Appendix F7

Meadowbank Gold Project 2009 Wildlife Monitoring Summary Report, April 2010



MEADOWBANK GOLD MINE PROJECT

2009 WILDLIFE MONITORING SUMMARY REPORT

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SECTION 1 • EXECUTIVE SUMMARY

This report represents the fourth of a series of annual Wildlife Monitoring Summary Reports for the Agnico-Eagle Mines Ltd. (Agnico-Eagle) Meadowbank Gold Mine Project (the project). The project is located approximately 70 km north of the Hamlet of Baker Lake, 300 km inland from the northwest coast of Hudson Bay. The Meadowbank area is above the tree line near the Arctic Circle in an area of permanently frozen ground (permafrost) that extends to a depth of 400 to 500 m. The local physiography is characterized by numerous lakes and low, rolling hills covered mainly by heath tundra.

The Meadowbank Mine (the mine) is expected to be operational for a minimum of ten years. An extended mine life may result if exploration activities continue to discover additional resources in the area. Construction of a 106.8 km All-Weather Private Access Road (AWPAR), situated between Baker Lake, the nearest community, and the mine was completed in March 2008. Baseline and monitoring programs investigating wildlife abundance and diversity in the Meadowbank area 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) (Agnico-Eagle 2006).

The primary purpose of the 2009 Wildlife Monitoring Summary Report is to summarize the 2009 data collected from the various monitoring programs and to assess and communicate potential natural and mine-related changes in wildlife populations in the vicinity of the Meadowbank Mine through the qualitative and quantitative evaluation of accumulative monitoring datasets. Relative to previous monitoring summary reports, this report has been scaled back to include only basic statistical analyses and a simplified presentation of the 2009 monitoring data. Following the onset of mine operations in 2010, additional statistical analyses and modelling will be reinstated or added in subsequent annual reports, where appropriate, to adequately evaluate potential mine-related effects.

In 2008, construction of the AWPAR and numerous Meadowbank camp infrastructure upgrades were completed. In 2009, principal mine site construction commenced and is currently scheduled to continue through the beginning of 2010 followed by the onset of mine operations in 2010-2011. Given that the mine site was not yet operational in 2009, analysis of potential mine-related changes in this year's report was limited to breeding bird plots (conducted at mine site areas under construction and reference areas) and potential mine-related interactions along the AWPAR (i.e., AWPAR road surveys and bird transect surveys). Daily and weekly surveys are also conducted at the mine site to evaluate wildlife interactions. The remainder of the report focuses on reporting wildlife monitoring results as well as identifying natural variation in wildlife observations and prospective trends through basic statistical analyses pertaining to species abundance, diversity and richness. In addition, this report evaluates the effectiveness of implemented mitigation measures, presents the adaptive management strategies implemented in 2009 and identifies the need, if any, for implementation of additional mitigation measures.

As in 2008, abundance and diversity were similar for most species along the breeding bird transects in 2009. Relative to 2008, species richness increased in 2009; however, the results were not statistically significant. The higher species richness values in 2009 are likely due in part to the additional replicate survey completed in 2009 (i.e., 3 replicates compared to 2 in 2008).

To date, no Project-related variation in species abundance, richness and diversity has been observed between mine and reference / control bird plots, suggesting mining activities to date are not affecting bird community metrics. Natural variation has been noted in both mine and reference / control plots; however, results between years are not statistically different. Additional statistical analyses will be run in future years after updated Ecological Land Classification (ELC) mapping has been completed (currently scheduled for 2010 after mine construction completion). Updated mapping may identify edge habitats or changes in habitat types within plots in developed areas, which will be evaluated as a variable if changes in bird communities are observed.

Localized changes in habitat type and the resulting changes in utilization are exemplified by the Peregrine Falcon (*Falco peregrinus*) nest observed at Quarry 19 along the AWPAR for the first time in 2009. Prior to construction of the AWPAR, surveys indicated that only low suitability habitat was available within and adjacent to the road footprint. During AWPAR construction, materials were excavated from numerous quarries for use as roadbase material, resulting in sites characterized by steep walls and rock overhangs, which are suitable habitats for nesting raptors. A management plan was developed for the nesting falcon pair and monitoring was conducted between July and September 2009. The falcon chicks successfully fledged in early September. Raptor nest surveys, with a focus on quarries along the AWPAR, will continue to be incorporated into AWPAR road surveys and annual waterbird nest surveys.

Waterbirds (i.e., shorebirds and waterfowl) continued to utilize lakes and ponds at the mine site and along the AWPAR in 2009. Moreover, numerous waterbirds nested in the same location as in previous years, which serve as a good monitoring indicator of potential AWPAR effects. Variances in nest fidelity over time can be evaluated both quantitatively and qualitatively (in future years) with the inclusion of additional datasets to ascertain whether AWPAR effects are occurring. Potential changes in the composition of nesting species at the mine site and along the AWPAR will also be explored in future years with the inclusion of additional data.

Road wildlife survey data was similar to previous years, with the highest densities of Caribou (*Rangifer tarandus*) observed in March and October. The total number of surveys in 2009 was lower relative to previous years, which was due to frequent weather-related road closures and personnel scheduling issues. The current goal for future years is to average two (2) surveys a week over the course of the year. 2009 marked the first year in which a preliminary assessment of Caribou density along the AWPAR was completed. Three areas along the AWPAR may be utilized by Caribou at a higher frequency relative to other areas. In response to 2008 caribou mortalities along the AWPAR, an evaluation of roadkill locations and counts was undertaken for the first time in 2009 to determine areas where higher roadkill densities may be occurring. Despite the pooling of both 2008 and 2009 roadkill data, roadkill density along the entire AWPAR alignment remained low (i.e., 0 to 1.4 mortalities per km). These datasets will continue to be refined in future years for use as an adaptive management tool.

2009 marked the third year of the hunter harvest study, which was strategically revised at the end of 2007 as a result of the generally low hunter participation rates. In 2008, seventeen (17) calendars were returned, increasing to thirty-three (33) in 2009. The increase in participation is likely the result of increased Baker Lake Hunter and Trapper Organization (HTO) participation, word-of-mouth, building rapport with local hunters, and an increased check-in frequency. In 2009, use of the AWPAR was regulated by Agnico-Eagle in consultation with the Nunavut Impact Review Board (NIRB). Hunters are now required to obtain a pass from the HTO office before using the AWPAR. Additional

measures include limiting hunting vehicles to ATVs, requiring gate check-in and safety briefings, requiring that hunters wear high visibility clothing and use buggy-whips, and instating a no-shooting zone around the AWPAR. Caribou harvests within 5 km of the AWPAR in 2009 (n=140) increased relative to 2008 (n=102); however, the highest harvest densities in 2009 were located east of the hamlet of Baker Lake, well outside the 'zone of influence' of the AWPAR. Moreover, harvest counts were generally higher in areas west of Baker Lake relative to previous years. Additionally, frequency of harvests in more remote areas (i.e., Tehek Lake, Schultz Lake) was also higher than in previous, which were outside the areas documented during the 2005 Nunavut Wildlife Harvest Study. The annual variation in harvest locations and harvest frequency are anticipated to be due to a combination of factors, including increased participation of existing participants, inclusion of new hunter data, and attrition.

Of the nine female Caribou collared in early May 2008, only seven were transmitting at the end of 2008. By late summer 2009, only five Caribou were still transmitting data and by the fall rut season, the number was further reduced to three. In November 2009, twenty-one additional Caribou were collared (10 by AREVA Resources Canada Inc. and 11 by Agnico-Eagle). Of these animals, nineteen (19) were still transmitting data at the end of 2009. A detailed description of Caribou locations each season are provided in this report. Agnico-Eagle has committed to an additional five collars, which will be deployed in future years. Additional collaring efforts and longer-term data will provide further seasonal information on collared Caribou distribution.

Numerous proactive, precautionary measures were implemented in 2009, including, but not limited to, garbage and waste improvements at the mine site, Arctic Fox trapping and relocation, temporary road closures when high densities of Caribou were observed, and development of a trail system around the mine site to prevent degradation of adjacent, high value habitats.

With each additional year of monitoring, a better understanding of the movement patterns and population dynamics of various wildlife species can be determined. Each subsequent Wildlife Monitoring Summary Report builds on data presented in the previous year's report. Analyses of data from the current monitoring programs to date indicate that they are appropriate for investigating natural versus mine-related changes.

SECTION 2 • INTRODUCTION

2.1 BACKGROUND

The Agnico-Eagle Mines Ltd. (Agnico-Eagle) Meadowbank Gold Mine Project (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 Private Access Road [AWPAR], 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].

This report is the fourth[2] of a series of annual Wildlife Monitoring Summary Reports for the project. The purpose of this report is to summarize the 2009 data collected from the various monitoring programs and to identify and communicate natural variation and potential mine-related changes in wildlife populations and environmental health within and adjacent to the Meadowbank project area through the interpretation of accumulative monitoring datasets. Relative to previous monitoring summary reports, this report has been scaled back to include only basic statistical analyses and a simplified presentation of the 2009 monitoring data. Following the onset of mine operations in 2010, additional statistical analyses and modelling will be reinstated or added in subsequent annual reports, where appropriate, to adequately evaluate potential mine-related effects.

In 2008, construction of the AWPAR and numerous Meadowbank camp infrastructure upgrades were completed. In 2009, principal mine site construction commenced and is currently scheduled to continue through the beginning of 2010 followed by the onset of mine operations in 2010-2011. Given that the mine site was not yet operational in 2009, analysis of potential mine-related changes in this year's report was limited to breeding bird plots (conducted at mine site areas under construction and reference areas) and potential mine-related interactions along the AWPAR (i.e., AWPAR road surveys and bird transect surveys). Daily and weekly surveys are also conducted at the mine site to evaluate wildlife interactions. The remainder of the report focuses on reporting wildlife monitoring results as well as identifying natural variation in wildlife observations and prospective trends through basic statistical analyses pertaining to species abundance, diversity and richness. In addition, this report evaluates the effectiveness of implemented mitigation measures, presents the adaptive management strategies implemented in 2009 and identifies the need, if any, for implementation of additional mitigation measures.

[1] Section 54 of the Project Certificate discusses the requirements of the Terrestrial Ecosystem Management Plan for the project, including the methodology and rationale for the numerous monitoring surveys and studies discussed in this report.
[2] The 2006 Wildlife Monitoring Summary report was completed for Cumberland Resources Ltd. in April 2007. Agnico-Eagle acquired Cumberland Resources Ltd. in July 2007, assuming responsibility for the mine's monitoring requirements as stipulated in the Project Certificate issued by the NIRB. The 2007 Wildlife Monitoring Summary report was completed in April 2008.


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
NUNAVUT
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 Ltd.

2.2 PROJECT DESCRIPTION

The project encompasses mine construction, operation, maintenance, reclamation and closure, as well as associated monitoring activities. Gold will be extracted from open pits during the minimum 10-year operational lifespan of the mine. All construction and operating supplies for the project are transported on ocean freight systems to facilities constructed in the vicinity of the Hamlet of Baker Lake, which include barge unloading facilities, lay-down area, and fuel tank farm. An AWPAR haulage route from the Hamlet of Baker Lake to the mine site provides the primary means of mine site access and re-supply, while on-site mine access roads connect open pit areas to ancillary facilities. On-site facilities 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 identified environmental sensitivities were integrated into the current project design. Valued Ecosystem Components (VECs) and Valued Socio-Economic Components (VSECs) were identified in consultation with regulatory agencies and residents of Baker Lake. VECs include air quality, noise, water quality, surface water quantity, permafrost, fish populations, fish habitat, vegetation cover (wildlife habitat), ungulates, predatory mammals, small mammals, raptors, waterbirds and other breeding birds. VSECs include employment, training and business opportunities, traditional ways of life, individual and community wellness, infrastructure and social services, and sites of heritage significance. Further details on the proposed project can be found in the Final Environmental Impact Statement (FEIS 2005).

2.3 MONITORING PROGRAM APPROACH

Wildlife monitoring is an essential tool in protecting and maintaining wildlife resources utilizing areas associated with the project. Because of uncertainties associated with impact predictions and the effectiveness of mitigation, monitoring is necessary to verify conclusions in the EIA, fine-tune and refine mitigation measures, where necessary, and document significant impacts on species abundance, richness, diversity and distribution. Several variables that define the well-being of wildlife populations within the project area are currently being monitored. A summary of the general approach is provided in Section 2.4 while specific monitoring initiatives for wildlife VECs are discussed in detail in Section 3 and in the Terrestrial Ecosystem Management Plan (TEMP) (Agnico-Eagle 2006).

2.3.1 Habitat Distribution

Habitat, including vegetation, rocks, rock crevices, and eskers, is required by wildlife species for critical life processes such as foraging, protection, reproduction and hibernation. Each wildlife species or wildlife VEC has varying needs for habitat units as classified under the Ecological Land Classification (ELC). As a result, the availability of all ELC habitat units within the Meadowbank study areas (discussed in Section 2.3.2) will be assessed following the significant construction, operation and decommissioning phases of the mine. Frequency of ELC analysis may vary if notable changes are not observed between years. Currently, a joint ELC analysis of the mine site and AWPAR is scheduled for inclusion in the 2010 Wildlife Monitoring Summary Report, given that principal mine site construction is currently scheduled for completion in 2010.

Once mine site construction has been significantly completed, extent of habitat loss at the mine site and ancillary facilities will be identified and mapped based on AEM as-built mine and road construction reports, and ground investigations. Newly disturbed areas will be delineated using Global Positioning System (GPS) and Geographic Information System (GIS) mapping capabilities. Where unnecessary and unplanned habitat degradation is documented, measures will be taken to reclaim or rejuvenate these areas. Measures may involve removal of contaminated soil, placement of stockpiled native soils, reseeding (e.g., native-grass cultivars and forbs such as nitrogen-fixing legumes), and transplanting of vegetation.

2.3.2 Wildlife Distribution

Various on-going monitoring programs have been established to assess the distribution of wildlife within the Local Study Area (LSA) and Regional Site Area (RSA)[3]; however, because many species using the area are migratory and/or transient with large home and foraging ranges, observed changes in distribution between monitoring events will not necessarily be an accurate predictor of population changes as a result of mine-related activities. As additional data is collected each year, natural versus mine-related wildlife distribution variability can be ascertained with increasing statistical certainty. Details on the specific monitoring programs designed to examine potential trends of each particular VEC are described in detail in subsequent sections.

2.3.3 Wildlife Richness, Diversity and Abundance Indices

Wildlife richness, diversity and abundance indices are anticipated to be a more accurate deterministic predictor of the potential effects of mine-related activities than wildlife distribution. Both increases and decreases in species richness (number of species in a given area), abundance (population size) and diversity (an index that incorporates the number of species and associated abundance) as a result of natural and mine-related processes may be observed over time.

2.3.4 Wildlife Health

The health of wildlife using the mine site and environs will be difficult to determine directly (i.e., tissue sampling) given the migratory and transient nature of all larger, long-living animals and the difficulty in obtaining samples for analysis. In 2006, a Wildlife Screening Level Risk Assessment (WSLRA) was completed (Azimuth 2006) in accordance with approved Health Canada procedures. The WSLRA included the collection of baseline soil, vegetation (i.e., lichen, berry and sedge) tissue samples (2005) and insect samples (2006). In 2008, additional and vegetation sampling was conducted as a component of the Environmental Health Monitoring Program for the project. 2008 analytical results were added to the 2005 dataset to provide a comprehensive baseline dataset whereby changes in potential contaminant exposure to wildlife populations during mine operations, if any, can be evaluated. Soil and tissues are known to assimilate metals and other substances and are basic foods for herbivores such as Caribou (*Rangifer tarandus*) and seasonal insectivores such as Lapland Longspur (*Calcarius lapponicus*). The 2005, 2006 and 2008 samples, and samples collected over the life of the mine, are analyzed for inorganic elements and other contaminants. Results will be compared between years and between reference and mine site sampling locations. The next sampling period is currently scheduled for the first full year of mine site operation in 2011.

[3] boundaries discussed in Section 2.6

2.3.5 Adaptive Management

Within each wildlife mitigation approach or method, there is a certain level of uncertainty or unpredictability. One of the primary objectives of monitoring is to determine if implemented mitigation measures have been successful. The success of implemented mitigation measures can be assessed by evaluating residual effects, which are those effects that persist after mitigation measures have been implemented as intended. Significant residual effects may require the implementation of adaptive management strategies. Adaptive management is an ongoing process that evolves throughout the life of the mine as better and more effective mitigation options are introduced in a process that is designed to be iterative and continually improving.

2.4 GENERAL MONITORING MEASURES

2.4.1 Overview of Monitoring Measures

Monitoring programs are designed to evaluate implemented mitigation measures on a predetermined basis to establish their effectiveness. These programs continue to be modified, as necessary, to meet the objective of the mitigation strategy set out in the TEMP. Monitoring programs also serve to evaluate the effectiveness of implemented mitigation measures against baseline conditions and mine-related impact predictions (i.e., hypotheses).

An Agnico-Eagle environmental supervisor is currently available at the mine site at all times. Detailed reporting protocols (e.g., in the event of a dangerous animal frequenting the site) for environmental staff and a staff chart detailing staff responsibilities have been implemented. Moreover, environmental technicians are now monitoring wildlife presence in close proximity to mine facilities on a daily and weekly basis (discussed in detail in Section 3.6). When the mine site is in operation, monitoring efforts will be focused on potential contaminant sources such as the tailings facility. Where unacceptable risks to wildlife are observed, mitigation measures will be implemented to avert animals from the contaminant source(s).

2.5 OBJECTIVES OF THE 2009 WILDLIFE MONITORING SUMMARY REPORT

As in previous years, the primary objectives of the 2009 Wildlife Monitoring Summary Report consist of the following:

1. reporting 2009 wildlife monitoring results;
2. summarizing the monitoring strategy implemented over the course of the year, which has been designed to be capable of detecting both natural and project-related changes in vegetation communities and wildlife populations in the vicinity of the mine site and ancillary facilities;
3. evaluating the accuracy of uncertain, weak, and/or significant impact predictions made in the EIS in the context of the wildlife management plan effectiveness;
4. fine-tuning existing mitigation measures where monitoring activities identify unacceptable project-related impacts to the distribution, abundance, integrity, health and/or viability of vegetation communities or wildlife populations; and
5. summarizing implemented adaptive management strategies used to further mitigate unforeseen impacts.

The annual Wildlife Monitoring Summary Report is designed to allow regulators and other stakeholders to contribute insight, expertise and suggestions for continually improving wildlife management activities at the Meadowbank mine site.

2.6 STUDY AREA BOUNDARIES

The mine site LSA includes both 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 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 AWPAR for a total area of 5,106 km^2 (Figure 2.2). The AWPAR LSA consists of a 3 km wide corridor centred on the AWPAR between Baker Lake and Meadowbank mine site (Figure 2.1). Justification for study area size can be found in Section 2.6 of previous wildlife monitoring summary reports.

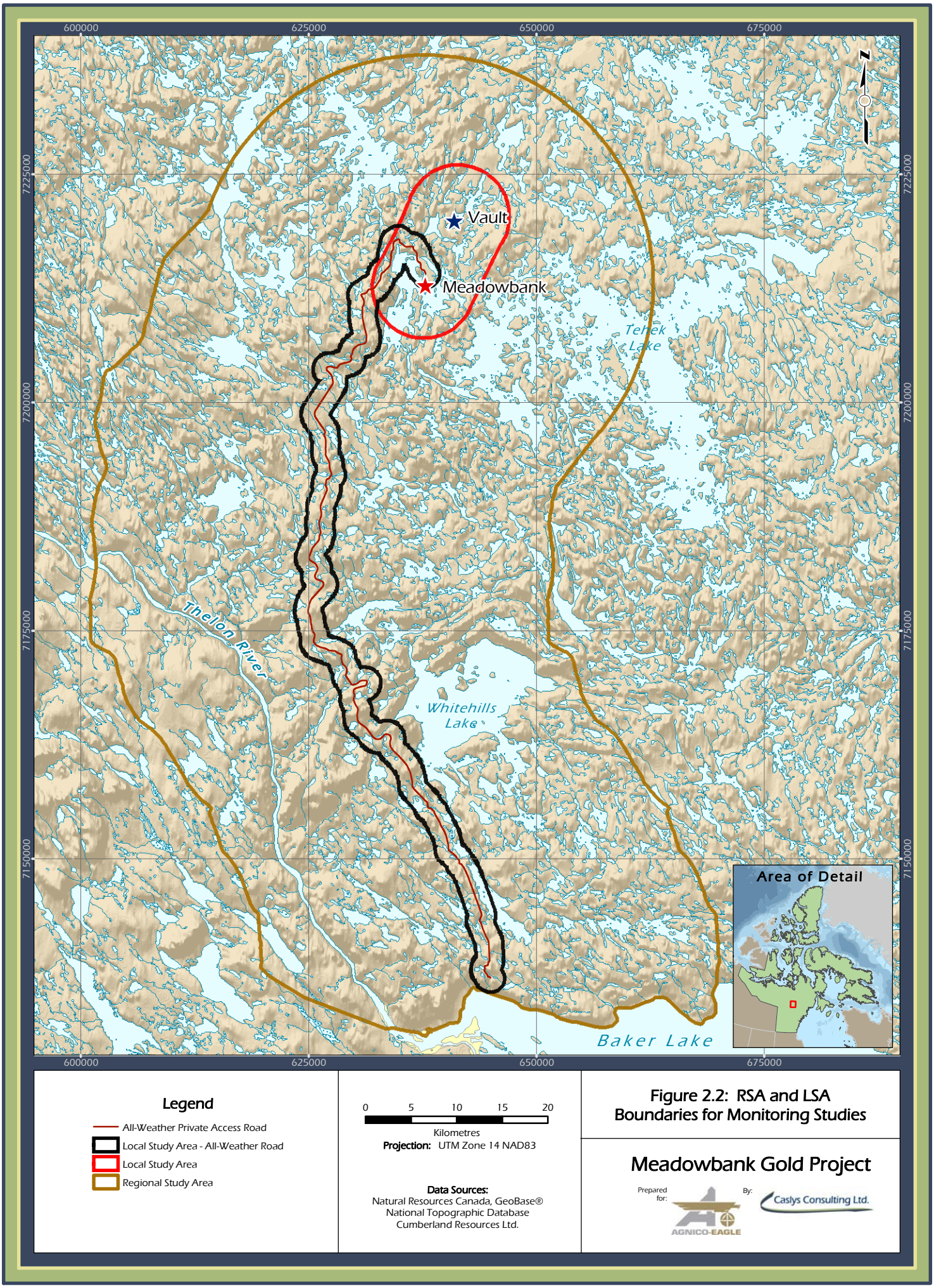
2.7 INUIT INVOLVEMENT

Since 1999, local Inuit from the Hamlet of Baker Lake have been involved in all wildlife-related baseline and monitoring surveys. A summary of the various programs and the average number of Inuit involved is provided in Table 2.1.

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

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	2003-2009 (7)	2 to 3
Breeding Bird Transects	2005-2007 (5)	2
Waterfowl Nest Surveys	2004-2009 (6)	1 to 2
Raptor Nest Surveys	2004-2007 (4)	1 to 2
Access Road Ground Surveys	2004-2009 (6)	3 to 4
Habitat Mapping	2004-2005 (2)	1 to 2
Phenology Plots	2003-2005 (3)	2

Over the survey years, several individuals have built up considerable experience in conducting baseline and monitoring surveys, affording them employment opportunities to be involved with the project as environmental technicians or in other capacities.


600000
625000
650000
675000
7225000
7200000
7175000
7150000
Vault
Meadowbank
Tehek Lake
Thelon River
Whitehills Lake
Baker Lake
Area of Detail
Legend
All-Weather Private 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
Cumberland Resources Ltd.
Figure 2.2: RSA and LSA Boundaries for Monitoring Studies
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

SECTION 3 • METHODOLOGY

3.1 HABITAT MAPPING

The total area of habitat disturbance associated with mine site and ancillary facility construction will be mapped during the significant construction completion, operation, and decommissioning phases of the mine site based on AEM as-built mine and road construction reports, and ground investigations. The purpose of monitoring habitat disturbance is to compare the status of vegetated areas in the construction and operation phases to baseline conditions (i.e., ELC from supervised classification conducted in 2005; refer to the Terrestrial Ecosystem Baseline Report for details) and losses predicted in the EIA.

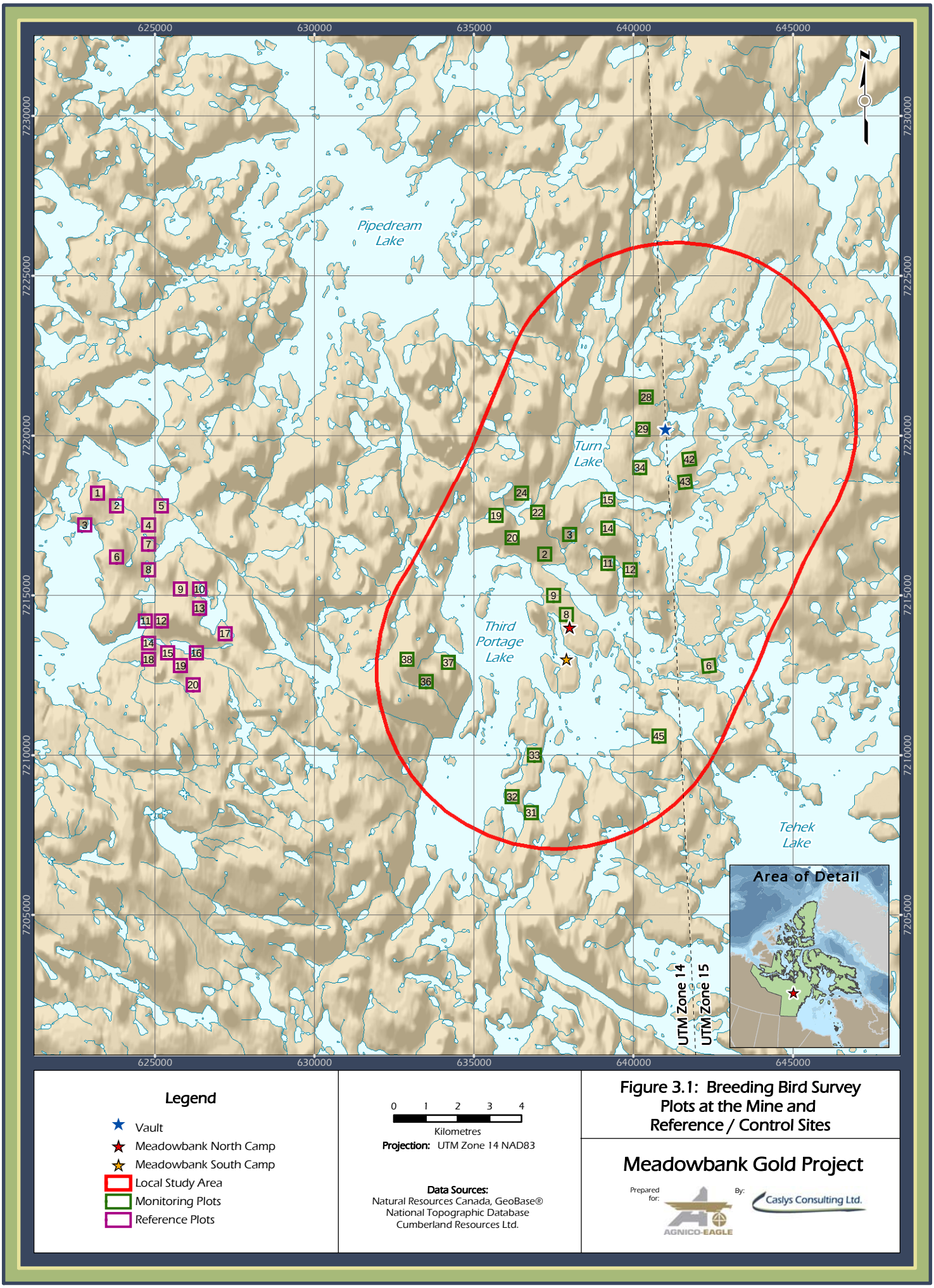
The habitat mapping monitoring plan was developed to describe the overall area of different ELC units lost due to mine construction activities at four primary locations: Main Site, Vault Site, Baker Lake Facilities, and the AWPAR (including quarry sites). The frequency of assessing vegetation changes may be reduced (e.g., a frequency of every three years) during the operational phase if the amount of new disturbance and reclamation areas remains relatively unchanged.

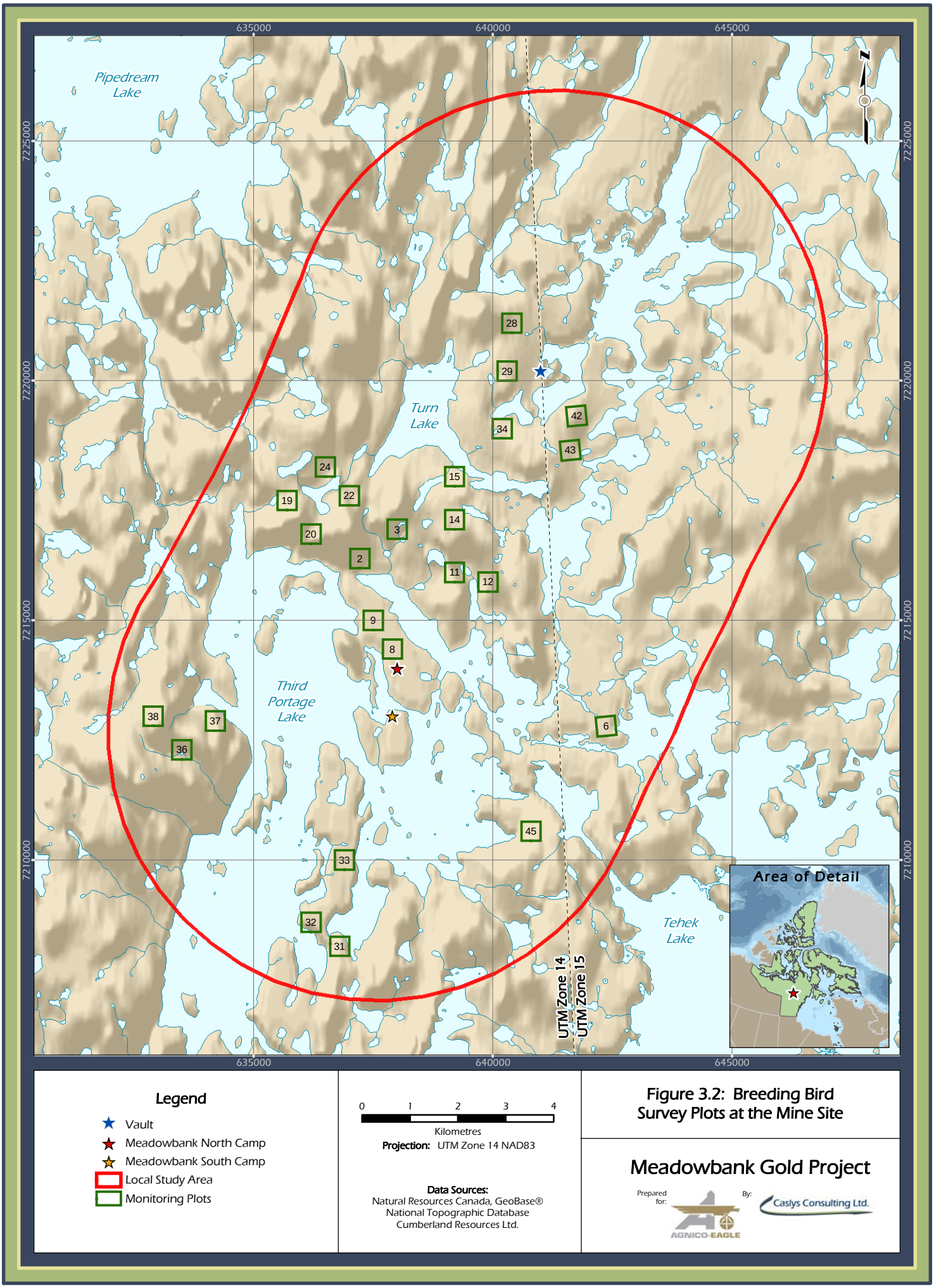
Although mine site construction was initially scheduled for completion in 2008, unanticipated AWPAR construction delays resulted in an associated delay in the onset of principal mine site construction, which commenced in 2009. Mine site construction is currently scheduled to be completed in the first quarter of 2010. On the basis of the revised construction schedule, ELC analysis has been tentatively rescheduled to 2010, and will include footprint effects of the mine site and ancillary facilities (including the AWPAR). ELC analysis following completion of the mine site would be a more valuable management tool, as it will provide a complete and accurate representation of habitat disturbance, thereby affording a comprehensive account of priority habitat restoration areas at the onset of the operation phase.

3.2 BREEDING BIRD PLOTS

3.2.1 Survey Methodology

Twenty-five breeding bird survey plots have been established at the mine site and twenty plots have been established at a reference / control area (refer to Figures 3.1, 3.2, and 3.3). Plots are surveyed using the Canadian Wildlife Service's Program for Regional and International Shorebird Monitoring (PRISM) protocols (CWS 2005). The reference / control area was chosen because of its proximity to aquatic and fisheries reference areas, the considerable distance from the mine site (i.e., ascertained to be outside the 'zone of influence' of the mine), and the similar terrain and vegetation communities as the mine site area. A replicate of the breeding bird survey of the 45 plots (i.e., reference / control and mine) will continue every year during the construction period and for at least the first three full years of mine operation (2011-2013). Thereafter, consideration will be given to revising the frequency of surveys following a review of the results of the surveys. Surveys in 2009 represent the seventh consecutive year (2003-2009) that breeding bird plots have been conducted at the mine site (refer to Table 3.1 for years each PRISM plot has been surveyed). Breeding bird plots within the reference / control area have been conducted since 2005. Dates of mine site and reference / control area surveys are provided in Table 3.1 and Table 3.2, respectively.


625000
630000
635000
640000
645000
7230000
7225000
7220000
7215000
7210000
7205000
Pipedream Lake
Turn Lake
Third Portage Lake
Tehek Lake
UTM Zone 14
UTM Zone 15
Area of Detail
Legend
Vault
Meadowbank North Camp
Meadowbank South Camp
Local Study Area
Monitoring Plots
Reference Plots
0 1 2 3 4
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Cumberland Resources Ltd.
Figure 3.1: Breeding Bird Survey Plots at the Mine and Reference / Control Sites
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.



Legend

- Vault
- Meadowbank North Camp
- Meadowbank South Camp
- Local Study Area
- Monitoring Plots

0 1 2 3 4

Kilometres

Projection: UTM Zone 14 NAD83

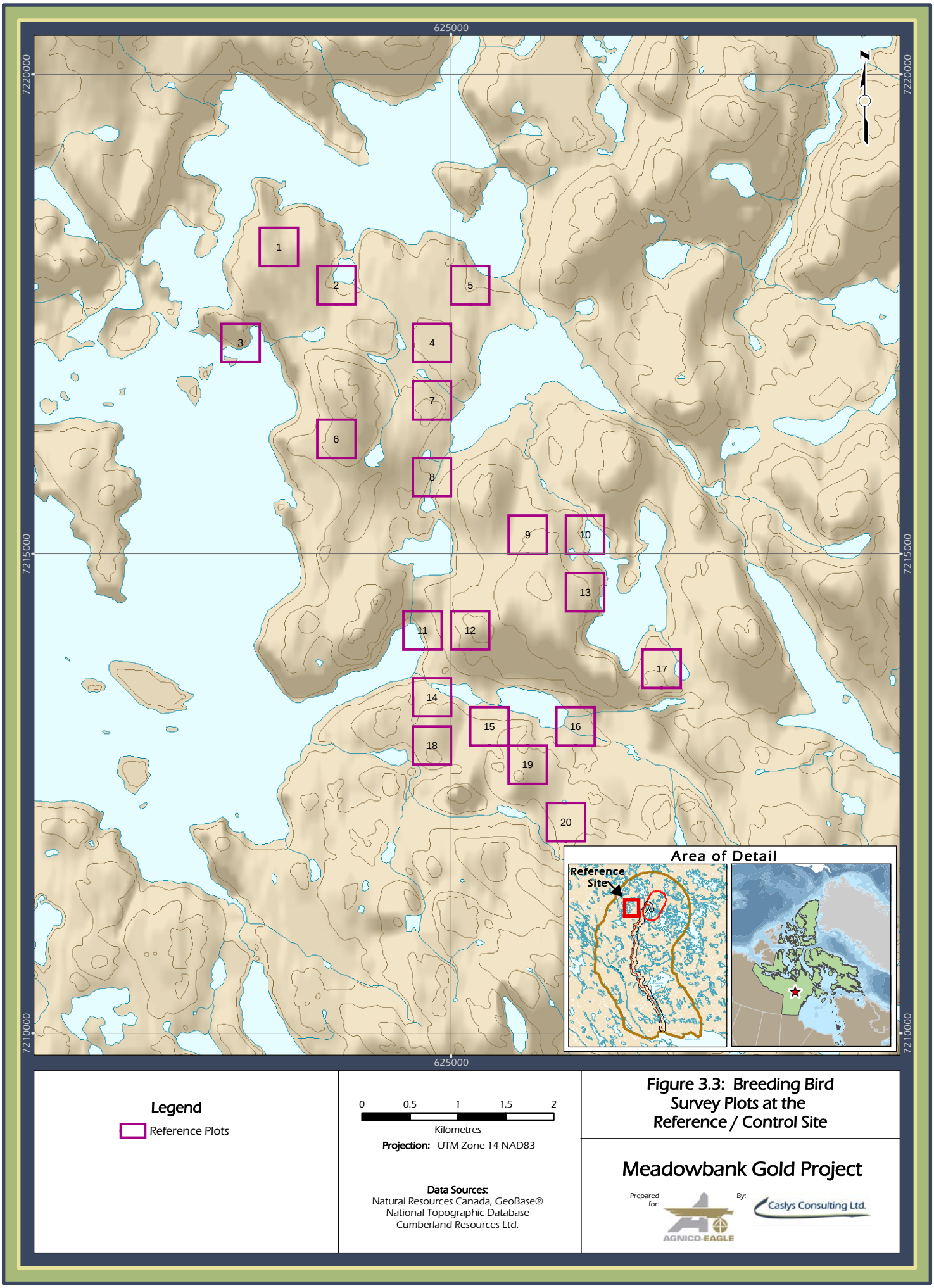
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Cumberland Resources Ltd.

Figure 3.2: Breeding Bird Survey Plots at the Mine Site

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

Reference Plots

0 0.5 1 1.5 2

Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Cumberland Resources Ltd.

Figure 3.3: Breeding Bird Survey Plots at the Reference / Control Site

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

Table 3.1: Survey Years at Mine Site PRISM Plots.

Meadowbank Mine Site								
		Survey Years and Dates						
Plot #	# Years Surveyed	2003 18 to 25 June	2004 19 to 25 June	2005 28 June to 17 July	2006 12 to 25 June	2007 15 to 28 June	2008 18 June to 02 July	2009 17 to 30 June
2	4	X		X	X	X	X	X
3	4	X		X	X	X	X	X
6	4	X		X	X	X	X	X
8	4	X		X	X	X	X	X
9	4	X		X	X	X	X	X
11	3	X			X	X	X	X
12	3	X			X	X	X	X
14	4	X		X	X	X	X	X
15	3	X			X	X	X	X
19	3	X		X		X	X	X
20	4	X		X	X	X	X	X
22	4	X		X	X	X	X	X
24	4	X		X	X	X	X	X
28	4		X	X	X	X	X	X
29	4		X	X	X	X	X	X
31	4		X	X	X	X	X	X
32	4		X	X	X	X	X	X
33	4		X	X	X	X	X	X
34	4		X	X	X	X	X	X
36	4		X	X	X	X	X	X
37	4		X	X	X	X	X	X
38	4		X	X	X	X	X	X
42	3		X		X	X	X	X
43	3		X		X	X	X	X
45	3		X		X	X	X	X
Total Surveys / Year		**13**	**12**	**19**	**24**	**25**	**25**	**25**

Table 3.2: Survey Years at Reference / Control PRISM Plots.

Reference / Control Site						
		Survey Years and Dates				
Plot #	# Years Surveyed	2005 28 June-17 July	2006 12-25 June	2007 21-27 June	2008 20-30 June	2009 18-28 June
1	3	X	X	X	X	X
2	3	X	X	X	X	X
3	3	X	X	X	X	X
4	3	X	X	X	X	X
5	3	X	X	X	X	X
6	3	X	X	X	X	X
7	3	X	X	X	X	X
8	3	X	X	X	X	X
9	3	X	X	X	X	X
10	3	X	X	X	X	X
11	3	X	X	X	X	X
12	3	X	X	X	X	X
13	3	X	X	X	X	X
14	3	X	X	X	X	X
15	3	X	X	X	X	X
16	3	X	X	X	X	X
17	2	X		X	X	X
18	3	X	X	X	X	X
19	3	X	X	X	X	X
20	3	X	X	X	X	X
Total Surveys / Year		**20**	**19**	**20**	**20**	**20**

Plots are surveyed by two teams, each consisting of two observers, and surveys alternate daily between reference and mine plots. To reduce observer bias, teams also alternate between mine and reference locations.

The methodology involves a survey of 400 x 400 m plots (refer to Figures 3.1, 3.2, and 3.3 for plot locations and Tables 3.3 and 3.4 for UTM locations of all mine and reference / control plots, respectively). 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. Based on the 25 m intervals, a total of 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 (refer to Appendix A) 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 (refer to Appendix A for a sample datasheet).

Table 3.3: UTM Coordinates (NAD 83) of PRISM Plots Used for Long-term Monitoring at Meadowbank Study Sites.

Meadowbank Mine Site				
	UTM Coordinates of PRISM Plot Corners			
#	Southwest	Northwest	Northeast	Southeast
2	14W 0637020 7216090	14W 0637020 7216490	14W 0637420 7216490	14W 0637420 7216090
3	14W 0637800 7216700	14W 0637800 7217100	14W 0638200 7217100	14W 0638200 7216700
6	15W 0359400 7212500	15W 0359400 7212900	15W 0359800 7212900	15W 0359800 7212500
8	14W 0637700 7214200	14W 0637700 7214600	14W 0638100 7214600	14W 0638100 7214200
9	14W 0637300 7214800	14W 0637300 7215200	14W 0637700 7215200	14W 0637700 7214800
11	14W 0639000 7215800	14W 0639000 7216200	14W 0639400 7216200	14W 0639400 7215800
12	14W 0639700 7215600	14W 0639700 7216000	14W 0640100 7216000	14W 0640100 7215600
14	14W 0639000 7216900	14W 0639000 7217300	14W 0639400 7217300	14W 0639400 7216900
15	14W 0639000 7217800	14W 0639000 7218200	14W 0639400 7218200	14W 0639400 7217800
19	14W 0635500 7217300	14W 0635500 7217700	14W 0635900 7217700	14W 0635900 7217300
20	14W 0636000 7216600	14W 0636000 7217000	14W 0636400 7217000	14W 0636400 7216600
22	14W 0636800 7217400	14W 0636800 7217800	14W 0637200 7217800	14W 0637200 7217400
24	14W 0636300 7218000	14W 0636300 7218400	14W 0636700 7218400	14W 0636700 7218000
28	14W 0640200 7221000	14W 0640200 7221400	14W 0640600 7221400	14W 0640600 7221000
29	14W 0641100 7220000	14W 0640100 7220400	14W 0640500 7220400	14W 0640500 7220000
31	14W 0636600 7208000	14W 0636600 7208400	14W 0637000 7208400	14W 0637000 7208000
32	14W 0636000 7208500	14W 0636000 7208900	14W 0636400 7208900	14W 0636400 7208500
33	14W 0636700 7209800	14W 0636700 7210200	14W 0637100 7210200	14W 0637100 7209800
34	14W 0640000 7218800	14W 0640000 7219200	14W 0640400 7219200	14W 0640400 7218800
36	14W 0633300 7212100	14W 0633300 7212500	14W 0633700 7212500	14W 0633700 7212100
37	14W 0634000 7212700	14W 0634000 7213100	14W 0634400 7213100	14W 0634400 7212700
38	14W 0632700 7212800	14W 0632700 7213200	14W 0633100 7213200	14W 0633100 7212800
42	15W 0359400 7219000	15W 0359400 7219400	15W 0359800 7219400	15W 0359800 7219000
43	15W 0359200 7218300	15W 0359200 7218700	15W 0359600 7218700	15W 0359600 7218300
45	14W 0640600 7210400	14W 0640600 7210800	14W 0641000 7210800	14W 0641000 7210400

Table 3.4: UTM Coordinates (NAD 83) of PRISM plots Used for Long-term Monitoring at Meadowbank Reference / Control Site.

	Reference / Control Site			
	UTM Coordinates of PRISM Plot Corners			
#	Southwest	Northwest	Northeast	Southeast
1	14W 0623000 7218000	14W 0623000 7218400	14W 0623400 7218400	14W 0623400 7218000
2	14W 0623600 7217600	14W 0623600 7218000	14W 0624000 7218000	14W 0624000 7217600
3	14W 0622600 7217000	14W 0622600 7217400	14W 0623000 7217400	14W 0623000 7217000
4	14W 0624600 7217000	14W 0624600 7217400	14W 0625000 7217400	14W 0625000 7217000
5	14W 0625000 7217600	14W 0625000 7218000	14W 0625400 7218000	14W 0625400 7217600
6	14W 0623600 7216000	14W 0623600 7216400	14W 0624000 7216400	14W 0624000 7216000
7	14W 0624600 7216400	14W 0624600 7216800	14W 0625000 7216800	14W 0625000 7216400
8	14W 0624600 7215600	14W 0624600 7216000	14W 0625000 7216000	14W 0625000 7215600
9	14W 0625600 7215000	14W 0625600 7215400	14W 0626000 7215400	14W 0626000 7215000
10	14W 0626200 7215000	14W 0626200 7215400	14W 0626600 7215400	14W 0626600 7215000
11	14W 0624500 7214000	14W 0624500 7214400	14W 0624900 7214400	14W 0624900 7214000
12	14W 0625000 7214000	14W 0625000 7214400	14W 0625400 7214400	14W 0625400 7214000
13	14W 0626200 7214400	14W 0626200 7214800	14W 0626600 7214800	14W 0626600 7214400
14	14W 0624600 7213300	14W 0624600 7213700	14W 0625000 7213700	14W 0625000 7213300
15	14W 0625200 7213000	14W 0625200 7213400	14W 0625600 7213400	14W 0625600 7213000
16	14W 0626100 7213000	14W 0626100 7213400	14W 0626500 7213400	14W 0626500 7213000
17	14W 0627000 7213600	14W 0627000 7214000	14W 0627400 7214000	14W 0627400 7213600
18	14W 0624600 7212800	14W 0624600 7213200	14W 0625000 7213200	14W 0625000 7212800
19	14W 0625600 7212600	14W 0625600 7213000	14W 0626000 7213000	14W 0626000 7212600
20	14W 0626000 7212000	14W 0626000 7212400	14W 0626400 7212400	14W 0626400 7212000

3.2.2 Statistical Approach

Principal mine site construction commenced in summer 2008 and will continue through the first quarter of 2010. Prior to 2008, PRISM survey analyses have been limited to an evaluation of the comparability of baseline bird community indices (described in Section 2.3.3) between the mine and control areas. This comparison was evaluated through an estimation of community statistics for bird PRISM plot data and a comparison of existing baseline ELC land classification composition for control and mine areas. Additionally, temporal trends in species community indices were summarized to document the natural temporal variability in bird populations. In 2008 and 2009, mine construction was factored into the PRISM survey analyses, building on existing bird community indices to ascertain potential mine-related effects over time.

