuals)	See Sections 7.5.7 and 8.6.2 (Ptarmigan)
Exposure to Contaminated Water or Vegetation	TBD - SLRA	Vegetation and Soil Samples	Every 3 Years	In 2011	NA	See 2011 Annual Report
Changes in Breeding Bird Populations	20% Change from Natural	Breeding Bird Plots and Transects	Yearly	Plots – 2012 Transects - 2011	Below Threshold	See Section 4.6 See 2011 annual report

SECTION 13 • LITERATURE CITED

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APPENDIX A

2012 Raptor Nest Monitoring Results

Agnico-Eagle Mines Ltd							
Peregrine Falcon Monitoring							
Date	**Time**	**Quarry # or Pit**	**Falcon Observed**	**Quantity**	**Comments**	**Concerns**	**Observer**
3-Jun-12	13:30	North pit	Yes	2	Two falcons have been observed in the north pit by the technicians	No	ST/JK
4-Jun-12	16:00	North pit	No	0	Looking for birds in the north pit	No	JK
4-Jun-12	1:00	North pit	Yes	2	Used bangers in the north pit to scare the birds	No	ST
4-Jun-12	2:00	North pit	Yes	2	Used bangers in the north pit to scare the birds	No	ST
4-Jun-12	3:05	North pit	Yes	2	Used bangers in the north pit to scare the birds	No	ST
4-Jun-12	4:15	North pit	No	0	No falcons were observed	No	ST
4-Jun-12	6:15	North pit	Yes	1	Used a banger then he flew away	No	ST
5-Jun-12	0:50	North pit	No	0	No falcons were observed	No	ST
5-Jun-12	1:05	North/south/mid pits	No	0	No falcons were observed	No	ST
5-Jun-12	3:10	North pit	No	0	No falcons were observed	No	ST
5-Jun-12	4:50	North pit	No	0	No falcons were observed	No	ST
5-Jun-12	5:15	South pit	No	0	No falcons were observed	No	ST
5-Jun-12	8:25	North pit	No	0	No falcons were observed	No	ST
5-Jun-12	10:20	North pit	No	0	No falcons were observed	No	ST
5-Jun-12	14:15	South pit	Yes	2	Two falcons were observed by Denis Gosselin flying around the south pit	No	JK
5-Jun-12	16:20	South pit	Yes	2	Two falcons flying and landing around has been observed by Shawn Perry. Technicians stayed in the pit area to determine the landing spots then used bear bangers to deter.	No	JK
6-Jun-12	1:00	South pit	Yes	1	The falcon was flying around after the use of a banger.	No	ST
6-Jun-12	1:24	North pit	No	0	No falcons were observed	No	ST
6-Jun-12	2:30	South pit	No	0	No falcons were observed	No	ST
6-Jun-12	4:10	North pit	No	0	No falcons were observed	No	ST
6-Jun-12	4:35	South pit	No	0	No falcons were observed	No	ST

Agnico-Eagle Mines Ltd							
Peregrine Falcon Monitoring							
Date	**Time**	**Quarry # or Pit**	**Falcon Observed**	**Quantity**	**Comments**	**Concerns**	**Observer**
6-Jun-12	10:15	South pit	No	0	No falcons were observed	No	ST
6-Jun-12	10:30	North pit	No	0	No falcons were observed	No	ST
6-Jun-12	13:00	South pit	Yes	1	The falcon was looking for nesting area. A banger was used to deter the bird.	No	EU
6-Jun-12	13:24	North pit	No	0	No falcons were observed	No	EU
6-Jun-12	14:30	South pit	No	0	No falcons were observed	No	EU
6-Jun-12	16:10	North pit	No	0	No falcons were observed	No	EU
6-Jun-12	16:35	South pit	No	0	No falcons were observed	No	EU
6-Jun-12	21:00	South pit	No	0	No falcons were observed	No	ST/EU
6-Jun-12	21:20	north pit	No	0	No falcons were observed	No	ST/EU
6-Jun-12	22:50	North pit	No	0	No falcons were observed	No	ST/EU
6-Jun-12	2:10	North pit	No	0	No falcons were observed	No	ST
7-Jun-12	12:00	South pit	Yes	2	Two falcons flying around the south pit have been observed by Alex Proulx	No	RA/JK
7-Jun-12	15:30	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
7-Jun-12	22:00	North/south/mid pits	No	0	No falcons were observed	No	RA
8-Jun-12	9:10	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
8-Jun-12	12:00	South pit	Yes	3	Falcons have been reported by mine workers	No	RA/JK
8-Jun-12	14:10	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
8-Jun-12	17:00	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
9-Jun-12	9:10	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
9-Jun-12	10:45	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
9-Jun-12	12:00	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
9-Jun-12	17:20	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
10-Jun-12	9:10	North/south/mid pits	No	0	No falcons were observed	No	RA/JK