3.2.2.1 Ecological Land Classification

The proportion of each ELC land type was estimated for each PRISM plot following ELC land classification in 2005. Mean proportions were then compared graphically to see if there was roughly equal composition for land types in the mine site and control site plots. The ELC data was then merged with the bird count data and preliminary analyses were conducted to detect associations between bird community indices and habitat types. In 2010, ELC for the mine site and control / reference site will be updated, the results of which will be used to further evaluate associations with specific habitat types and potential changes in species indices due to habitat loss.

3.3 BREEDING BIRD TRANSECTS

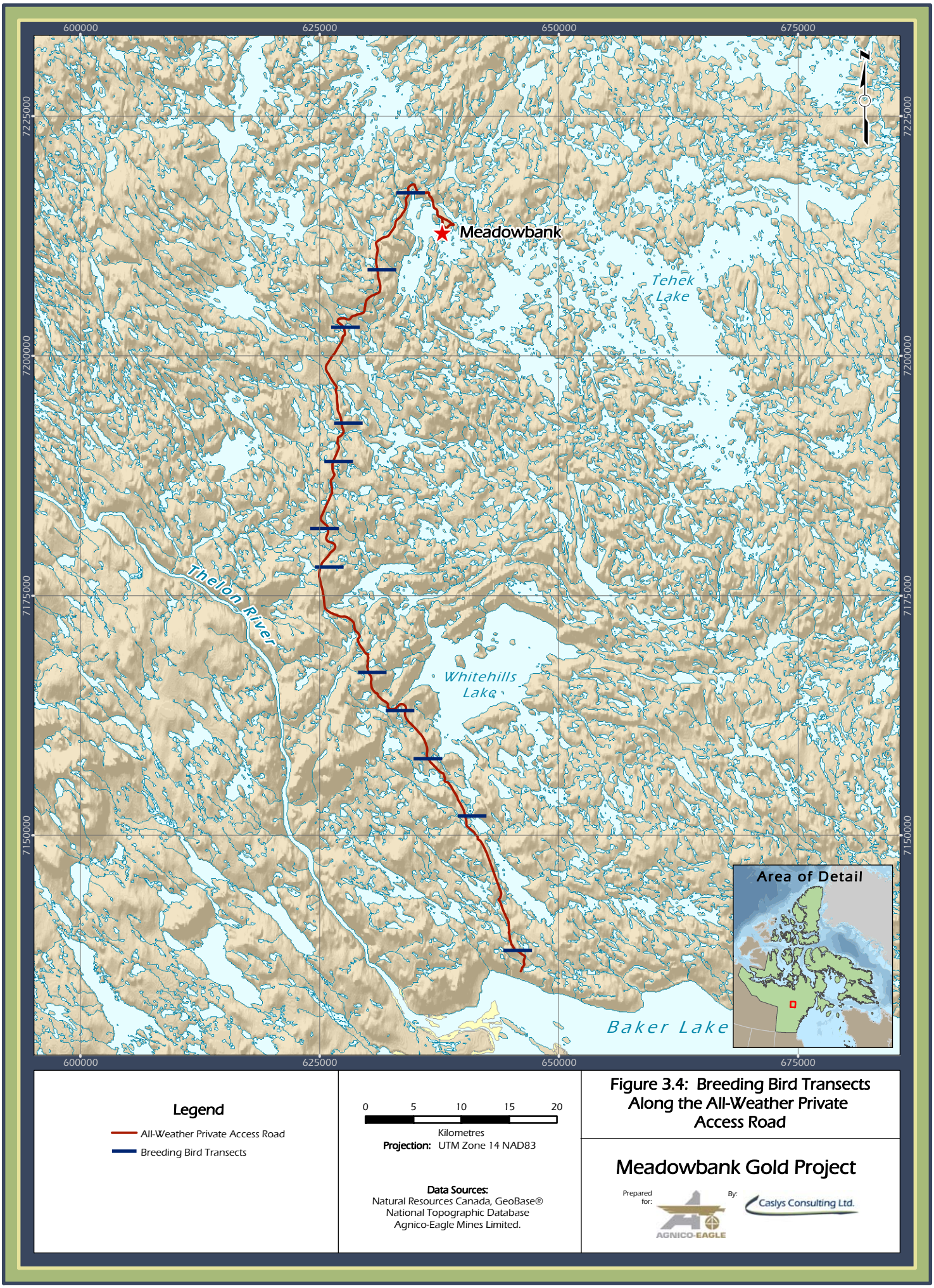
3.3.1 Survey Methodology

Twelve, 3 km long breeding bird transects bisecting the AWPAR (approximately 1.5 km on either side of the road) have been established for long-term monitoring purposes (refer to Figure 3.4). During each survey, results are recorded in 100 m intervals, so that potential 'zone of influence' or 'reduced habitat effectiveness' impacts can be identified (refer to data form in Appendix A). The 2005 and 2006 surveys were conducted prior to road development whereas 2007 surveys were conducted following partial completion of the road (bisecting transects 1-5). The 2007 data from transects 1-5 was analyzed separately from transects 6-12 to assess for the potential effects of road construction. The road extended through all transects after 2007. Transects were replicated twice in 2008 and three times in 2009.

Bird transect survey were conducted from July 3 to 14 in 2005, June 16 to 25 in 2006, June 17 to July 2 in 2007, June 22 to July 6 in 2008 and June 19 to July 4 in 2009. The bird transect survey was replicated three times in 2007, twice in 2008 and three times in 2009, with each replicate requiring between 2-4 days to complete. Start and end UTM coordinates of breeding bird transects along the AWPAR are provided in Table 3.5.

Table 3.5: UTM Coordinates of Breeding Bird Transects along the All-Weather Private Access Road.

Transect	NAD	East to West Coordinates	North South Coordinate (on road)
1	27	14W 0644200 to 0647200	14W 7138000
2	27	14W 0639450 to 0642450	14W 7152000
3	27	14W 0634800 to 0637800	14W 7158000
4	27	14W 0631900 to 0634900	14W 7163000
5	27	14W 0629000 to 0632000	14W 7167000
6	27	14W 0624500 to 0627500	14W 7178000
7	27	14W 0624000 to 0627000	14W 7182000
8	27	14W 0625500 to 0628500	14W 7189000
9	27	14W 0626500 to 0629500	14W 7193000
10	27	14W 0626200 to 0629200	14W 7203000
11	27	14W 0630000 to 0633000	14W 7209000
12	27	14W 0633000 to 0636000	14W 7217000



Legend

- All-Weather Private Access Road
- Breeding Bird Transects

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 3.4: Breeding Bird Transects Along the All-Weather Private Access Road

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

3.3.2 Statistical Approach

The 2009 data was added to the existing breeding bird dataset (2005-2008) and temporal trends in species community indices were refined and updated to assess for potential natural and mine-related changes in bird population dynamics as discussed in Section 4.3.1.

3.4 RAPTOR NEST SURVEYS

Surveys along the proposed AWPAR alignment in 2005 (i.e., prior to AWPAR construction) indicated that only low suitability habitat for nesting raptors was available. To construct the AWPAR in 2007-2008, excavated and blasted rock materials were utilized from numerous quarries along the alignment, resulting in localized habitat areas characterized by steep walls and overhangs that are suitable for nesting. Given the overall low probability of raptor occurrence within LSA and RSA areas, a specific raptor survey was not scheduled for 2009. Instead, raptor observations were integrated into on-going biweekly AWPAR ground surveys, mine site ground surveys as well as annual waterbird nest surveys.

If an active raptor nest is observed within 1 km of mine site facilities or the AWPAR, a site-specific nest management plan is to be developed or updated, as necessary, to mitigate potential mine-related impacts. The management plan will consist of recommendations to minimize the impact of mine-related activities on nesting raptors and may include, set-back distances, coordinated vehicle movements, noise reduction techniques, and limitations on blasting, if applicable. The GNDoE (DoE 2005) recommends aircraft buffer distances of at least 1.5 km. Other recommendations made by the GNDoE will be followed (refer to the TEMP for specific details, Agnico-Eagle 2006).

The status of the nest will be monitored on a weekly basis until young have fledged. In contrast, if any raptor nests are observed within 100 m of mine facilities, they are to be monitored on a daily basis. Where possible, nests will be observed from a distance of at least 100 m with a spotting scope, and information on behaviour, number of eggs, number of chicks, and number of fledged young will be determined, if feasible. If a monitoring distance of 100 m cannot be achieved, or raptor disturbance is observed during monitoring, frequency of monitoring should be adjusted accordingly to minimize potential monitoring-related impacts.

3.5 WATERBIRD NEST SURVEYS

3.5.1 Survey Methodology

Mine Site

Ponds, wetlands, lake shorelines and islands within 200 m of mine site facilities (200 m considered to be the approximate 'zone of influence' for waterfowl) were surveyed[4] (i.e., systematic ground searches by foot) in 2006 (9 to 14 July), 2007 (3 to 7 July), 2008 (3 July), and 2009 (July 1, 5-6) to

[4] Relative to 2006 and 2007, less rigorous waterfowl surveys with a reduced scope were carried out in 2004 (i.e., 27 July) and 2005 (16 to 19 July).

determine the occurrence and frequency of nesting waterbirds[5]. As AWPAR road construction had been completed at the time of the 2008-2009 waterfowl nest surveys, additional shoreline areas were surveyed within 200 m of the mine site roads, which overlapped certain mine site survey areas (refer to Figure 3.5).

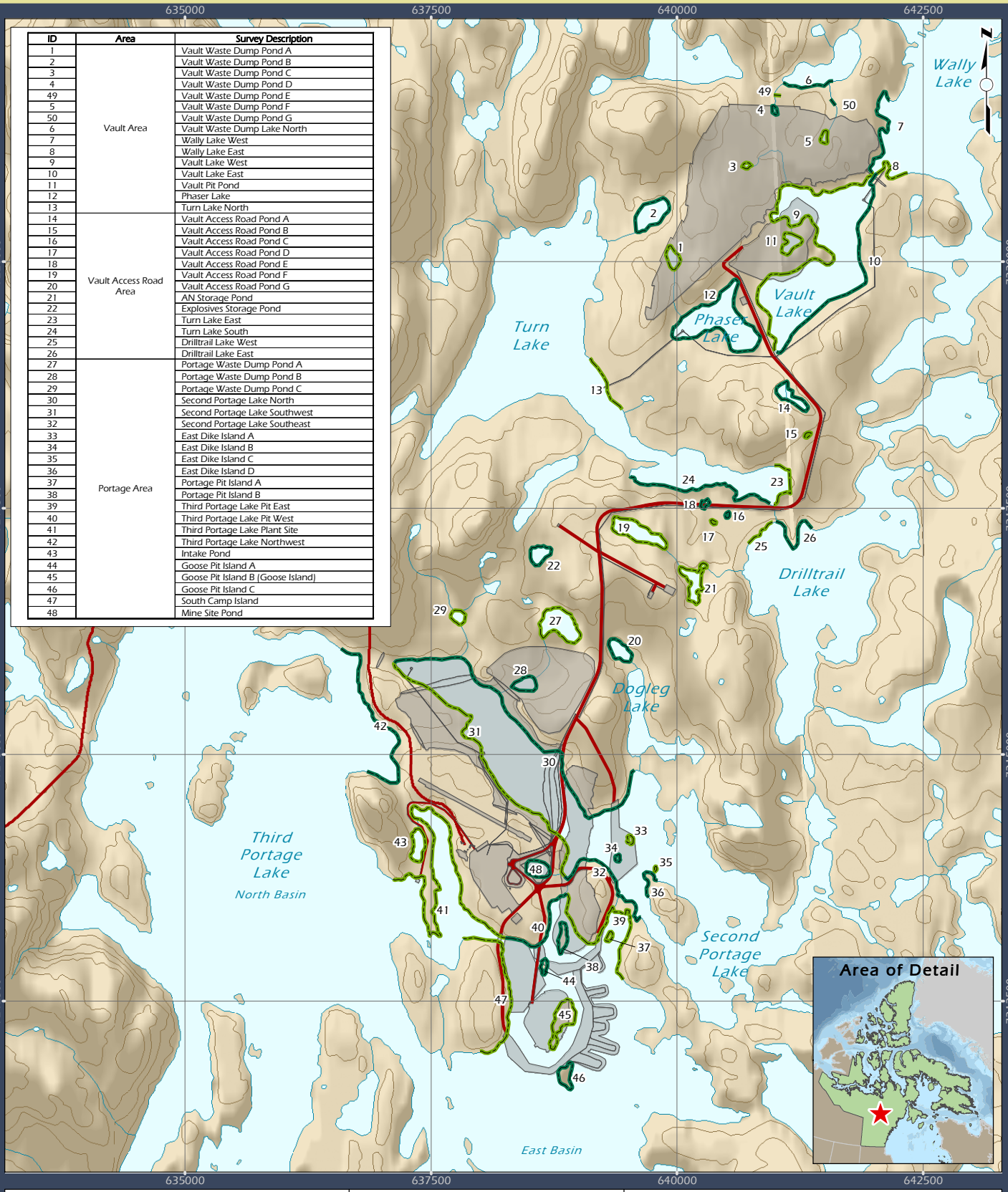
The survey protocol consists of two observers walking around the edges of islands, wetlands or shorelines, with one observer 5 m from the water's edge and the second observer 15 m from the water's edge (10 m between observers). Areas are assessed for indications of nesting waterbirds (i.e., ducks, swans, geese, jaegers) in potentially suitable sites within the Meadowbank mine site LSA, including: 1) islands in 3rd Portage and 2nd Portage lakes; 2) wetlands from the Vault to the plant site; 3) shorelines of portions of 3rd and 2nd Portage lakes; and 4) portions of Turn Lake, Phaser Lake, and Vault Lake. Details on the locations of each survey segment are provided in Table 3.6 and Figure 3.5. Observers use maps and UTM coordinates for orientation. The UTM locations (taken with handheld GPS units) of all waterbirds and their nests are recorded on datasheets (refer to Appendix A). An attempt is made to conduct the surveys within the first two weeks of July, when most waterbird species are expected to be nesting.

Given the low numbers of nesting waterbirds seen in the Meadowbank mine site LSA on nest surveys to date (2004 to 2009), the number of waterbirds nesting within 200 m of mine site facilities within any given year is predicted to be small. However, potential changes in waterbirds nesting distribution may occur and will continue to be documented and monitored, as necessary.

[5] Waterbirds are inclusive of waterfowl and shorebirds.

Table 3.6: Waterbird Nest Survey Areas at Meadowbank

Area	UTM Coordinates	~ Length (m)
Vault Area		
Vault Waste Dump Pond A	639957 7220019	500
Vault Waste Dump Pond B	639734 7220483	1,000
Vault Waste Dump Pond C	640692 7220984	300
Vault Waste Dump Pond D	640985 7221530	200
Vault Waste Dump Pond E	641026 7221667	200
Vault Waste Dump Pond F	641498 7221251	400
Vault Waste Dump Pond G	641602 7221608	100
Vault Waste Dump Lake North	641064 7221834 to 641587 7221826	600
Wally Lake West	642148 7221619 to 642006 7220903	1,300
Wally Lake East	642036 7220887 to 642344 7220910	300
Vault Lake West	641988 7220903 to 640989 7219091	4,000
Vault Lake East	642025 7220873 to 641008 7219080	2,300
Vault Pit Pond	641190 7220197	800
Phaser Lake	640433 7219451	2,800
Turn Lake North	639111 7219017 to 639430 7218486	600
Vault Access Road		
Vault Access Road Pond A	641116 7218642	1,000
Vault Access Road Pond B	641327 7218241	200
Vault Access Road Pond C	640503 7217424	200
Vault Access Road Pond D	640366 7217354	200
Vault Access Road Pond E	640269 7217554	300
Vault Access Road Pond F	639590 7217231	1,400
Vault Access Road Pond G	639408 7216062	700
AN Storage Pond	640188 7216775	1,200
Explosives Storage Pond	638599 7217023	700
Turn Lake East	640989 7217948 to 640975 7217539	700
Turn Lake South	640941 7217532 to 639512 7217810	1,600
Drilltrail Lake West	640964 7217372 to 640711 7217157	400
Drilltrail Lake East	640990 7217372 to 641383 7217298	1,100
Portage Area		
Portage Waste Dump Pond A	638800 7216329	1,300
Portage Waste Dump Pond B	638495 7215694	700
Portage Waste Dump Pond C	637767 7216377	500
Second Portage Lake North	637129 7215932 to 639571 7214870	3,700
Second Portage Lake Southwest	637129 7215928 to 638881 7213745	3,100
Second Portage Lake Southeast	638877 7213757 to 639638 7213348	1,300
East Dike Island A	639519 7214132	200
East Dike Island B	639386 7213946	100
East Dike Island C	639779 7213842	100
East Dike Island D	639724 7213556 to 639805 7213719	500
Portage Pit Island A	639297 7213159	300
Portage Pit Island B	638848 7213129	700
Third Portage Lake Pit East	638881 7213578 to 639445 7212713	1,900
Third Portage Lake Pit West	638858 7213596 to 638239 7213140	1,000
Third Portage Lake Plant Site	638239 7213140 to 637118 7213731	3,400
Third Portage Lake Northwest	636594 7216099 to 636854 7214829	2,100
Intake Pond	637352 7214046	900
Goose Pit Island A	638651 7212862	300
Goose Pit Island B (Goose Island)	638855 7212368	1,200
Goose Pit Island C	638855 7211729	700
South Camp Island	637827 7213125 to 637990 7211993	1,700
Mine Site Pond	638587 7213845	700
Total Survey Distance (m)		**51,500**



ID	Area	Survey Description
1	Vault Area	Vault Waste Dump Pond A
2		Vault Waste Dump Pond B
3		Vault Waste Dump Pond C
4		Vault Waste Dump Pond D
49		Vault Waste Dump Pond E
5		Vault Waste Dump Pond F
50		Vault Waste Dump Pond G
6		Vault Waste Dump Lake North
7		Wally Lake West
8		Wally Lake East
9		Vault Lake West
10		Vault Lake East
11		Vault Pit Pond
12		Phaser Lake
13		Turn Lake North
14	Vault Access Road Area	Vault Access Road Pond A
15		Vault Access Road Pond B
16		Vault Access Road Pond C
17		Vault Access Road Pond D
18		Vault Access Road Pond E
19		Vault Access Road Pond F
20		Vault Access Road Pond G
21		AN Storage Pond
22		Explosives Storage Pond
23		Turn Lake East
24		Turn Lake South
25		Drilltrail Lake West
26		Drilltrail Lake East
27	Portage Area	Portage Waste Dump Pond A
28		Portage Waste Dump Pond B
29		Portage Waste Dump Pond C
30		Second Portage Lake North
31		Second Portage Lake Southwest
32		Second Portage Lake Southeast
33		East Dike Island A
34		East Dike Island B
35		East Dike Island C
36		East Dike Island D
37		Portage Pit Island A
38		Portage Pit Island B
39		Third Portage Lake Pit East
40		Third Portage Lake Pit West
41		Third Portage Lake Plant Site
42		Third Portage Lake Northwest
43		Intake Pond
44		Goose Pit Island A
45		Goose Pit Island B (Goose Island)
46		Goose Pit Island C
47		South Camp Island
48		Mine Site Pond

Legend

- Survey Route (Note: Alternating colour to help with transect identification)
- Roads
- Mine Features

0 500 1,000 1,500

Metres

Projection: UTM Zone 14 NAD83

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

Figure 3.5: Meadowbank Waterbird Nest Survey Locations

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

All-Weather Private Access Road

Waterbird nest surveys have been conducted along the AWPAR in 2007, 2008 and 2009. In 2007, surveys were limited to recently completed sections of the AWPAR, whereas in 2008 and 2009, surveys were conducted along the entire length of the AWPAR between Baker Lake and the mine site. Protocols are akin to those outlined above for the mine site. Details on the locations of each survey segment are provided in Table 3.7 and Figure 3.6. Individual detailed map sheets and corresponding survey results are provided in Figures 4.21 to 4.30.

Table 3.7: Waterbird Nest Survey Locations along the AWPAR.

		Starting Location		End Location		
Mapsheet	Label	Easting	Northing	Easting	Northing	Length (m)
A	L1	644795.21	7138862.01	644727.72	7139029.93	234.84
A	L2	645019.15	7139759.40	645012.12	7139890.05	331.55
A	L3	644560.81	7140685.44	644551.00	7140909.00	366.31
A	L4	644129.87	7142997.49	644029.18	7143222.28	308.22
A	L5	643613.90	7143489.39	643749.91	7143769.98	687.38
A	P1	646241.31	7137151.71	646235.23	7137241.49	259.35
A	P2	645726.17	7137914.16			208.64
A	P3	645459.68	7138214.38			167.89
A	P4	645338.07	7138607.67			387.23
A	P5	644653.00	7139716.00			126.06
A	P6	644625.00	7139826.00			120.60
A	P7	644989.51	7140458.44	644985.08	7140534.94	96.00
B	L6	643974.91	7144626.46	643861.79	7144938.22	813.69
B	L7	642927.68	7146298.94	642899.02	7146375.70	477.58
B	L8	641845.00	7149429.00			621.96
B	L9	641069.66	7150020.10	640587.00	7150516.00	850.65
B	P10	643281.15	7146539.30	643265.43	7146582.67	118.06
B	P11	643131.44	7146949.82	643108.99	7147013.89	79.29
B	P12	642238.79	7148153.99	642226.58	7148181.01	74.23
B	P13	641341.85	7149517.90	641335.78	7149601.59	193.89
B	P8	643428.64	7146132.73	643399.18	7146204.00	313.81
B	P9	643371.40	7146290.60	643333.23	7146395.72	417.68
C	L10	640175.83	7150933.22	640659.18	7150990.59	645.54
C	L11	640135.66	7151223.31	640553.54	7151139.54	553.72
C	L12	640468.00	7151871.00	640424.73	7152064.88	411.75
C	L13	640334.60	7152453.94	640285.00	7152612.00	180.07
C	L14	639801.10	7153564.02	639679.51	7153769.87	273.76
C	L15	637878.24	7155800.79	638635.05	7155608.38	893.89
C	L16	637839.32	7155924.00	638288.38	7155781.30	504.31
C	L17	637494.31	7156375.87	637103.16	7156798.46	636.55
C	P15	639056.00	7154470.00			120.46
D	L18	634672.55	7161199.60	634646.00	7161232.00	58.97

		Starting Location		End Location		
Mapsheet	Label	Easting	Northing	Easting	Northing	Length (m)
D	L19	633391.25	7163381.78	633125.26	7163116.70	497.83
D	L20	633133.59	7163710.83	633036.08	7163613.59	354.97
D	P16	636495.95	7157422.78	636418.51	7157506.43	231.23
D	P18	636492.00	7157921.00			156.80
D	P19	636572.00	7157945.00			113.80
D	P20	635079.74	7161370.80	635034.29	7161420.77	207.29
D	P21	634079.00	7161788.00	633981.16	7161918.38	179.42
E	L23	630170.00	7167629.00	630166.18	7168199.23	674.52
E	L25	630268.31	7169444.62	629877.04	7169287.57	722.27
E	L26	628904.81	7169951.80	628872.80	7170162.32	254.89
E	P22	631201.09	7164702.69	631159.65	7164732.62	77.41
E	P23	630957.00	7164877.00	630827.49	7164972.93	257.26
E	P24	630710.25	7165060.21	630648.25	7165122.97	94.07
E	P25	630369.00	7168586.00			72.16
F	L27	629346.18	7170317.24	629387.83	7170521.86	519.57
F	L28	628577.00	7171217.27	628493.65	7171379.49	202.46
F	L29	628396.45	7171969.76	628413.50	7172209.38	419.72
F	L65	627678.18	7172586.40	627656.04	7172587.84	23.47
F	P27	628836.14	7171734.00	628833.39	7171752.03	611.14
F	P28	628218.00	7172381.00			443.86
F	P29	626808.87	7172832.36	626763.30	7172853.42	335.44
G	L30	626245.24	7180293.96	626130.16	7180331.84	342.28
G	L31	626219.31	7180739.51	625992.54	7180819.64	347.54
G	L32	625757.12	7182581.00	625636.17	7182653.05	144.81
G	P30	625060.86	7178454.83	625095.95	7178518.03	245.37
G	P31	626613.00	7180418.00			208.49
G	P32	625587.00	7181072.00			206.00
G	P33	625336.99	7182828.87	625295.00	7182859.00	127.66
H	L34	626029.00	7186206.00	625972.00	7186989.00	821.22
H	L35	626422.02	7186325.80	626385.21	7186943.92	727.11
H	L36	626519.05	7188356.12	626511.23	7188599.21	355.56
H	P34	626174.67	7187658.89	626185.00	7187721.00	77.68
H	P35	626540.00	7188999.00			176.34
H	P36	626547.94	7189825.22	626561.15	7189856.06	398.39
I	L37	627585.04	7191834.31	627600.36	7191856.10	32.65
I	L38	627299.27	7192147.97	627699.29	7192038.69	446.01
I	L39	627253.94	7192265.53	627713.88	7192081.59	607.52
I	L40	626530.95	7196642.37	626554.00	7196682.00	83.54
I	P37	627671.57	7192337.47	627652.85	7192384.92	359.84
I	P38	627071.00	7194514.00	627078.66	7194624.75	425.66
J	L42	627377.33	7202686.95	627262.87	7202946.30	341.34
J	L43	627263.86	7204129.87	627415.06	7204130.20	219.91

		Starting Location		End Location		
Mapsheet	Label	Easting	Northing	Easting	Northing	Length (m)
J	L44	627436.32	7204135.46	627715.12	7204070.65	289.71
J	P39	625862.97	7198739.03	625862.99	7198745.98	336.52
J	P40	627575.00	7202152.00			134.03
J	P41	627449.36	7202291.53	627446.42	7202308.18	135.35
J	P42	627182.00	7203559.00			183.27
J	P43	627687.00	7203696.00			150.68
J	P44	628005.00	7203872.00			109.25
J	P45	628054.00	7203902.00			185.17
J	P46	628556.00	7204084.00			367.06
K	L45	629543.09	7205327.10	629575.48	7205408.03	331.77
K	L46	631133.32	7207201.95	631131.62	7207322.54	142.77
K	L47	630696.19	7209721.61	630696.19	7209996.57	304.99
K	L48	630696.22	7210039.29	630697.31	7210122.00	112.30
K	L49	631184.57	7210508.68	631219.04	7210586.42	307.31
K	P47	630625.13	7206551.96	630658.97	7206560.88	51.51
K	P48	630999.27	7206650.43	631058.13	7206678.09	272.79
K	P49	630740.00	7210309.00			202.56
K	P50	630759.94	7210629.79	630799.44	7210676.51	76.34
K	P51	631235.00	7210917.00			145.56
L	L50	633981.54	7214758.23	634222.42	7215649.84	1,009.96
L	L51	633758.00	7215321.90	633773.79	7215445.68	305.05
L	L52	633800.00	7215641.00	633816.50	7215736.68	827.61
L	L53	634094.25	7217452.41	634124.71	7217564.95	294.62
L	L54	634387.46	7217869.75	634414.10	7217883.86	34.50
L	L55	634586.00	7218013.23	634719.68	7218088.53	318.35
L	L64	634488.96	7216961.24	634490.55	7216997.65	37.28
L	P52	634070.00	7216136.00			271.78
M	L57	636353.44	7217257.82	636460.55	7217220.27	131.26
M	L58	636718.39	7216019.00	637109.39	7214713.00	1,657.22
M	L60	637302.13	7214405.85	638307.48	7213136.01	2,010.54
M	L61	638585.00	7213922.00			689.98
M	L62	638894.68	7213992.83	639118.03	7213928.53	648.07
M	L63	638696.08	7213450.57	638888.66	7213476.39	374.43
Total Survey Distance						**37,839.07 m (37.8 km)**

610000 620000 630000 640000 650000 660000

7220000 7210000 7200000 7190000 7180000 7170000 7160000 7150000 7140000

N

L M K J I H G F E D C B A

Tehek Lake

Thelon River

Whitehills Lake

Baker Lake

610000 620000 630000 640000 650000 660000

Legend

All-Weather Private Access Road

Mapsheets

0 5 10 15

Kilometers

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 3.6: Meadowbank Waterbird AWPAR Nest Survey Locations - Map Index

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

3.6 MINE SITE GROUND SURVEYS

3.6.1 Mine Site Inspections

Agnico-Eagle environmental department personnel conduct daily mine site inspections focusing on waste management, spills, hazardous waste management and wildlife monitoring. Formal mine site inspections are carried out a minimum of once per week as part of the broader environmental on-site management. During these inspections, non-conformities are identified and addressed. Specifically, the results of these formal inspections are scored and weighted as part of the mine operations productivity bonus as an incentives program for performance in meeting milestones, mining productivity targets and environment targets.

As part of the weekly inspections, technicians conduct:

- Regular monitoring of Caribou and Muskox (*Ovibos moschatus*) in the vicinity of the mine site facilities; if risks to animal health are perceived, efforts will be made to ensure the right of way is provided for the animals and preventative measures are put in place to prevent exposure to potentially hazardous conditions;

- Regular monitoring of all large mammals on- site; and

- Periodic inspections of waste management areas, bins and hazardous material storage.

The primary objective of the daily and weekly inspections is to ensure that construction and mine activity continues to meet the following goals:

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

2. Main mine facilities are consolidated in one area, and temporary workplaces and material lay-down areas are designated and clearly delineated; and

3. 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.

During the daily and weekly inspections conducted in 2009, few wildlife related non-conformities were identified (discussed in Section 5.15). Since much of the mine site construction activity was completed in 2008, the mine footprint did not change in 2009. As a result, the environmental inspections and coordination on-site focused on ensuring that no ancillary construction activity was undertaken without environmental notification. No such activity was noted.

3.6.2 Incidental Mine Site Wildlife Observations

All mine site personnel are required to document and report wildlife observed within the boundaries of Meadowbank camp as well as the constructed mine site and ancillary areas. This documentation ensures that wildlife is being adequately managed and that potential problem animals, as per Appendix A - Section 2.2.8 (Reporting Wildlife Observations and Incidents) of the TEMP (Agnico-

Eagle 2006), are identified. New construction and support personnel working and staying at Meadowbank camp are acquainted with the documentation requirements and reporting procedure, which involves filling out a wildlife log form located in a designated area. Information recorded on log forms includes:

- Observer Name
- Date
- Time
- Wildlife Species Observed
- Count
- Location
- Details / Comments

Completed incidental wildlife log forms are 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 (Section 3.6.1) are consolidated and entered into a database (results discussed in Section 4.6).

3.6.3 Waste Management and Landfill

Operation and management of the waste generated at the mine site is an important component of wildlife management. In 2009, the Waste Management Plan required an adaptive approach as the site transitioned through the construction phase. As a result, the waste segregation on-site improved from 2008 through the implementation of a centralized waste management area for waste segregation as well as suitably covered (i.e., to prevent animal access to food waste) yellow garbage bins located throughout the mine site for designated incinerator waste. General waste bins (i.e., the large red bins on-site designated for on-land disposal) are inspected prior to their transport and disposal in the landfill.

Formal weekly inspections (and informal daily inspections) of the mine facilities are conducted to ensure that garbage is being handled appropriately, aromatic substances are not left in the open, and the incinerator is working efficiently. Any areas of concern are noted in the weekly reports. If an item is considered to be non-conforming, the appropriate mine staff are guided on the respective procedures and a follow-up inspection is completed to ensure the issue has been handled appropriately.

3.7 ALL-WEATHER PRIVATE ACCESS ROAD SYSTEMATIC GROUND SURVEYS

3.7.1 Survey Methodology

Surveys of the proposed alignment of the AWPAR were initially conducted by snowmobile between 2004 and 2005; however, as the information gathered during the surveys was predominantly observational in nature, results could not be analyzed statistically.

Construction of the AWPAR commenced in early 2007, and systematic ground surveys were initiated utilizing an all-wheel drive vehicle shortly thereafter. The distance covered by the systematic ground surveys increased throughout 2007 as the road construction continued northward from Baker Lake. In March 2008, AWPAR construction was completed, thereby establishing an overland route between Baker Lake and Meadowbank Camp.

The survey team typically includes one driver and one observer. 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. 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 AWPAR Systematic Ground Surveys as has been indicated for On-Site Systematic Ground Surveys (refer to field data form in Appendix A). These surveys are on-going at an average frequency of two times per week, contingent on weather conditions. Results of the AWPAR systematic ground surveys are provided in Section 4.7.

3.7.2 Statistical Approach

Summary counts and the number of surveys in which species were detected were summarized as a function of season. The majority of species were typically sighted intermittently with the exception of Caribou and waterfowl; therefore, Caribou and waterfowl data was further summarized by date of survey. In addition, histograms of sightings as a function of distance from road and group size were summarized for Caribou to assess the actual sightability distance of Caribou as a function of distance from road and season of survey. Bird species that were recorded by observers as flying over the road were not considered in the analysis given that actual utilization of the road area was indeterminate.

3.7.3 Road Related Mortality

Recently deceased wildlife species that were observed during the AWPAR systematic ground surveys were recorded and compiled at the end of 2008 and 2009. In each case, an attempt to ascertain the cause of death was made using the following categories: natural mortality, predation, anthropogenic (e.g. vehicular collision) or unknown cause. In the case of larger kills, such as Caribou, the accuracy of field information was verified via comparison to incident investigation reports, a requirement as stipulated in the TEMP. A cumulative summary of observed road mortalities results along the AWPAR is provided in Section 4.7.1.

3.8 HARVEST STUDY

3.8.1 Approach

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 AWPAR. The harvest study has similarities to the Nunavut Wildlife Harvest Study (NWMB 2005) and the Inuvialuit Harvest Study. Some of the primary differences between these studies and the Meadowbank study are that the study focuses on only three mammal species and four fish species (refer to Section 3.8.3 for details) and is only being conducted in one community (Baker Lake). Since 2007, the harvest study has been conducted annually in collaboration with the Baker Lake HTO and an Agnico-Eagle appointed harvest study administrator. In 2009, AREVA Resources Canada Inc. (AREVA) entered into a data and cost-sharing agreement with Agnico-Eagle; however the implementation of the harvest study has remained the same. Agnico-Eagle and AREVA recognize that communication with participants is of high importance to ensure study success through adequate participation rates and accurate reporting.

3.8.2 Objectives

The primary objectives of the Meadowbank Harvest Study are to:

1. Gather information on Caribou, Muskox and Wolverine (*Gulo gulo*) harvest (i.e., animals retrieved) rates and Inuit-use patterns in the Baker Lake area;
2. Gather information on Arctic Char (*Salvelinus alpinus*), Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*) and Arctic Grayling (*Thymallus arcticus*) catch rates and Inuit-use patterns in the 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 AWPAR proposed for the project;
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.

3.8.3 Wildlife and Fish Species Included in the Study

The wildlife species for which harvest data is being collected is currently limited to Caribou, Muskox and Wolverine. The few species in the study were deliberately chosen to simplify data entry and collection.

To support creel surveys, data on fish harvest (Arctic Char, Lake Trout, Lake Whitefish, and Arctic Grayling) is also requested, the results of which have been submitted to Agnico-Eagle in a separate year-end memo.

3.8.4 Participants

Both Inuit and non-Inuit residents of Baker Lake, at least 16 years of age, are eligible to participate in the harvest survey.

3.8.5 Timing

In 2007, forty (40) participants contributed to the Hunter Harvest study; however, the majority of those only provided cursory data for the first few months of the calendar year during an initial interview. Specifically, only nine participants recorded data for more than one month in 2007. To account for this apparent decline in participation, additional trips were made to Baker Lake in 2008 and 2009 (May, July and October) to sign up participants, promote the study and encourage participants to enter data each month. In 2008 and 2009, sixty-three (63) and eighty-two (82) prospective study participants were selected for inclusion in the study, respectively. Study participant selection is based on previous year's participation as well as recommendations from Agnico-Eagle personnel and local area residents. In addition, local area residents are encouraged (via radio address and marketing material placed in strategic locations [e.g., post office and Northern Store]) to voluntarily sign up for the study each year at the Baker Lake HTO and Agnico-Eagle offices.

In early 2008 and 2009, a sign-up sheet and calendars were made available at the Agnico-Eagle office following the initial radio address and posting of promotional materials around the hamlet. In 2008, Baker Lake HTO involvement was limited as a result of temporary board dissolution, which resulted in short staffing. In May 2008, a preliminary meeting was held with interim HTO board members followed by a detailed meeting with the newly formed HTO board in October 2008. The objectives of the October 2008 meeting were to present an overview of the study and establish HTO interest and participation for subsequent years of the Hunter Harvest study. In early 2009, a sign-up sheet and calendars were also made available at the HTO office, resulting in eight new participant sign-ups.

3.8.6 Survey Method Details

The harvest calendar is visually appealing and consists of local photographs of wildlife and Baker Lake residents (refer to Appendix B). Space is provided for each calendar day where harvest details can be documented. A map of the study area is provided at the end of the calendar, which is divided into 4 km^2 UTM grid cells. Each cell has a unique location code to facilitate recording of information. When calendars are issued, participants / participating households are encouraged to write harvest details (e.g., number of animals, sex, age and location [i.e., grid code]) for the appropriate date on the calendar. The harvest study administrator is responsible for contacting participants regularly in person or via telephone and collecting and reviewing completed calendars on an annual basis. Harvest results are summarized on data entry sheets and included in the harvest study database for subsequent statistical analysis.

In 2008 and 2009, prospective participants were contacted via telephone in April and September and asked if any information had been recorded in the calendar to-date. Those individuals who had entered data in their calendars were interviewed during the May and/or October trip to Baker Lake and resulting data was recorded. In some instances, the assistance of a translator was required. Supplementary information was also collected during the interviews to complement calendar data, which included notable Caribou movements, aggregations and unique observations. Since 2008, a

visit to Baker Lake has been conducted in January/February to collect the calendars from the previous year and conduct supplementary interviews of participants that did not hand in their calendars. The annual prize draw is also conducted during this visit, which is typically held at the Agnico-Eagle office. Prize draw results are announced the following day on the local radio. Where possible, prizes are handed out in person along with a new calendar to encourage continued participation. New calendars are also promoted and distributed to additional prospective participants during this time.

3.8.7 Promotion

Where possible, calendars (Appendix B) are hand-delivered to prospective participants. Where calendars cannot be hand delivered, they are placed in the post office boxes of prospective participants along with English and Inuktitut instructional/promotional flyers (refer to Appendix B), which are posted around the community. During the May visit each year, additional promotional flyers are re-posted at high foot traffic locations. The flyers briefly outline the study purpose and provide applicable contact and calendar pick-up information. Radio addresses have been made on a minimum of two occasions each year since study inception each year during opportune times (e.g., immediately prior to Bingo games, when listenership is high) to announce the study winners, associated prizes, and to promote the study.

To reward participation at the end of each study year, active participants are provided with one raffle ticket for each month of involvement. A raffle draw is then held for a number of quality prizes that are of interest to hunters and anglers.

3.8.8 Data Analysis and Reporting

Harvest data is analyzed at the end of each study year, the results of which are summarized in Section 4.8, including information on spatial distribution, seasonal patterns, and harvest rates. In addition, a preliminary comparison of 2007, 2008 and 2009 Hunter Harvest study data is compared to baseline conditions for land use and traditional hunting areas obtained from the Nunavut Wildlife Management Board (NWMB) harvest study.

3.9 RADIO-COLLARING PROGRAM

Agnico-Eagle is assisting the GNDoE in a Caribou radio-collaring program within the Meadowbank RSA. The joint radio-collaring program was developed to provide information on the distribution of Caribou occurring within the Meadowbank RSA and contribute data to other ongoing radio-collaring programs for the Beverly and Qamanirjuaq herds. This program, along with GNDoE regional data, is also serving to provide a regional perspective on Caribou behaviour near mine operations. Information on the identification of various herds that use the RSA at different times of the year is an important component of ongoing monitoring efforts at the Meadowbank Mine and along the AWPAR.

The program involves a joint commitment between Agnico-Eagle and GNDoE to:

- Collar caribou within the Meadowbank RSA. Timing and logistics of collar placement have been discussed with GNDoEs Kivalliq Regional Wildlife Biologist;
- Agree on suitable timing for radio-collaring program each year;

- Share Caribou data from proposed radio-collaring program and other data sources; and
- Conduct data analyses.

Agnico-Eagle has committed to:

1. Pay for cost of Global Positioning System (GPS) collars and break-away devices (i.e., a 3-year drop mechanism);
2. Pay for costs of annual data access costs (ARGOS);
3. For collar deployment, pay for costs of helicopter and pilot with suitable experience and acceptable to the GNDoE wildlife biologist; and
4. Retrieve collars of deceased animals and those that have dropped off after three years if economically feasible. Collars remain the property of Agnico-Eagle after drop-off.

The GNDoE has committed to:

1. Source and obtain GPS collars;
2. Collect radio-collaring data from ARGOS and make this available to Agnico-Eagle; and
3. Provide access to data from other radio-collaring programs in the region with relevance to the Meadowbank project.

An initial commitment of 15 collars was made by Agnico-Eagle. Collaring was originally scheduled to commence in 2007, but was postponed for one year due to logistical constraints. Of the ten collars scheduled to be placed on Caribou in 2008, nine were deployed in May 2008. One collar was not used due to a deficiency but was repaired and deployed in November 2009. In 2008, Agnico-Eagle made a commitment of an additional 10 collars to supplant the indefinite suspension of RSA and LSA aerial surveys, leaving a total of 16 collars that needed to be deployed to fully achieve this commitment. Additionally, AREVA committed to a 10-collar satellite-collaring program. In November 2009, 11 collars supported by Agnico-Eagle and 10 collars supported by AREVA were deployed.

Of the nine collars deployed in May 2008, only two are still active, whereas nineteen (19) collars of the November 2009 deployment were transmitting data to the end of 2009. Currently, twenty-one (21) radio-collars are being tracked with results being downloaded on a regular basis. The remaining five collars committed to by Agnico-Eagle will be deployed in subsequent years.

3.10 ENVIRONMENTAL HEALTH MONITORING

No environmental health monitoring was conducted in 2009. Environmental health monitoring sampling methodology and results-to-date are provided in the 2008 Wildlife Monitoring Summary report. The nest round of environmental health monitoring is scheduled for 2011, which will coincide with the first full year of mining operations.

3.11 CHECKLIST SURVEYS

Environment Canada's Canadian Wildlife Service (Yellowknife) has requested the collection and submission of bird checklist survey information on an annual basis. The surveys are not part of Agnico-Eagle's long-term management or monitoring plans but are completed to assist the federal government's efforts in assessing bird distribution and abundance across the Arctic. 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 2009 is provided in Table 3.8.

Table 3.8: Checklist Survey Effort per Month – 2003 to 2009.

	2003	2004	2005	2006	2007	2008	2009
February					1		
March					1		
May	3				4	1	
June	9	10	14	12	18	13	14
July			16	10	5	7	5
August		4	4		1	1	
September				2	2	2	
November					1		
TOTAL	**12**	**14**	**34**	**24**	**33**	**24**	**19**

3.12 MINE SITE BREEDING BIRD NEST SURVEYS

Similar to 2008, suitable breeding bird habitat areas in the vicinity of mine infrastructure were surveyed during daily and weekly mine site inspections (Section 3.6.1). No breeding bird nest sites were identified in 2009; as a result, no mitigation measures were implemented.

SECTION 4 • RESULTS

4.1 HABITAT MAPPING

2009 construction activities consisted of principal mine site construction and exploration camp infrastructure upgrades. The remainder of mine site construction will continue through the first quarter of 2010. As a result of the revised construction schedule, the analysis of project-related habitat disturbance was deferred to 2010, following significant completion of both the mine site and ancillary facilities[6], for inclusion in the 2010 Wildlife Monitoring Summary Report.

4.2 BREEDING BIRD PLOTS

4.2.1 Summary of Data to Date

Mine site construction was well underway at the mine site at the time of the 2009 surveys, which allowed for an assessment of potential mine-related effects. 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.

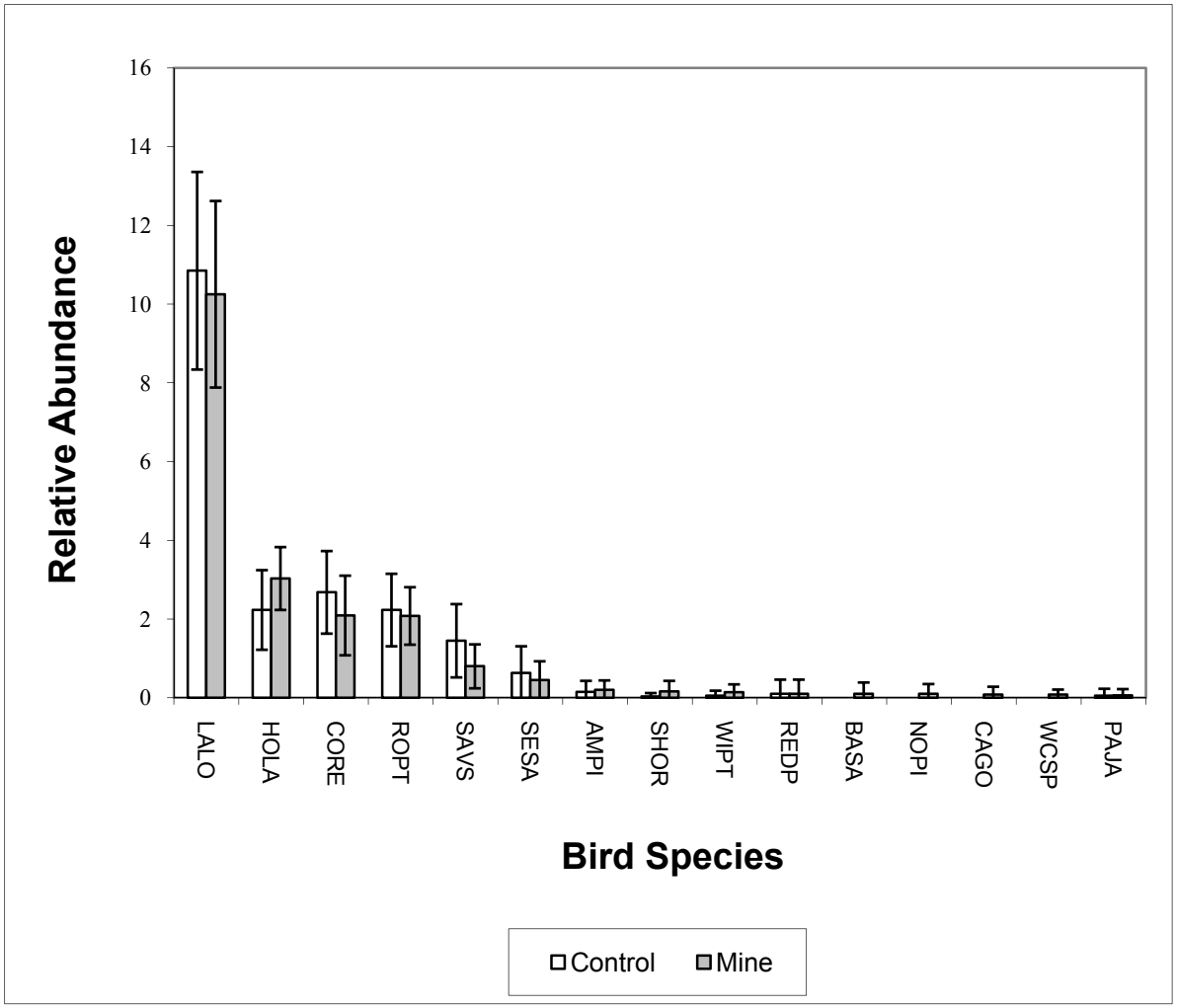
In 2008, existing ELC land classification composition (baseline) was compared for both reference / control and mine site plots to evaluate the similarity in habitat composition between areas. As intended, no significant statistical differences were identified between reference / control and mine areas, thereby validating the use of each area for comparative purposes during mine site construction and operation. Additional details pertaining to historical comparative analyses are available in the 2007 and 2008 Wildlife Monitoring Summary Reports.

4.2.1.1 Species Relative Abundance

Bird species abundance in 2009 was similar across mine and reference / control site plots with the confidence intervals for mean counts per plot overlapping for all species (Figure 4.1).

[6] based on the current construction schedule.

Figure 4.1: Relative Abundance (Mean Birds Counted per Plot) for the 15 Most Common Bird Species. Relative Abundance was Averaged across Years for Estimates. Error Bars are 95% Confidence Intervals.



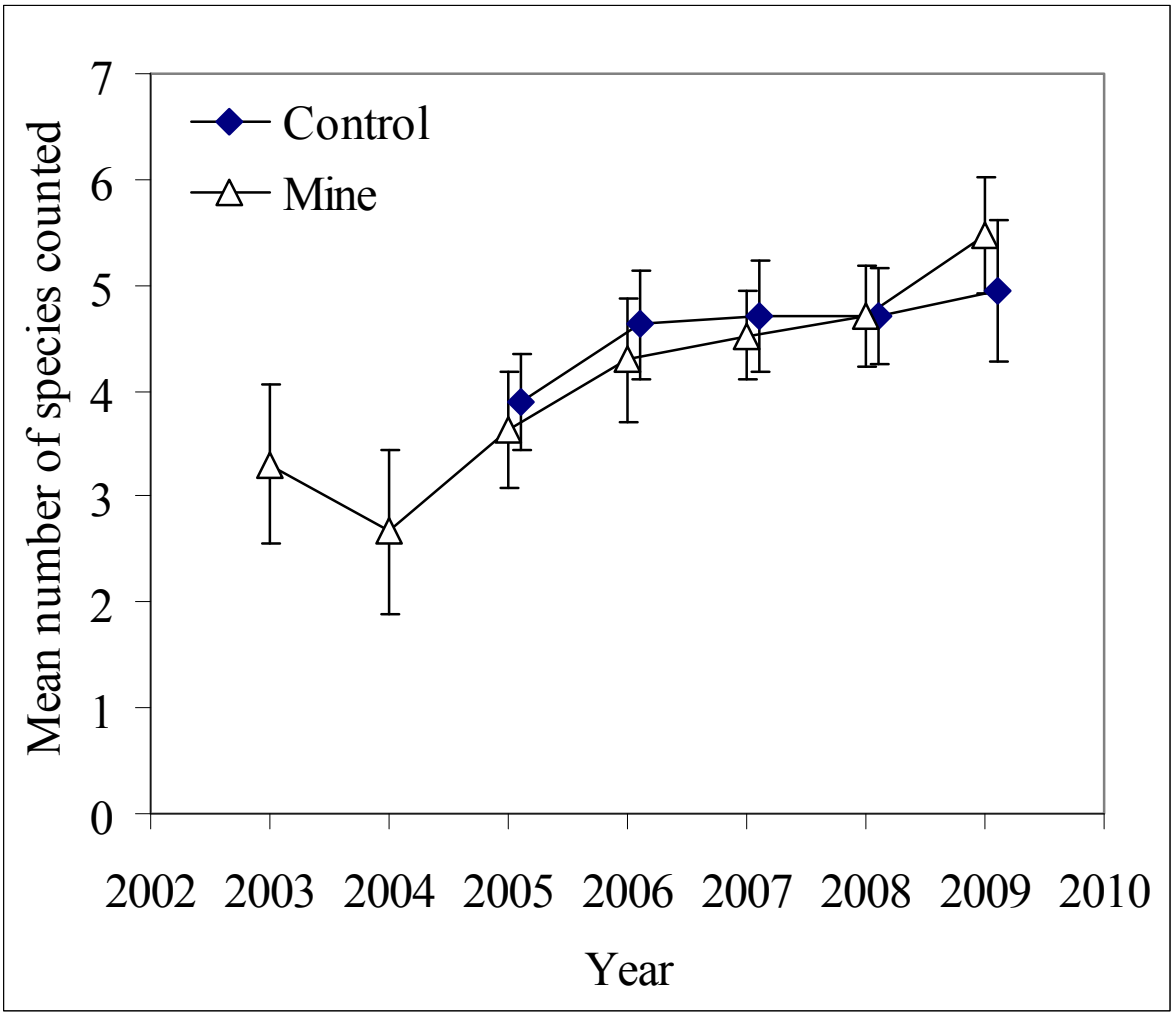
Lapland Longspur (LALO), Horned Lark (*Eremophila alpestris*) (HOLA), Common Redpoll (*Carduelis flammea*) (CORE) and Savannah Sparrow (*Passerculus sandwichensis*) (SAVS) are the most common species (Figure 4.1).

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 (in 2008 and 2009), or effects of the distance of the plot from mine areas (at α=0.05). However there was a marginally negative trend in abundance (χ^2=3.09, df=1, p=0.08).

4.2.1.2 Species Richness

Species richness (i.e., the mean number of unique species counted at plots) was initially compared graphically (Figure 4.2). Species richness in 2009 continued to be similar between mine and reference / control site plots. A trend of increasing species richness is also evident. Poisson regression results suggested that a linear trend in species richness existed when all of the years of data-to-date were considered (χ^2=17.69, df=1, p<0.0001). The effect of distance from disturbance (i.e., construction or operation) on mine site plots (χ^2=1.29, df=2, p=0.52) was not significant.

Figure 4.2: Species Richness (the Mean Number of Species Counted at Plots) as a Function of Year of Survey and Plot Location.



Inspection of the raw data revealed that American Golden-Plover (*Pluvialis dominica*) (AGPL), Dunlin (*Calidris alpina*) (DUNL) and Herring Gull (*Larus argentatus*) (HERG) appeared for the first time in the mine site plots in 2009 whereas Parasitic Jaeger (*Stercorarius parasiticus*) (PAJA), Sandhill Crane (*Grus canadensis*) (SACR), Semipalmated Plover (*Charadrius semipalmatus*) (SEPL) and unidentified shorebird (SHOR) appeared for the first time in reference / control sites plots in 2009. Of

the new species that appeared in mine plots in 2009, Herring Gull was also identified in control plots in 2006 and 2007. Similarly, American Golden-Plover was identified in control plots in 2008. In contrast, Dunlin had not been previously seen in either mine or control plots

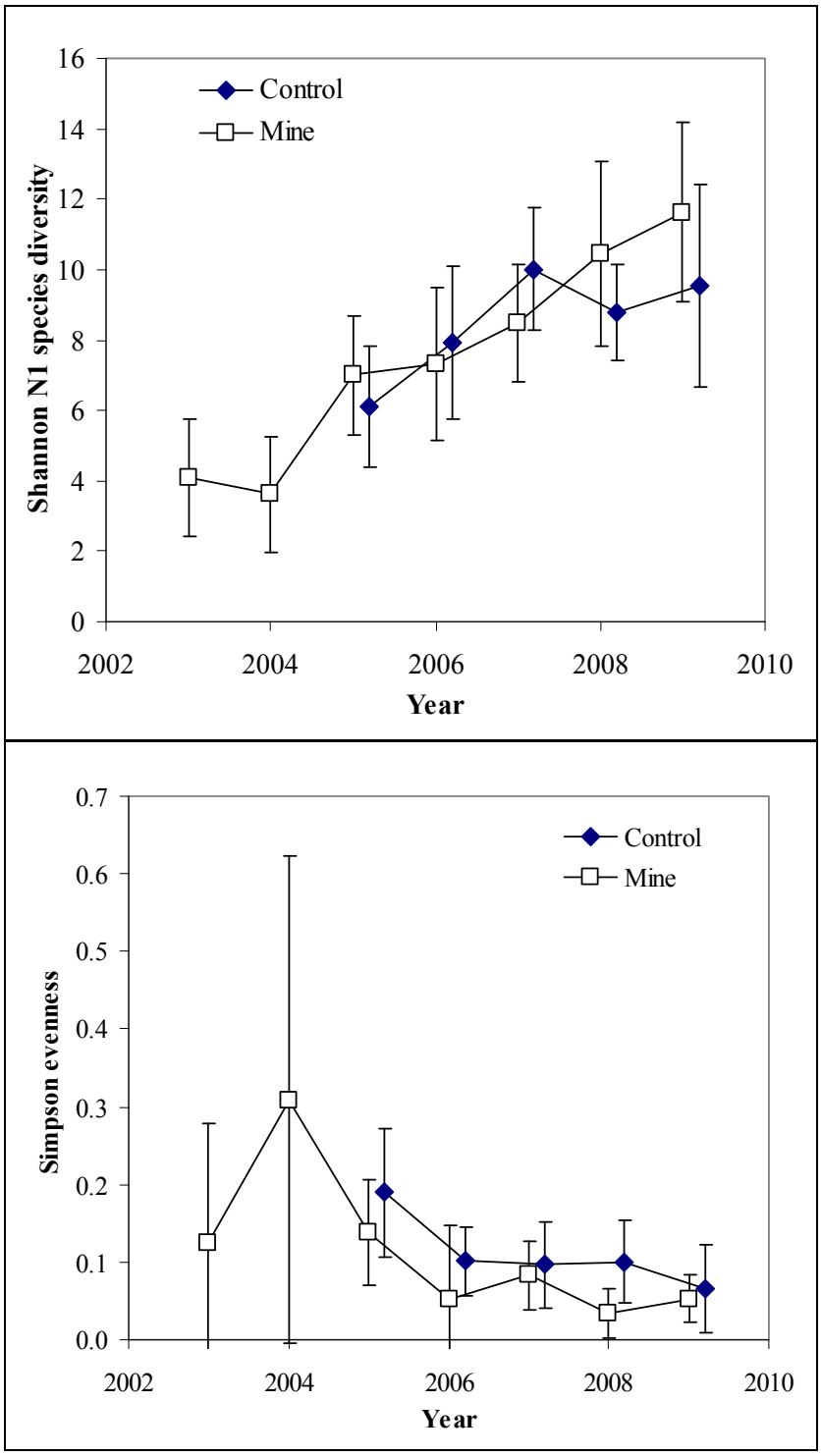
Table 4.1: New Species Identified in Reference / Control and Mine Site Plots for Each Year Surveyed.

Location	Year	New Species				
Control	2005	CAGO				
Control	2006	HORE	PESA	RBME	RTLO	
Control	2008	AGPL				
Control	2009	PAJA	SACR	SEPL	SHOR	
Mine	2006	LTJA	SAND	SEPL		
Mine	2007	SNBU	WCSP			
Mine	2008	AMRO	CAGO	LESA	SACR	SHOR
Mine	2009	AGPL	DUNL	HERG		

4.2.1.3 Species Diversity

Results to date indicate that both the mine and reference / control sites were heavily dominated by Lapland Longspur (LOLA), Horned Lark (HOLA), Savannah Sparrow (SAVS), Common Redpoll (CORE) and Rock Ptarmigan (*Lagopus muta*) (ROPT), as illustrated in Figure 4.1. Most other species were only occasionally sighted on plots. The Shannon N1 species diversity and evenness were used to compare species diversity trend across years for mine and control sites. Results suggested that evenness and species diversity were equal for control and mine plots in all years (Figure 4.3) as indicated by overlap of confidence intervals. Species diversity increased for both mine and control sites throughout the study. Evenness was higher in 2004; however, a large degree of variance around estimates makes interpretation difficult. Diversity was slightly higher in 2008 and 2009 in mine plots; however, the estimate was not significantly different than control plots as indicated by overlap of confidence intervals of estimates.

Figure 4.3: 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 a similar species diversity score



4.3 BREEDING BIRD TRANSECTS

4.3.1 Summary of Data to Date

Breeding bird transects were conducted in 2005 and 2006 prior to mine site and AWPAR construction. In 2007, the AWPAR had been constructed in 5 of 12 transects (transects 1 to 5) prior to the surveys, which were conducted between 17 June 2007 and 2 July 2007. All subsequent surveys (i.e., 2008 [22 June to 06 July) and 2009 [June 19 to July 4]) were conducted following AWPAR completion. The most common bird species observed each year to date are provided in Table 4.2.

Table 4.2: The Most Common Bird Species Observed Each Year During the Breeding Bird Transect Surveys.

Year	Dates	Common Bird Species Observed												
		AMPI	CAGO	HERG	HOLA	LALO	REDP*	ROPT	SAVS	SESA	SNGO	WCSP	WIPT	**Total Number of Species Observed**
2005	03-04, 08, 14 July	4	9	3	32	111	10	11	48	3	0	6	0	14
2006	16, 22, 25 June	3	50	6	20	194	22	20	39	2	0	3	3	25
2007	17-18, 25-26, 29-30 June; 01-02 July	19	137	27	82	499	136	61	108	40	252	25	24	29
2008	17-18, 25-26, 29-30 June, 01-02 July	3	55	17	71	230	111	27	94	9	0	1	8	19
2009	19-20, 24-25 June; 02-04 July	2	72	32	130	321	58	57	90	14	89	16	21	29

* Includes Common Redpoll (CORE) and Hoary Redpoll (HORE), the latter of which occurred in low densities.

First occurrence records for birds observed during the Breeding Bird Transect surveys are provided in Table 4.3.

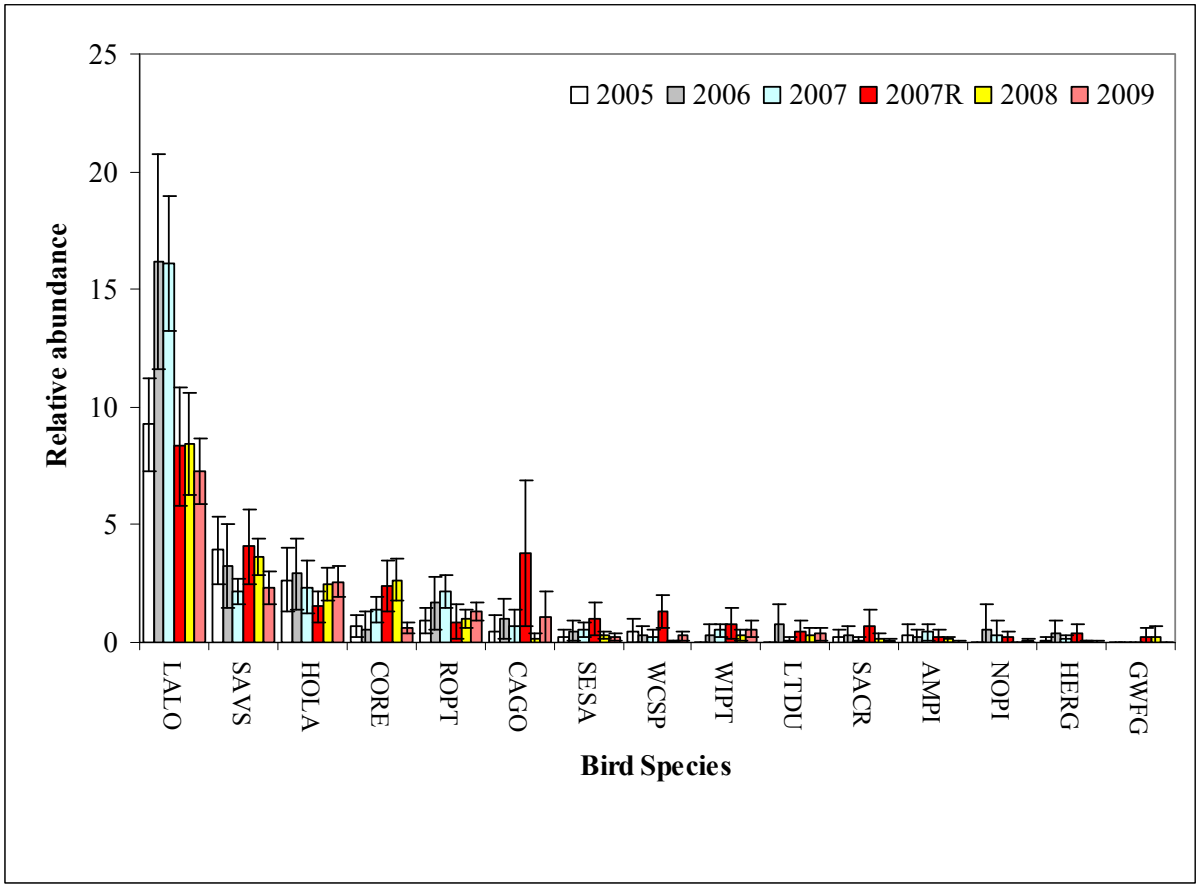
Table 4.3: First Occurrence Records for Birds Observed During the Breeding Bird Transect Surveys Each Year.

Year	New Bird Species Observations
2005	AMGP, AMPI, CAGO, CORE, HERG, HOLA, LALO, ROPT, SACR, SAVS, SESA, TUSW, WCSP
2006	CKGO, GWFG, LTDU, LTJA, NOPI, PEFA, PESA, RLHA, WIPT, WRSA
2007	COLO, DUNL, HORE, PAJA, RTLO, SNBU, SNGO, GRSC
2008	CORA, LESA
2009	BASA, GWTE, NOHA, SPSA

4.3.1.1 Species Relative Abundance

Species relative abundance was generally similar for most species in 2009 compared to 2008 (Figure 4.4). Relative abundance for Lapland Longspur was lower in 2009 and 2008 compared to 2007, which may be the result of survey timing relative to the breeding season. In contrast, Savannah Sparrow abundance appears to be cyclical, Horned Lark abundance has been relatively uniform across years and Common Redpoll abundance was highest in 2008. Common Redpoll nest counts recorded during the AWPAR waterbird nest surveys (Section 4.5.2) were also lower. Whether this is a mine-related effect or natural variation as well as variation in abundance along transect lines will be explored in future years.

Figure 4.4: Relative Abundance (Mean Birds Counted per Transect) for the 16 Most Common Bird Species. Relative Abundance was Averaged across Years for Estimates. Error Bars are 95% Confidence Intervals. A Large Number of Snow Geese seen in 2007 are not Displayed.



Note: 2007 denotes non-roaded transects, whereas 2007R denotes roaded transects.

Table 4.4 summarizes species relative abundance calculated from the survey data. The detections column summarizes whether a bird species was detected in a given year from 2005 to 2009. Bird species received a value of 1 if detected and a value of 0 if not detected.

Table 4.4: Mean Species Relative Abundances (Mean Birds Counted per Transect) and Species Detections per Transect per Year. Bolded species were only seen in 2009.

Species Species	Mean Relative Abundance						Detections				
	2009 Mean	2008 Mean	2007 R Mean	2007 Mean	2006 Mean	2005 Mean	2009	2008	2007	2006	2005
AGPL	0.1	0.0	0	0.0	0.1	0.1	1	0	0	1	1
AMGP	0.0	0.0	0.1	0.3	0.0	0.0	0	0	1	0	0
AMPI	0.1	0.1	0.3	0.4	0.3	0.3	1	1	1	1	1

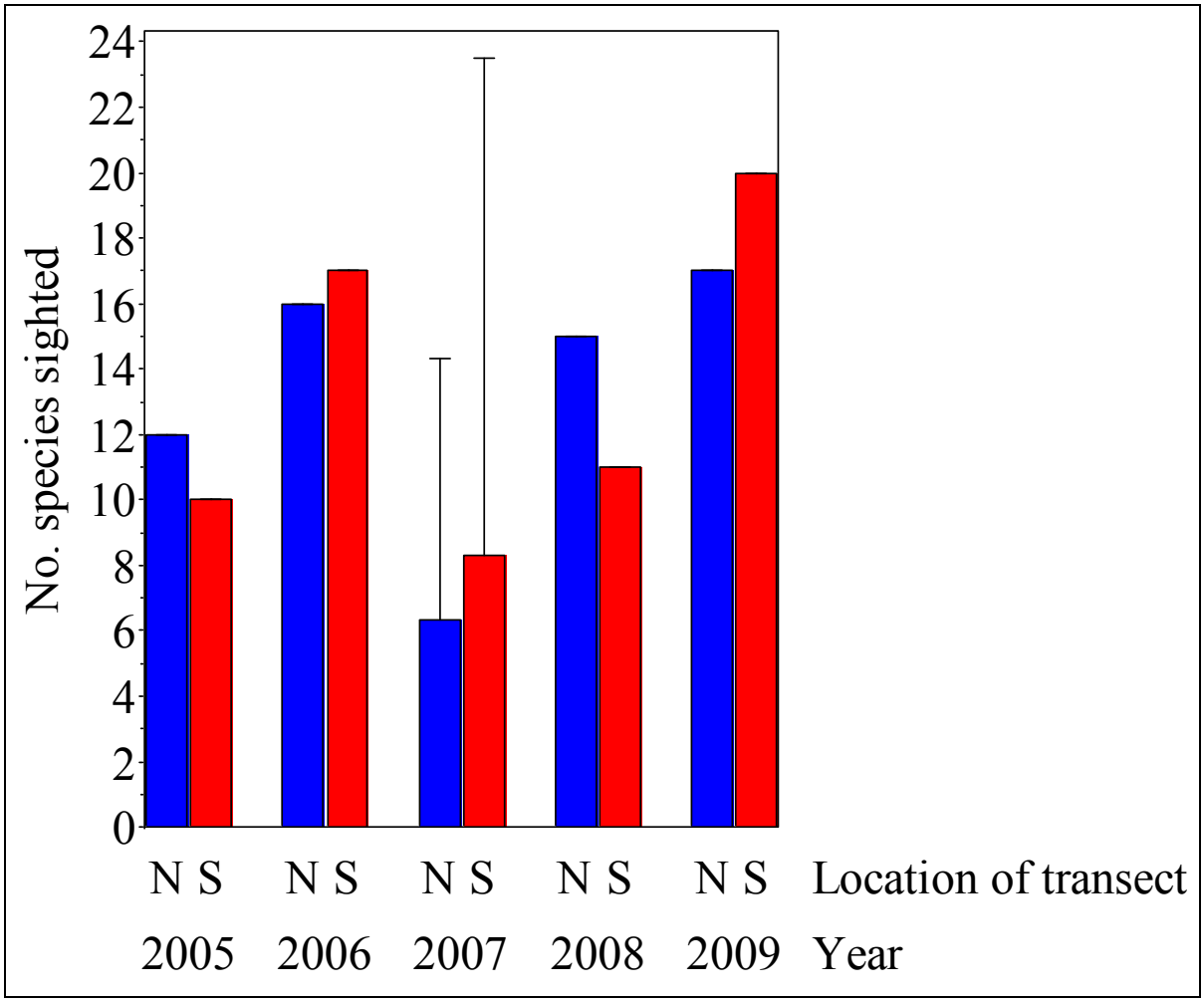
Species Species	Mean Relative Abundance						Detections				
	2009 Mean	2008 Mean	2007 R Mean	2007 Mean	2006 Mean	2005 Mean	2009	2008	2007	2006	2005
BASA	0.1	0.0	0.0	0.0	0.0	0.0	1	0	0	0	0
CAGO	1.1	0.1	3.8	0.7	1.0	0.5	1	1	1	1	1
CKGO	0.0	0.0	0.0	0.0	0.2	0.0	0	0	0	1	0
COLO	0.1	0.0	0.1	0.0	0.0	0.0	1	0	1	0	0
CORE	0.6	2.7	2.4	1.4	0.6	0.7	1	1	1	1	1
DUNL	0.0	0.0	0.1	0.1	0.0	0.0	0	0	1	0	0
GRSC	0.0	0.0	0.3	0.0	0.0	0.0	0	0	0	0	0
GWFG	0.0	0.3	0.3	0.0	0.0	0.0	0	1	0	0	0
GWTE	0.1	0.0	0.0	0.0	0.0	0.0	1	0	0	0	0
HERG	0.1	0.1	0.4	0.1	0.4	0.1	1	1	1	1	1
HOLA	2.6	2.5	1.5	2.3	2.9	2.7	1	1	1	1	1
HORE	0.0	0.0	0.0	0.4	0.0	0.0	0	0	1	0	0
LALO	7.3	8.5	8.3	16.1	16.2	9.3	1	1	1	1	1
LESA	0.1	0.1	0.0	0.0	0.0	0.0	1	1	0	0	0
LTDU	0.4	0.3	0.5	0.1	0.8	0.0	1	1	1	1	0
LTJA	0.0	0.0	0.0	0.2	0.0	0.0	0	0	1	0	0
NOHA	0.1	0.0	0.0	0.0	0.0	0.0	1	0	0	0	0
NOPI	0.1	0.0	0.2	0.3	0.6	0.0	1	0	1	1	0
PAJA	0.0	0.1	0.1	0.0	0.0	0.0	0	1	0	0	0
PASS	0.1	0.0	0.1	0.1	0.1	0.0	1	0	1	1	0
PESA	0.0	0.0	0.3	0.0	0.2	0.0	0	0	0	1	0
REDP	0.1	0.1	0.1	0.0	0.1	0.0	1	1	0	1	0
RLHA	0.1	0.0	0.0	0.0	0.1	0.0	1	0	0	1	0
ROPT	1.3	1.0	0.9	2.2	1.7	0.9	1	1	1	1	1
RTLO	0.0	0.0	0.1	0.0	0.0	0.0	0	0	0	0	0
SACR	0.1	0.2	0.7	0.1	0.3	0.3	1	1	1	1	1
SAND	0.0	0.0	0.0	0.0	0.1	0.0	0	0	0	1	0
SAVS	2.3	3.6	4.1	2.1	3.3	3.9	1	1	1	1	1
SESA	0.2	0.3	1.0	0.5	0.5	0.3	1	1	1	1	1
SNBU	0.1	0.1	0.1	0.0	0.0	0.0	1	1	1	0	0
SNGO	0.3	0.0	11.5	0.0	0.0	0.0	1	0	1	0	0
SPSA	0.1	0.0	0.0	0.0	0.0	0.0	1	0	0	0	0
TUSW	0.0	0.0	0.0	0.0	0.0	0.1	0	0	0	0	1
WCSP	0.3	0.1	1.3	0.2	0.3	0.5	1	1	1	1	1
WIPT	0.6	0.3	0.8	0.5	0.3	0.0	1	1	1	1	0
WRSA	0.0	0.0	0.1	0.0	0.0	0.0	0	1	0	0	0

4.3.1.2 Species Richness

In general, species richness increased from 2005 to 2006 then decreased in 2007 and increased again 2008 and 2009 (Table 4.4 and Figure 4.5). In 2009, there was a record 20 species sighted in the southern transects and 17 species sighted in the northern transects. This increase in species

richness may be due in part to the additional replicate survey; however, additional species may also be utilizing the newly created habitats along the AWPAR. In future years, an evaluation of bird observation frequency relative to the road location may be explored in additional detail.

Figure 4.5: Species richness for north (transects 6 to 12) and south (transects 1 to 5) transects as a function of year. The south transects were roaded in 2007 and all transects were roaded in 2008 and 2009. Therefore the mean number of species observed in 2007 is shown with a corresponding standard error bar.



4.3.1.3 Species Diversity

In previous years, overall species diversity was compared graphically. Annual results have consistently indicated that transects were dominated by relatively few species with many species only being seen occasionally. Results will be analyzed in detail again in future years to evaluate potential changes in species diversity along the transect lines.

4.4 RAPTOR NEST SURVEYS

Numerous raptors were observed during the 2009 surveys, including a Peregrine Falcon displaying defensive territorial behaviour (circling and calling). The falcon was observed on 03 July 2009 during the waterbird nest surveys conducted along the AWPAR. Closer inspection revealed an active nest being incubated by the female at Quarry 19 (UTM 14W 0628658 E; 7204270 N). Agnico-Eagle environmental personnel were contacted on 04 July 2009 and 08 July 2009 to discuss the nest and potential mitigation measures.

Agnico-Eagle environmental personnel monitored the nest on 09 and 21 July 2009 to evaluate potential impacts as a result of AWPAR traffic activity. The nest is located on the west face of the quarry, which opens to the AWPAR and is set back approximately 40 m from the road edge. Based on the observations during monitoring events, the Peregrine Falcon pair did not appear to be disturbed by typical road activities.

Gebauer & Associates was consulted to provide recommendations for an appropriate management strategy. Recommendations were implemented into a Nest Management Plan (in the form of a memorandum developed by Agnico-Eagle environmental personnel), which was submitted to mine-operations staff and distributed internally. The management plan memo (refer to Appendix C) recommended that wildlife surveyors monitor the health of paired falcons and that dust suppressant be applied in the vicinity of Quarry 19.

In accordance with the Nest Management Plan, Meadowbank environmental personnel conducted weekly inspections of the nest while conducting weekly wildlife surveys along the AWPAR. During mine site application of regulatory approved Dust-Stop, an attempt was made to transport the dust suppressant in a liquid form to Quarry 19. However, due to the distance between the mine site and Quarry 19 (approximately 20 km), the mine operations personnel determined that the solution would not remain mixed; therefore, suppressant was not applied near Quarry 19. Notwithstanding, by late July, the monitors noted juvenile falcon presence and by late August and early September, that the falcons had successfully fledged.

Quarry sites will be investigated again during the 2010 waterbird nest surveys. A cumulative summary of potential information on potential raptor nests within the LSA and RSA is provided in Table 4.5.

Table 4.5: Cumulative Summary of Potential Raptor Nest Sites Identified in the Meadowbank RSA (All Locations in NAD83 Unless Indicated Otherwise).

Nest ID	Species	Location (UTM)	Notes
1	Peregrine Falcon	14W 0627535 7222833	2006 notes: Between Aug 14-20, 2006, on 3-4 different occasions, a peregrine falcon was observed either flying, calling, ”stooping” and taking flight from the Marker Hill area. Marker Hill is a steep-sided, ~25-30 m high hillock, located ~13.5 km northwest of Meadowbank camp near an embayment of Pipedream Lake.
2	Peregrine Falcon	14W 0636994 7230217	1996 notes: Nesting falcons seen by Orin Durey (867-793-2389) 2006 notes: No falcons seen on a June visit, but snow still covering most of the steep rock face
3	Unknown	14W 0629640 7168650	2005 notes: Very close to vegetation plot 58f on boulder at base of slope in Whitehills area - transition

Nest ID	Species	Location (UTM)	Notes
			from bouldery slope to seepage toe. Nest is about 350- 400m W - NW of the nearest point of the all-weather road (see Photo below).
			2006 notes: Not visited
4	Unknown	65 27.281 96 46.146	1999 notes: Good cliffs and outcrops observed on 01 June survey of RSA suitable for nesting raptors
5	Unknown	65 27.311 96 37.231	1999 notes: Good cliffs, outcrops and three circling falcons suggest presence of nest – 01 June survey
6	Unknown	14W 0594144 7210893	2002 notes: Possible nest site observed on 27 July during aerial survey of RSA
7	Peregrine Falcon	14W 0591977 7174147	2002 notes: Possible nest site observed on 30 July during aerial survey of RSA
8	Unknown	14W 0627197 7222658	2002 notes: Possible nest site observed on 14 September aerial survey of RSA; likely same nest site as #1
9	Unknown	14W 0639041 7243790	2002 notes: Possible nest site observed on 15 September aerial survey of RSA
10	Unknown	14W 0623824 7240981	2002 notes: Possible nest site observed on 16 September aerial survey of RSA
11	Unknown	14W 0616841 7248905	2002 notes: Possible nest site observed on 16 September aerial survey of RSA
12	Peregrine Falcon	15W 0378111 7181538	2004 notes: Falcon seen near suitable nesting cliffs on 22 June aerial survey of RSA
13	Peregrine Falcon	14W 0628400 7171860	2008 notes: Falcon seen leaving quarry during bird nest survey.
14	Peregrine Falcon	14W 0628658 7204270	2009 notes: Falcon pair and active nest at Quarry 19

4.5 WATERBIRD NEST SURVEYS

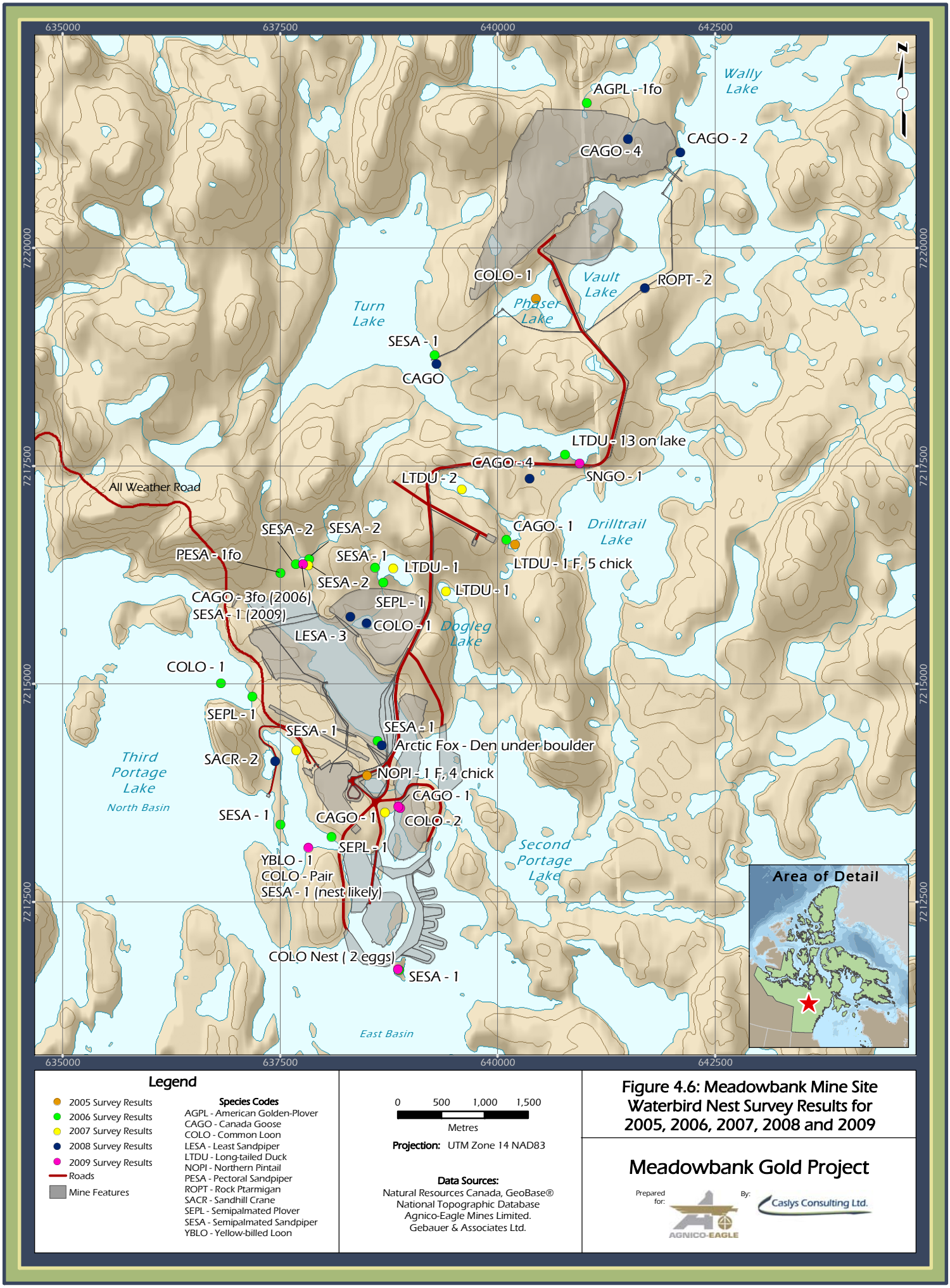
4.5.1 Mine Site

Waterbird nest surveys have been conducted within the Meadowbank Mine Site LSA on an annual basis since 2004. Comparatively, surveys in 2004 were the least intensive and no waterbird nests were located. In 2005, when survey intensity increased, two duck broods and one Common Loon were observed (Table 4.6). Starting in 2006, surveys followed the intensive protocols presented in Section 3.5. In all, approximately 50 km of shoreline was surveyed (refer to Table 3.6 in Section 3.5). Semipalmated Sandpiper (*Calidris pusilla*) was the most common waterbird species encountered in 2006 (Table 4.6 and Figure 4.6) while Canada Goose (*Branta canadensis*) was the most common waterbird species encountered in 2007 (Table 4.6 and Figure 4.6). In 2008 and 2009, Long-tailed Duck (*Clangula hyemalis)* and Common Loon (*Gavia immer*) were the most common waterbird species, respectively (Table 4.7 and Figure 4.6). Annual variability is anticipated to be predominantly the result of survey timing and intensity.

Table 4.6: Waterbird Nest Survey Results in 2006, 2007, 2008, and 2009

Date	Location	Species	Number	UTM Coordinates
16 July	Small Lake near SE end of Airstrip	Northern Pintail	1 F, 4 chick	14W 0638500 7213950
18 July	East of Explosives Storage	Long-tailed Duck	1 F, 5 chick	14W 0640200

Date	Location	Species	Number	UTM Coordinates
				7216600
19 July	Phaser Lake	Common Loon	1 adult	14W 640800 7219400
09 July 2006	Third Portage Lake Northwest	Common Loon	1 calling	On lake
09 July 2006	Third Portage Lake Northwest	Semipalmated Plover	1 on ice at 20 m	637184 7214854
09 July 2006	Portage Waste Dump Pond C	Pectoral Sandpiper	1 flyby	637505 7216273
09 July 2006	Portage Waste Dump Pond C	Canada Goose	3 flyby	637767 7216377
09 July 2006	Portage Waste Dump Pond C	Semipalmated Sandpiper	1?	637835 7216436
09 July 2006	Portage Waste Dump Pond C	Semipalmated Sandpiper	1 nesting pair (2)	637683 7216377
09 July 2006	Portage Waste Dump Pond A	Semipalmated Sandpiper	1 nesting pair (2)	638593 7216335
09 July 2006	Portage Waste Dump Pond A	Semipalmated Plover	1 nesting	638685 7216164
10 July 2006	Vault Waste Dump Pond E	American Golden-Plover	1 flyby	641026 7221667
10 July 2006	Turn Lake North	Semipalmated Sandpiper	1 nesting	639278 7218773
11 July 2006	AN Storage Pond	Canada Goose	1 nesting on small island	640101 7216654
12 July 2006	Second Portage Southwest	Semipalmated Sandpiper	1 nesting	638621 7214348
12 July 2006	Second Portage Southwest	Semipalmated Plover	1 nesting?	638092 7213248
12 July 2006	Third Portage Lake Plant Site	Semipalmated Sandpiper	1 nesting?	637505 7213389
12 July 2006	Turn Lake South	Long-tailed Duck	13 on lake	640775 7217631
13 July 2006	Goose Pit Island C	Semipalmated Sandpiper	1 nesting	638872 7211723
04 July 2007	Portage Waste Dump Pond B	Least Sandpiper	3 disturbed on ground	638308 7215769
04 July 2007	Portage Waste Dump Pond B	Common Loon	1 flew to 2nd Portage	638495 7215694
04 July 2007	Vault Waste Dump Pond F	Canada Goose	4 molting	641498 7221251
04 July 2007	Vault Access Road Pond D	Canada Goose	4 disturbed from pond	640366 7217354
05 July 2007	Intake Pond	Sandhill Crane	2 flew east to shoreline	637446 7214115
07 July 2007	Vault Lake West, Wally Lake West	Canada Goose	2 flew away	642100 7221100
07 July 2007	Vault Lake West, Wally Lake West	Rock Ptarmigan	2 observed	641692 7219539
07 July 2007	Turn Lake North	Canada Goose	sign (molted feathers)	639111 7219017
03 July 2008	Third Portage Lake Plant Site	Semipalmated Sandpiper	1 near shoreline.	637686 7214237
03 July 2008	Second Portage Southwest Vault	Canada Goose	1 swimming along shore	638706 7213526
03 July 2008	Portage Waste Dump Pond A	Long-tailed Duck	1 male swimming nr. shore	638800 7216329
03 July 2008	Portage Waste Dump Pond C	Semipalmated Sandpiper	Pair vocalizing on ground.	637767 7216377
03 July 2008	Vault Access Road Pond F	Long-tailed Duck	Pair swimming on lake	639590 7217231
03 July 2008	Vault Access Road Pond G	Long-tailed Duck	Male swimming on lake	639408 7216062
01 July 2009	Turn Lake South	Snow Goose	1 resting	640941 7217532
05 July 2009	South Camp Island	Yellow-billed Loon	1 swimming	637827 7213125
05 July 2009	South Camp Island	Common Loon	Pair flying over	637827 7213125
05 July 2009	South Camp Island	Semipalmated Sandpiper	1 female with potential nest	637827 7213125
05 July 2009	Goose Pit Island C	Common Loon	Nest on east side of island w/ 2 eggs	638855 7211729
05 July 2009	Third Portage Lake Pit East	Common Loon	Pair flying over	638881 7213578
05 July 2009	Third Portage Lake Pit West	Canada Goose	Acting territorial – potential nest	638858 7213596
06 July 2009	Portage Waste Dump Pond C	Semipalmated Sandpiper	On shore, no nest found	637767 7216377



Legend

- 2005 Survey Results
- 2006 Survey Results
- 2007 Survey Results
- 2008 Survey Results
- 2009 Survey Results
- Roads
- Mine Features

Species Codes

AGPL - American Golden-Plover
CAGO - Canada Goose
COLO - Common Loon
LESA - Least Sandpiper
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PESA - Pectoral Sandpiper
ROPT - Rock Ptarmigan
SACR - Sandhill Crane
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
YBLO - Yellow-billed Loon

0 500 1,000 1,500
Metres

Projection: UTM Zone 14 NAD83

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

Figure 4.6: Meadowbank Mine Site Waterbird Nest Survey Results for 2005, 2006, 2007, 2008 and 2009

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.5.2 Waterbird Nest Surveys - AWPAR

Waterbird nest surveys were conducted along recently completed sections of the AWPAR for the first time in 2007. All subsequent surveys (2008 and 2009) were completed following AWPAR completion. Results for 2009 are summarized in Table 4.7. Results from 2007-2009 are illustrated in Figure 4.7 to Figure 4.19 (Mapsheet A to Mapsheet M).

Table 4.7: Waterbird Nest Survey Results in 2009.

Survey Date	Mapsheet	Label	Survey Results
01-Jul-09	A	L1	2 LALO males calling. 1 CAGO on lake. SNGO molt sign.
01-Jul-09	A	L2	1 SESA nest with 3 eggs on edge of lake towards road. LTDU pair on far end of lake (furthest from road).
01-Jul-09	A	L3	2 LTDU female, 1 SAVS calling, 2 NOPI females.
01-Jul-09	A	L4	3 CAGO calling. 2 SACR on far end of lake. 1 SAVS nest – 644292 E; 7142925 N - unknown egg count as female on nest. 1 old passerine nest – 644078 E; 7143100 N.
01-Jul-09	A	L5	1 SAVS nest with 7 eggs – 643753 E; 7143662 N. 1 LALO F, 1 SAVS M calling.
01-Jul-09	A	P1	HERG flying overhead. 1 SAVS calling. 3 LTDU on lake (2 females; 1 male). LALO pair on west edge of lake
01-Jul-09	A	P2	No waterfowl / shorebird / passerine activity
01-Jul-09	A	P3	1 SAVS nest with 5 eggs – 355584 E; 7138161 N. 1 LALO pair.
01-Jul-09	A	P4	1 CAGO nest with 3 eggs – 355497 E; 7138621 N. HERG pair flying overhead. 1 LALO male, 1 SAVS calling, 1 WIPT male.
01-Jul-09	A	P5	No waterfowl / shorebird / passerine activity - almost no vegetation surrounding shoreline
01-Jul-09	A	P6	No waterfowl / shorebird / passerine activity - almost no vegetation surrounding shoreline
01-Jul-09	A	P7	No waterfowl / shorebird / passerine activity
01-Jul-09	B	L6	1 new feather-lined CAGO nest - no eggs yet (or predated) 643960 E; 7144700 N. 1 LALO male singing, 1 SESA flying south overhead.
01-Jul-09	B	L7	Old CAGO nest 643043 E; 7146394 N. 6 CAGO on lake. 2nd old CAGO nest – 643035 E; 7146324 N. 1 SAVS and 1 LALO calling. 4 SESA foraging.
01-Jul-09	B	L8	1 GRSC on lake. 2 LTDU on lake and 1 RBME on lake. Old waterfowl nest – 641692 E; 7149559 N.
01-Jul-09	B	L9	11 HERG on ice in center of lake. RBME pair on lake. 2 GWFG on ice. 1 SAVS male singing.
01-Jul-09	B	P10	1 COLO flying overhead
01-Jul-09	B	P11	2 SACR foraging – 643130 E; 7146920 N
01-Jul-09	B	P12	Dried up
01-Jul-09	B	P13	1 LTDU pair on lake w/ 2 juveniles. 1 CORE M singing. 1 SAVS foraging/calling.
01-Jul-09	B	P8	1 CAGO on nest on island - 643395E; 7146199N. 1 SESA foraging. 1 LTDU on lake. 2 SAVS and 1 LALO calling.
01-Jul-09	B	P9	1 SESA foraging. 1 SAVS on nest with 5 eggs – 643257 E; 7146510 N
01-Jul-09	C	L10	1 SAVS nest 640215 E; 7151198 N - unknown egg count. 1 SESA foraging, 1 WIPT resting, 1 SAVS male singing.
01-Jul-09	C	L11	1 SAVS male singing
01-Jul-09	C	L12	1 CORE pair, 1 HERG flying overhead, 1 LALO male and 1 SAVS male singing.
01-Jul-09	C	L13	Old PASS nest – 640300 E; 7152677 N. SAVS calling. SESA pair.
01-Jul-09	C	L14	2 LALO male singing, 2 LTDU flying overhead, 1 SAVS female.
01-Jul-09	C	L15	1 SESA, 2 SACR flying N overhead, 1 LALO male singing
01-Jul-09	C	L16	1 HERG nest - last year's location. 1 CORE nest with 2 eggs – 638183 E; 715570 N. SESA foraging, 2 SAVS foraging, 1 AMPI male singing.
01-Jul-09	C	L17	CAGO pair flying overhead, 1 HERG flying overhead. 4 GWFG on lake. Old SAVS nest - 637234E; 7156755N.