Agnico-Eagle Mines Ltd							
Peregrine Falcon Monitoring							
Date	**Time**	**Quarry # or Pit**	**Falcon Observed**	**Quantity**	**Comments**	**Concerns**	**Observer**
10-Jun-12	10:45	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
10-Jun-12	12:00	North/south/mid pits	No	0	No falcons were observed	No	RA/JK
10-Jun-12	14:30	South pit	No	0	No falcons were observed	No	RA/JK
11-Jun-12	8:45	South pit	No	0	No falcons were observed	No	RA/JK
11-Jun-12	11:45	South pit	No	0	No falcons were observed	No	RA/JK
11-Jun-12	23:00	South pit	No	0	No falcons were observed	No	JK
12-Jun-12	9:30	South pit	No	0	No falcons were observed	No	JK/RA
12-Jun-12	13:20	South pit	No	0	No falcons were observed	No	JK/RA
13-Jun-12	15:30	North pit	No	0	No falcons were observed	No	RA
16-Jun-12	14:30	South pit	No	0	No falcons were observed	No	ST/RV
17-Jun-12	14:20	South pit	No	0	No falcons were observed	No	ST
18-Jun-12	14:00	Quarry #3	No	0	No falcons were observed	No	ST
18-Jun-12	15:16	Quarry #18	Yes	1	The falcon took off from the edge of the quarry on the pick-up arrival	No	ST
18-Jun-12	15:35	Quarry #20	No	0	No falcons were observed	No	ST
18-Jun-12	16:00	South pit	No	0	No falcons were observed	No	ST
19-Jun-12	15:20	Quarry 2	no	0		No	CB/SR
19-Jun-12	15:30	Quarry 3	no	0		No	CB/SR
19-Jun-12	16:00	Quarry 7	yes	1		No	CB/SR
19-Jun-12	16:30	Quarry 18	no	0		No	CB/SR
19-Jun-12	16:50	Quarry 21	no	0		No	CB/SR
20-Jun-12	17:00	South pit	yes	1		No	CB
21-Jun-12	9:20	Quarry 2	no	0		No	CB
21-Jun-12	9:30	Quarry 3	no	0		No	CB
21-Jun-12	9:45	Quarry 7	no	0		No	CB
21-Jun-12	10:10	Km 66	yes	1	stand on the road, and fly away	No	CB
21-Jun-12	10:30	Quarry 18	no	0		No	CB
21-Jun-12	10:50	Quarry 21	no	0		No	CB

Agnico-Eagle Mines Ltd							
Peregrine Falcon Monitoring							
Date	**Time**	**Quarry # or Pit**	**Falcon Observed**	**Quantity**	**Comments**	**Concerns**	**Observer**
21-Jun-12	16:00	South pit	no	0		No	CB
22-Jun-12	10:30	South pit	no	0		No	MT
22-Jun-12	16:30	South pit	no	0		No	CB/MT
23-Jun-12	11:00	South pit	no	0		No	CB
24-Jun-12	8:15	South pit	no	0		No	CB
24-Jun-12	16:15	South pit	no	0		No	CB
25-Jun-12	9:45	South pit	no	0		No	CB
25-Jun-12	11:00	South pit	no	0		No	CB
27-Jun-12	16:00	South pit	yes	1	4 eggs in nest	No	JK/DK
28-Jun-12	9:00	Quarry 21	yes	1	standing on a rock	No	MT
28-Jun-12	9:20	Quarry 18	yes	1	flying back to the quarry when I arrived	No	MT
28-Jun-12	10:20	Quarry 7	no	0		No	MT
28-Jun-12	10:45	Quarry 3	yes	1	Flying around	No	MT
28-Jun-12	11:00	Quarry 2	yes	1	Flying around	No	MT
30-Jun-12	15:00	South pit	yes	1	flying above pit. Eggs observed with binoculars from South wall	No	JK
1-Jul-12	16:00	South pit	yes	1	laying on the eggs	No	JK/DK
2-Jul-12	17:05	South pit	yes	1	laying on the eggs	No	JK/DK
3-Jul-12	16:00	South Pit	yes	1	laying on the eggs	No	JK/DK
4-Jul-12	7:30	Quarry 21	yes	1			MT
4-Jul-12	7:45	Quarry 18	no	0			MT
4-Jul-12	8:00	Quarry 7	yes	1			MT
4-Jul-12	9:00	Quarry 3	no	0			MT
4-Jul-12	9:30	Quarry 2	yes	1			MT
4-Jul-12	9:45	Quarry 2	yes	2			MT
5-Jul-12	14:30	South pit	yes	1	laying on the eggs	no	JK/DK/RV
7-Jul-12	?	South pit	yes	3	flying above south pit	no	Shawn Perry