Survey Date	Mapsheet	Label	Survey Results
01-Jul-09	C	P15	No waterfowl / shorebird / passerine activity
02-Jul-09	D	L18	1 CAGO nest - same location as 2008 (small island ~ 200 m offshore)
02-Jul-09	D	L19	SAVS male singing
02-Jul-09	D	L20	1 CAGO on nest on small island – 633168 E; 7163539 N - getting heavily dusted by road traffic. 1 CAGO sitting 633143 E; 7163692 N
02-Jul-09	D	P16	Old waterfowl nest – 636477 E; 7157486 N. 2 SAVS and 1 WIPT foraging.
02-Jul-09	D	P18	1 SAVS and 1 SESA foraging
02-Jul-09	D	P19	4 GWFG flying west overhead, 1 SAVS foraging and 1 SAVS male singing.
02-Jul-09	D	P20	SACR pair on far side of lake. 2 SESA foraging. 2 CAGO set back from lake (635130 E; 7161391 N). 1 LTDU on lake, 1 SAVS foraging.
02-Jul-09	D	P21	No waterfowl / shorebird / passerine activity
02-Jul-09	E	L23	1 SAVS, 1 WCSP, and 1 AMPI male singing.
02-Jul-09	E	L25	2 CAGO on lake, 1 SAVS nest with 5 eggs – 629832 E; 7169121 N. 4 CAGO flying overhead to NW. 1 SAVS foraging.
02-Jul-09	E	L26	3 LTDU (1 male; 2 juveniles) on lake
02-Jul-09	E	P22	6 NOPI flying overhead to north. CORE nest with 5 eggs - 631198E; 7164819N.
02-Jul-09	E	P23	4 LTDU on lake, 1 CAGO on lake. 1 CAGO nest on island (east side centre).
02-Jul-09	E	P24	No waterfowl / shorebird / passerine activity
02-Jul-09	E	P25	SAVS nest – 629888 E; 7167437 N - unknown egg count as female on nest. WCSP male singing.
02-Jul-09	F	L27	1 SAVS nest with 3 chicks, 1 egg – 629031 E; 7170380 N. 1 LALO male singing, 1 WIPT foraging. 1 LTDU on lake. Old passerine nest – 629220 E; 7170355 N. Old CAGO nest – 629333 E; 7170567 N
02-Jul-09	F	L28	No waterfowl / shorebird / passerine activity. Still a lot of ice on lake surface.
02-Jul-09	F	L29	1 LALO male singing, 2 SAVS foraging, CORE pair, and 1 SACR foraging.
02-Jul-09	F	L65	5 GWFG on shore, 1 LALO F foraging and 1 HERG flying southbound over lake.
02-Jul-09	F	P27	1 SAVS flushed - could not locate nest but nest likely – 628786 E; 7171826 N. 1 LALO F foraging.
02-Jul-09	F	P28	No waterfowl / shorebird / passerine activity
02-Jul-09	F	P29	1 LALO pair and 3 SESA
02-Jul-09	G	L30	Old PASS nest – 626262 E; 7180450 N
02-Jul-09	G	L31	CAGO pair and 1 LTDU on lake
02-Jul-09	G	L32	1 LALO nest with 4 chicks – 625570 E; 7182512 N and 1 SAVS M singing.
02-Jul-09	G	P30	Old CORE nest – 625058 E; 7178500 N. CORE M calling.
02-Jul-09	G	P31	Old PASS nest – 626637 E; 7180325 N
02-Jul-09	G	P32	No waterfowl / shorebird / passerine activity.
02-Jul-09	G	P33	1 old waterfowl nest on island – 625312 E; 7182913 N. 2 SAVS M and 3 LALO M singing. 2 LTDU on lake. 1 SESA and 1 ROPT foraging.
02-Jul-09	H	L34	1 SAVS and 1 LALO male singing
02-Jul-09	H	L35	1 LALO nest – 626299 E; 7186656 N. 5 LTDU on lake, 1 HERG, 2 RNPH mating - likely to nest nearby, 1 SESA and ROPT and CORE pair foraging. 2 CAGO flying overhead to south.
02-Jul-09	H	L36	4 CAGO on shore. 2 LALO male singing, 1 CORE female foraging, and 1 AGPL male foraging.
02-Jul-09	H	P34	No waterfowl / shorebird / passerine activity.
02-Jul-09	H	P35	No waterfowl / shorebird / passerine activity.
02-Jul-09	H	P36	5 SESA foraging, 1 LALO male singing.
02-Jul-09	I	L37	No waterfowl / shorebird / passerine activity.
02-Jul-09	I	L38	1 SAVS foraging

Survey Date	Mapsheet	Label	Survey Results
02-Jul-09	I	L39	1 LALO nest - 627654E; 7192102N. 1 LALO and 1 SAVS male singing.
02-Jul-09	I	L40	No waterfowl / shorebird / passerine activity.
02-Jul-09	I	P37	1 LTDU sitting on lake edge. 3 LALO singing/foraging and 1 SAVS foraging.
02-Jul-09	I	P38	2 SACR, 1 LTDU on lake, and 1 SAVS, 2 LALO, and 1 HOLA male singing.
03-Jul-09	J	L42	No waterfowl / shorebird / passerine activity.
03-Jul-09	J	L43	No CAGO nest on island this year. 3 SESA foraging.
03-Jul-09	J	L44	3 SESA foraging and 1 CORE male singing.
03-Jul-09	J	P39	1 SESA nest with 4 eggs – 625858 E; 7198727 N. 2nd SESA nest at 625741 E; 7198717 N.
03-Jul-09	J	P40	No waterfowl / shorebird / passerine activity.
03-Jul-09	J	P41	1 CAGO, 4 LTDU, 1 SESA foraging/resting on lakeshore. 1 LALO and 1 SAVS male foraging/singing
03-Jul-09	J	P42	1 PAJA nest with 2 eggs - 627098E; 7203600N. 1 DUNL, 2 LALO male singing/foraging.
03-Jul-09	J	P43	No waterfowl / shorebird / passerine activity.
03-Jul-09	J	P44	1 SESA nest – 628053 E; 7203833 N. Almost no water in pond.
03-Jul-09	J	P45	1 ROPT resting.
03-Jul-09	J	P46	No waterfowl / shorebird / passerine activity.
03-Jul-09	K	L45	1 SAVS male singing and LALO pair.
03-Jul-09	K	L46	2 LTDU on lake and 2 SAVS male singing.
04-Jul-09	K	L47	1 LALO male singing.
04-Jul-09	K	L48	1 recently predated ROPT egg on rock – 630732 E; 7210080 N. Predated nest likely nearby. 1 SAVS and 1 LALO male singing.
04-Jul-09	K	L49	No waterfowl / shorebird / passerine activity.
04-Jul-09	K	P47	1 SESA, 1 SAVS, and 2 LALO.
04-Jul-09	K	P48	1 SESA nest – 630990 E; 720667 N. 2 SESA foraging, 1 SAVS male singing.
04-Jul-09	K	P49	1 LALO female, 1 CORA flew over to NE. Shorelines very rock all the way around the lakeshore.
04-Jul-09	K	P50	1 LALO male
04-Jul-09	K	P51	1 SESA foraging
04-Jul-09	K	P55	No waterfowl / shorebird / passerine activity.
04-Jul-09	L	L50	No waterfowl / shorebird / passerine activity.
04-Jul-09	L	L51	1 LALO nest with 3 chicks – 633859 E; 7215332 N
04-Jul-09	L	L52	HOLA pair, 1 LALO and 1 SAVS male calling. 1 ROPT resting and 1 predated ROPT.
04-Jul-09	L	L53	1 SAVS nest - 634179E; 7217481N. CAGO pair on lake.
04-Jul-09	L	L54	3 LALO
04-Jul-09	L	L55	CAGO pair on lake. 1 SAVS nest w/ 4 eggs – 634592 E; 7218140 N. 1 AMPI and 1 SAVS male foraging/calling.
04-Jul-09	L	L64	1 SAVS male singing.
04-Jul-09	L	P52	No waterfowl / shorebird / passerine activity.
04-Jul-09	M	L57	No waterfowl / shorebird / passerine activity.
04-Jul-09	M	L58	3 LALO (2 males, 1 female). WIPT pair and 1 WCSP calling.
04-Jul-09	M	L60	AMPI nest with 5 eggs – 637696 E; 7214095 N. 2 AMPI feeding. 1 ROPT. 1 SAVS and 1 WCSP male singing.
04-Jul-09	M	L61	Sewage treatment lagoon. No Observations.
04-Jul-09	M	L62	1 CAGO pair, 1 HOLA pair, 3 LALO, 1 adult and 2 juvenile ROPT. 1 AMPI. Low water level, lots of boulders.
04-Jul-09	M	L63	No waterfowl / shorebird / passerine activity.

643000 644000 645000 646000 647000

7143000 7142000 7141000 7140000 7139000 7138000 7137000

SAVS Nest (7 eggs)
L5
Grayling
SESA - 3
Minnows
SNGO sign
LALO - 1 F
SAVS - 1 M
CORE Nest (5 eggs)
Old Passerine Nest
L4
Larger fish
Minnows
LALO - Pair
CAGO - 3
SACR - 2
SAVS Nest
SESA - 1
LTDU - Pair
Minnows
LTDU - 2 F
SAVS - 1
NOPI - 2 F
L3
Old Passerine Nest
P7
HERG - 3 flying
P6
P5
L2
NOPI - 1
Minnows
LTDU - Pair
SESA Nest (3 eggs)
L1
LALO Nest (3 eggs)
LALO - 2 M
CAGO - 1
SNGO - 1
SESA - Pair
HEGU - Pair
LALO - 1 M
SAVS - 1
WIPT - 1 M
P4
P3 LALO - Pair
Duck Nest (7 eggs)
LALO (nest likely)
P2 LTDU - 1
P1
LTDU - 1
RTLO - 1
Dead Loon - 1
LALO Nest (1 egg, 2 chicks)
LTDU - 1
HEGU - 1
SAVS - 1
LTDU - 3 (2 F, 1 M)
LALO - Pair

L M K J I H G F E D C B A

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

643000 644000 645000 646000 647000

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
2009
Survey Route - 2009 *
(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.7
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

641000 642000 643000 644000 645000

7150000 7149000 7148000 7147000 7146000 7145000 7144000

N

LTDU - 1M, 2F
Minnows
Fish
HERG - Pair
SACR - 3
HERG - 11
RBME - Pair
GWFG - 2
SAVS - 1 M
L9

Old Passerine Nest

Old Waterfowl Nest

Minnows
NOPI - 1F flying
GRSC - 1
LTDU - 2
RBME - 1
L8

Old Passerine Nest
SAVS Nest (3 eggs)
CORE Nest (1 egg)

P13
SESA - 1
Minnows
LTDU - Pair (2 juveniles)
CORE - 1 M
SAVS - 1

Sandpiper (unidentified sp.) P12

P11
Minnows
HERG - 1
SACR - 2

Minnows
NOPI
COLO - 1
P10
SAVS Nest (5 eggs)

Old CAGO Nest
LALO Nest (2 eggs)
Old CAGO Nest

P9
Minnows
CAGO - 5
SESA - 1 F

Fish
CAGO
CAGO - 6
SAVS - 1
LALO - 1
SESA - 4
L7

CAGO Nest
Old passerine nest
CAGO Nest
P8
SESA - 1
CAGO - 2
SESA - 1
LTDU - 1
SAVS - 2
LALO - 1

CAGO Nest

LTDU - 1F
SESA - 4
Minnows
SESA
CAGO
LALO - 1 M
SESA - 1 F
L6

SAVS Nest (7 eggs)
L5

L M K J I H G F E D C B A

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

641000 642000 643000 644000 645000

Legend

All-Weather Private Access Road
Road Buffer (200m)
Survey Route - 2009 *
(Note: Alternating Colour to help with transect identification)

Nest Locations (Observation Year)
- 2007
- 2008
- 2009

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.8
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet B

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

637000 638000 639000 640000 641000

7157000 7156000 7155000 7154000 7153000 7152000 7151000

SAVS Nest (3 chicks, 2 eggs)
Old SAVS Nest

L17
CAGO - 3
Minnows
SNGO sign
CAGO - Pair
HERG - 1
GWFG - 4

HERG Nest
Old CORE Nest

Fish
SESA - 1
SAVS - 2
AMPI - 1 M

HERG Nest
L16
CORE Nest (1 egg)
Old Passerine Nest
CORE Nest (2 eggs)

L15
Minnows
SESA - 1
SACR - 2
LALO - 1 M

P15

Old Waterfowl Nest

LTDU - 1F
RNPH - 1
Minnows
LALO - 2 M
LTDU - 2
SAVS - 1 F
L14

Old Passerine Nest
L13
SESA - 2
Minnows
SAVS - 1
SESA - Pair

Core Nest (5 eggs)
L12
Minnows
CORE - Pair
HEGU - 1
LALO - 1 M
SAVS - 1

RBME - 1M, 2F
Minnows
LTDU - Pair
GRSC - Pair
SAVS - 1 M
L11
Abandoned SAVS Nest
SAVS Nest
SAVS Nest
Abandoned/Old Waterfowl Nest

Grayling
SESA - 1
Minnows
HERG calling
L10
SESA - 1
WIPT - 1
SAVS - 1 M

N

L M K J I H G F E D C B A

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

637000 638000 639000 640000 641000

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
2009
Survey Route - 2009 *
(Note: Alternating Colour
to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.9
2007, 2008 and 2009 AWPAR Waterfowl Nest Survey Results
Mapsheet C

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

633000 634000 635000 636000 637000

7164000 7163000 7162000 7161000 7160000 7159000 7158000 7157000

L20
AMGP -1
Minnows
CAGO - 1
CAGO - Old nest
CAGO Nest

L19
SAVS - 1 M

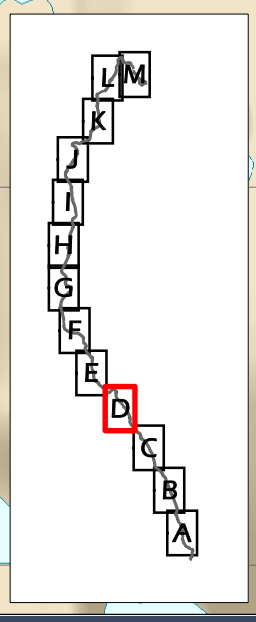
SESA - 1
LTDU - Pair
P21

SACR - 2
LTDU - 1F
LTDU - 1 juvenile
SACR - Pair
SESA - 2
CAGO - 2
LTDU - 1
SAVS - 1
P20
CAGO Nest
CAGO Nest

CAGO Nest
CAGO Nest
L18
NOPI - 4

P19 Waterbird skull
SAVS - 1
SESA - 1
P18
GWFG - 4
SAVS - 1
SAVS - 1 M

Old Waterfowl Nest
P16
SAVS - 2
WIPT - 1



Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

Legend

All-Weather Private Access Road
Road Buffer (200m)
Survey Route - 2009 *
(Note: Alternating Colour
to help with transect identification)

Nest Locations (Observation Year)
- 2007
- 2008
- 2009

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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



Figure 4.10
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet D

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

628000 629000 630000 631000 632000

7169000 7168000 7167000 7166000 7165000 7164000 7163000

L26
TUSW - 2
LTDU - 1M
Fish
LTDU - 5
LTDU - 3 (1 M, 2 juveniles)

CORE Nest (3 eggs)
SAVS Nest (5 eggs)
L25 Larger fish
CAGO - 2
CAGO - 4
SAVS - 1

SAVS Nest (5 eggs)
L23 Fish
SAVS - 1
WCSP - 1
AMPI - 1 M

WCSP - 1 M P25
SAVS Nest (4 eggs)
SAVS Nest
Old Passerine Nest

SESA - 1
Minnows
P24
SESA - 1
Minnows
SEPL - 1
LTDU - 3
LTDU - 4
CAGO - 1
P23
CAGO Nest
Old Nest along road edge
CORE Nest (5 eggs)
Old CORE Nest
P22
NOPI - 6

L M K J I H G F E D C B A

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

628000 629000 630000 631000 632000

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
2009
Survey Route - 2009 *
(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.11
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet E

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE
By: Caslys Consulting Ltd.

625000 626000 627000 628000 629000

7176000 7175000 7174000 7173000 7172000 7171000 7170000

N

LALO Nest (6 eggs)

P29
LALO - Pair
SESA - 3

Minnows
SACR - 3

P28

Minnows
LTDU - 1M
Larger fish
NOPI - 2
PEFA
LALO - 1 M
SAVS - 2
CORE - Pair
SACR - 1 F

L29

AMPI Nest (6 eggs)

CORE Nest (3 eggs)

Likely SAVS Nest nearby

P27
HERG
SAVS - 1
LALO - 1 F

Minnows
Larger fish

L28

Old CAGO Nest

GWFG Nest (3 eggs)

CAGO Nest

Old Passerine Nest

L27
LTDU - 1
NOPI - Pair
LALO - 1 M
WIPT - 1
LTDU - 1

SAVS Nest (3 Chicks, 1 egg)

SAVS Nest (5 eggs)

Old Waterfowl Nest

L26
TUSW - 2
LTDU - 1M
Fish
LTDU - 5

L M K J I H G F E D C B A

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

Legend

All-Weather Private Access Road
Road Buffer (200m)
Survey Route - 2009 *
(Note: Alternating Colour
to help with transect identification)

Nest Locations (Observation Year)
- 2007
- 2008
- 2009

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.12
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet F

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

623000 624000 625000 626000 627000

7183000 7182000 7181000 7180000 7179000 7178000 7177000

PAJA Nest (Pair, 2 eggs)

P33

Old Waterfowl Nest

SAVS - 2 M
LALO - 3 M
LTDU - 2
SESA - 1
ROPT - 1 F

L32 SAVS - 1 M

LALO Nest (4 chicks)

L65

GWFG - 5
LALO - 1 F
HERG - 1

P32 CORE Nest

Old Waterfowl Nest

L31

LTDU - 2 juveniles
CAGO - Pair
LTDU - 1

P31

Old Passerine Nest

Old CORE nest

L30

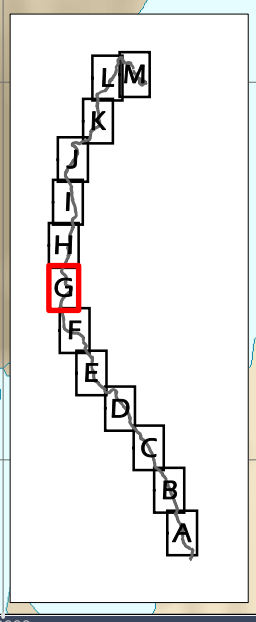
Old Passerine Nest

Old CORE Nest

P30

CORE 1 M

CORE Nest (3 eggs)



Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
- 2007
- 2008
- 2009

Survey Route - 2009 *
(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.13
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet G

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

623000 624000 625000 626000 627000

7190000 7189000 7188000 7187000 7186000 7185000 7184000

N

Old Waterfowl Nest

P36 LTDU - (2F, 2 juveniles)
SESA - 5
LALO - 1 M

P35

L36 HERG
CAGO - 4
LALO - 2 M
CORE - 1 F
AGPL - 1 M

LTDU - 5
HERG - 1
RNPH - 2
SESA - 1
ROPT - 1
CORE - Pair
L35 CAGO - 2

AMGP (nest likely)

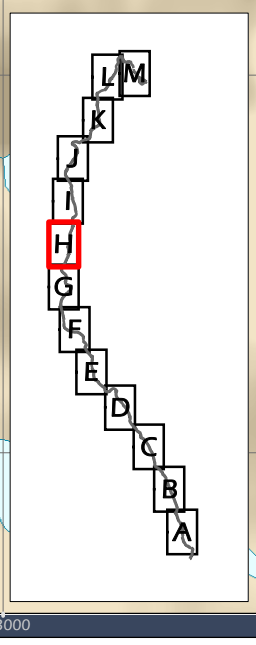
LALO Nest

L34
SAVS - 1
LALO - 1 M

HERG Nest

SACR (nest likely) - Pair

P54



Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
- 2007
- 2008
- 2009

Survey Route - 2009 *
(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.14
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet H

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

624000 625000 626000 627000 628000

7197000 7196000 7195000 7194000 7193000 7192000 7191000

N

HERG Nest (pair)

L40

P38
SACR - 2
LTDU - 1
SAVS - 1
LALO - 2
HOLA - 1 M

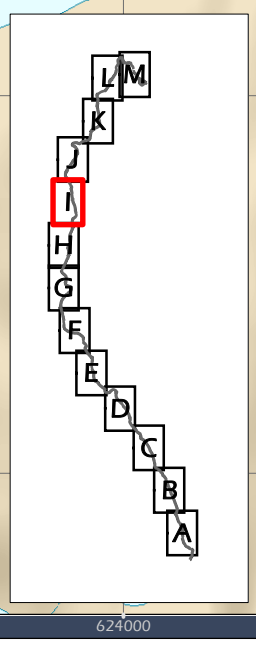
LTDU - 1
LALO - 3
SAVS - 1
P37

LALO
SESA
LALO - 1
SAVS - 1 M

L39
LALO Nest

L38
SAVS - 1

L37



Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

624000 625000 626000 627000 628000

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
- 2007
- 2008
- 2009

Survey Route - 2009 *
(Note: Alternating Colour
to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail



Figure 4.15
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet I

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

625000 626000 627000 628000 629000

7204000 7203000 7202000 7201000 7200000 7199000 7198000

CAGO Nest
SESA - 3
CORE - 1 M
L44
P46
SESA
HERG
SESA - 3
L43
ROPT - 1
P45
P44
SAVS Nest (5 eggs)
SESA Nest
PAJA Nest (2 eggs)
PAJA Nest
P43
P42
DUNL - 1
LALO - 2 M
SNGO sign
L42
P41
CAGO - 1
LTDU - 4
SESA - 1 F
LALO - 1
SAVS - 1 M
P40
P39
LTDU Nest (4 eggs)
SESA Nest (4 eggs)
SESA Nest (4 eggs)
HERG Nest (pair)

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

M L K J I H G F E D C B A

Legend

All-Weather Private Access Road
Survey Route - 2009 *
Road Buffer (200m)
(Note: Alternating Colour to help with transect identification)

Nest Locations (Observation Year)
- 2007
- 2008
- 2009

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.16
2007, 2008 and 2009 AWPAR Waterfowl Nest Survey Results
Mapsheet J

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

P51 SESA - 1

P50
LALO - 1 M

L49 SESA - 1

LALO - 1 F P49
CORA - 1 F

Likely ROPT Nest nearby
L48
Predated ROPT egg
SAVS - 1
LALO - 1 M

L47
LALO - 1 M

L46
LTDU - 2
SAVS - 2 M

SAVS Nest (5 eggs)

SESA Nest
P48
SESA - 2
SAVS - 1 M

LTDU - 1 P47
SESA - 1
SAVS - 1
LALO - 2

LALO Nest
CAGO - 1 L45
AMGP - 1
SAVS - 1 M
LALO - Pair

P55

P46

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
2009
Survey Route - 2009 *
(Note: Alternating Colour to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.17
2007, 2008 and 2009 AWPAR Waterfowl Nest Survey Results
Mapsheet K

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

631000 632000 633000 634000 635000

7218000 7217000 7216000 7215000 7214000 7213000 7212000 7211000

L54
LALO - 3
SAVS Nest
(4 eggs)
L55
CAGO - Pair
AMPI - 1
SAVS - 1 M
LALO Nest (4 eggs)
LALO (nest likely) - 1
CAGO - Pair
L53
SAVS Nest
L64
SAVS - 1 M
P52
HOLA - Pair
LALO - 1
SAVS - 1 M
ROPT - 1
Predated ROPT - 1
L52
LALO Nest
(4, 4 eggs)
L51
LALO Nest
L50
SNGO - 17
P51 SESA - 1

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

L M K J I H G F E D C B A

Legend

All-Weather Private Access Road
Survey Route - 2009 *
Road Buffer (200m)
(Note: Alternating Colour to help with transect identification)

Nest Locations (Observation Year)
- 2007
- 2008
- 2009

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.18
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet L

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

635000 636000 637000 638000 639000

7218000 7217000 7216000 7215000 7214000 7213000 7212000

N

SAVS Nest
(4 eggs)

L55
CAGO - Pair
AMPI - 1
SAVS - 1 M

L57

LALO - 3 (2 M, 1 F)
WIPT - Pair
WCSP - 1

L58

Old LALO nest

AMPI Nest (5 eggs)

CAGO - Pair
HOLA - Pair
LALO - 3
ROPT - 3 (2 Juvenile)
AMPI - 1

L62

L61

AMPI - 2
ROPT - 1
SAVS - 1
WCSP - 1 M

L60

L63

LALO Nest (4 chicks)

L M K J I H G F E D C B A

Species Codes

AMGP - American Golden-Plover
AMPI - Americal Pipit
CAGO - Canada Goose
CORA - Common Raven
CORE - Common Redpoll
DUNL - Dunlin
GRSC - Greater Scaup
GWFG - Greater White-fronted Goose
HERG - Herring Gull
HOLA - Horned Lark
LALO - Lapland Longspur
LTDU - Long-tailed Duck
NOPI - Northern Pintail
PAJA - Parasitic Jaeger
PEFA - Peregrine Falcon
RBME - Red-breasted Merganser
RNPH - Red-necked Phalarope
ROPT - Rock Ptarmigan
RTLO - Red-throated Loon
SACR - Sandhill Crane
SAVS - Savannah Sparrow
SEPL - Semipalmated Plover
SESA - Semipalmated Sandpiper
TUSW - Tundra Swan
WCSP - White-crowned Sparrow
WIPT - Willow Ptarmigan

635000 636000 637000 638000 639000

Legend

All-Weather Private Access Road
Road Buffer (200m)
Nest Locations (Observation Year)
2007
2008
2009
Survey Route - 2009 *
(Note: Alternating Colour
to help with transect identification)

* Observations for 2007 are in red , 2008 are in blue and 2009 are in purple.

0 250 500 750
Metres

Projection: UTM Zone 14 NAD83

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

Area of Detail

Figure 4.19
2007, 2008 and 2009 AWPAR
Waterfowl Nest Survey Results
Mapsheet M

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

The figures illustrate that the lakes and ponds within 200 m of the AWPAR continue to be utilized by waterbird and songbird species on an annual basis (a qualitative assertion). Moreover, nest sites observed in previous years (i.e., 2007 or 2008) are often utilized again in subsequent years (e.g., Canada Goose nests observed at lakes L18 and L20 and pond P20 and a Parasitic Jaeger nest observed at pond P42). These types of locations are particularly good monitoring indicators of potential AWPAR effects and can be evaluated qualitatively and quantitatively to ascertain any variances in nest fidelity over time. No Greater White-fronted Goose (*Anser albifrons)* or Long-tailed Duck (*Clangula hyemalis*) nests were observed in 2009. These nests occurred in low densities in previous years; therefore, it is currently unknown whether or not this is a natural or mine-related effect. Potential changes in the composition of nesting species at the mine site and along the AWPAR will be explored in future years with the inclusion of additional data.

A summary of active nests observed during the 2007-2009 waterbird nest surveys is provided in Table 4.8. In 2007 and 2008, Canada Goose was the most abundant nesting waterbird along the AWPAR while in 2009, the most abundant waterbird was Semipalmated Sandpiper.

Table 4.8: Summary of 2007-2009 Waterbird Nest Survey Results

Bird Species	2007	2008	2009
CAGO	3	4	4
GWFG	1	0	0
HERG	1	2	1
LTDU	1	1	0
PAJA	0	2	1
SESA	0	1	5
TOTAL WATERBIRD NESTS	**7**	**10**	**12**

4.5.3 Potential Project-Related Variation and Accuracy of Impact Predictions

An analysis of project-related variation will be conducted in subsequent years following mine site construction completion and the collection of sufficient survey data during AWPAR operation for appropriate statistical analyses.

4.6 MINE SITE GROUND SURVEYS

Consolidated mine site observations from incidental wildlife observation logs, and daily and weekly mine site inspection reports are provided in Appendix D. Reported incidental wildlife observations in 2009 (155) dropped relative to 2008 (326), which is anticipated to be largely the result of personnel changes. Non-reporting may also be a factor as some employees may consider animal observations as commonplace over time. 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 as well as evaluating the effectiveness of adaptive management and in identifying potential problem animals.

4.7 ALL-WEATHER PRIVATE ACCESS ROAD GROUND SURVEYS

Ground surveys commenced shortly following the onset of AWPAR construction (2007). 2009 marked the first year in which sampling intensity was uniform along the entire length of the AWPAR.

In 2007, road surveys were conducted on average every 4.1 days from 01 March 2007 until 31 December 2007. In 2008, road surveys were conducted on average every 4.2 days from 02 January 2008 until 29 December 2008. In 2009, road surveys were conducted on average every 6.3 days from 09 January 2009 to 16 December 2009. The number of surveys conducted each season in 2007, 2008 and 2009 is detailed in Table 4.9.

Table 4.9: Number of AWPAR Surveys per Season in 2007, 2008, and 2009

Year	Season	n
2007	Spring	10
	Summer	24
	Fall	8
	Winter	32
	Year End Total	**74**
2008	Spring	15
	Summer	6
	Fall	15
	Winter	52
	Year End Total	**88**
2009	Spring	15
	Summer	10
	Fall	8
	Winter	25
	Year End Total	**58**

In 2009, AWPAR surveys decreased relative to 2008 due to frequent road closures in 2009 (i.e., blowing snow or unfavourable/unsafe driving conditions) and personnel scheduling limitations. Agnico-Eagle has taken on a more active role pertaining to AWPAR surveys. The current goal is to average two (2) surveys a week over the course of the year. Survey intensity will increase during the period between March and October to offset the potential reduction in surveys during poor weather conditions between November and February.

Caribou and waterfowl represent the two most commonly sighted groups observed during the surveys. Tables 4.10 and 4.11 summarize the seasonal and monthly 2009 monitoring program observations and sampling intensity for Caribou and waterfowl, respectively. 2007 and 2008 results are also provided for comparative purposes.

Table 4.10: 2007, 2008, and 2009 Systematic Ground Survey Caribou Observations and Sampling Intensity along the AWPAR.

Year	Season	Month	# of Surveys	Total # of Sightings*	Average # of Sightings / Survey	Total # of Observed Caribou	Average # of Observed Caribou / Survey	Average # of Caribou / Sighting
2007	Winter	March	7	43	6.1	491	70.1	11.4
	Spring	April	7	84	12.0	1,174	167.7	14.0
	Spring	May	3	59	19.7	910	303.3	15.4
	Summer	June	12	96	8.0	680	56.7	7.1
	Summer	July	12	13	1.1	20	1.7	1.5
	Fall	August	6	9	1.5	10	1.7	1.1
	Fall	September	2	38	19.0	410	205.0	10.8
	Winter	October	5	5	1.0	92	18.4	18.4
	Winter	November	12	44	3.7	3,184	265.3	72.4
	Winter	December	8	207	25.9	3,773	471.6	18.2
2008	Winter	January	9	224	24.9	3,232	359.1	14.4
	Winter	February	5	289	57.8	3,324	664.8	11.5
	Winter	March	5	231	46.2	2,635	527.0	11.4
	Spring	April	10	364	36.4	4,612	461.2	12.7
	Spring	May	5	142	28.4	1,720	344.0	12.1
	Summer	June	4	28	7.0	104	26.0	3.7
	Summer	July	2	10	5.0	133	66.5	13.3
	Fall	August	5	79	15.8	428	85.6	5.4
	Fall	September	10	108	10.8	1,351	135.1	12.5
	Winter	October	12	62	5.2	2,910	242.5	46.9
	Winter	November	11	87	7.9	7,895	717.7	90.7
	Winter	December	10	136	13.6	1,402	140.2	10.3
2009	Winter	January	3	25	8.3	300	100.0	12.0
	Winter	February	5	45	9.0	483	96.6	10.7
	Winter	March	4	26	6.5	433	108.3	16.7
	Spring	April	7	48	6.9	548	78.3	11.4
	Spring	May	8	52	6.5	676	84.5	13.0
	Summer	June	6	33	5.5	269	44.8	8.2
	Summer	July	4	0	0.0	0	0.0	0.0
	Fall	August	5	51	10.2	182	36.4	3.6
	Fall	September	3	24	8.0	204	68.0	8.5
	Winter	October	4	24	6.0	609	152.3	25.4
	Winter	November	5	1	0.2	13	2.6	13.0
	Winter	December	1	2	2.0	22	22.0	11.0

* the total number of occurrences a Caribou was observed – singularly or in a group

Table 4.11: 2007, 2008, and 2009 Systematic Ground Survey Waterfowl Observations and Sampling Intensity along the AWPAR.

Year	Season	Month	# of Surveys	Total # of Sightings	Average # of Sightings / Survey	Total # of Observed Waterfowl	Average # of Observed Waterfowl / Survey	Average #of Waterfowl / Sighting
2007	Winter	March	7	0				
	Spring	April	7	0				
	Spring	May	3	0				
	Summer	June	12	271	22.6	6,494	541.2	24.0
	Summer	July	12	74	6.2	192	16.0	2.6
	Fall	August	6	12	2.0	110	18.3	9.2
	Fall	September	2	2	1.0	4	2.0	2.0
	Winter	October	5	0				
	Winter	November	12	0				
	Winter	December	8	0				
2008	Winter	January	9					
	Winter	February	5					
	Winter	March	5					
	Spring	April	10					
	Spring	May	5	10	2.0	64	12.8	6.4
	Summer	June	4	67	16.8	368	92.0	5.5
	Summer	July	2	5	2.5	130	65.0	26.0
	Fall	August	5	9	1.8	222	44.4	24.7
	Fall	September	10	16	1.6	2,409	240.9	150.6
	Winter	October	12	1	0.1	1	0.1	1.0
	Winter	November	11					
	Winter	December	10					
2009	Winter	January	3					
	Winter	February	5					
	Winter	March	4					
	Spring	April	7					
	Spring	May	8	2	0.3	41	5.1	20.5
	Summer	June	6	6	1.0	45	7.5	7.5
	Summer	July	4	1	0.3	3	0.8	3.0
	Fall	August	5	21	4.2	821	164.2	39.1
	Fall	September	3	14	4.7	2,201	733.7	157.2
	Winter	October	4	1	0.3	2	0.5	2.0
	Winter	November	5					
	Winter	December	1					

Figure 4.20 (Mapsheet A) and Figure 4.21 (Mapsheet B) illustrate the observed 2009 spring Caribou distribution within the AWPAR LSA. Similarly, Figure 4.22 (Mapsheet A) and Figure 4.23 (Mapsheet B) illustrate the observed 2009 summer Caribou distribution. Figure 4.24 (Mapsheet A) and Figure 4.25 (Mapsheet B), and Figure 4.26 (Mapsheet A) and Figure 4.27 (Mapsheet B) illustrate the observed Caribou distribution in 2009 for fall and winter, respectively. Figure 4.28 (Mapsheet A) and

Figure 4.30 (Mapsheet B) illustrate observed Caribou distribution data within AWPAR LSA for all seasons in 2009.

In August 2009, Agnico-Eagle updated the data form; however, the 'direction from road' column was inadvertently excluded from the update. This column was subsequently added to the revised data form in October 2009. As a result, the data collected between August and October is presented graphically as circles of varying diameter around the road. These circles indicate that the animal(s) may have been observed in any direction from the centre of the observation location. The circle diameter is representative of the approximate distance between the observer and the animal(s).

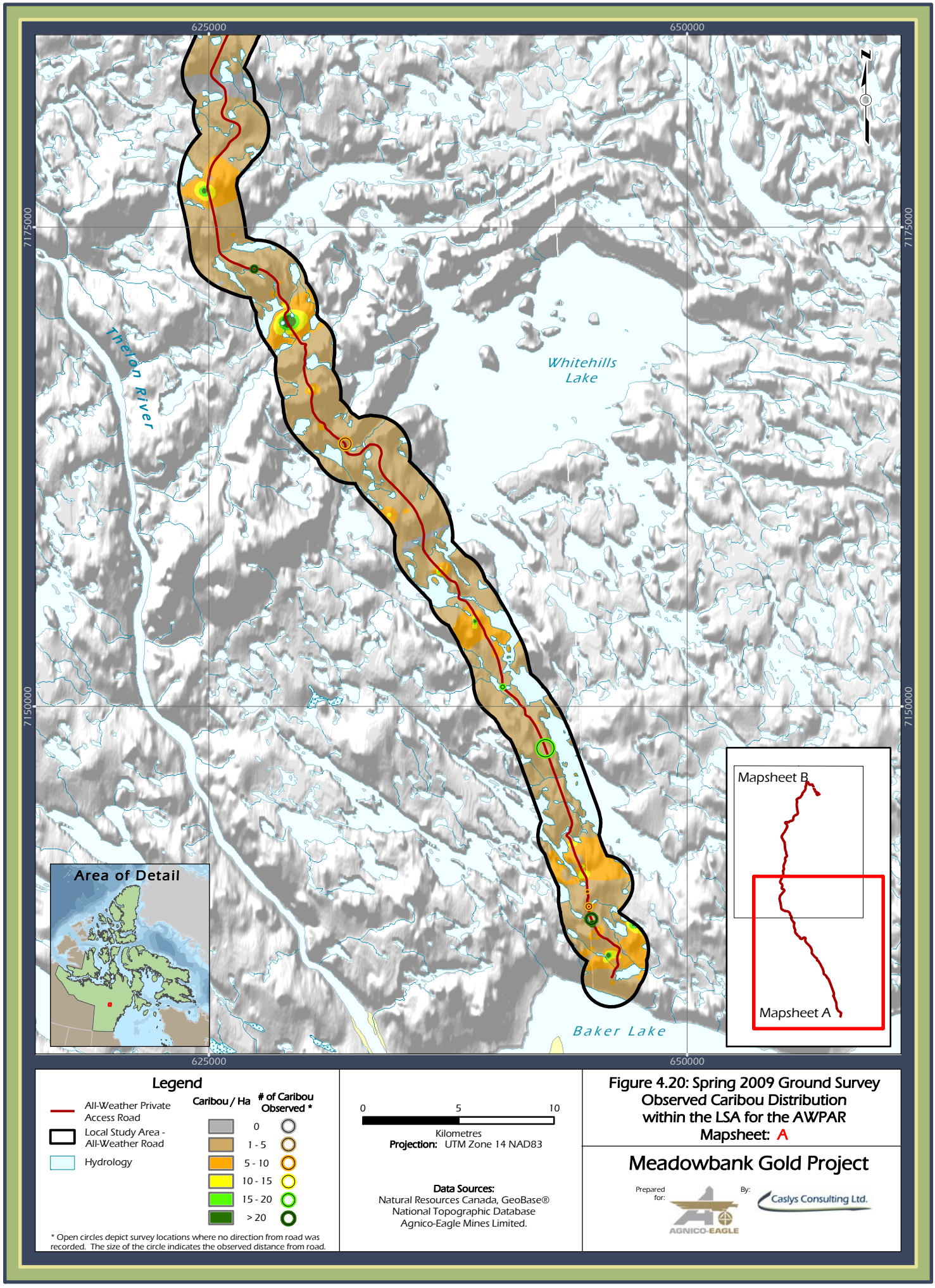
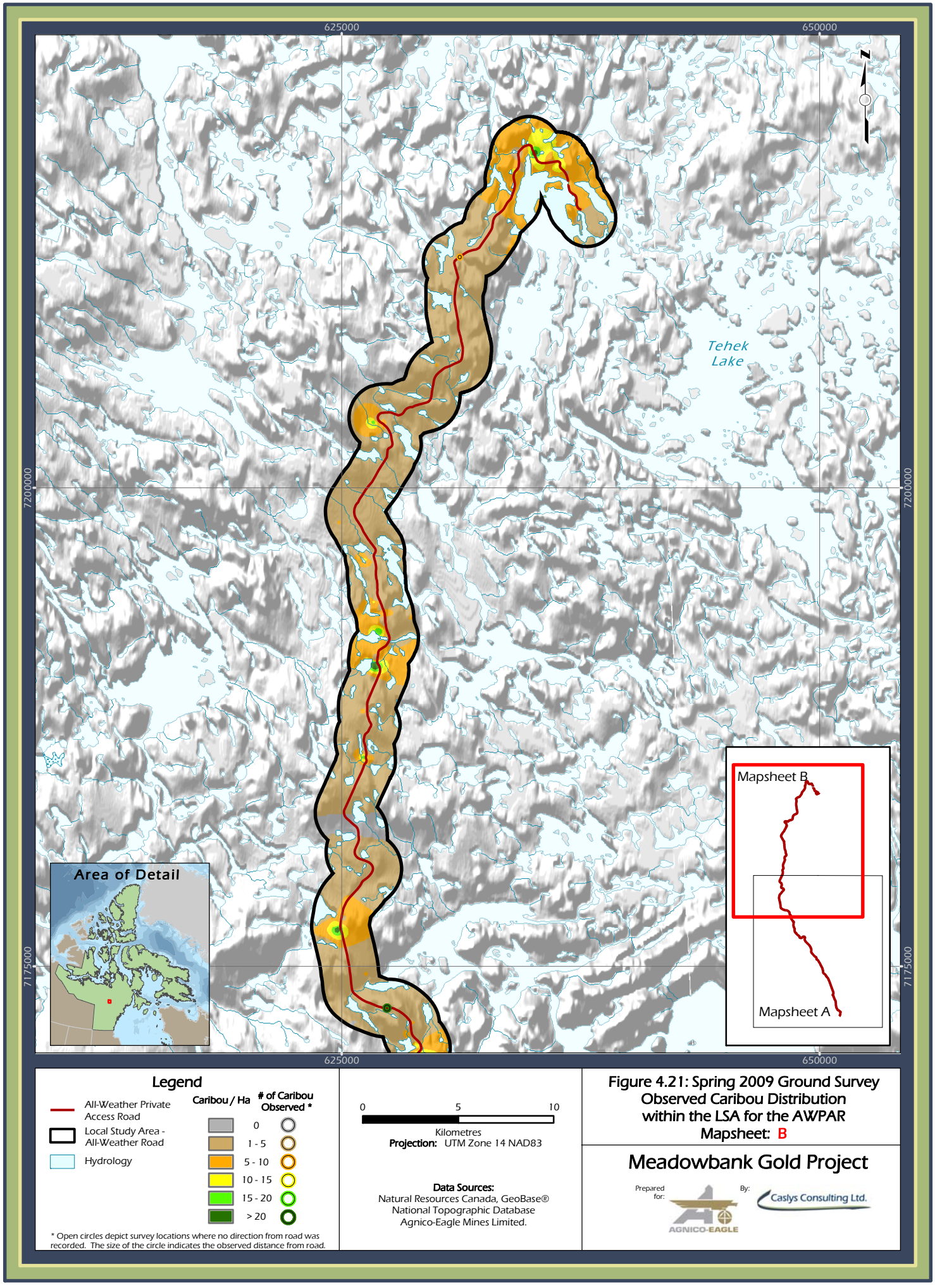


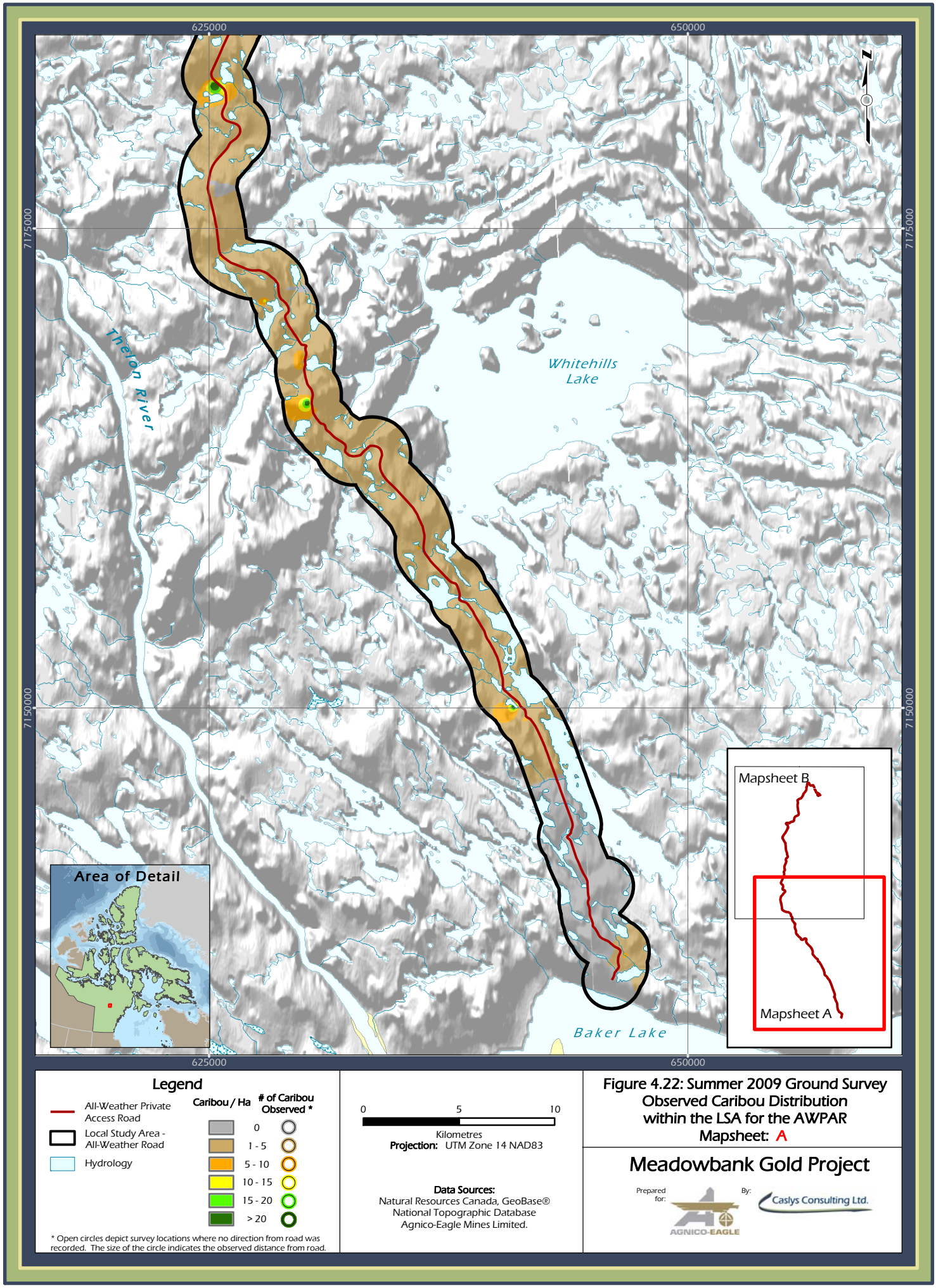
Figure 4.20: Spring 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


625000
650000
7200000
7175000
Tehek Lake
Area of Detail
Mapsheet B
Mapsheet A
Legend
All-Weather Private Access Road
Local Study Area - All-Weather Road
Hydrology
Caribou / Ha
# of Caribou Observed *
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20
* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.
0
5
10
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Figure 4.21: Spring 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: B
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.



Legend

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

Caribou / Ha	# of Caribou Observed *
0	
1 - 5	
5 - 10	
10 - 15	
15 - 20	
> 20	

* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.

0 5 10

Kilometres

Projection: UTM Zone 14 NAD83

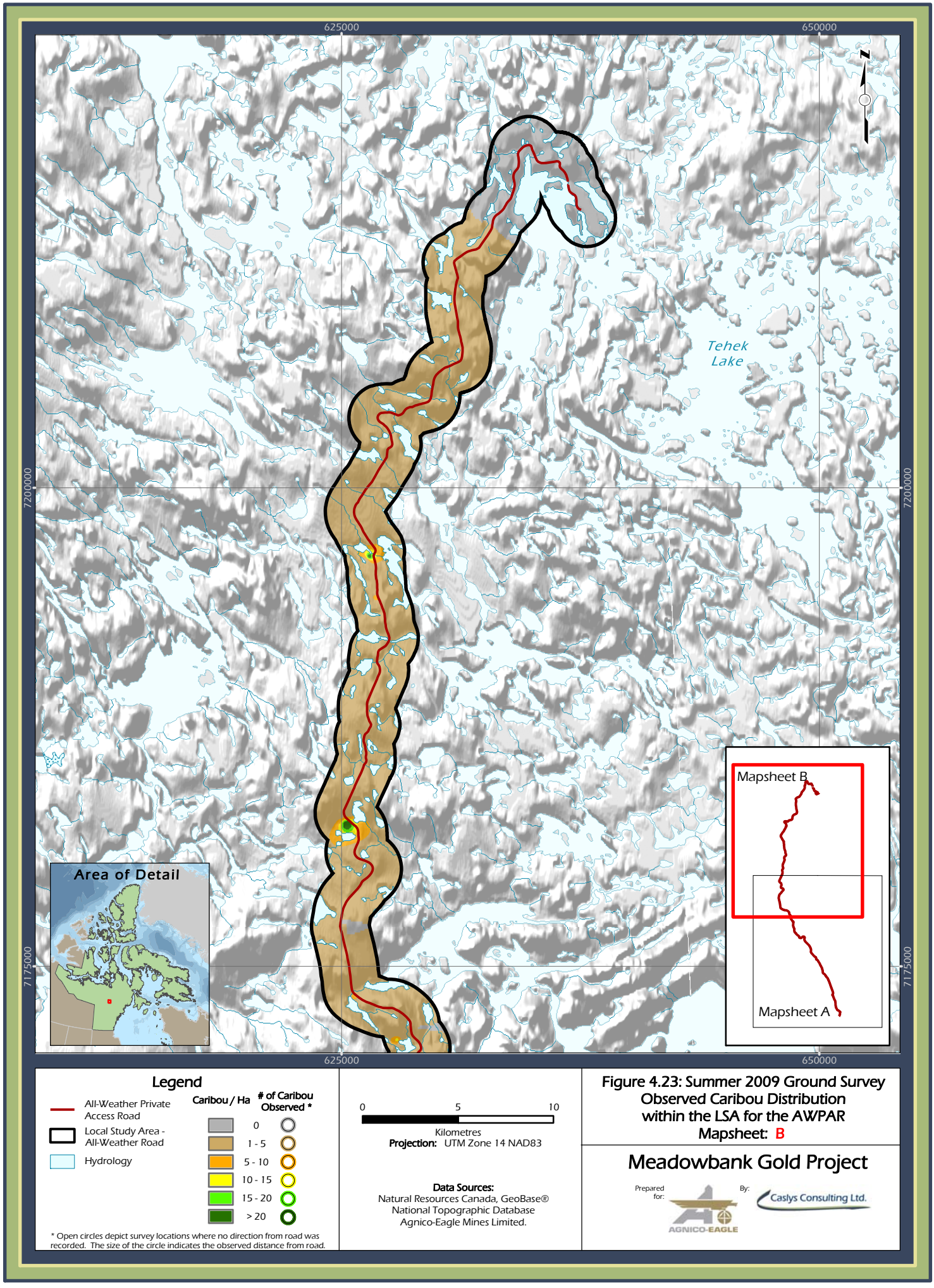
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

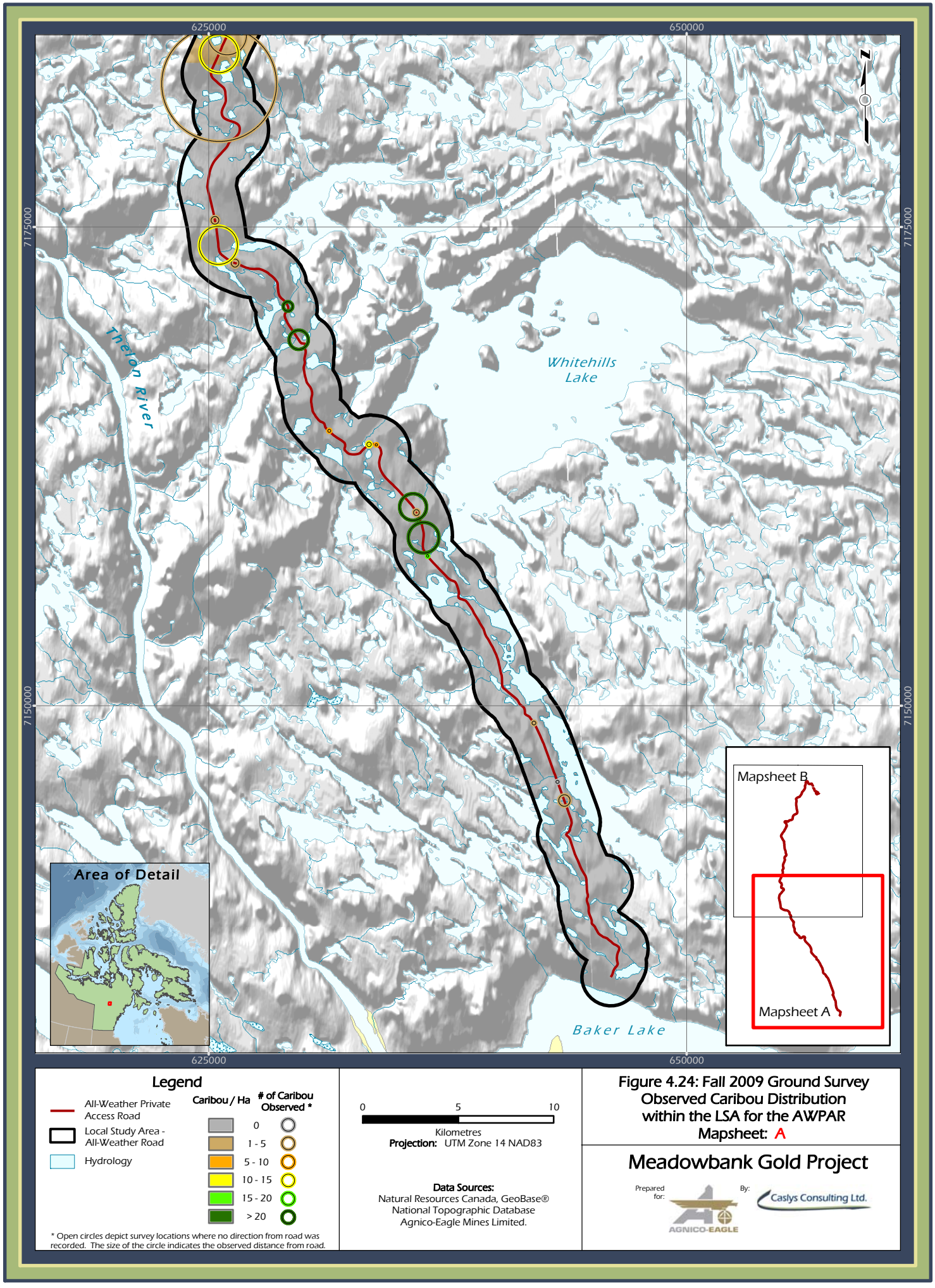
Figure 4.22: Summer 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


625000
650000
7200000
7175000
Tehek Lake
N
Area of Detail
Mapsheet B
Mapsheet A
Legend
All-Weather Private Access Road
Local Study Area - All-Weather Road
Hydrology
Caribou / Ha
# of Caribou Observed *
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20
* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.
0
5
10
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Figure 4.23: Summer 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: B
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.



Legend

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

Caribou / Ha	# of Caribou Observed *
0	
1 - 5	
5 - 10	
10 - 15	
15 - 20	
> 20	

* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.

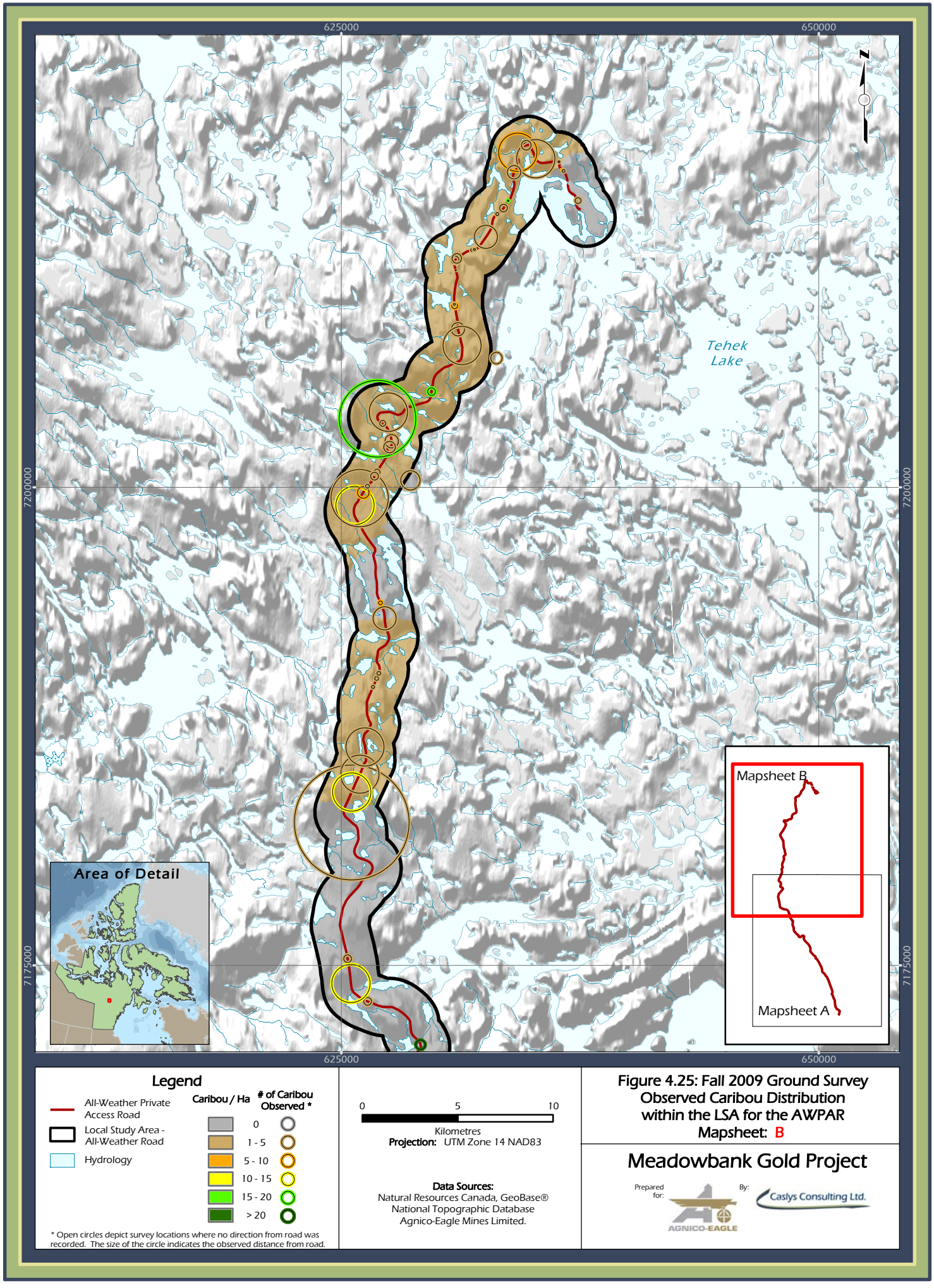
0 5 10
Kilometres
Projection: UTM Zone 14 NAD83

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

Figure 4.24: Fall 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR Mapsheet: A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE
By: Caslys Consulting Ltd.


625000
650000
7200000
7175000
Tehek Lake
N
Area of Detail
Mapsheet B
Mapsheet A
Legend
All-Weather Private Access Road
Local Study Area - All-Weather Road
Hydrology
Caribou / Ha
# of Caribou Observed *
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20
* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.
0
5
10
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Figure 4.25: Fall 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: B
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

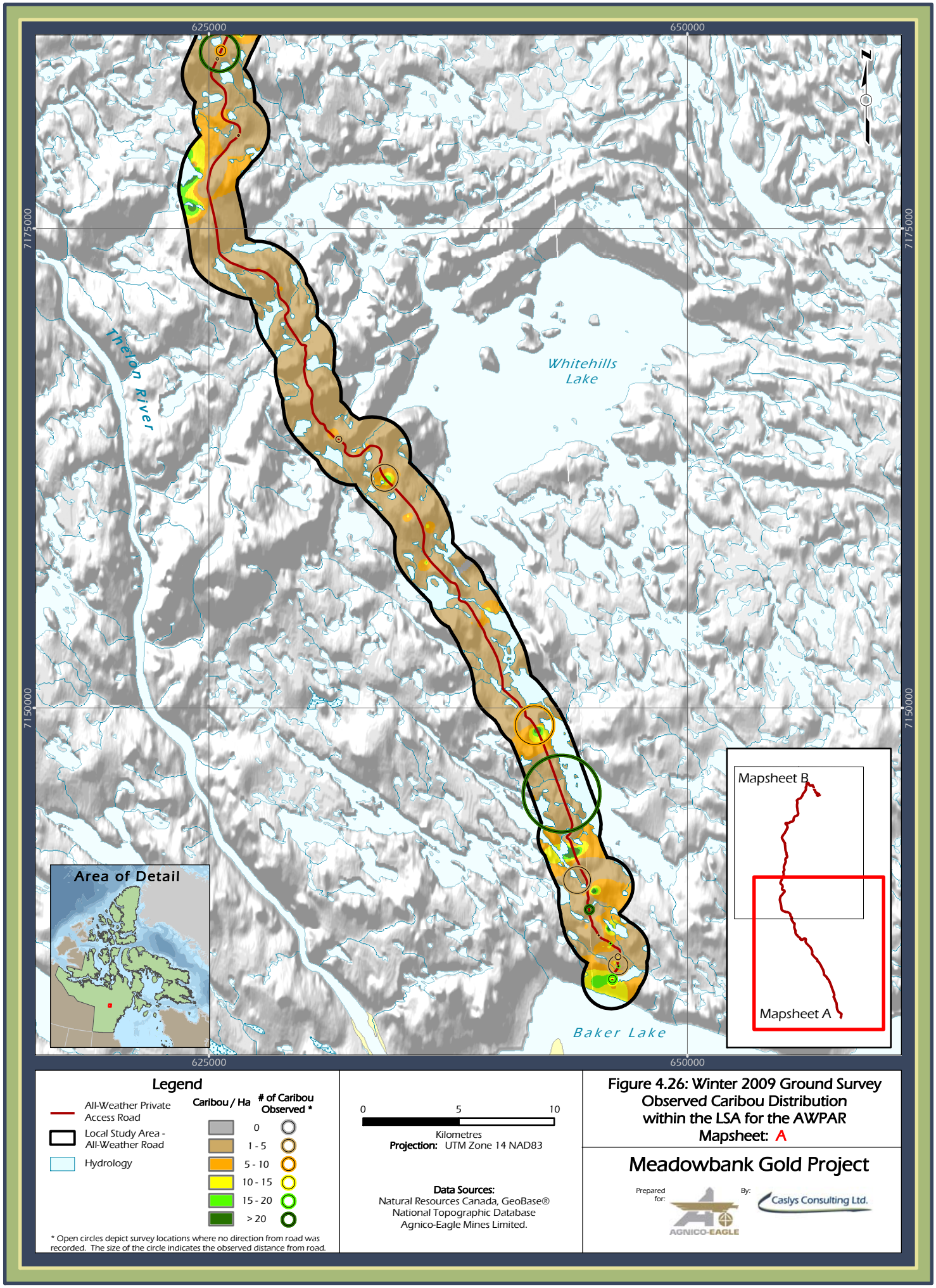
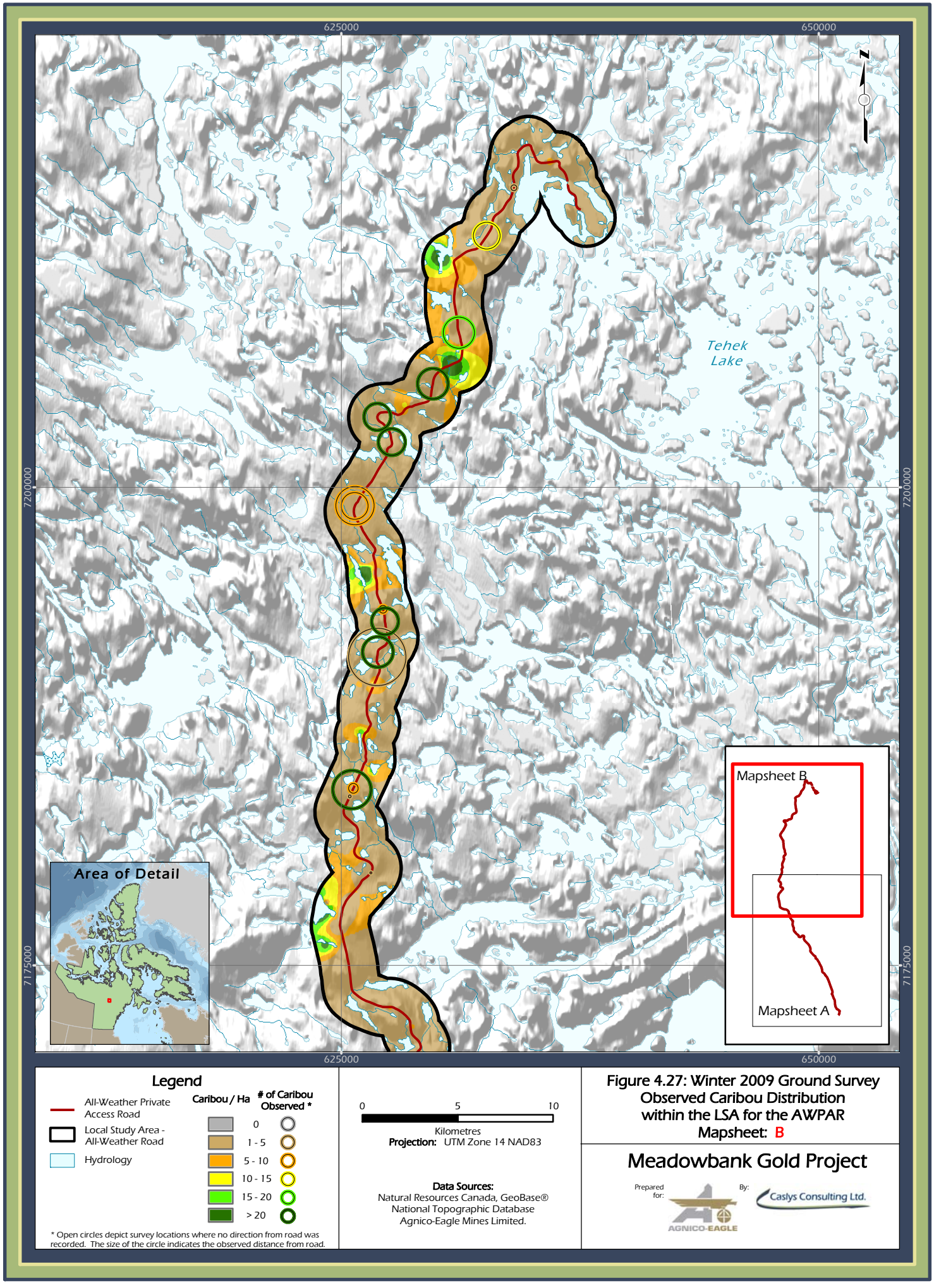


Figure 4.26: Winter 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


625000
650000
7200000
7175000
Tehek Lake
Area of Detail
Mapsheet B
Mapsheet A
Legend
All-Weather Private Access Road
Local Study Area - All-Weather Road
Hydrology
Caribou / Ha
# of Caribou Observed *
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20
* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.
0
5
10
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Figure 4.27: Winter 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR
Mapsheet: B
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

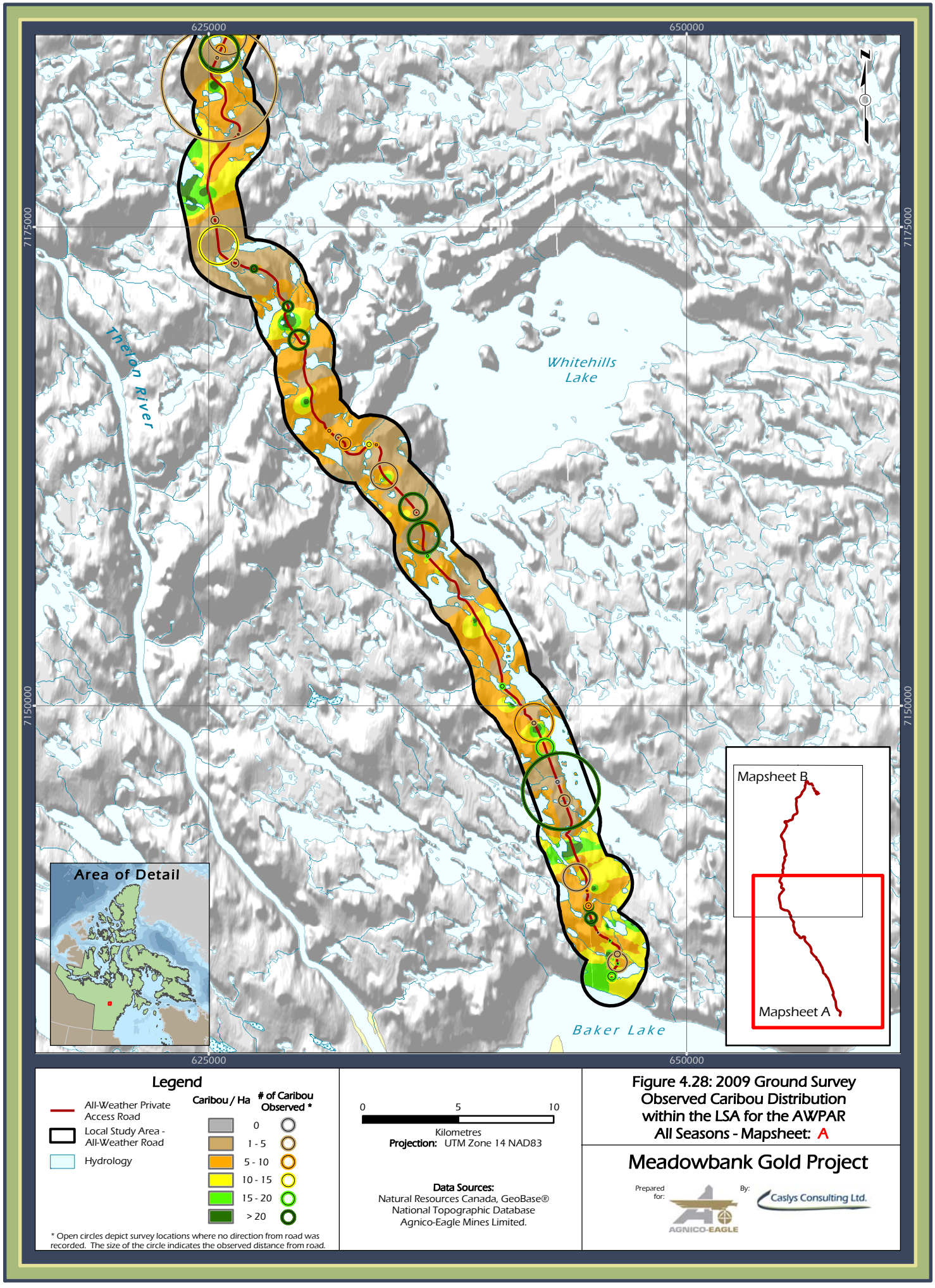
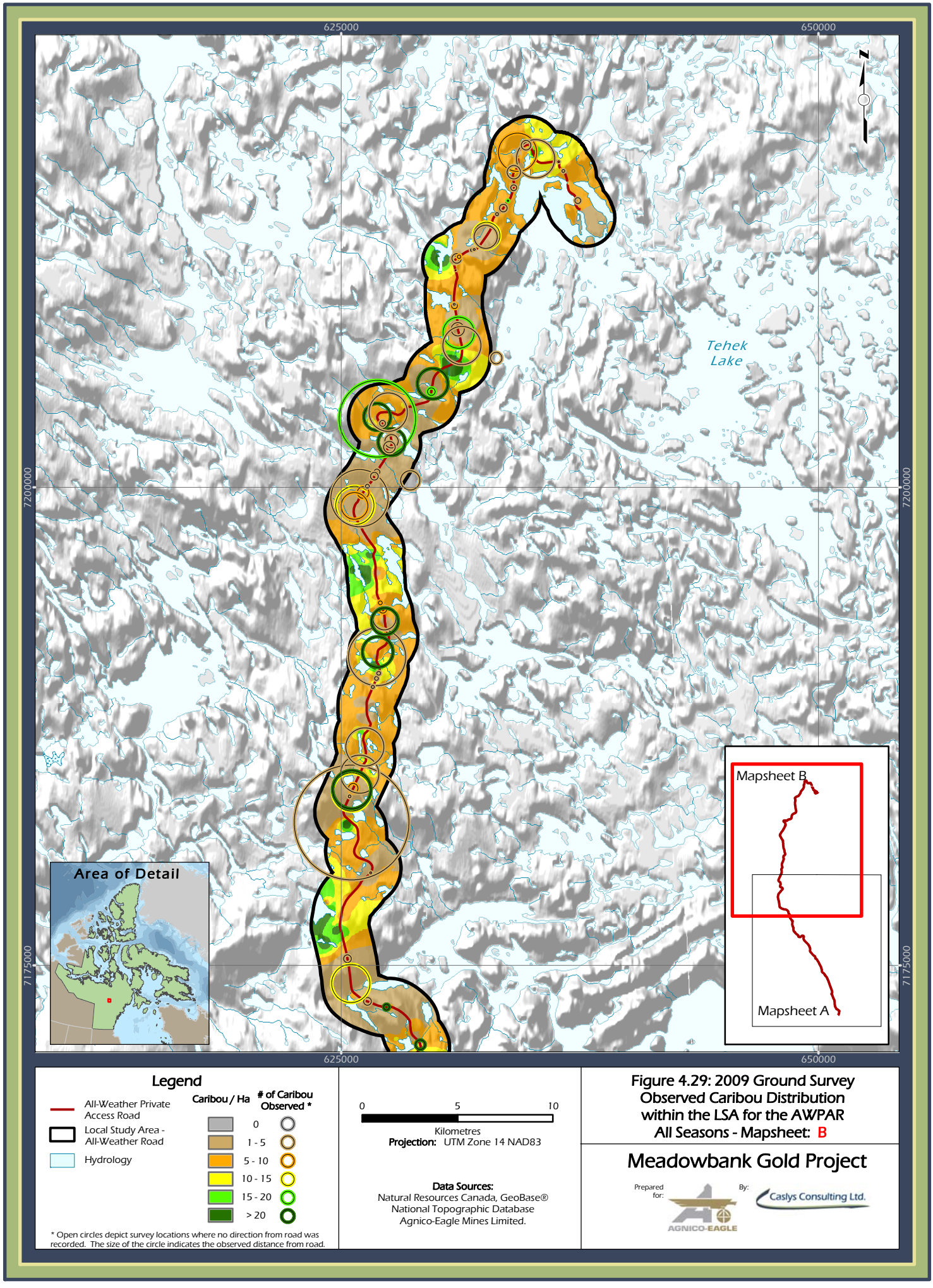


Figure 4.28: 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR All Seasons - Mapsheet: A

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


625000
650000
7200000
7175000
Tehek Lake
N
Area of Detail
Mapsheet B
Mapsheet A
Legend
All-Weather Private Access Road
Local Study Area - All-Weather Road
Hydrology
Caribou / Ha
# of Caribou Observed *
0
1 - 5
5 - 10
10 - 15
15 - 20
> 20
* Open circles depict survey locations where no direction from road was recorded. The size of the circle indicates the observed distance from road.
0
5
10
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Figure 4.29: 2009 Ground Survey Observed Caribou Distribution within the LSA for the AWPAR All Seasons - Mapsheet: B
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

In addition to the two most commonly observed species, Caribou and waterfowl, data for each species observed during the surveys was divided into season. In summary, 23, 34, 28, and 17 species were sighted in 2009 during the spring, summer, fall, and winter surveys respectively. Comparatively, 24, 35, 27, and 20 species were observed in 2008 during the same period, a modest increase in species richness each season, despite thirty (30) fewer surveys in 2009. Similarly, 2009 results were up when compared to 2007 results, despite a lower number of surveys in 2009. In contrast, yearly detection counts (i.e., the total number of surveys in which a given species was observed) in 2009 were down when compared to 2007 and 2008 results, which is likely due to a lower number of surveys relative to previous years. Non-reporting of common species (e.g., Common Raven, Willow Ptarmigan and Arctic Ground Squirrel) may also be a factor. Table 4.13 summarizes counts of each species per 10 kilometres surveyed for all species sighted during surveys. Seventy-four (74), 88, and 58 surveys were conducted in 2007, 2008, and 2009, respectively.

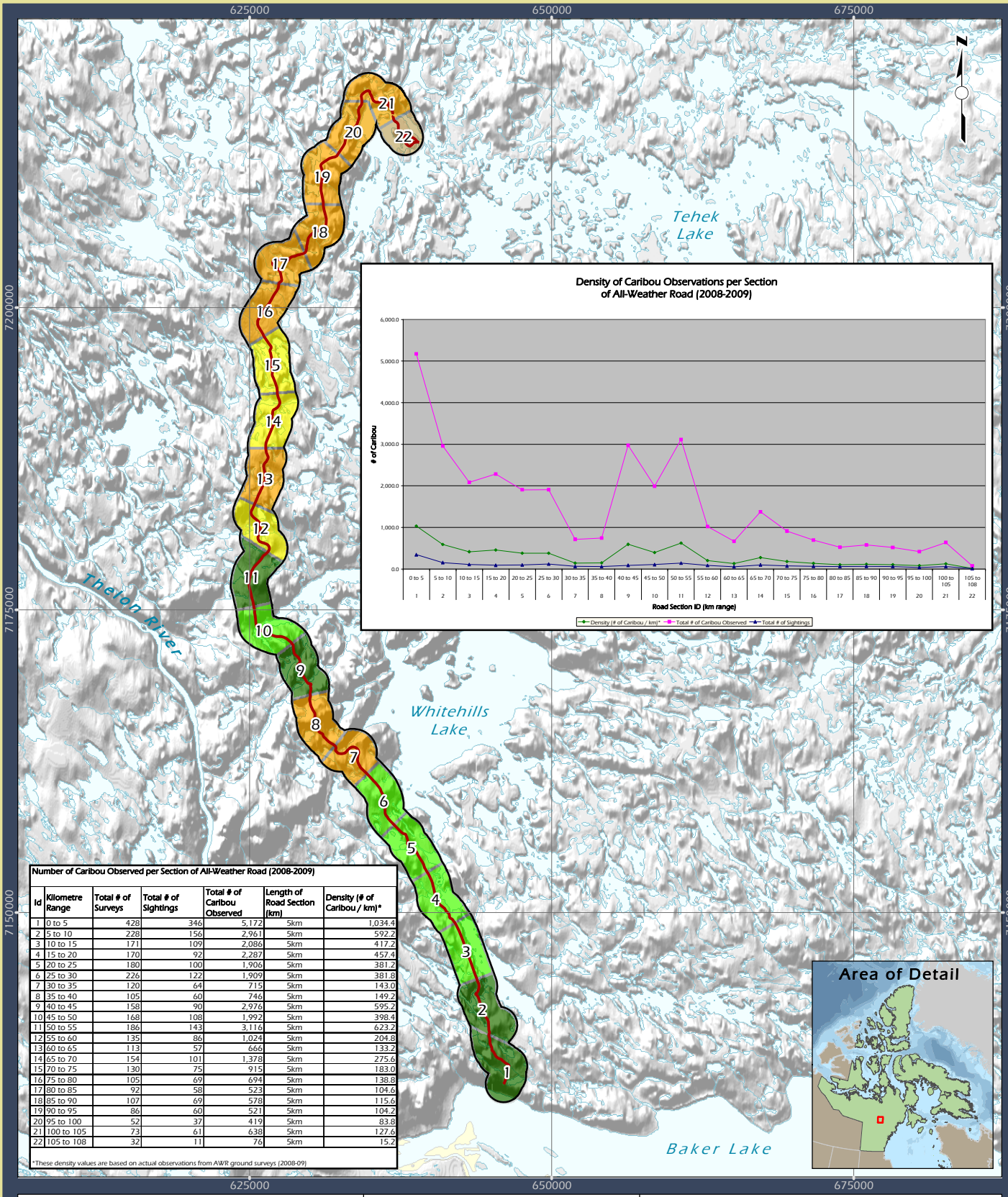
Table 4.12: The Mean Number of Species Counted per 10 Kilometres of Road Surveyed as a Function of Season (2007-2009 Pooled Data). The Number of Surveys per Season and per Year in which a Species was Detected in 2007-2009 are also Provided.

Species Name	Counts per 10 km Surveyed				# of Surveys where Species Detected Pooled (2007-2009) Data				Yearly Detections		
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	2007	2008	2009
Arctic Fox	0.1	0.0	0.1	0.1	18	8	19	60	32	60	13
Arctic Ground Squirrel	0.0	0.1	0.0	0.0	2	6	2	0	0	7	3
Arctic Hare	0.4	0.1	0.1	0.1	29	11	10	43	17	47	28
Arctic Tern	0.0	0.0	0.0	0.0	0	1	0	0	1	0	0
Cackling Goose	0.0	0.4	0.7	0.0	0	11	1	1	10	3	0
Canada Goose	0.1	1.4	1.5	0.0	2	23	11	0	19	11	6
Caribou	27.7	4.3	8.7	30.3	40	33	28	96	63	87	47
Common Loon	0.0	0.0	0.0	0.0	0	4	0	0	3	1	0
Common Merganser	0.0	0.0	0.0	0.0	0	1	0	0	0	1	0
Common Raven	0.1	0.0	0.0	0.1	7	4	1	24	13	22	1
Common Redpoll	0.0	0.0	0.0	0.0	1	0	0	0	0	1	0
Glaucous Gull	0.0	0.4	0.0	0.0	1	5	0	0	5	1	0
Greater Scaup	0.0	0.2	0.0	0.0	0	9	1	1	8	3	0
Greater WF Goose	0.0	0.9	0.0	0.0	1	15	1	0	13	4	0
Gyrfalcon	0.0	0.0	0.0	0.0	1	2	2	1	2	4	0
Herring Gull	0.0	0.6	0.1	0.0	1	17	6	0	20	4	0
Horned Lark	0.0	0.0	0.0	0.0	0	0	1	0	1	0	0
Lapland Longspur	0.0	0.0	0.0	0.0	0	1	0	0	0	1	0
Lemming	0.0	0.0	0.0	0.0	0	0	0	1	1	0	0
Long-tailed Duck	0.0	0.6	0.1	0.0	0	17	2	0	16	2	1
Long-tailed Jaeger	0.0	0.0	0.0	0.0	0	0	1	0	1	0	0
Muskox	0.2	0.2	0.4	0.1	6	13	15	20	12	32	10
Northern Pintail	0.0	0.3	0.0	0.0	1	16	1	0	12	6	0
Owl (unidentified spp.)	0.0	0.0	0.0	0.0	0	1	1	0	1	0	1
Parasitic Jaeger	0.0	0.0	0.0	0.0	0	1	2	0	2	1	0

Species Name	Counts per 10 km Surveyed				# of Surveys where Species Detected Pooled (2007-2009) Data				Yearly Detections		
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	2007	2008	2009
Peregrine Falcon	0.0	0.0	0.0	0.0	0	2	1	1	2	1	1
Raven	0.0	0.0	0.0	0.0	1	1	0	0	2	0	0
Red-breasted Merganser	0.0	0.1	0.0	0.0	0	8	1	0	8	1	0
Rock Ptarmigan	0.9	0.6	0.0	0.5	14	13	2	14	19	23	1
Ross's Goose	0.1	1.2	0.0	0.0	1	5	0	0	5	1	0
Rough-legged Hawk	0.0	0.0	0.0	0.0	0	0	1	0	0	0	1
Sandhill Crane	0.1	1.0	0.4	0.0	2	27	16	0	25	13	7
Snow Bunting	0.0	0.0	0.0	0.0	1	0	0	0	0	1	0
Snow Goose	0.0	20.9	17.0	0.0	1	8	6	2	5	6	6
Snowy Owl	0.0	0.0	0.0	0.0	0	0	0	1	1	0	0
Tundra Swan	0.0	0.1	0.0	0.0	0	7	2	0	8	1	0
Weasel	0.0	0.0	0.0	0.0	0	1	0	0	1	0	0
Willow Ptarmigan	0.4	1.0	0.1	0.4	8	18	3	16	24	21	0
Wolf	0.1	0.0	0.0	0.0	8	1	1	16	4	16	6
Wolverine	0.0	0.0	0.0	0.0	4	1	0	6	4	6	1
Ptarmigan (unident. spp.)	0.4	0.0	0.0	0.0	8	1	2	4	7	7	1

The majority of sightings occurred in the summer months for most species. Only Caribou were sighted consistently across all seasons. Certain species, such as geese, displayed high abundances in summer and fall surveys. Similar to previous years, counts per kilometer for Caribou were highest in March and October. No Caribou or very low abundances of Caribou have been sighted from July to late August each year to date.

A preliminary assessment of Caribou density along the AWPAR was completed by pooling 2008 and 2009 AWPAR data (all seasons) and dividing the road into twenty-two (22), 5 km long segments. Caribou observations were totalled for each segment to produce a density figure (Figure 4.30). Highest Caribou densities were observed in segments 1, 9 and 11 (1.8 – 2.9 Caribou per hectare) followed by segments 2-6 and 10 (0.9 to 1.8 Caribou per hectare). Density may be slightly skewed due to a higher percentage of surveys along the southern portion of the road during poor weather conditions and prior to AWPAR completion in March 2008. Additional years of data will serve to refine the density figure to accurately reflect areas of highest Caribou utilization along the AWPAR, which can be used by environmental managers to effectively prioritize areas should additional mitigation measures or adaptive management strategies be implemented in future years.



Number of Caribou Observed per Section of All-Weather Road (2008-2009)

Id	Kilometre Range	Total # of Surveys	Total # of Sightings	Total # of Caribou Observed	Length of Road Section (km)	Density (# of Caribou / km)*
1	0 to 5	428	346	5,172	5km	1,034.4
2	5 to 10	228	156	2,961	5km	592.2
3	10 to 15	171	109	2,086	5km	417.2
4	15 to 20	170	92	2,287	5km	457.4
5	20 to 25	180	100	1,906	5km	381.2
6	25 to 30	226	122	1,909	5km	381.8
7	30 to 35	120	64	715	5km	143.0
8	35 to 40	105	60	746	5km	149.2
9	40 to 45	158	90	2,976	5km	595.2
10	45 to 50	168	108	1,992	5km	398.4
11	50 to 55	186	143	3,116	5km	623.2
12	55 to 60	135	86	1,024	5km	204.8
13	60 to 65	113	57	666	5km	133.2
14	65 to 70	154	101	1,378	5km	275.6
15	70 to 75	130	75	915	5km	183.0
16	75 to 80	105	69	694	5km	138.8
17	80 to 85	92	58	523	5km	104.6
18	85 to 90	107	69	578	5km	115.6
19	90 to 95	86	60	521	5km	104.2
20	95 to 100	52	37	419	5km	83.8
21	100 to 105	73	61	638	5km	127.6
22	105 to 108	32	11	76	5km	15.2

*These density values are based on actual observations from AWR ground surveys (2008-09)

Legend

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

Caribou Density (per km of AWPAR)

- 15.2
- 15.2 - 149.2
- 149.2- 275.6
- 275.6 - 457.4
- 457.4 - 1,034.4

0 5 10 15

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 4.30: 2008-2009 AWPAR Ground Survey Caribou Observation Density

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.7.1 Wildlife Mortality along the AWPAR

Documentation of road-related wildlife mortality commenced in 2007 shortly after the onset of road construction. 2007 recorded mortality was limited to nine animals, consisting of three passerines (cause of death uncertain), two Arctic Ground Squirrels (cause of death uncertain), one Arctic Hare (likely killed by Arctic Fox) and three Caribou, which were the result of collisions with NUNA trucks. Two vehicle-related Caribou mortalities occurred in 2008, exceeding the threshold of one (1) per Section 4.4.2.3 (Project-Related Mortality) of the TEMP (Agnico-Eagle 2006). To effectively mitigate the impacts to Caribou as a result of vehicle collisions, additional adaptive management strategies were implemented and enforced by Agnico-Eagle environmental, operations and security personnel in 2009 (discussed in Section 5.15.1.1). As a result, no vehicle-related Caribou near misses or mortalities occurred in 2009, despite large numbers of animals crossing the AWPAR, particularly during peak migration period (October 2009). Table 4.13 summarizes the 2008 and 2009 wildlife mortality data for all species while Figure 4.31 illustrates roadkill locations along the AWPAR.

Roadkill density along the AWPAR (Figure 4.32) is broken down into five classes using a 'natural breaks' method that best groups similar values. Results to date (2008 and 2009) indicate that areas 10 and 15 have the highest roadkill density followed by areas 3 and 4; however, in general, roadkill density along the entire AWPAR alignment remained low (i.e., 1.0×10^{-6} to 2.24×10^{-3} mortalities per hectare). Accumulative years of data will be used to validate roadkill density variation along the AWPAR and identify areas where a higher density of kills may be occurring. As such, roadkill locations and counts will continue to be monitored in future years to evaluate the need, if any, for the implementation of adaptive management strategies as a proactive approach.

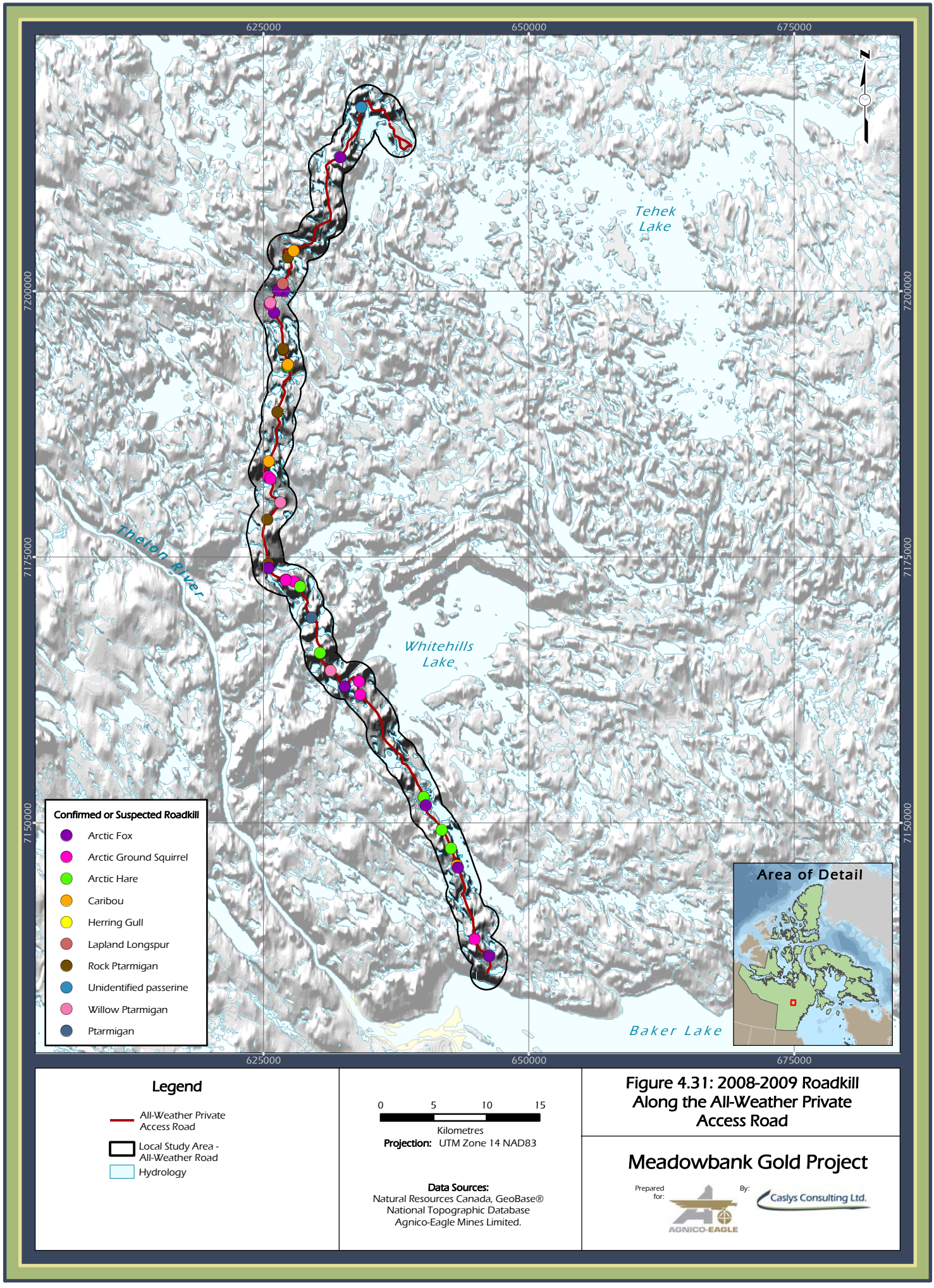
Table 4.13: 2008 and 2009 AWPAR Wildlife Mortality Data.