Agnico-Eagle Mines Ltd							
Peregrine Falcon Monitoring							
Date	**Time**	**Quarry # or Pit**	**Falcon Observed**	**Quantity**	**Comments**	**Concerns**	**Observer**
8-Jul-12	14:25	South pit	yes	1	sitting on eggs	no	JK/DK
10-Jul-12	14:30	South pit	yes	1	nesting	none	JK/DK
12-Jul-12	22:30	south pit	yes	2	one nesting, one flying	no	ra
15-Jul-12	14:00	Quarry 2	yes	2	flying has we got in quarry, were protective	no	ra/jp
15-Jul-12	14:00	Quarry 3	yes	2 + youngs	saw nest, eggs hatched, youngs seemed healthy.	no	ra/jp
15-Jul-12	14:00	Quarry 7	yes	2	flying has we got in quarry, were protective		ra/jp
15-Jul-12	14:00	Quarry 19	yes	2 + youngs	saw nest, eggs hatched, youngs seemed healthy.	no	ra/jp
15-Jul-12	14:00	Quarry 21	yes	2 + youngs	saw nest, eggs hatched, youngs seemed healthy.	no	ra/jp
26-Jul-12	15:00	South pit	yes	1	flying around	no	MT
30-Jul-12	16:30	South pit	yes	1 + 2 chicks	flying above pit. Chicks observed with binoculars from South wall	no	MT
5-Aug-12	?	south pit	no	0			st
10-Aug-12	18:30	Quarry 2	no	0			ra
10-Aug-12	18:30	Quarry 3	no	0			ra
10-Aug-12	18:50	Quarry 7	no	0			ra
10-Aug-12	19:30	Quarry 19	yes	1 + young	one was flying above, young (almost adult size) was close to nest on groung	no	ra
10-Aug-12	19:30	Quarry 21	yes	2	flying has we got in quarry, were protective	no	ra
10-Aug-12	21:00	South pit	no		got closer to nest, nothing's left there	?	ra

APPENDIX B

2012 Wildlife Incident Reports

November 24, 2012

Caribou Mortality

Time: 04:11

Location: km 86.5 AWPR

Weather Conditions: Visibility good, low wind. No sunlight.

Ray Carlson - Grader Operator

Site Services – Road Crew

Description of Events:
Travelling north bound, in Grader 01. Just finished grading a section, lifted blade up for travel. Travelling in grader at approx. 25km/hr. At approx. 86.5 km Ray noticed ~ 50 yards in front of the grader 2 caribou went across the road west to east, when he noticed the caribou he released the throttle to slow down. While slowing down, a caribou came from west side of the roadway and ran right into the grader in between the front wheels and the grader blade. Ray hit the brakes to a skid. Even though he braked, the caribou got caught underneath the blade of the grader. Ray backed the grader to release the caribou, there were slight leg kicks and then the animal did not move. Ray then contacted the Baker Lake Gatehouse and reported the incident. The Gatehouse contacted the environment department to report the incident. At 07:48 Jeffrey Pratt contacted Conservation officer Rob Harmer with the Government of Nunavut to report the mortality.

Caribou was retrieved from the side of the road by AEM environmental staff. Enviro Staff skin and butchered the caribou. Spoiled meat and hide were taken to the incinerator at the Meadowbank site to incinerate to avoid attraction close to the road. Salvaged meat was taken to Baker Lake Elders home.

Jeff Pratt
Environmental Coordinator

January 3rd, 2013

Wolverine Mortality

Time: 07:20

Location: km 105 AWPR

Weather Conditions: Visibility good, low wind. No sunlight.

Dino Stagg

Driver – Artic Fuel

Description of Events:
Travelling south bound, in Tanker. The Driver was leaving Meadowbank site to go back to Baker Lake. As he was going around the turn at WTP the wolverine came out the ditch and ran across the road going under the truck. It was dark and the road was slippery so the tanker/trailer did not stop in time. The driver did not report this incident to the gatehouse. At around 7:35 the Environment department was notified that a dead animal was on the side of the AWPR road in front of WTP. Technicians Jamie Kataluk and Robin Allard went to location immediately. Wolverine with no external signs of impact was found dead on road. They proceeded to pick up carcass. At 10:10 Robin Allard sent e-mail notification to Conservation officer Rob Harmer and Russell Toolooktook, GN Wildlife officer to report the mortality.

The wolverine was retrieved from the side of the road by AEM environmental staff. Enviro staff skinned the animal to preserve its state. As asked by Officer Toolooktook, the carcass and skin will be sent to Baker Laker to his attention, as soon as possible. A memo reminding all personal to report of encounters with wildlife on AWPR will be sent by AEM to all user of the road.