Report Date	Species	Location	Comments
		2008	
01 Feb	1 Arctic Fox	n/a	On AWPAR.
19 and 28 Feb	1 Caribou	14W 0635980 7159812	Blood stain and piece of antler; wolf tracks nearby; cause of death unknown.
21 Feb	1 Caribou	14W 0624969 7177408	Carcass 110 m west of road; apparently being scavenged by Wolf because of tracks and scats; cause of death unknown.
03 Mar and 14 May	1 Caribou*	14W 0643941 7142920	Along AWPAR (~ 5 m from edge); on 03 March being scavenged by Common Raven; cause of death not determined, but no wolf or fox tracks nearby; on 14 May being scavenged by Glaucous Gull.
04 Apr	1 Caribou	14W 0642718 7147470	Caribou carcass 125 m from road; Common Raven feeding on carcass; cause of death uncertain.
21 Apr	1 Caribou	14W 0631722 7164000	Caribou carcass 150 m from road; Arctic Fox feeding on carcass; cause of death uncertain.
24 Apr	1 Rock Ptarmigan*	14W 0626626 7180166	Apparent road kill on AWPAR because carcass lying in the middle of the road.
12 May	1 Arctic Ground Squirrel*	14W 0634011 7163314	Road kill on AWPAR because carcass in middle of road.
22 May	3 Ptarmigan	~ 10 km, 50 km and 90 km mark along road	Dead on Road; apparent roadkill
27 May	1 Rock Ptarmigan	14W 0626922 7194262	Dead on Road; apparent roadkill

Report Date	Species	Location	Comments
30 May	1 Rock Ptarmigan	14W 0626340 7188640	Dead on Road; apparent roadkill
31 May	1 Rock Ptarmigan	14W 0626048 7179363	Road kill
06 Jun	1 Willow Ptarmigan	14W 0631342 7164318	Dead on Road; apparent roadkill
06 Jun	1 Rock Ptarmigan	14W 0625483 7174368	Dead on Road; apparent roadkill
06 Jun	1 Rock Ptarmigan	14W 0626873 7194492	Dead on Road; apparent roadkill
06 Jun	1 Rock Ptarmigan	14W 0627323 7203201	Dead on Road; apparent roadkill
06 Jun	1 Rock Ptarmigan	14W 0625382 7178559	Fresh road kill
06 Jun	1 Arctic Ground Squirrel	14W 0625466 7182555	Carcass in middle of road apparently killed by vehicle.
06 Jun	1 Caribou	14W 0628699 7171429	Caribou carcass possible cache and not roadkill; 70 m west of road.
18 Jun	1 Rock Ptarmigan*	14W 0626873 7194598	Dead on Road; apparent roadkill
18 Jun	1 Lapland Longspur*	14W 0626827 7200720	Dead on Road; apparent roadkill
18 Jun	1 Arctic Ground Squirrel*	14W 0634127 7162081	Dead on Road; apparent roadkill
26 Jun	1 Arctic Ground Squirrel	14W 0627143 7172895	Dead on Road; apparent roadkill
13 Aug	1 Arctic Ground Squirrel	15W 0355176 7139683	Dead on Road; apparent roadkill
13 Aug	1 Lapland Longspur	14W 0634252 7217314	Dead on Road; apparent roadkill
29 Aug	1 Caribou	14W 0627277 7193109	Carcass of caribou (head only), approximately 40 m from road; Herring Gull scavenging head; cause of death unknown – likely hunting.
29 Aug	1 Ptarmigan	14W 0625677 7198936	Dead on Road; apparent roadkill
09 Sep	1 Arctic Ground Squirrel	14W 0627890 7172731	Dead on Road; apparent roadkill
10 Sep	1 Caribou	AWPAR km 100	Carcass of caribou (head only); cause of death – hunting.
11 Sep	1 Ptarmigan*	14W 0629557 7169342	Dead on Road; apparent roadkill
11 Sep	1 Arctic Fox*	14W 0626399 7200081	Dead on Road; apparent roadkill
17 Sep	1 Arctic Fox	15W 0356376 7137395	“Flattened” fox on the middle of the road; partially frozen into the road.
19 Sep	1 Arctic Fox	14W 0643329 7145804	Dead on Road; apparent roadkill
23 Sep	3 Arctic Foxes	AWPAR between km 74 and 80	Dead on Road; apparent roadkill
29 Sep	1 Arctic Hare	AWPAR km 46	Dead on Road; apparent roadkill
04 Oct	1 Caribou	Between km 82 and 83	Not reported. Autopsy at camp suggested that the caribou had been struck and killed by a vehicle.
09 Oct	1 Arctic Fox	14W 0627628 7202467	Dead on Road; apparent roadkill
07 Nov	1 Arctic Fox*	14W 0640298 7151692	Dead on Road; apparent roadkill
07 Nov	1 Caribou*	14W 0625514 7183994	Dead on Road; apparent roadkill
18 Nov	1 Arctic Fox	AWPAR – km 82	Driver attempted to avoid collision, but no safe escape route.
19 Nov	1 Arctic Fox	At Meadowbank Camp near emulsion plant	Driver attempted to avoid collision, but no safe escape route.
30 Nov	1 Wolf	At Meadowbank Camp	Sick or injured and needed to be disposed of by Baker Lake Conservation Officer. Report available.
09 Dec	1 Arctic Hare	14W 0640111 7152463	Dead on Road; apparent roadkill
13 Dec	1 Arctic Hare	AWPAR – km 16	Dead on Road; apparent roadkill
17 Dec	1 Arctic Fox	14W 0632258 7212615	Dead on Road; apparent roadkill

Report Date	Species	Location	Comments
28 Dec	1 Wolf	Near Meadowbank Camp	Killed by Conservation Officer because of proximity to Camp. Report available.
		2009	
23 May	1 Ptarmigan	14 W 0627286 7192997	Dead on Road; apparent roadkill
08 Jun	1 Arctic Ground Squirrel	14W 0641422 7140910	Dead on Road; apparent roadkill
08 Jun	1 Ptarmigan	14W 0625650 7198761	Dead on Road; apparent roadkill
29 Jun	1 Arctic Ground Squirrel	14W 0627143 7172845	Dead on Road; apparent roadkill
24 Aug	Arctic Hare	14W 0628492 7172247	Dead on Road; apparent roadkill
20 Sep	Caribou	14W 0643247 7146019	~ 80 m off of road. May have been from hunting.
20 Sep	Arctic Fox	14W 0626008 7197985	Dead on Road; apparent roadkill
28 Sep	Arctic Hare	15W 0630358 7165996	Dead on Road; apparent roadkill
05 Oct	Arctic Hare	14W 0641814 7149365	Dead on Road; apparent roadkill
30 Oct	Arctic Hare	14W 0637873 7174605	Dead on Road; apparent roadkill

n/a – not available
* - photograph(s) available



Legend

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

0 5 10 15

Kilometres

Projection: UTM Zone 14 NAD83

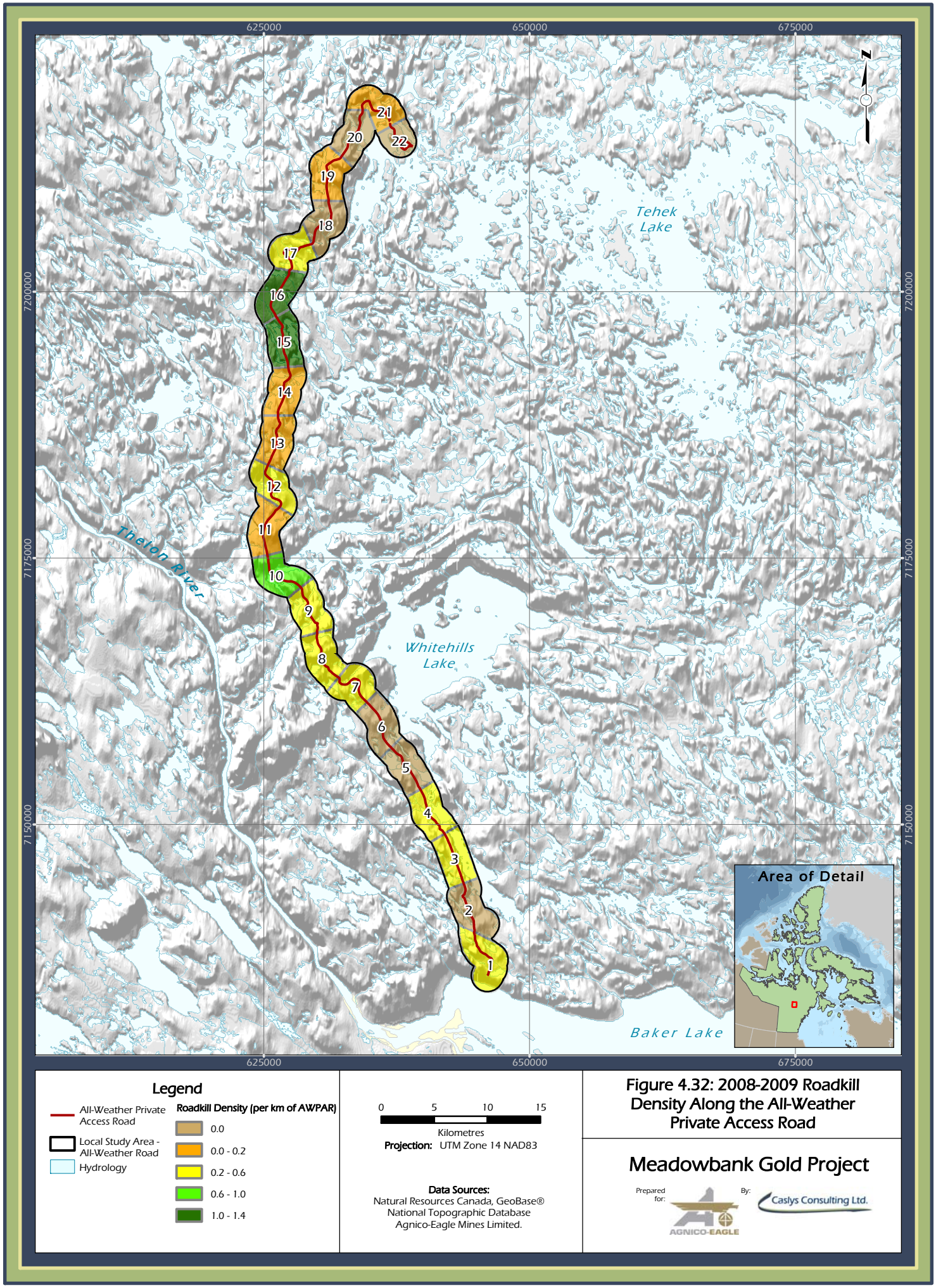
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.

Figure 4.31: 2008-2009 Roadkill Along the All-Weather Private Access Road

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Roadkill Density (per km of AWPAR)

- 0.0
- 0.0 - 0.2
- 0.2 - 0.6
- 0.6 - 1.0
- 1.0 - 1.4

0 5 10 15

Kilometres

Projection: UTM Zone 14 NAD83

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

Figure 4.32: 2008-2009 Roadkill Density Along the All-Weather Private Access Road

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

4.8 HARVEST STUDY

The hunter harvest study was initiated in 2007 and is on-going. The study was strategically revised at the end of 2007 as a result of the generally low participation rates. In 2008, participation increased markedly. Specifically, seventeen calendars were returned in 2008 (up from four in 2007) and the average number of participating months was seven (up from two in 2007). In 2009, participation continued to increase, which was likely the result of increased HTO participation, word-of-mouth, building rapport with local hunters, and an increased check-in frequency. At the end of 2009, thirty-three (33) calendars were returned. Interview and calendar data were compiled and entered into a database for interpretation and graphical analysis. The continuation of the revised strategy coupled to on-going HTO participation and AREVA involvement are anticipated to further improve harvest data participation and reporting in future years.

4.8.1 Hunting Results

A graphical representation of terrestrial animals (Caribou, Muskox and Wolverine) harvested per month in 2009 is provided in Figure 4.33. Participation rates were more uniform across the entire year relative to 2008. Specifically, the average number of participants per month in 2008 was 11.8, increasing to 13.7 in 2009. In 2009, approximately 1,300 Caribou, two (2) Muskox and eleven (11) Wolverine were harvested by the thirty-five (35) study participants, which is down from 2008 (~1,500 Caribou). 2009 Caribou harvest data was standardized through the simple division of harvested animals by the number of participants (Figure 4.34), which suggests that harvests over the course of the year were relatively homogeneous with the exception of September and October, which may have been influenced by the fall Caribou migration (analogous to 2008 results).

The remaining hunter harvest figures illustrate the frequency of successful hunting trips and harvest totals in 2009 for Caribou (Figure 4.35), Muskox (Figure 4.36), Wolverine (Figure 4.37) as well as all terrestrial species harvested since study inception (2007) (Figure 4.38). Figure 4.39 presents an overlay of harvest totals (2007-2009 data) on the historical NWMB harvest study data.

In 2007, only seven (7) of the reported harvested Caribou were killed within 5 km of the AWPAR (2.3% of total harvests). In 2008, this number increased to 102 Caribou, which is significantly higher than in 2007, and higher than the 2008 increase in study participation alone would suggest. The Caribou kill locations appeared to be closely correlated to the AWPAR, with the highest concentration of kills often occurring less than 5 km from the road (Figure 4.35). In 2009, traditional hunting activities along the AWPAR were regulated by Agnico-Eagle in consultation with NIRB, requiring hunters to get a pass from the Baker Lake HTO office. Additional measures included limiting hunting vehicles to ATVs, requiring gate check-in and safety briefing, requiring that hunters wear high visibility clothing and use buggy-whips, and instating a no-shooting zone around the AWPAR. Caribou harvests within 5 km of the AWPAR in 2009 (n=140; 10.8% of total harvests) increased relative to 2008 (n=102; 6.8% of total harvests); however, the highest harvest densities in 2009 were located east of the hamlet of Baker Lake, well outside the ‘zone of influence’ of the AWPAR. Moreover, harvest counts were generally higher in areas west of Baker Lake relative to previous years. Additionally, frequency of harvests in more remote areas (i.e., Tehek Lake, Schultz Lake) were also higher than in previous years, which were outside of the areas documented during the 2005 Nunavut Wildlife Harvest Study. The annual variation in harvest locations and harvest frequency is anticipated to be due to a combination of factors, including increased participation of existing participants, inclusion of new hunter data and attrition. As an example, 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. To date, Caribou harvest density has remained highest within 20 km of the hamlet of Baker Lake (Figure 4.39), irrespective of AWPAR location. Additional years of data will serve to further evaluate hunting trends and the significance of mine-related effects as a result of AWPAR construction.

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 AWPAR; therefore, the AWPAR is anticipated to have little effect on Muskox and Wolverine hunting patterns.

Figure 4.33: Terrestrial Animals (Caribou, Muskox and Wolverine) Harvested per Month in 2009. Counts of Participants per Month and Animals Harvested Divided by the Number of Participants are also Provided.

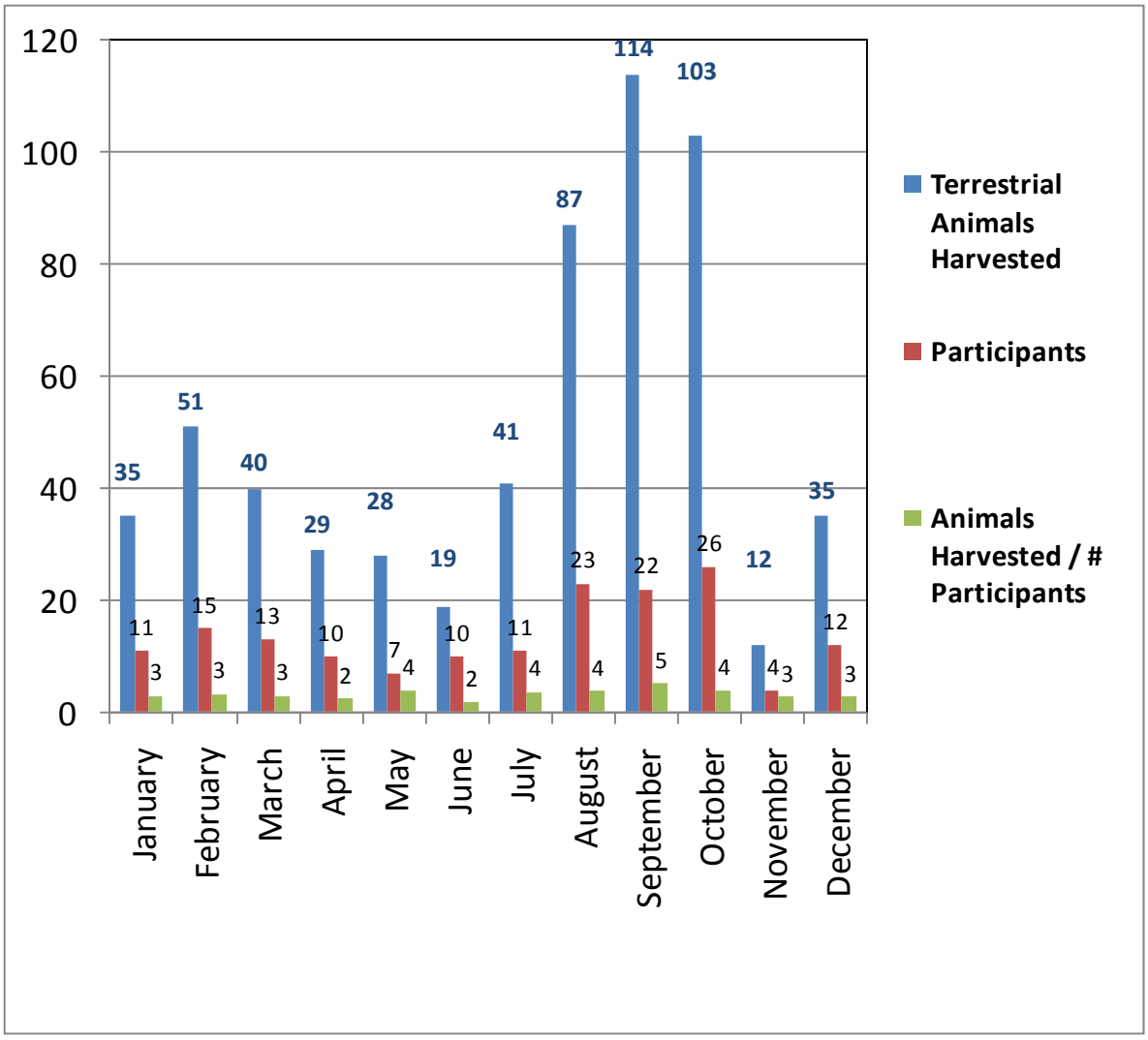
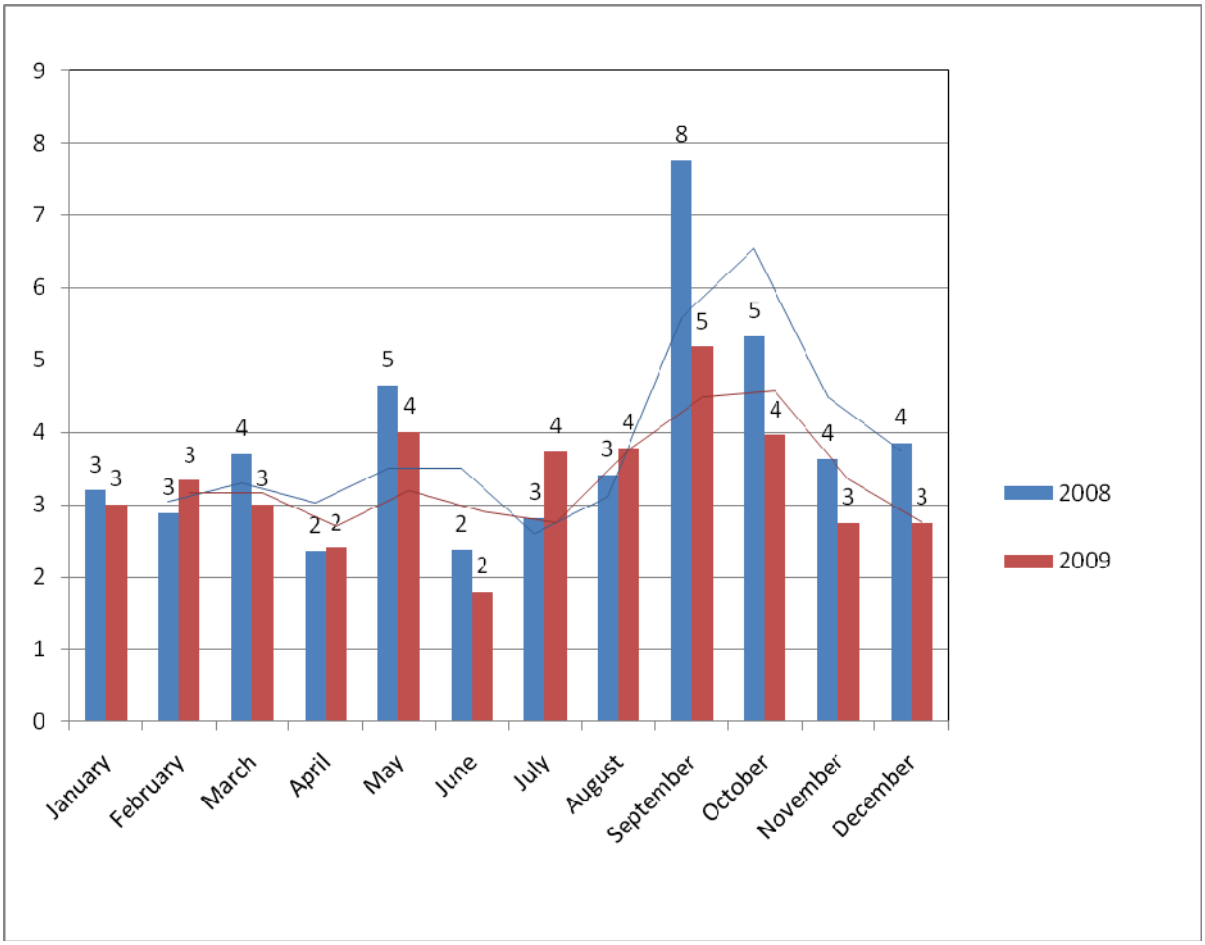
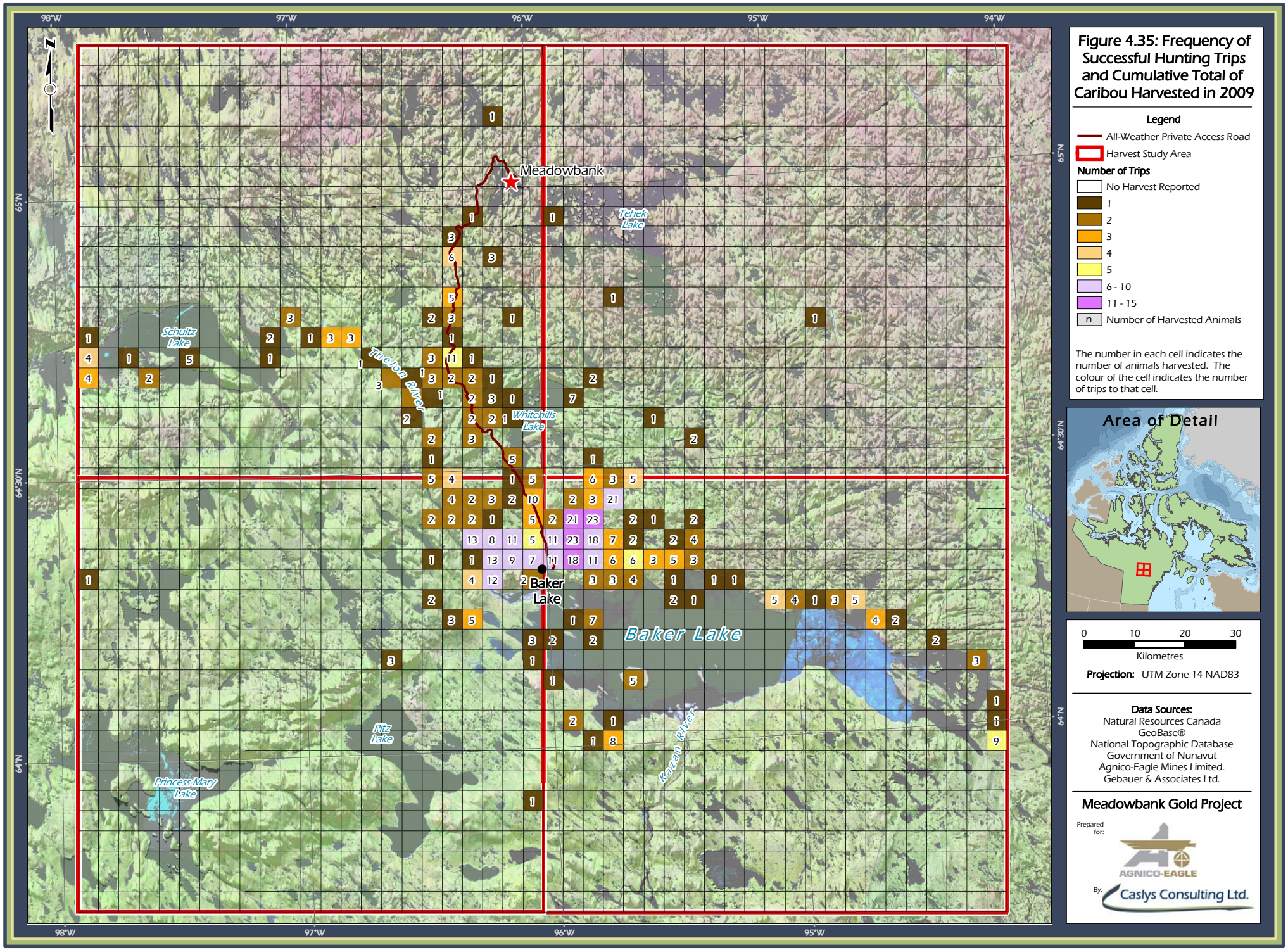
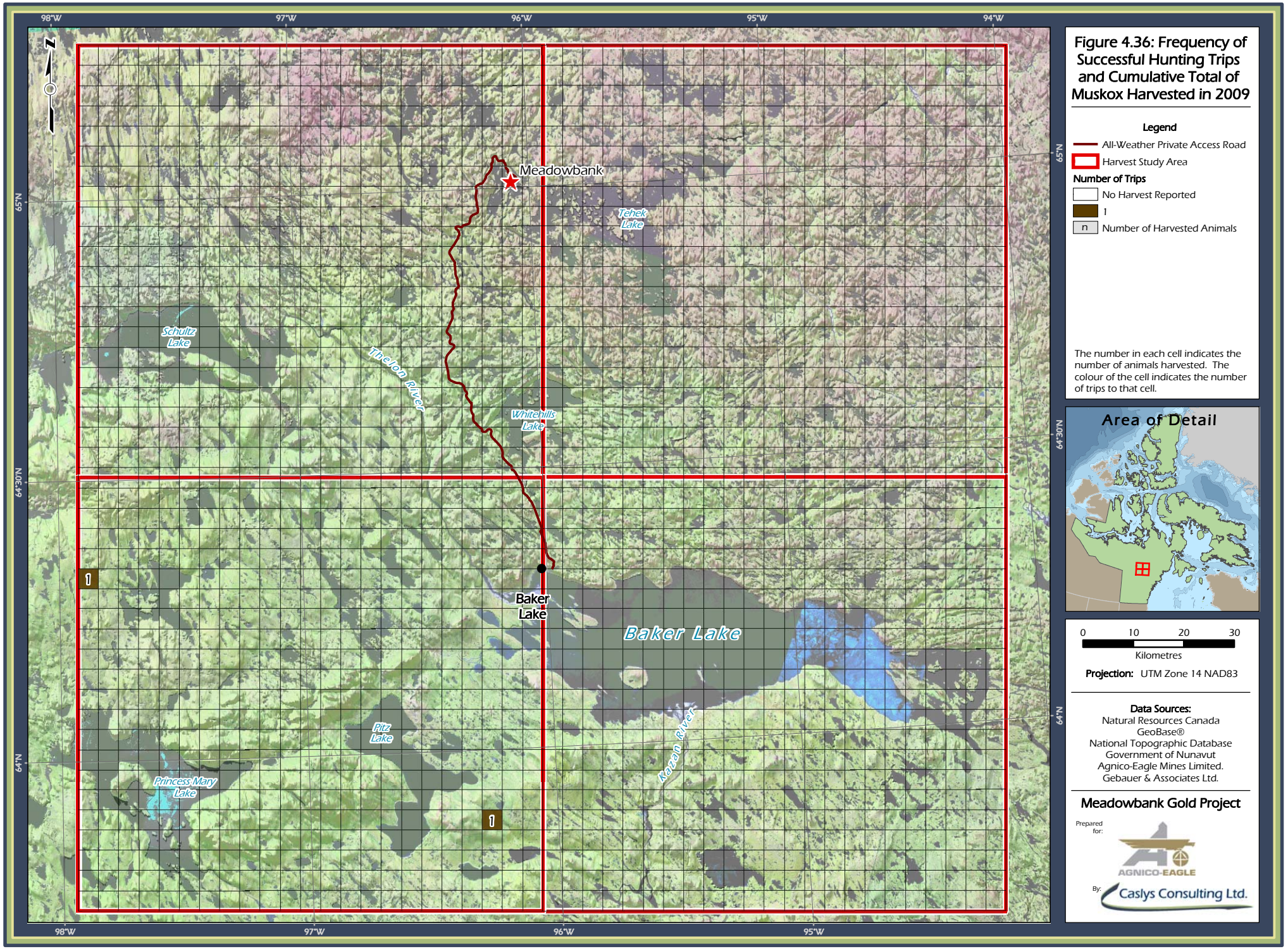
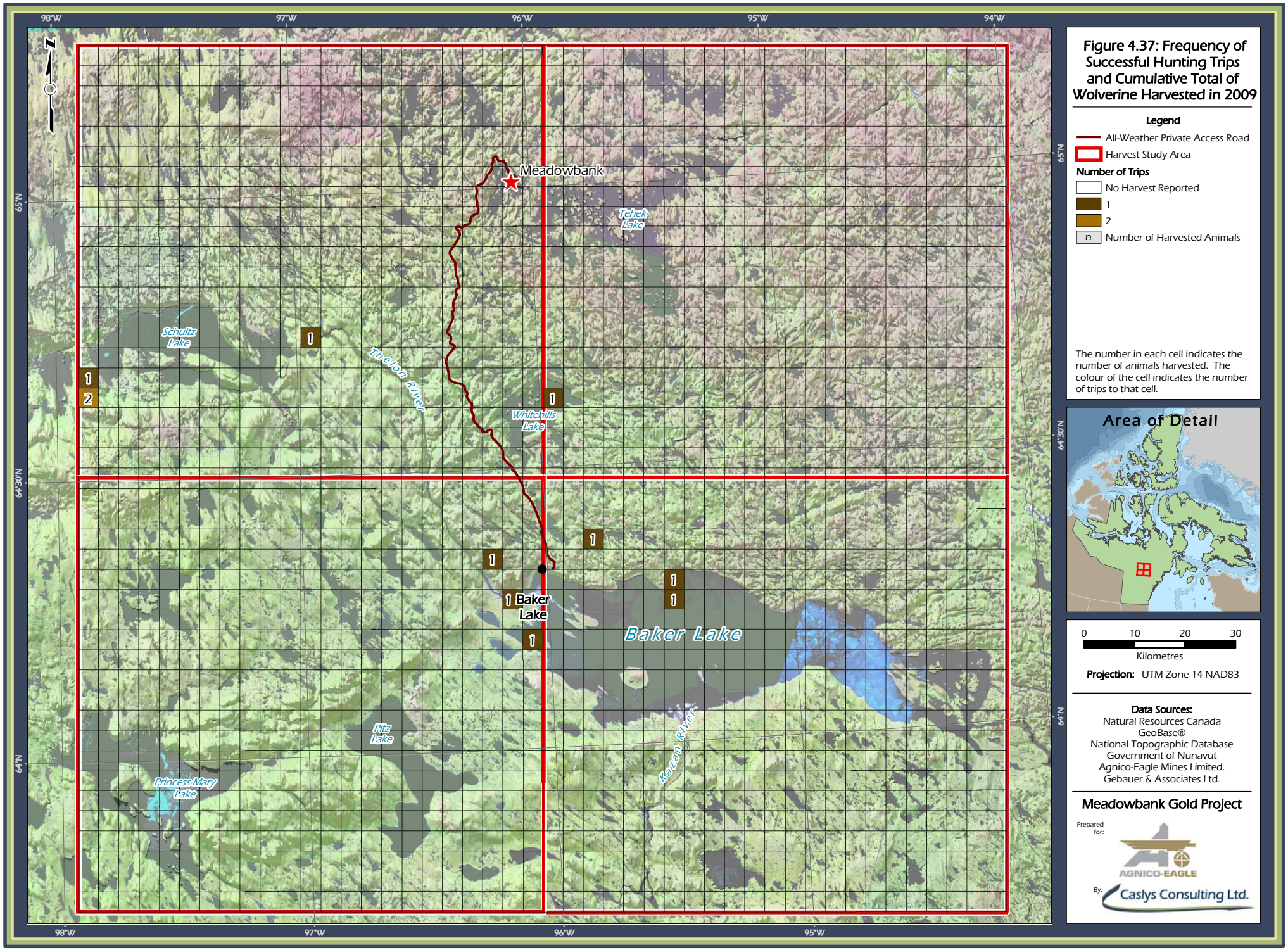


Figure 4.34: Caribou Harvested per Month, per Participant (rounded to nearest single digit)




98°W
97°W
96°W
95°W
94°W
65°N
64°30'N
64°N
N
Meadowbank
Tehek Lake
Schultz Lake
Tiber River
Whitehills Lake
Baker Lake
Baker Lake
Pitz Lake
Kazan River
Princess Mary Lake
Figure 4.35: Frequency of Successful Hunting Trips and Cumulative Total of Caribou Harvested in 2009
Legend
All-Weather Private Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
2
3
4
5
6 - 10
11 - 15
n
Number of Harvested Animals
The number in each cell indicates the number of animals harvested. The colour of the cell indicates the number of trips to that cell.
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 Ltd.


98°W
97°W
96°W
95°W
94°W
65°N
64°30'N
64°N
N
Meadowbank
Tehek Lake
Schultz Lake
Thelon River
Whitehills Lake
Baker Lake
Baker Lake
Pitz Lake
Kazan River
Princess Mary Lake
1
1
Figure 4.36: Frequency of Successful Hunting Trips and Cumulative Total of Muskox Harvested in 2009
Legend
All-Weather Private Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
n
Number of Harvested Animals
The number in each cell indicates the number of animals harvested. The colour of the cell indicates the number of trips to that cell.
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 Ltd.


98°W
97°W
96°W
95°W
94°W
65°N
64°30'N
64°N
N
Meadowbank
Tehek Lake
Schultz Lake
Thelon River
Whitehills Lake
Baker Lake
Pitz Lake
Princess Mary Lake
Kazan River
1
2
Figure 4.37: Frequency of Successful Hunting Trips and Cumulative Total of Wolverine Harvested in 2009
Legend
All-Weather Private Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
2
n
Number of Harvested Animals
The number in each cell indicates the number of animals harvested. The colour of the cell indicates the number of trips to that cell.
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 Ltd.

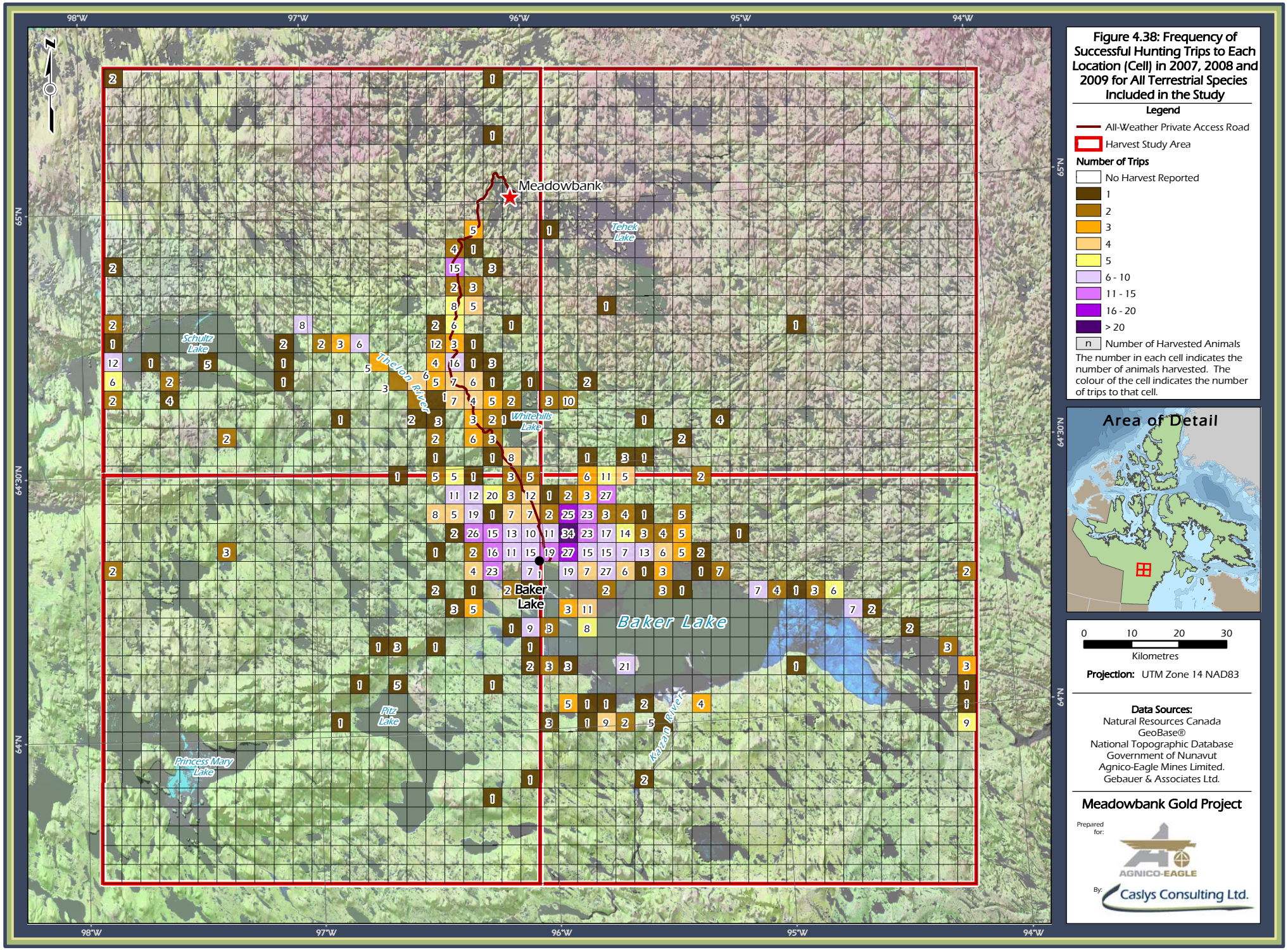


Figure 4.38: Frequency of Successful Hunting Trips to Each Location (Cell) in 2007, 2008 and 2009 for All Terrestrial Species Included in the Study

Legend

- All-Weather Private Access Road
- Harvest Study Area

Number of Trips

- No Harvest Reported
- 1
- 2
- 3
- 4
- 5
- 6 - 10
- 11 - 15
- 16 - 20
- > 20
- n Number of Harvested Animals

The number in each cell indicates the number of animals harvested. The colour of the cell indicates the number of trips to that cell.

0 10 20 30
Kilometres

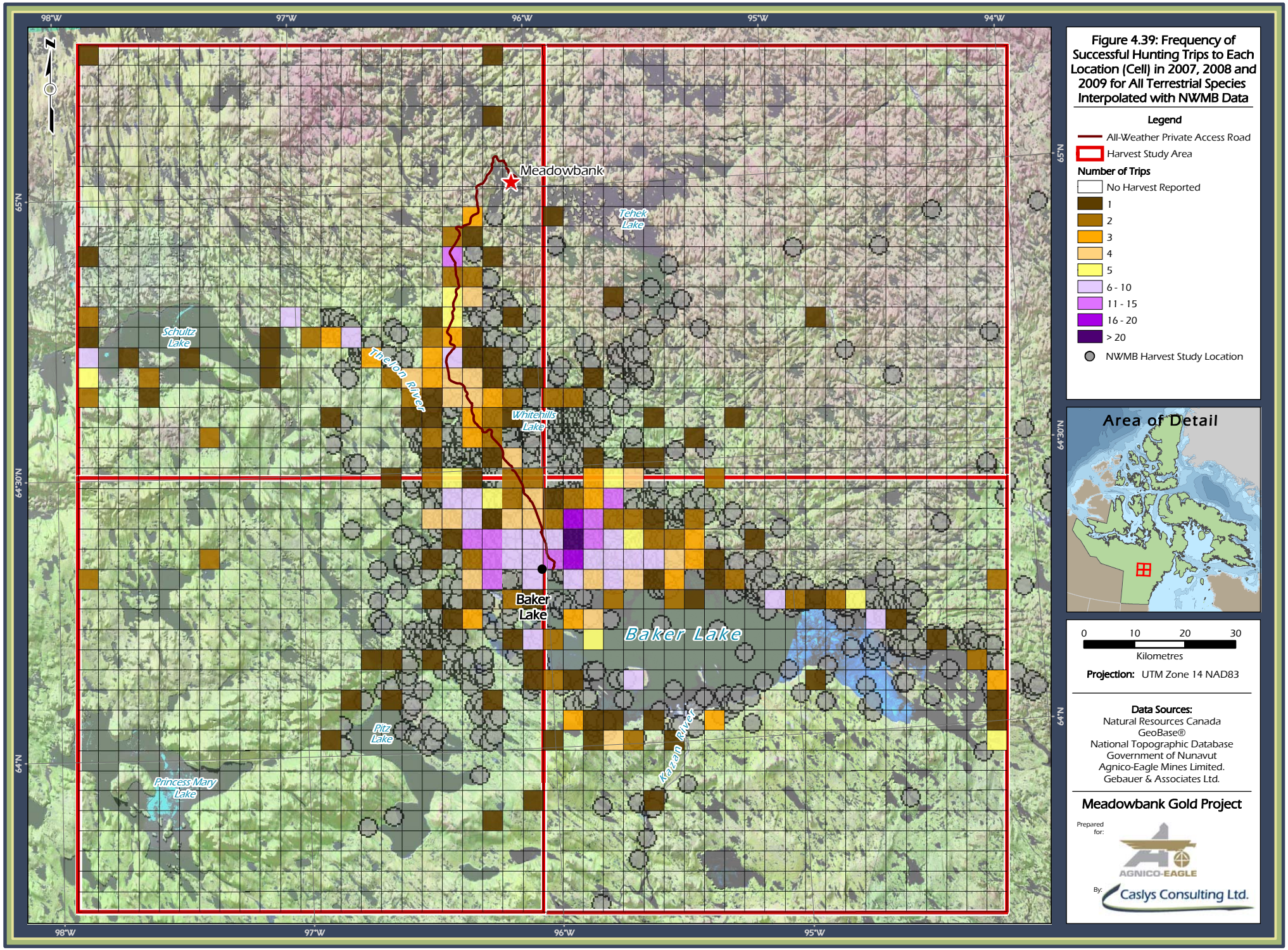
Projection: UTM Zone 14 NAD83

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 Ltd.


98°W
97°W
96°W
95°W
94°W
65°N
64°30'N
64°N
N
Meadowbank
Tehek Lake
Schultz Lake
Thelon River
Whitehills Lake
Baker Lake
Baker Lake
Pitz Lake
Kazan River
Princess Mary Lake
Figure 4.39: Frequency of Successful Hunting Trips to Each Location (Cell) in 2007, 2008 and 2009 for All Terrestrial Species Interpolated with NWMB Data
Legend
All-Weather Private Access Road
Harvest Study Area
Number of Trips
No Harvest Reported
1
2
3
4
5
6 - 10
11 - 15
16 - 20
> 20
NWMB Harvest Study Location
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 Ltd.

4.9 RADIO-COLLARING PROGRAM

In May 2008, nine female Caribou were fitted with Advanced Research and Global Observation Satellite (ARGOS) GPS Type IV radio-collars after being netted via helicopter. An additional collar was not utilized due to a deficiency and has since been repaired. Of the nine collared caribou, only seven were still alive at the end of 2008 and only two (2) were still transmitting data at the end of 2009. In November 2009, twenty-one (21) collars were deployed (ten [10] by AREVA and eleven by Agnico-Eagle). At the end of 2009, nineteen (19) of these collars were transmitting data. In all, twenty-one collars continued to transmit data into 2010. The remaining five collars committed to by Agnico-Eagle are currently scheduled for deployment in 2010.

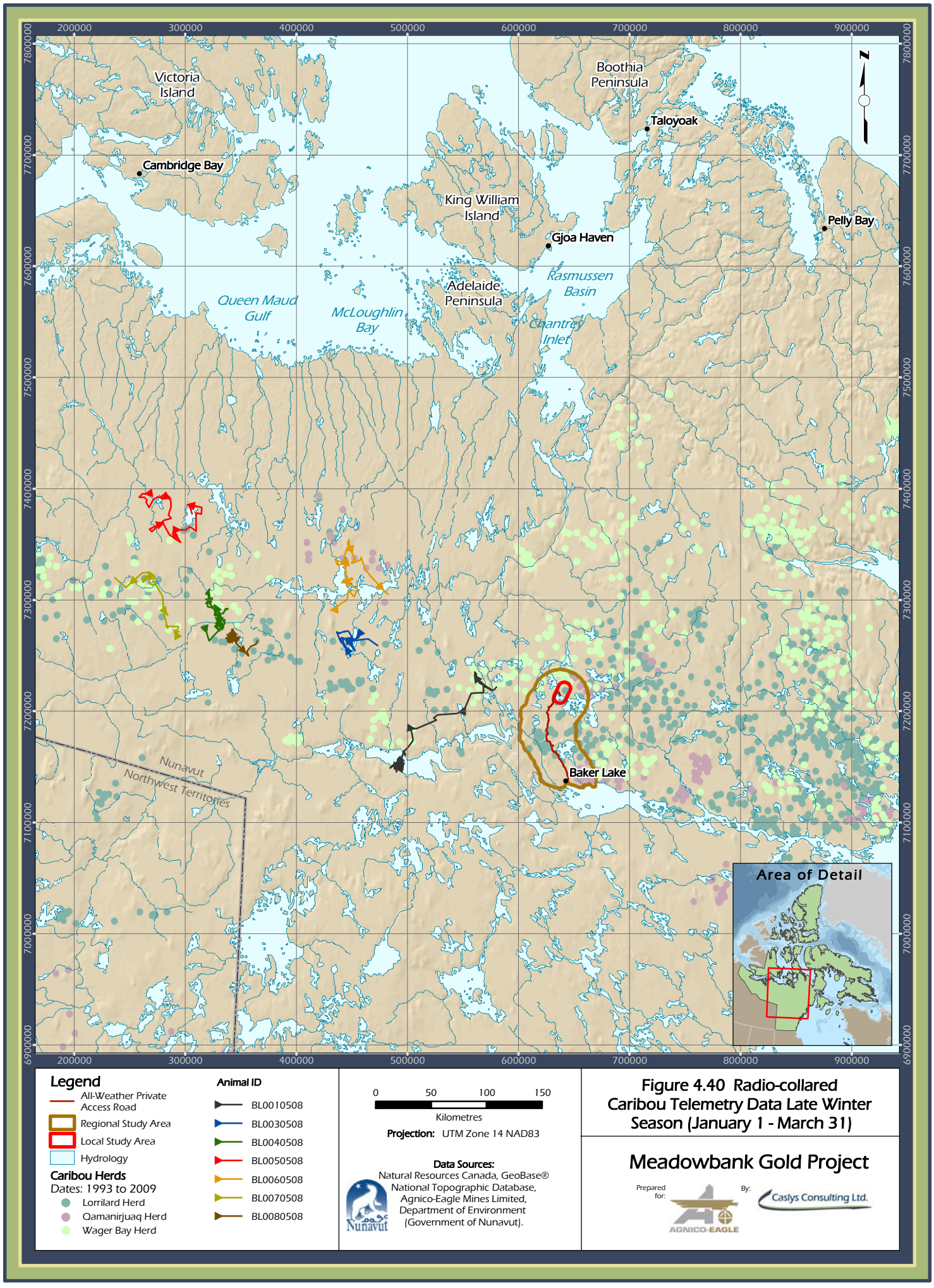
Collar data is regularly[7] retrieved electronically via satellite and distributed to GNDoE and Gebauer and Associates personnel by CLS America, the data-management company. Location figures were generated for the late winter (January 1 – March 31; Figure 4.40), spring (April 1 – May 25; Figure 4.41), calving (May 26 – June 25; Figure 4.42), post-calving (June 26 – July 31; Figure 4.43), late summer (August 1 – September 15; Figure 4.44), fall (September 16 - October 31; Figure 4.45), fall rut (October 15 - October 31; Figure 4.46), early winter (November 1 – December 31; Figure 4.47) seasons. In addition, a figure was generated for each Caribou for all reported dates in 2009 (Figure 4.48).

In late winter (January 1 – April 1), Caribou (n=7) movement was limited. Collared Caribou were generally situated north of Aberdeen Lake, south of the Garry lakes and east of the Ellice River. In spring (April 1 – May 25), all collared Caribou migrated northeast towards the Adelaide Peninsula and Pelly Bay area. One collared Caribou traversed the mine site LSA during this period. Collared cows (n=7) spent the calving season (May 26 – June 25) well north of the Meadowbank mine site in the vicinity of the Adelaide Peninsula and Chantry Inlet. Two cows moved even further north in the vicinity of Murchison River between Rasmussen Basin and Pelly Bay. Caribou movement (n=6) in the post-calving season (June 26 – July 31) varied widely, including aggregations at the Adelaide Peninsula and northerly and southerly movement along the Murchison River. One Caribou migrated south stopping just north of Schultz Lake. All Caribou (n=6) moved south during the late summer season (August 1 – September 15). In the early fall season (September 17 – October 31), the Caribou (n=5) continued to migrate to the southwest, being situated primarily between Schultz Lake and Garry lakes area. Caribou (n=3) locations remained relatively unchanged during the fall rut season (October 15-October 31). The majority of 2009 data is limited as additional Caribou were collared in early November (Figure 4.47 – winter season [November 1 – December 31]). As a result, data must be interpreted with caution. 2009 Caribou were collared to the west of Baker Lake. The majority of the collared Caribou migrated in a northwesterly direction remaining north of Schultz Lake and Aberdeen Lake and south of the Garry lakes shortly after being collared. One Caribou was particularly wide-ranging, travelling as far north as MacAlpine Lake (66^{o} 35' latitude) and south into NWT just north of the Radford River (64^{o} 21' latitude). Additional collaring efforts and longer-term data will provide further seasonal information on collared Caribou distribution.

4.10 ENVIRONMENTAL HEALTH MONITORING

No environmental health monitoring was conducted in 2009. The next round of environmental health monitoring is scheduled for 2011, during the first fully operational year of the mine.

[7] Often data is retrieved on a daily basis, but may vary depending on signal strength and weather conditions.



Legend

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

Caribou Herds
Dates: 1993 to 2009

- Lorrilard Herd
- Qamanirjuaq Herd
- Wager Bay Herd

Animal ID

- BL0010508
- BL0030508
- BL0040508
- BL0050508
- BL0060508
- BL0070508
- BL0080508

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 (Government of Nunavut).

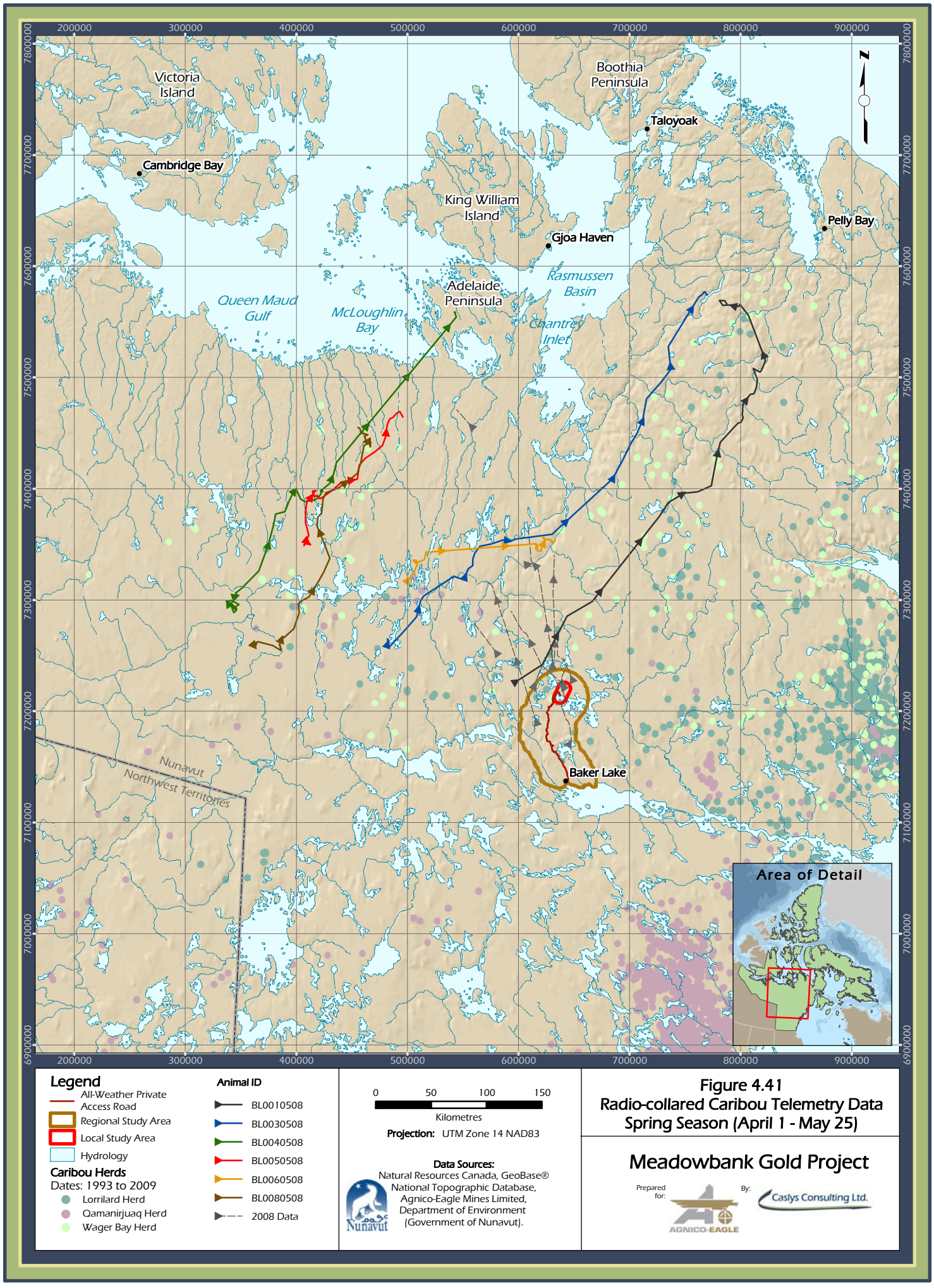
Nunavut

Figure 4.40 Radio-collared Caribou Telemetry Data Late Winter Season (January 1 - March 31)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Caribou Herds

Dates: 1993 to 2009

- Lorrilard Herd
- Qamanirjuaq Herd
- Wager Bay Herd

Animal ID

- BL0010508
- BL0030508
- BL0040508
- BL0050508
- BL0060508
- BL0080508
- 2008 Data

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 (Government of Nunavut).

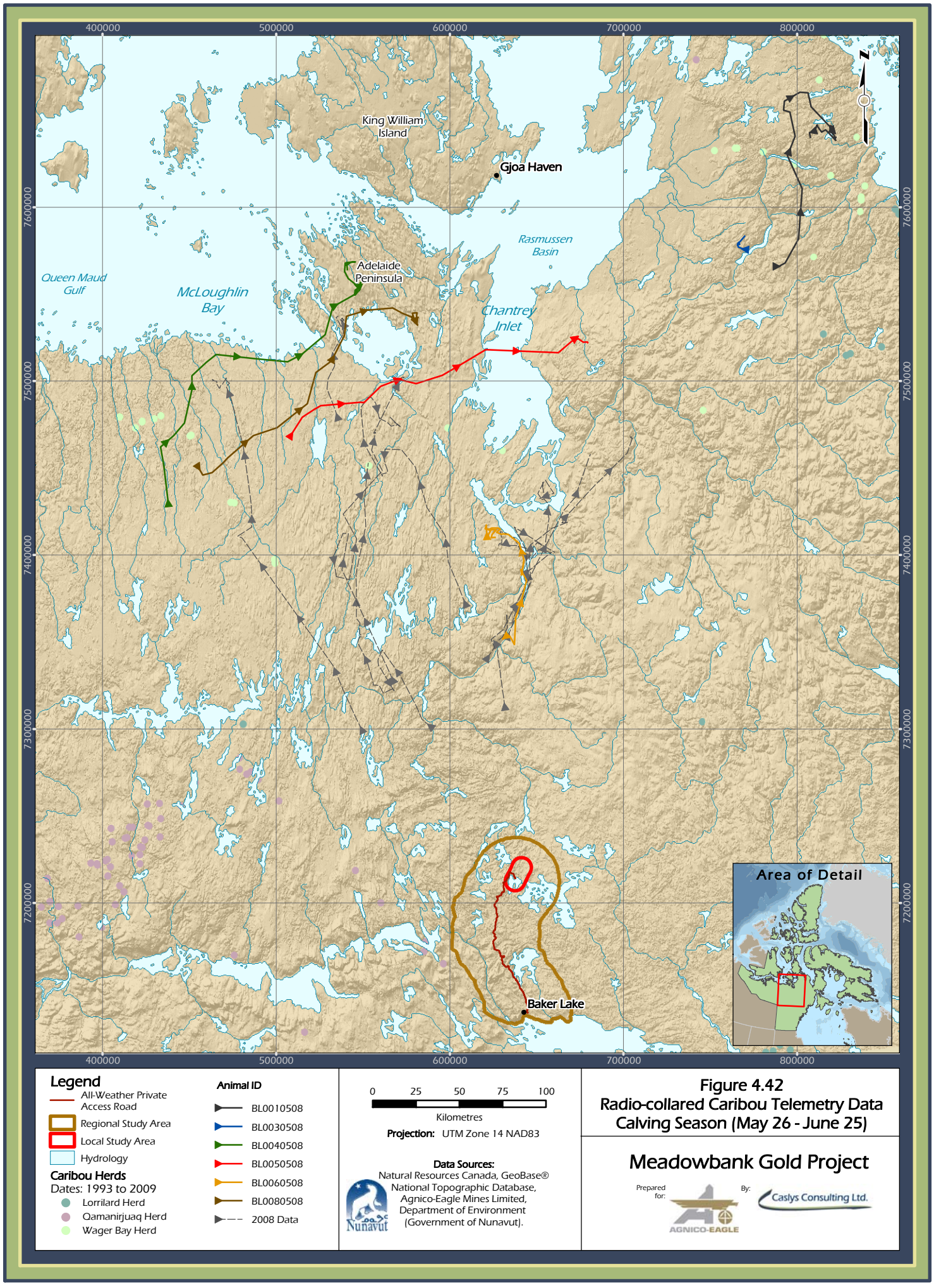
Nunavut

Figure 4.41
Radio-collared Caribou Telemetry Data
Spring Season (April 1 - May 25)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


400000
500000
600000
700000
800000
7600000
7500000
7400000
7300000
7200000
King William Island
Gjoa Haven
Rasmussen Basin
Queen Maud Gulf
McLoughlin Bay
Adelaide Peninsula
Chantrey Inlet
Baker Lake
Area of Detail
Legend
All-Weather Private Access Road
Regional Study Area
Local Study Area
Hydrology
Caribou Herds
Dates: 1993 to 2009
Lorrilard Herd
Qamanirjuaq Herd
Wager Bay Herd
Animal ID
BL0010508
BL0030508
BL0040508
BL0050508
BL0060508
BL0080508
2008 Data
0 25 50 75 100
Kilometres
Projection: UTM Zone 14 NAD83
Data Sources:
Natural Resources Canada, GeoBase® National Topographic Database, Agnico-Eagle Mines Limited, Department of Environment (Government of Nunavut).
Nunavut
Figure 4.42
Radio-collared Caribou Telemetry Data
Calving Season (May 26 - June 25)
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

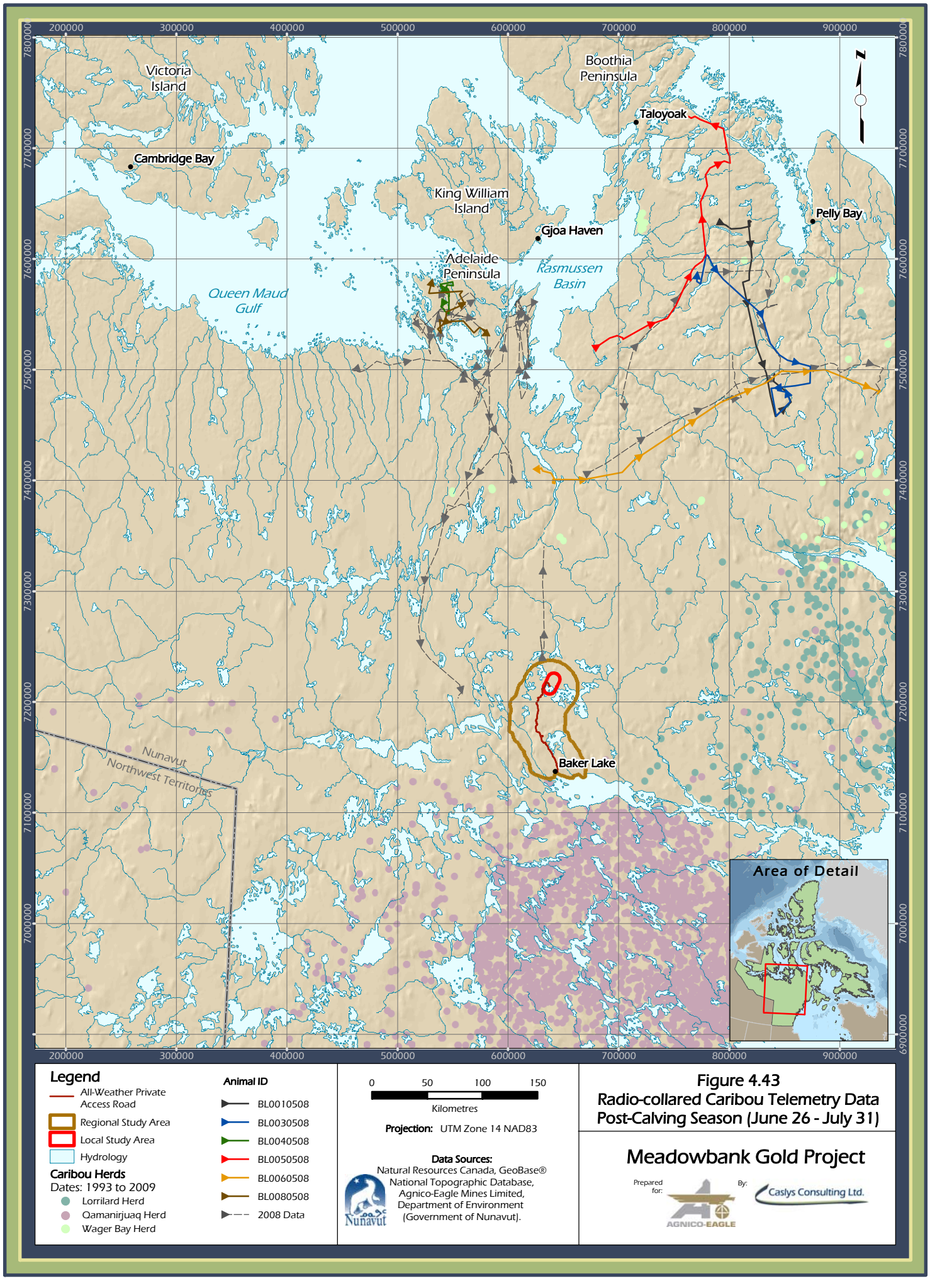


Figure 4.43
Radio-collared Caribou Telemetry Data
Post-Calving Season (June 26 - July 31)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

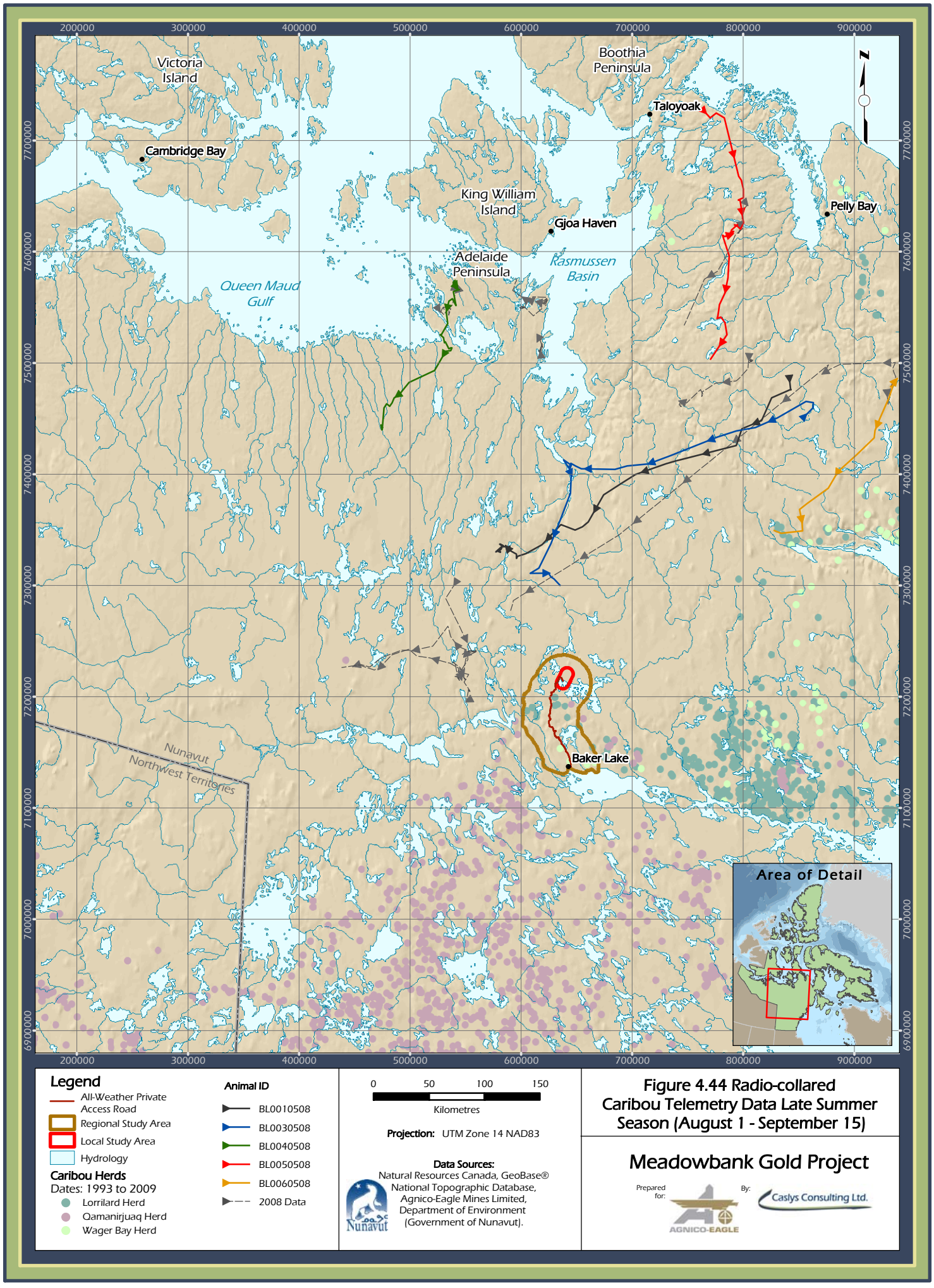
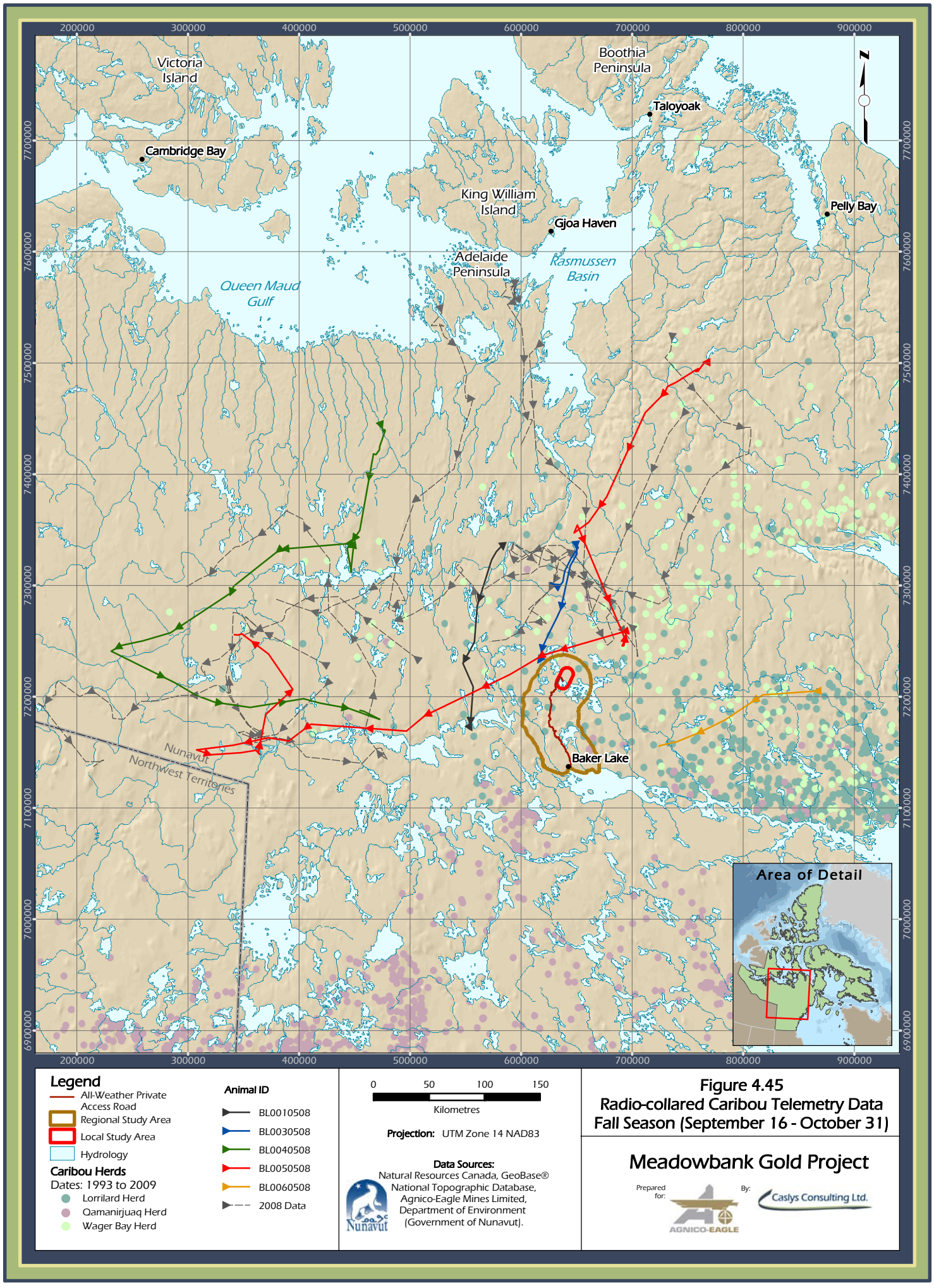


Figure 4.44 Radio-collared Caribou Telemetry Data Late Summer Season (August 1 - September 15)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.


200000
300000
400000
500000
600000
700000
800000
900000
7700000
7600000
7500000
7400000
7300000
7200000
7100000
7000000
6900000
N
Victoria Island
Boothia Peninsula
Taloyoak
Cambridge Bay
King William Island
Gjoa Haven
Pelly Bay
Adelaide Peninsula
Rasmussen Basin
Queen Maud Gulf
Nunavut
Northwest Territories
Baker Lake
Area of Detail
Legend
All-Weather Private Access Road
Regional Study Area
Local Study Area
Hydrology
Caribou Herds
Dates: 1993 to 2009
Lorrilard Herd
Qamanirjuaq Herd
Wager Bay Herd
Animal ID
BL0010508
BL0030508
BL0040508
BL0050508
BL0060508
2008 Data
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 (Government of Nunavut).
Nunavut
Figure 4.45
Radio-collared Caribou Telemetry Data
Fall Season (September 16 - October 31)
Meadowbank Gold Project
Prepared for:
AGNICO-EAGLE
By:
Caslys Consulting Ltd.

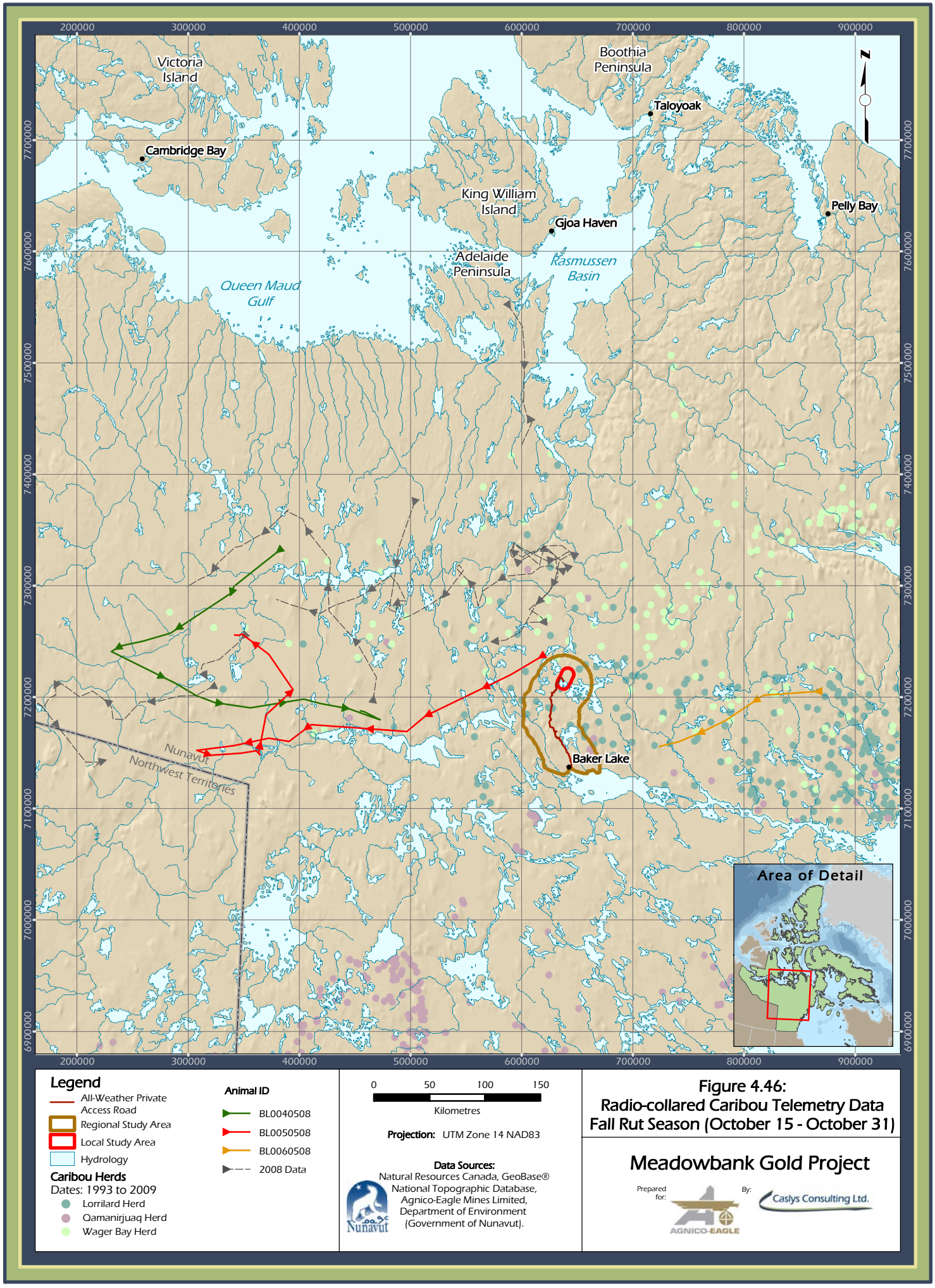


Figure 4.46:
Radio-collared Caribou Telemetry Data
Fall Rut Season (October 15 - October 31)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

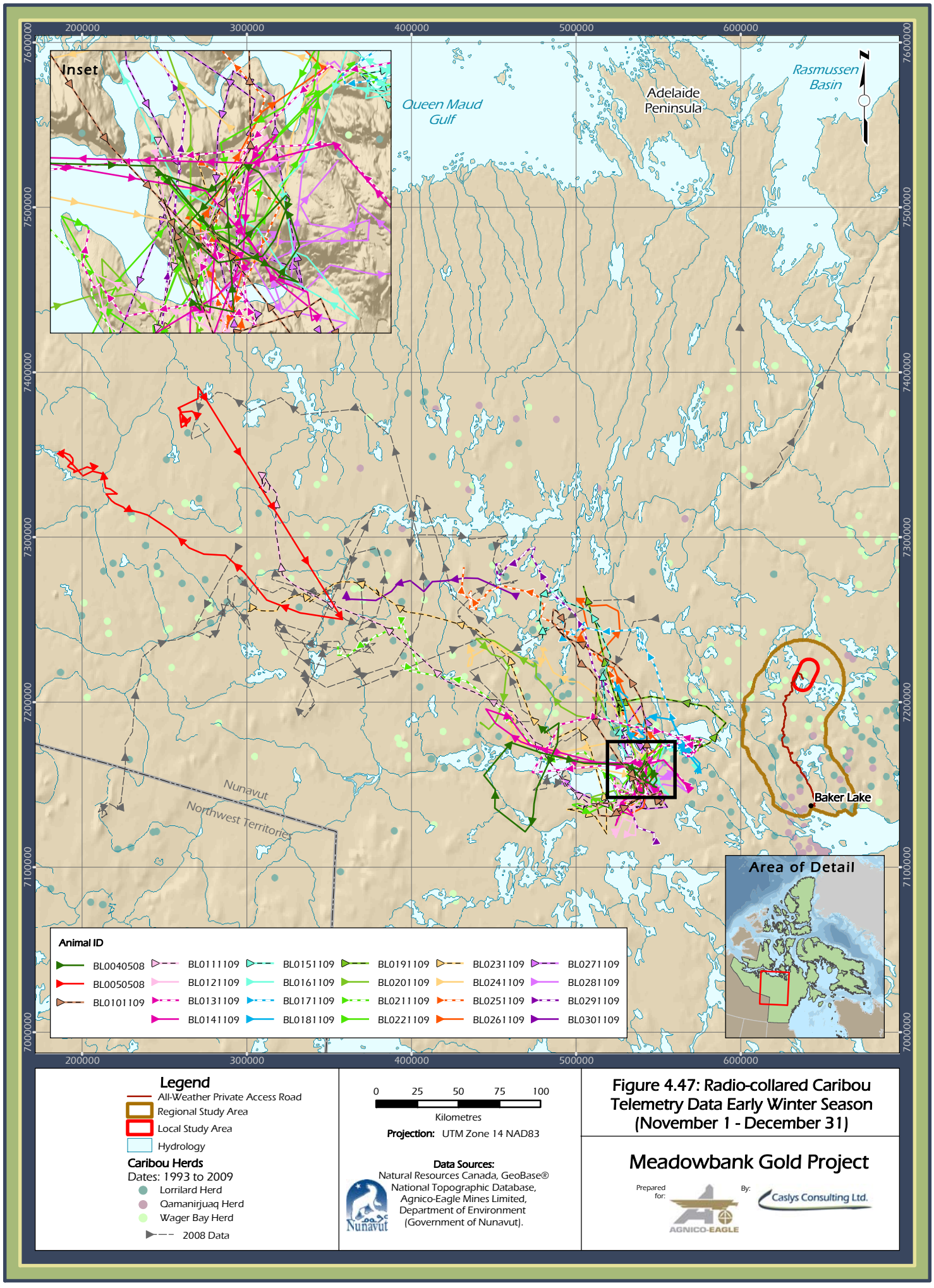
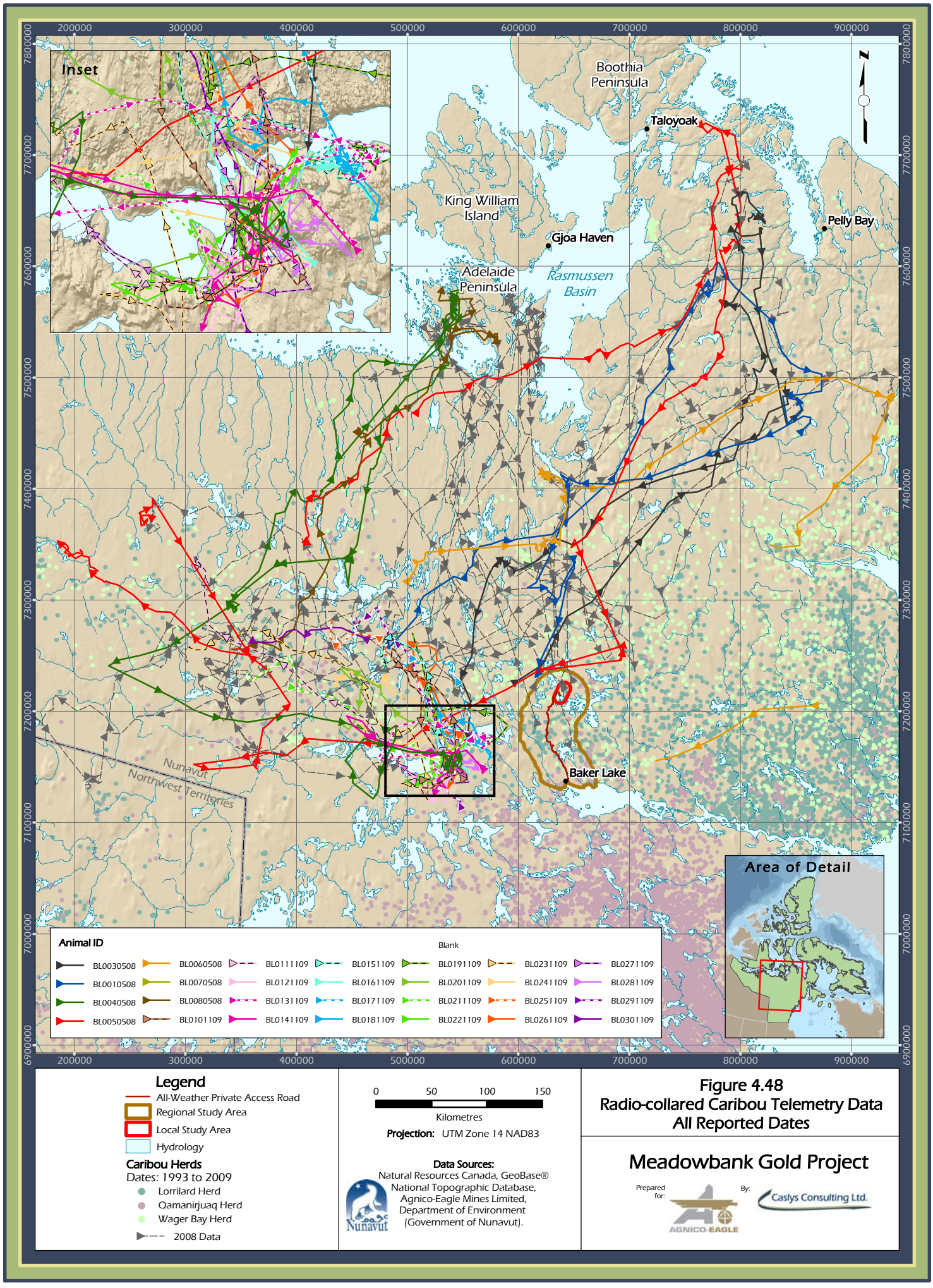


Figure 4.47: Radio-collared Caribou Telemetry Data Early Winter Season (November 1 - December 31)

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Legend

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

Caribou Herds
Dates: 1993 to 2009

- Lorrilard Herd
- Qamanirjuaq Herd
- Wager Bay Herd
- 2008 Data

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 (Government of Nunavut).

Figure 4.48
Radio-collared Caribou Telemetry Data
All Reported Dates

Meadowbank Gold Project

Prepared for: AGNICO-EAGLE
By: Caslys Consulting Ltd.

4.11 CHECKLIST SURVEYS

A brief summary of results from the checklist surveys is provided in Table 4.14. In 2009, Bald Eagle (*Haliaeetus leucocephalus*) and Yellow-billed Loon (*Gavia adamsii*) were observed for the first time. A summary of first occurrence records between 2003 and 2009 are provided in Table 4.15. Bird species abundance average counts per month and per year (2003-2009) are provided in Figure 4.49. The large number of birds in October corresponds to a large, migrating flock of Snow Bunting observed in 2008. Bird species diversity counts per month and per year (2003-2009) are provided in Figure 4.50. Results should be interpreted cautiously as survey intensity varied by day and habitat type, which are not accounted for. Moreover, the number of cumulative surveys per month (i.e., survey intensity) varies widely, ranging from one (February, March, October, and November – all conducted in 2007) to ninety (90) surveys (June – 2003 to 2009).

Both species abundance and species diversity were slightly higher in 2009 relative to 2008, despite fewer surveys in 2009. Species diversity, however, was still lower than the period of 2005-2007, which is anticipated to be largely the result of a truncated survey period since 2007.

Table 4.14: Bird Species Diversity by Month and Year.

Year	Month	Number of Surveys	Number of Species
2003	May	3	14
	June	9	32
	2003 Total	**12**	
2004	June	10	30
	August	4	10
	2004 Total	**14**	
2005	June	14	40
	July	16	21
	August	4	11
	2005 Total	**34**	
2006	June	12	42
	July	10	22
	September	2	10
	2006 Total	**24**	
2007	February	1	2
	March	1	1
	May	4	11
	June	18	43
	July	5	20
	August	1	4
	September	2	11
	November	1	3
	2007 Total	**33**	
2008	May	1	10
	June	13	27
	July	7	18
	August	1	6
	October	2	7
	2008 Total	**24**	
2009	June	14	31
	July	5	23
	2009 Total	**19**	

Table 4.15: Comprehensive Bird Species List and First Date of Occurrence.

Species Code	Species Name	First Date of Occurrence		Species Code	Species Name	First Date of Occurrence
AMGP	American Golden-Plover	20-Jun-03		MOBL	Mountain Bluebird	27-Jun-07
AMPI	American Pipit	16-Jun-03		NOPI	Northern Pintail	16-Jun-03
AMRO	American Robin	16-Jun-03		PAJA	Parasitic Jaeger	20-Jun-03
ATSP	America Tree Sparrow	18-Jun-05		PALO	Pacific Loon	20-Jun-05
BAEA	Bald Eagle	01 Jul-09		PASS	Unidentified passerine species	19-Sep-07
BASA	Baird's Sandpiper	29-May-03		PEFA	Peregrine Falcon	16-Jun-06
BASW	Barn Swallow	01-Jun-05		PESA	Pectoral Sandpiper	13-Jun-06
CACG	Cackling Goose	11-Jun-06		POJA	Pomarine Jaeger	18-Jun-03
CAGO	Canada Goose	26-May-03		PTAR	Ptarmigan	16-May-07
COGO	Common Goldeneye	01-Jul-08		RBME	Red-breasted Merganser	16-Jun-03
COLO	Common Loon	21-Jun-03		REDP	Unidentified redpoll species	07-Jun-05
COME	Common Merganser	18-Jun-05		RLHA	Rough-legged Hawk	18-Jun-03
CORA	Common Raven	26-May-03		ROGO	Ross's Goose	03-Jun-05
CORE	Common Redpoll	29-May-03		ROPT	Rock Ptarmigan	26-May-03
DUNL	Dunlin	04-Jun-05		RTLO	Red-throated Loon	27-May-03
GLGU	Glaucous Gull	26-May-03		SACR	Sandhill Crane	16-Jun-03
GOOS	Unidentified goose species	19-Jun-04		SAVS	Savannah Sparrow	16-Jun-03
GRSC	Greater Scaup	16-Jun-03		SEOW	Short-eared Owl	27-May-03
GULL	Unidentified gull species	20-Jun-04		SEPL	Semipalmated Plover	03-Jun-05
GWFG	Greater White-fronted Goose	26-May-03		SESA	Semipalmated Sandpiper	16-Jun-03
GWTE	Green-winged Teal	16-Jun-03		SHOR	Unidentified shorebird species	19-Jun-04
GYRF	Gyrfalcon	13-Jun-06		SNBU	Snow Bunting	29-May-03
HERG	Herring Gull	26-May-03		SNGO	Snow Goose	26-May-03
HOLA	Horned Lark	16-Jun-03		SNOW	Snowy Owl	21-Jun-07
HORE	Hoary Redpoll	20-Jun-03		TEWA	Tennessee Warbler	27-Jun-08
JAEG	Unidentified jaeger species	15-Jun-07		THGU	Thayer's Gull	20-Jun-03
LALO	Lapland Longspur	26-May-03		TUSW	Tundra Swan	18-Jun-04
LESA	Least Sandpiper	01 Jul-08		WCSP	White-crowned Sparrow	27-May-03
LOON	Unidentified loon species	19-Jun-04		WIPT	Willow Ptarmigan	23-Jun-04
LTDU	Long-tailed Duck	16-Jun-03		WRSA	White-rumped Sandpiper	15-Jun-06
LTJA	Long-tailed Jaeger	18-Jun-03		YBLO	Yellow-billed Loon	04-Jul-09
MALL	Mallard	18-Jun-03				

Figure 4.49: Bird Species Abundance Averages per Month and per Survey Date per Year (2003-2009).

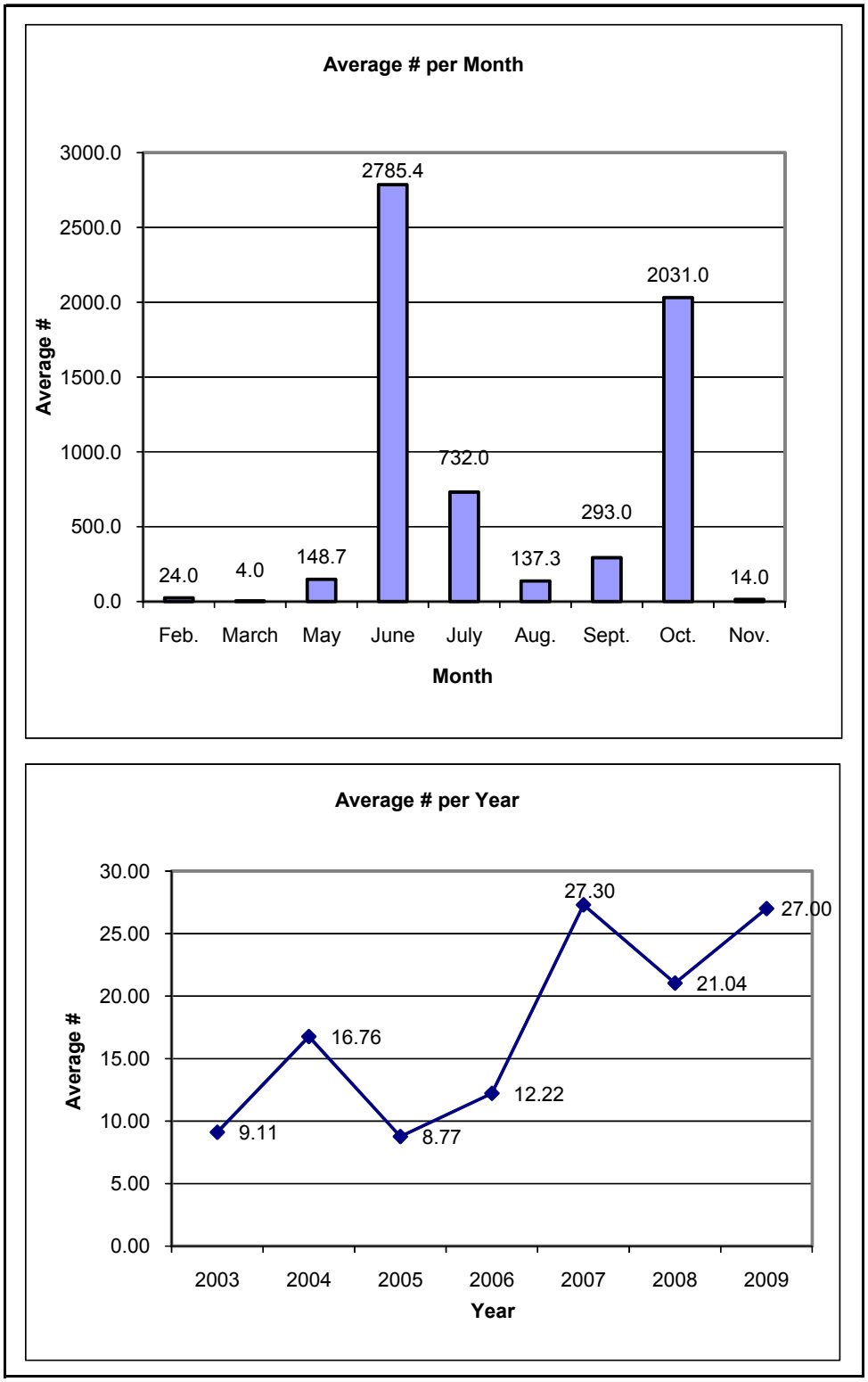
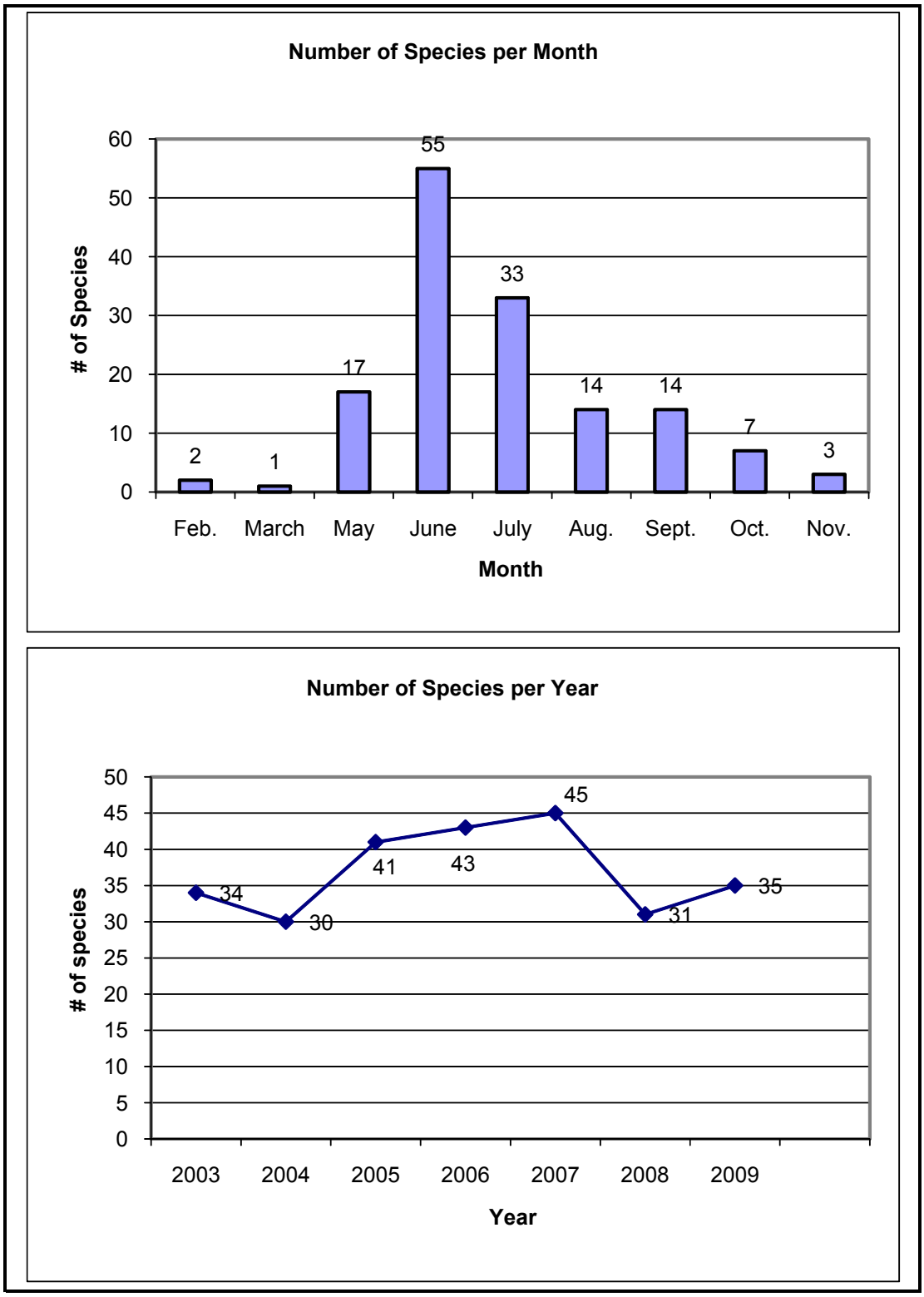


Figure 4.50: Bird Species Diversity Counts per Month and per Year (2003-2009).



4.12 BREEDING BIRD NEST SURVEYS

No Breeding Bird Nest Monitoring and Management Plan was developed in 2009 as clearing activities had largely been completed. Bird surveys were incorporated into daily and weekly mine site surveys conducted by Agnico-Eagle environmental personnel. As no breeding bird nests were identified within the mine site, no mitigation measures were implemented in 2009.

SECTION 5 • DISCUSSION AND RECOMMENDATIONS

5.1 HABITAT MAPPING

Habitat mapping was not conducted in 2009 as significant mine construction had not been completed at the time of the surveys. It was concluded that ELC analysis following completion of the mine would be a more valuable management tool, as it would provide a complete and accurate representation of habitat disturbance. Mine site construction is currently scheduled to be completed in the first quarter of 2010. On the basis of the revised construction schedule, ELC analysis has been tentatively rescheduled to 2010 and will include footprint effects of the mine site and ancillary facilities (including the AWPAR).

5.2 BREEDING BIRD PLOTS

Mine site construction was well underway at the mine site at the time of the 2009 surveys, which allowed for an assessment of potential mine-related effects. As in previous years, species abundance, richness and diversity metrics were not statistically different between mine and control plots, despite the onset of construction activities. These results also suggest that most community indices are temporally variable as most metrics increased concurrently in both control and mine site plots between 2003 and 2009. This increase 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. It is for this reason that a treatment and control design, in which measurements are taken before and during development, is essential to allow differentiation of environmental and anthropogenic effects on bird communities.

In 2008, analysis with the Pradel model suggested that the rate of new species occurring in mine plots was slightly higher than in reference / control plots, which also resulted in higher species diversity scores. Pradel model analysis was not conducted with the 2009 data. From an ecological perspective, construction and development within the PRISM plots could add edge areas resulting in the arrival of new species. Further monitoring of plots over time and further analysis with the Pradel model will better establish longer-term trends in response to the development of mine habitats. As such, this analysis should be reinstated in future years as it is a powerful tool that can be used to assess changes in bird communities.

5.3 BREEDING BIRD TRANSECTS

In 2009, only summary analyses on community metrics were conducted of the bird transect data. In future years, additional analyses will be conducted to more thoroughly explore trends in this data set, especially whether the presence of the AWPAR is affecting community metrics. Recommended analyses include Pradel modelling and Robust design in the MARK program (White and Burnham 1999) to evaluate changes in species richness and community stability over time.

5.4 RAPTOR NEST SURVEYS

Raptor nest monitoring will continue at the mine site and within the AWPAR LSA during AWPAR ground surveys and waterbird nest surveys. Monitoring will focus on high-suitability habitats including cliffs and the quarries along the AWPAR. Confirmed raptor nest locations (i.e., Peregrine Falcon nest - Quarry 19) will be re-evaluated each year to assess for activity. If an active nest is identified within 500 m of mine facilities, a management plan will be developed or updated, as necessary, to mitigate potential mine-related impacts.

5.5 WATERBIRD NEST SURVEYS

2009 marked the sixth consecutive year that waterfowl nest surveys were conducted at the mine site and the fourth year of the more intensive protocols established in 2006 (Section 3.7). The intensive protocol resulted in a more comprehensive dataset relative to previous years; however, counts, nest location and species continued to vary between years. In general, waterbird nest density within the mine site LSA remains low. The baseline waterfowl nest survey data will become increasingly important for comparative purposes following mine site construction and during mine operation.

Waterfowl nest survey results suggest that the shoreline and wetland areas within 200 m of the AWPAR continued to be utilized by waterbirds. In addition, historically identified nests are often utilized again in subsequent years (field observation), which are good monitoring indicators of potential AWPAR-related effects over time. Data collected during subsequent survey years will increase the robustness of the existing dataset, thereby providing increased statistical power for trend and effects analyses to establish natural and potential project-related variation.

5.6 MINE SITE GROUND SURVEYS

Informal daily mine surveys and weekly formal mine surveys will continue to play an increasingly important role in 'real-time' LSA wildlife monitoring as the mine transitions from the construction phase to the operational phase. Agnico-Eagle will continue to provide annual summaries of survey results and resulting adaptive measures implemented over the course of each year.

5.7 ALL-WEATHER PRIVATE ACCESS ROAD SYSTEMATIC GROUND SURVEYS

The road survey data is 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 as discussed in Section 5.15.1.1). Moreover, Caribou density can be compared graphically across years, which can be used to track changes in density and preferential migration corridors. The sections of AWPAR with higher Caribou densities can be prioritized should additional adaptive management strategies be required in the future. To this end, a preliminary assessment of Caribou density was conducted for the first time in 2009.

In future years, statistical analysis may be explored to compare trends in Caribou densities or counts along the AWPAR with the assumption that habitat types and sightability remain constant. This type

of analysis would be most meaningful once a longer time series of data is collected. The extrapolation of Caribou density based on Caribou observed in proximity to the road is based upon the assumption that roads do not influence Caribou density, which may be flawed given the reported potential impacts of roads and mines on Caribou distribution for other projects (Boulanger et al. 2004).

In 2009, species counts were slightly lower in winter, spring and summer relative to 2008. Similarly, yearly detection counts were down when compared to 2007 and 2008 results, which is anticipated to be due to a lower number of surveys relative to previous years, although non-reporting of certain common species may have also played a role. Variation may also be due in part to the first full year in which the AWPAR was surveyed fully but may also be due to surveyor experience, weather conditions (i.e., visibility) and natural variation. Additional years of data will help evaluate the primary source(s) and statistical relevance of variation.

Reporting of wildlife mortality along the AWPAR decreased sharply in 2009 relative to 2008. This reduction is anticipated to be the result of a combination of factors, including a lower number of AWPAR surveys in 2009 relative to 2008, increased security and ticketing for vehicle speeding, and environmental education. Roadkill location and roadkill density were plotted for the first time in 2009. Cumulative (2008 and 2009) roadkill density along the AWPAR alignment remains low (i.e., 0 – 1.4 mortalities per km); however, roadkill data collected to date suggests that areas with a higher roadkill density may exist, which will be validated in subsequent years following the inclusion of additional data. As such, roadkill locations and counts will continue to be monitored to evaluate the need, if any, for the implementation of adaptive management strategies in future years.

5.8 HARVEST STUDY

After being strategically revised at the end of 2007, harvest study participation rates increased markedly in 2008 and again in 2009, which is anticipated to be the result of increased visits to Baker Lake, regular reminders, on-going promotions and draws, and continued building rapport with hunters.

As stated in the TEMP (Agnico-Eagle 2006), the hunter harvest study was established to monitor the spatial distribution, seasonal patterns and harvest rates both prior to and following construction of the AWPAR. If changes in the spatial distribution, seasonal patterns or harvest levels exceed 20% of the pre-AWPAR levels, adaptive management measures are to be implemented. A qualitative analysis of data collected to date suggests that Wolverine and Muskox hunting did not appear to be influenced by the AWPAR, which is likely due to the lower densities of these species (often requiring hunters to travel great distances to locate a potential kill) and their general aversion to human presence and associated activities. In contrast, Caribou kill locations in 2008 and 2009 appeared to be closely associated with the AWPAR when compared to 2007 data (during AWPAR construction), often occurring less than 5 km from the road. 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.

In future years, a series of detailed statistical analyses will be conducted to isolate the effect of the AWPAR road on hunting trends, irrespective of study participation rates. The statistical power of each

relationship can be tracked on an annual basis to establish if adaptive management and mitigation strategies are effective.

5.9 RADIO-COLLARING PROGRAM

As additional Caribou are collared in subsequent years and complete annual datasets are generated, home range and habitat use by season (i.e., pre-calving, calving, post-calving, early summer, fall, fall rut, early winter and late winter) can be mapped with increasing certainty. Distributional data can be compared to historical radio-collaring data to evaluate changes in habitat usage, migration patterns and timing as a result of mine construction and the AWPAR, hunting patterns or other natural disturbances.

5.10 ENVIRONMENTAL HEALTH MONITORING

In accordance with the Environmental Health Monitoring Program (Azimuth 2006) and TEMP (Agnico-Eagle 2006), the next collection of soil and tissue samples is scheduled for 2011, during the first fully operational year of the mine. A more detailed analysis of the three years of analytical results will be undertaken following the 2011 collection and the WSLRA will be revised, as appropriate. The data will provide a means of routinely evaluating any changes in contaminant exposure and, ultimately, potential risks to wildlife during operations.

5.11 CHECKLIST SURVEYS

Checklist surveys provide a summary of bird species and abundance on a given day in a given 10 km x 10 km area. The results are not used by Agnico-Eagle for long-term monitoring, but are instead part of a collaborative effort to support the Canadian Wildlife Service in determining abundance and distribution of bird species in the Arctic.

5.12 BREEDING BIRD NEST SURVEYS

No Breeding Bird Nest Monitoring and Management Plan was developed in 2009 as clearing activities had largely been completed. Bird surveys were incorporated into daily and weekly mine site surveys conducted by Agnico-Eagle environmental personnel. As no breeding bird nests were identified within the mine site, no mitigation measures were implemented in 2009.

5.13 NATURAL VARIATION

The addition of annual monitoring results into the existing datasets exemplifies the importance of collecting sufficiently robust data prior to drawing conclusions established through statistical analyses. For example, data for breeding bird plots and transects is not yet robust enough to determine whether significant natural changes in bird populations have occurred. Ongoing yearly surveys, as well as an increase in replications for the transect surveys (as done in 2009) will continue to improve confidence in trend analysis in subsequent years.

5.14 PROJECT-RELATED VARIATION

Potential project-related variation in species diversity, abundance and richness community metrics has been assessed using the survey data from breeding bird plots as well as bird transects and AWPAR systematic ground surveys. To date, no significant statistical differences were identified for community metrics or temporal trends between reference / control and mine site breeding bird plots. In contrast, 2007 and 2008 breeding bird transect results suggested that songbird species richness and diversity were highest closest to the AWPAR. Additional statistical analyses on previous breeding bird transect data suggested that year of analysis, the presence of the AWPAR and the interaction between transect and absolute distance were all significant. Contributing factors may include increased survey intensity in the vicinity of the AWPAR, edge habitat effects, increased sightability (i.e., through proximity effects and the high contrast of the road relative to the surrounding area) in roaded transects, survey timing and survey intensity. In 2008, the effect of the road on community metrics was less robust. Additional years of data and more comprehensive statistical analyses in future years will serve to determine the robustness of these types of trends.

An analysis of project-related variation will be conducted in subsequent years following completion of mine facilities and the collection of sufficient data for applicable statistical analysis.

5.14.1 Species Diversity, Abundance and Richness

The primary intent of the breeding bird plot surveys was to establish the degree of similarity between baseline mine and reference / control site plots in terms of basic measures of species abundance, richness and diversity. A statistical analysis of ELC classes confirmed that baseline mine and reference / control site plots were directly comparable with the exception of a slightly higher proportion of Heath-Tundra in control plots and a slightly higher proportion of Lichen classes in the mine plots. These marginal variations were not statistically significant. In 2009, species abundance, richness and diversity continued to remain statistically indifferent in mine and reference / control plots despite the onset of mine construction. Of note, diversity was marginally higher in 2009 mine plots and may have been due in part to the creation of new edge habitats as a result of construction-related activities. This preliminary postulation will be explored in future years.

2009 breeding bird transect species abundance was also similar to 2008 data. Specifically, relative abundance for Lapland Longspur was lower in 2009 and 2008 compared to 2007, which may be the result of survey timing relative to the breeding season. In contrast, Savannah Sparrow abundance appears to be cyclical, Horned Lark abundance has been relatively uniform across years and Common Redpoll abundance was highest in 2008, decreasing sharply in 2009. Common Redpoll nest counts recorded during the AWPAR waterbird nest surveys (Section 4.5.2) were also lower. Whether this is a mine-related effect or natural variation will be explored in future years.

Species richness has been increasing since 2007. In 2009, there was a record of 20 species sighted in the southern transects and 17 species sighted in the northern transects. This increase in species richness may be due in part to the additional replicate survey; however, additional species may also be utilizing the newly created habitats along the AWPAR. In future years, an evaluation of bird observation frequency relative to the road location may be explored in additional detail. As in previous years, overall species diversity was compared graphically. Annual results have consistently indicated that transects were dominated by relatively few species with many species only being seen

occasionally. Results will be analyzed in detail again in future years to evaluate potential changes in species diversity along the transect lines.

Similar to the bird transect survey findings, Caribou and waterfowl abundance tabulated from repeat AWPAR surveys appeared higher in close proximity (100-200 m) to the road. Higher counts at greater distances are largely the result of data-pooling.

5.15 ACCURACY OF IMPACT PREDICTIONS

A series of impact hypotheses were made in the TEMP (Agnico-Eagle 2006) to predict the anticipated level of effect that mine-related activities may have on terrestrial wildlife following the implementation of recommended mitigation measures and monitoring programs. To date, the evaluation of the accuracy of certain impact predictions has been limited as a result of delays in AWPAR and mine site construction completion. As a result, the only impact predictions appropriate for discussion at this juncture are:

1. variation in community metrics along breeding bird transects and between reference / control and mine site PRISM plots;
2. wildlife mortality associated with problem animals at Meadowbank camp;
3. wildlife mortality as a result of AWPAR operation, including vehicle-related collisions; and
4. unauthorized hunting along the AWPAR.

A detailed evaluation of the accuracy of PRISM plot community metrics between reference / control and mine site areas, breeding bird transect community metrics, wildlife mortality impact predictions, and unauthorized hunting along the AWPAR are provided in Sections 5.2, 5.3, 5.15.1 and 5.15.2, respectively. The accuracy of remaining impact predictions will be discussed in increasing detail in subsequent years once mine site construction has been completed and additional data has been collected, thereby facilitating a detailed and quantitative assessment of accuracy.

5.15.1 Wildlife Mortality

Wildlife mortality thresholds were developed as a component of the TEMP (Agnico-Eagle 2006). Thresholds were established based on wildlife life histories, population densities, general aversion to human presence and thresholds developed for other mine sites (e.g., Diavik 1998; BHP 2000) Resulting project-specific thresholds were based on the provision that recommended mitigation measures would be adhered to (e.g., 50 km/hr speed limit along the AWPAR). Wildlife mortality thresholds for the Meadowbank Gold Mine Project are provided in Table 5.1.

Table 5.1: Wildlife Mortality Thresholds for the Meadowbank Gold Mine Project as Established in the Terrestrial Ecosystem Management Plan (Agnico-Eagle 2006).

Wildlife Group	Threshold	Threshold Exceeded	Adaptive Management Implemented	Monitoring Program	TEMP Reference
Ungulates	1 individual as a result of vehicle collision	NO – 2009 YES – 2007 & 2008 (refer to previous monitoring reports for details)	YES (proactive); discussed in Section 5.15.1.1.	On-going AWPAR Surveys	4.4.2.3
	1 individual as a result of mine-related activities (e.g., falling into pits, tailing, sludge or other means)	Not Yet Applicable	Not Yet Applicable	Daily and Weekly Mine Site Ground Surveys	4.4.2.3
Predatory Mammals	Destruction of 1 problem Grizzly Bear or Wolverine at Meadowbank Site	NO	YES; discussed in Section 5.15.1.2	Daily Mine Site Ground Surveys	4.5.2.1
Small Mammals	100 individuals as a result of vehicle collisions	NO	NO	On-going AWPAR Surveys	4.6.2.2
Raptors	Maintenance of healthy prey populations to insure 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	ELC Habitat Mapping	4.7.2.1
	Nest failures will not be caused by mine-related activities	NO	NO	Raptor Nest Monitoring and development of appropriate management plan(s)	4.7.2.2.
	1 individual as a result of vehicle collision	NO	NO	On-going AWPAR Surveys	4.7.2.3
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 (1) nest failure.	NO	NO	On-going AWPAR Surveys Annual Mine Site and AWPAR Waterbird Nest Surveys	4.8.2.2
	1 individual as a result of vehicle collision	NO	NO	On-going AWPAR Surveys	4.8.2.4
Other Breeding Birds	50 individuals as a result of vehicle collision	NO	NO	On-going AWPAR Surveys	4.9.2.2

5.15.1.1 Ungulates

On 27 February and 11 May 2009, two Caribou mortalities were reported to the environmental department along the road (Appendix F). Follow-up investigations conducted by environmental staff concluded that, in both cases, the Caribou had been killed by Wolves.

On 10 September 2009, a carcass of a dead Caribou was located at kilometer 100. The environmental department was notified, which subsequently inspected the area. Upon arrival, the carcass was noted as having been eaten by scavengers, but otherwise appeared to be a healthy male. The stomach was on the ground beside the carcass, which is a good indication that the Caribou had not been killed by a predator. The environmental team conducted an autopsy and located a bullet hole. The puncture wound was evidence that the animal was shot by a hunter and was not wounded due to road activity. A memorandum documenting the investigation was circulated within the mine operations department and is included Appendix F.

No caribou misses, near misses or mortalities were related to mine activities along the AWPAR or mine site in 2009, which is anticipated to be the result of implemented adaptive management strategies, which are discussed below.

In 2009, under the guidance of the environment and security department, the AWPAR dispatch was provided a directive to assist the environmental department in preventing wildlife incidences. As in the past, during Caribou peak migration along the AWPAR, notices were sent to all road occupants, wildlife consultants were notified and AWPAR wildlife survey efforts were increased to three times per week (refer to Appendix E for email discourse and reminders).

The following text summarizes the mitigation measures and instructions provided to the security department for dispatch in 2009.

The key tasks for dispatch included:

1. Regular radio / dispatch announcements to transmit information regarding:
    a. Speed limit (50 km/hr maximum);
    b. Mine Access Road with limited access by HTO approved hunters;
    c. Reporting requirements for wildlife sightings; and
    d. Enforcement / reminders pertaining to Caribou Migration from ~October to December;
2. Log / record wildlife sightings;
3. Submit *Wildlife Log* to on-site Environment Coordinator (at a minimum of once per month); and
4. Enforce spill prevention and report spills to on-site Environmental Coordinator

Example Dispatch Announcements

The following is an example dispatch message from January to September:

"Please do not exceed the posted and enforced speed limit of 50 km/hr. Please respect the environment: watch out for wildlife and report to dispatch any wildlife sightings, prevent spills and report spills and do not litter. Thanks and have a great day."

The following are example dispatch messages for the period between October and December.

"The period of October thru December is a critical migration period for wildlife (Caribou), it is very important to inform road users on the need to use caution, respect wildlife and the 50 km/hr speed limit."

"This is Baker Lake dispatch. Please be advised that this is an important migration period for wildlife. It is very important to report, I repeat, report wildlife movement along the All-Weather Private Access Road. It is also very important to use caution and respect the 50 km/hr speed limit. Thank-you for your cooperation. Copy Meadowbank".

From September 2009 to present, the following information has been successfully transmitted. The participation of dispatch during peak Caribou migration (approximately 20-31 October 2009) was very important in the success of the management of the herds as thousands of caribou successfully crossed the AWPAR without incident. These abovementioned adaptive management strategies are a marked improvement relative to 2008, in which two Caribou road-related mortalities were reported.

For Security Officer During Fall Caribou Migration

In 2009, Security personnel completed regular trips along the road during Caribou migration to assist the Environmental Department in making decisions to temporarily close the AWPAR. Security personnel were required to complete a Caribou Migration Monitoring Form (refer to Appendix E for an example form).

5.15.1.2 Predatory Mammals

Although no Grizzly Bear (*Ursus arctos*) or Wolverine 'problem animals' had to be destroyed in 2008-2009, other predatory mammal incidences occurred, which are discussed below.

Arctic Fox

Due to exploration activities and prior to the installation of a formal waste management system (which was formalized in 2009, following the arrival of suitable covered bins on the barge), a family of Arctic Foxes had become habituated to the mine site activities. Despite improved facilities and efforts to segregate, contain, and enclose food waste, the local Arctic Fox population propagated in the spring in dens near the mine site. Weekly on-site inspections by environmental technicians provided monitoring data that indicated a population growth in late 2008 as the pups matured, leaving their den sites.

In response, the Agnico-Eagle environmental department contacted Gebauer & Associates and the GNDoE wildlife officer in Baker Lake on 14 November 2008 to discuss mitigation approaches (refer to email summary in Appendix F). As a result of these discussions, it was concluded that the best solution would be to continue to contain the food waste by the incinerator, expedite the installation of the high capacity incinerator and begin the relocation of Arctic Foxes. The GN wildlife officer

recommended the use of *Tru-catch Live Traps* supplied by Margo Wildlife Supplies Ltd. in Edmonton. Shortly thereafter, three (3) traps were purchased and implemented by Agnico-Eagle personnel.

Table 5.2 summarizes the late 2008-early 2009 Arctic Fox capture and relocation program. Specifically, the program began on 04 December 2008 and continued until late February 2009. In total, forty-one (41) Arctic Foxes were captured and relocated approximately halfway between the mine site and the hamlet of Baker Lake. It was possible that some of these foxes were recaptures. As noted in the table, the time required to capture three foxes increased significantly from December to late February.

Table 5.2: 2008-2009 Arctic Fox Relocation Program Summary

Date	Fox Count	Initial location	Relocation (AWPAR)	Catching time	Initial
12/4/2008	3	incinerators area			SD-SG
12/5/2008	3	incinerators area			SD-SG
12/6/2008	3	incinerators area			SD-SG
12/7/2008	3	incinerators area	km 37	10 mins	NS-RT
12/8/2008	3	incinerators area	kms 39, 37, 35	15 mins	NS-RT
12/9/2008	3	incinerators area	kms 49, 33, 31	75 mins	NS-RT
12/10/2008	3	incinerators area	kms 41, 39, 35	120 mins	NS-RT
12/11/2008	3	incinerators area	kms 57, 55, 51	30 mins	RT-JK
12/11/2008	3	incinerators area	kms 41, 39, 35	60 mins	RT-MB
12/12/2008	3	2 near kitchen waste, 1 - incin.	kms 26, 24, 18	35 mins	RT-MB
12/13/2008	3	incinerators area	kms 21, 19, 17	15 mins	RT
12/14/2008	3	incinerators area	kms 44, 42, 39	50 mins	RT
12/15/2008	3	incinerators area	Q6, km 33, km 29	160 mins	RT
12/16/2008	2	incinerators area	kms 45, 41	50 mins	RT
1/6/2009	3	incinerator area	km 50	25 mins	JK
1/7/2009	3	incinerator area	km 50	42 mins	JK
1/8/2009	3	kitchen area	km 39	42 mins	JK

Date	Fox Count	Initial location	Relocation (AWPAR)	Catching time	Initial
9-Jan-09	3	incinerator area	km 50	11 mins	JK
1/19/2009	3	incinerator area	kms 44, 42, 40	40 mins	RT
1/28/2009	1	incinerator area	km 90	100 mins	RT
1/29/2009	1	incinerator area	km 50	60 mins	RT
1/31/2009	3	incinerator area, kitchen	kms 48, 46, 44	3 hrs, 10 mins	RT, JK
2/2/2009	3	incinerator area	km 50	55 mins	JK
2/8/2009	3	incinerator area	km 50	60 mins	JK
2/10/2009	3	imcinerator area	km 35	65 mins	JK
2/14/2009	1	incinerator area	km 50	110 mins	RT
2/27/2009	3	incinerator area and exploration	km 50	124 mins	JK

Subsequent to the relocation program and in conjunction with improved waste management, Arctic Fox activity near the exploration incinerator decreased significantly. The reduction in fox activity coincided with numerous Arctic Fox mortalities at the mine site as food source accessibility was nearly eliminated (refer to Appendix F for details). Monitoring identified an overall decrease in fox abundance near the incinerators and landfill by February 2009. With the implementation of a formal waste management system and installation of a high capacity incinerator, few foxes were noted near the mine site during weekly inspections throughout 2009.

Wolf

In 2009, four emaciated wolves were euthanized at the mine site following close monitoring. In all cases, the wildlife protection protocol was strictly followed. Specifically, each of the wolf's behaviour was closely monitored as a protective measure for the animal and mine personnel. After monitoring, an attempt was made to deter each wolf using aversive techniques. The persistence of the wolves at the mine site was discussed with the GN conservation officer. As a result of these discussions, it was concluded that the wolves were to be euthanized if they could not be deterred or if they posed a danger to operations personnel or themselves.

All of the wolves euthanized at the mine site were solitary animals. Based on their observed behaviour, the wolves appeared ill with impaired mobility, either due to natural causes (i.e., contracted illness such as rabies or parasites) or due to incidental ingestion of landfill waste resulting in emaciation. Although significant efforts were made to segregate food waste, some food waste was disposed of in the landfill, thus attracting wolves. As previously stated, AEM has taken further

preventative action by conducting daily inspections of waste sent to the landfill and continuing to enforce waste segregation on-site. Appendix F presents a summary of the wolf fatalities.

5.15.2 Other Impact Predictions

Other impact predictions to be monitored for threshold exceedences, as set out in the 2006 Terrestrial Ecosystem Management Plan, are provided in Table 5.3. Only those impact predictions that can be adequately quantified during mine site construction are discussed in detail.

Table 5.3: Impact Prediction Thresholds for the Meadowbank Gold Mine Project as Established in the 2006 Terrestrial Ecosystem Management Plan

Category	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Habitat Loss	Terrestrial habitat lost will not exceed the total area of loss predicted (478 ha for mine site and 282 ha for AWPAR) in the FINAL EIS or described on subsequent, approvals or authorizations. Threshold is >5% of predicted losses. Specific habitat loss thresholds are also available for each animal group.	Not Yet Applicable	Not Yet Applicable	ELC Habitat Mapping currently scheduled to 2009 to verify threshold compliance.	4.3.2.1
Wildlife Abundance and Diversity	Mine-related reduction in local breeding bird abundance and diversity will not occur.	NO (PRISM plots) Not Yet Applicable (transects)	Not Required (PRISM plots) Not Yet Applicable (transects)	Annual PRISM Plot surveys and analysis. Annual Breeding Bird Transect surveys and analysis.	4.3.2.3
Air Quality	Airborne dust and emissions will not result in unacceptable contaminant (inorganic elements) levels in vegetation in close proximity to roads and some mine facilities. Threshold levels are >20% increase over baseline levels reported in the Azimuth (2006).	Not Yet Applicable	Not Yet Applicable	Second round of baseline soil and vegetation collected in 2008. First round of sampling during mine operation scheduled for 2011, which will allow for a comparison with baseline results	4.3.2.2
Contaminant Exposure	Unacceptable contaminant levels in vegetation and soils in close proximity to the mine facilities and road will not occur. Animals will not be exposed to contaminated water long enough to result in wildlife or human health risks. Thresholds have been calculated as magnitude increases of Hazard Quotients (HQ) provided in the Azimuth (2006).	Not Yet Applicable	Not Yet Applicable	Second round of baseline soil and vegetation collected in 2008. First round of sampling during mine operation scheduled for 2011, which will allow for a comparison with baseline results	4.4.2.4; 4.6.2.3; 4.8.2.3; 4.9.2.3.
Sensory Disturbance	Mine related construction and operations activities will not preclude Caribou and Muskox 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; discussed in Section 5.15.	Currently monitored through Incidental Wildlife Monitoring, radio-collaring data and AWPAR Road Surveys. Will also be monitored via Systematic Ground Surveys once initiated.	4.4.2.2

Category	Threshold	Threshold Exceeded	Adaptive Management Implemented	Status	TEMP Ref.
Traditional Hunting Patterns	The AWPAR 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.	YES; Qualitative Assessment	Road access regulated, safety measures enforced and training required. No shooting zone instated around the AWPAR.	On-going monitoring through the Hunter Harvest Study	4.4.2.3
Habitat Reclamation	Following mine closure and reclamation activities, areas (with the exception of tailings, waste rock facilities and exposed pit slopes) will see re-vegetation rates of >20% (year 2 post-closure), >40% (year 5), >60% (year 8) and >80% (year 11).	Not Yet Applicable	Not Yet Applicable	Monitoring program to be set up post mine-closure	4.3.2.3

5.16 OTHER ADAPTIVE MANAGEMENT IMPLEMENTED IN 2009

5.16.1 Designated Trail Implementation

For the safety of employees, as well as to protect wildlife habitat and reduce the impacts on the tundra, the services department (mine operations) designed a network of designated recreational walking trails around the mine site in 2009. The final document was circulated in January 2010 and the memo is attached in Appendix E.

SECTION 6 • SUMMARY

The 2009 Wildlife Monitoring Summary Report describes data collected to date, investigates the suitability of monitoring programs in assessing trends in wildlife abundance and diversity, and assesses (preliminarily) natural and mine-related variability within populations. Currently, the monitoring program outlined in the TEMP is suitable for assessing impacts of mine-related activities on wildlife. The monitoring program 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. Similarly, the on-going collection of data will allow for increasingly robust statistical analyses each year, which will build on an increasingly comprehensive understanding of naturally occurring and potential mine-related effects.

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SECTION 8 • GLOSSARY AND ACRONYMS

Adaptive Management – A systematic process for continually improving management policies and practices by learning from the outcomes of monitoring programs.

AIC – Akaike Information Criterion.

Anthropogenic – caused or influenced by human activities.

ARGOS – Advanced Research and Global Observation Satellite.

AWPAR – All-Weather Private Access Road.

Baseline – Describes the environmental conditions (including wildlife diversity, distribution and abundance) prior to disturbance, and to which post-development changes can be compared.

Closure and Post-Closure Phase – The stage in mine development when exploitable ore reserves have been exhausted, and the decommissioning of mine structures, buildings, and equipment begins. Abandonment and restoration also begin at this stage.

Construction Phase – The stage in mine development (referring to the Meadowbank Gold Mine Project) when the major mine structures, such as processing plant and ancillary facilities, open pit, waste rock storage facility, and tailings impoundment, are developed.

COPC – Contaminant of Potential Concern.

CRC – Communications Research Centre.

CWS – Canadian Wildlife Service.

EIA – **Environmental Impact Assessment**. Unless otherwise specified, all references to an EIA in this document refer to the 'Terrestrial Ecosystem Impact Assessment' and not the overall Project Environmental Impact Statement, or EIS (q.v).

EIS – **Environmental Impact Statement**. For the purposes of this report, EIS refers to the overall Project Environmental Impact Statement, as shown in the EIA Documentation Organization Chart.

ELC – Ecological Land Classification, a land classification system based on terrain, soils, and vegetation, in which areas of similar ecology are identified and mapped within a hierarchy of ecosystems where broad to specific levels of detail are presented on a series of maps.

Exclusion Zone – the area established as being beyond the influence of a potentially modulating factor (see Zone of Influence).

Fidelity – in the fields of scientific modelling and simulation, fidelity refers to the degree to which a model or simulation reproduces the state and behaviour of a real world object, feature or condition. Fidelity is therefore a measure of the realism of a model or simulation.

GIS – Geographic Information Systems, a computer system capable of capturing, storing, analyzing, and displaying geographically referenced information (i.e., data identified according to location).

GNDoE – Government of Nunavut, Department of Environment.

GPS – Global Positioning System, a satellite-based navigation system.

Habitat Effectiveness – The value of habitat to wildlife. Sensory disturbance may limit wildlife use of functional habitat thus resulting in reduced effectiveness.

Harvest Study – A study of hunter and angler fishing patterns in the Baker Lake area and the effect of the AWPAR. A calendar is used to collect data on animals harvested and fish caught.

HTO – Hunters and Trappers Organization.

IDW – Inverse Distance Weighting.

LSA – Local Study Area - The mine site LSA for the monitoring programs is a 5 km radius circle around the main mine facilities joined with a 5 km radius circle around the Vault facilities to form an elliptical shape. The AWPAR LSA is a 3 km wide corridor centred on the proposed AWPAR from the main mine site to Baker Lake.

KIA – Kivalliq Inuit Association.

Mine Footprint – The area covered by all mine facilities.

Mitigation – An action taken against an impact in order to control its effect.

Monitoring – The systematic observation or tracking of an activity to determine whether it is proceeding or functioning as expected. Through monitoring, the accuracy of environmental impact predictions is assessed.

NAD – North American Datum.

NIRB – Nunavut Impact Review Board.

NLUIS – Northern Land Use Information Series.

NWMB – Nunavut Wildlife Management Board

Operations Phase – The stage in mine development when major facilities have been developed and ore is being extracted from the ground and either processed on-site or shipped off-site for processing.

Permafrost – Permanently frozen ground.

Physiography – Physical features of the earth's surface (e.g., rivers, lakes, land forms and terrain features).

PRISM – Program for Regional and International Shorebird Monitoring.

Radio-Collaring Program – A program that places collars on Caribou to study their seasonal distribution and movement patterns.

Raptor – A bird that hunts by snatching its prey (e.g., rough-legged hawk, snowy owl, peregrine falcon, gyrfalcon).

Reclamation and Closure – Upon mine closure, the minimization of surface area disturbance through recontouring of disturbed areas to be consistent with the surrounding topography and to stabilize slopes but encourage runoff, encourage or establish revegetation, and return the land to post-mining uses for traditional pursuits and wildlife habitat.

Relative Abundance – An estimate of the number of animals in a given area. A measure for comparing wildlife populations between sites. Does not reflect the actual number of animals present in an area.

Residual Effect – An effect that persists after mitigation measures have been implemented.

RSA – Regional Study Area. The RSA for monitoring programs is a 25 km radius circle around the main mine site and a 50 km wide corridor centred on the proposed AWPAR from the main mine site to Baker Lake.

TEMP – Terrestrial Ecosystem Management Plan.

Traditional Knowledge – The knowledge local people have gained over the years from the environment and the world around them. Traditional knowledge is gained both by personal experience and by passing on information from one generation to the next.

Ungulate – A wide taxonomic group of hoofed mammals (e.g., Caribou and Muskox).

UTM – Universal Transverse Mercator Coordinate System, used to derive geographic coordinates, normally in meters, east and north, of an origin that are defined uniquely grid for each zone.

VEC, Valued Ecosystem Component – Environmental attributes or components selected through consultation with regulatory and governmental authorities, discussions with members of the local community, and a review of VECs identified in other northern mine projects. This selection process can be further refined through the application of one or more of the following criteria: conservation status, relative abundance within the project area, importance in subsistence lifestyle and economy, importance in predator-prey systems, habitat requirement size and sensitivity, and contribution to local area concerns. Other considerations include scientific and aesthetic values.

VSEC, Valued Socio-economic Component – A cultural, social or economic aspect of the environment which, if affected by development, would be of concern to regional residents and / or government regulators.

Waterbird – Includes both Waterfowl and Shorebirds

Waterfowl – Freshwater-dependent, swimming aquatic birds (e.g., Common Loon, Canada Goose, Long-tailed Duck).

WMA – Wildlife Management Area.

WSLRA – Wildlife Screening Level Risk Assessment.

Zone of Influence – The geographic area where animal behaviour and abundance may be influenced by industrial activities (see Exclusion Zone).

APPENDIX A

Field Data Forms

AGNICO-EAGLE - ALL-WEATHER PRIVATE ACCESS ROAD SURVEYS

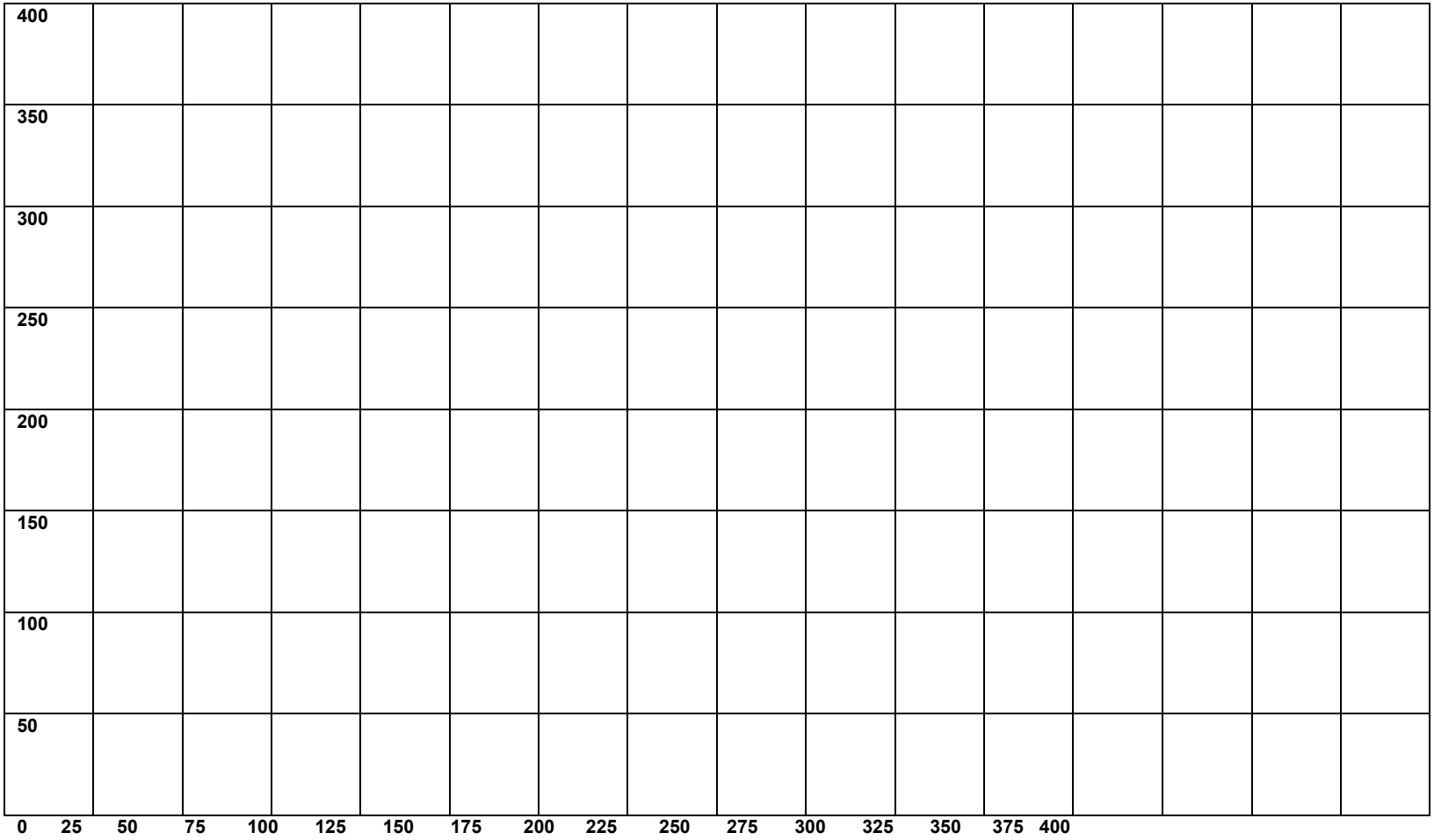
Date (day/month/year) _____ Time Started _____ Time Ended _____ Page ____ of _____
Start Location (UTM) _____End Location _____ Observer Names: _____
Temp: ____ Wind Speed (km/hr): _____ Wind Dir: ____ Visibility (circle): 100m 500m 1km >1km **Precipitation: _____**

Time	Species Name	Number, Sex and Age[1]	Habitat Type (ELC)[2]	Behaviour[3]	Direction of Travel[4]	Distance from Road (m)	Direction from Road (N or S)	Location on All-Weather Road (GPS Coordinates)			Comments
								Zone	Easting	Northing	

[1] Sex = M (male) or F (female); Age = C (calf, chick, cub or pup), Y (yearling), and A (adult)
[2] Habitat = WA (water), SE (sedge), BR (birch and riparian shrub), HT (heath tundra), LI (lichen), LR (lichen-rock), RC (ridge crest/esker/avens), RO (rock and boulder), and DI (disturbed)
[3] Behaviour = RE (resting), FO (foraging), WK (walking), RU (running), ST (standing), MI (milling), CO (courting), FL (flying), and NE (nesting)
[4] Direction of Travel = N (North), NE (Northeast), E (East), SE (Southeast), S (South), SW (Southwest), W (West), and NW (Northwest)

AGNICO-EAGLE RESOURCES LTD - PRISM PLOT RAPID SURVEY OBSERVATIONS

Site:_____ Plot:____ Date:_____ Time In:_____ Out:_____ Surveyors:_____



Coordinates: SW NW NE SE

AGNICO-EAGLE RESOURCES LTD - PRISM RAPID SURVEY SUMMARY FORM

Site:_____ Plot:____ Date:_____ Time In:_____ Out:_____ Surveyor:_____

Incidentals[2]:_____

Comments:_____

Species	Nests including pair	Prob Nest including pair [3]	Prs[4]	Males	Females	???? sex	Total no. pairs and indicated pairs[5]	Estimate[6]
comments (how did you arrive at final estimate?)								
comments (how did you arrive at final estimate?)								
comments (how did you arrive at final estimate?)								
comments (how did you arrive at final estimate?)								
comments (how did you arrive at final estimate?)								
comments (how did you arrive at final estimate?)								

[2] Notable species seen off the plot; Note: flybys and off transect birds can also be added as separate lines at the end of each days form Ensure to make a line between on plot data and these birds and label it INCIDENTALS BELOW in big letters. [3] Only used when a nest distraction display was seen. [4] Do not record a pair that was associated with a nest. They are represented by the nest. [5] Sum of the rows to the left [6] Estimated number of nests, pairs without nests and "indicated" pairs (territorial males, lone females) which are believed to be truly associated with the plot (assumed to be on plot at beginning of survey)

AGNICO-EAGLE RESOURCES - BREEDING BIRD TRANSECTS DATA FORM

Date (dd/mm/yy) _____ Time Started: _____ Time Ended: _____ Observer Names:_____ Page _____ of _____
Transect # ____ West Start Coordinate _____ East End Coordinate _____
North South Coordinate on All-Weather Road _____

Temperature:_____ Wind Speed_____ Wind Direction _____ Precipitation _____

Interval (at 100 m from W)	Species Name	Number, Sex and Age	Distance	In/Out	Comments Describe: Nest, age, behaviour etc.

APPENDIX B

Harvest Study Calendar and Promotional Materials



Caribou Bull

Shannon McFadyen

Baker Lake Harvest Study

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2009

Baker Lake Harvest Study

How to Use the Baker Lake Harvest Calendar

Cumberland Resources Ltd., in cooperation with the Baker Lake Hunters and Trappers Organization (HTO), wants to understand patterns of hunting and fishing by local people. With development of the Meadowbank Gold Project, 75 km north of Baker Lake, we want to make sure that traditional hunting and fishing activities are not affected in any way. We also want to understand how the mine might change hunting and harvesting patterns for caribou and fish by local people. Therefore, we are seeking your help in gathering this important information and answering the following questions:

1.How many caribou, muskox and wolverine do you catch?
2.When and where do you hunt for them?
3.Where do you fish and what species do you catch?
4.When will you fish?
5.Will you use the all-weather road to access different areas for hunting or fishing?
6.What decisions should we make regarding these species to make sure they are well protected and always there for the people of Baker Lake?

The calendar we are providing gives you space to write down the wildlife and fish you harvested for each day of the year. At the back of the calendar, are pictures of the wildlife and fish species included in the study. Please record where each animal or fish was harvested by looking at the maps at the end of the calendar and recording the location (see map symbols). For example, If you harvested a caribou on January 16th on Big Hips Island you would record “1 caribou, cell AF28” in the January 16th square of the calendar. You will also be visited by the hunter harvest field worker on a regular basis. His job will be much easier if you write down your harvest information right away.

If you have any questions, please call the Baker Lake Harvest Study field technician, Michael Haqpi at 867-793-4610 (mhaqpi@agnico-eagle.com)

ᖃᑉᓪᓕᐊᑦ ᐊᓐᔪᓇᓯᒃᓂᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᓂᖅ

ᖃᓄᖅ ᐊᑐᓚᐅᒃᓂᓐᓚᒃ ᐅᕙᓪᓕᐊᑦᑎᐊᓕᑦ ᐊᓐᔪᓇᓯᒃᓂᖅᓯᒪᔪᑦ

ᐅᓴᖅᑎᓐᓇᖅᑐᒥ ᐅᓴᖅᑕᕆᐊᖅᑐᑦ ᑕᑯᐊ ᑲᒪᓴᓐᓂᑯᓐ ᐱᓕᕆᖅᑎᖅᖢᖅᓯᓗᑎᒃ ᖃᑉᓪᓕᐊᑦᑎᒥ ᐊᓐᔪᓇᓯᒃᑎᑦ, ᑐᑭᓯᓂᓴᒃᑐᒃ ᖃᑉᓪᓕᐊᑦᑎᒥᐅᑦ ᓂᕐᕕᑎᓂᒃ ᐱᑕᖅᑕᕐᓂᖓᓂᒃ. ᑕᒪᑯᐊ ᐃᖃᓴᐊᕐᓂᓴ ᓂᕐᕕᑎᓴ ᐱᑕᖅᑕᐅᔪᒃᑐᑦ ᖃᐅᔨᓴᖅᓱᐃᓕᒪᑕ ᑐᑭᓯᓂᐅᓕᖅᑐᓗᒃ. ᐊᐅᖅᑎᓐᓇᖅᑐᒥ ᐅᓴᖅᑕᕆᐊᕐᕕᒃ ᐅᑯᐃᐸᓂᐊᑎᓴᒃ ᐅᓐᖏᓚᓂᓂᒃ 75 ᑭᓪᒥᑐᑦ, ᖃᓪᓕᓂᑐᐊᕐᑎᑦ. ᑕᒪᓐ ᐊᓐᔪᓇᓂᖅ ᐊᓯᖏᓐᓄᑯᓐᓇᐸᑎᒍ. ᑐᑭᓯᕐᒪᒥᔪᑦ ᑕᑦᓐ ᐊᕐᓂᑦ ᓴᓐᕈᐅᔪᖅ ᐊᓐᔪᓇᓯᒃᓂᖅᓯᒪᔪᑦ ᐊᓪᓚᖏᓐᓄᑯᓐᓇᐸᑎᖏᓐᓂᑦ. ᑕᒪᓐ ᑐᑭᓯᕐᓴᓐᓇᑦ ᐊᓐᔪᓇᓯᒃᓂᖅᓯᒪᔪᑦ ᐊᓪᓚᖏᓐᓄᑦᓯᓐᓇᖅᓯᖏᓐᓂᑦ.
ᑕᒪᓐ ᑐᑭᓯᕐᒪᑦᓴᓗᒍ ᐱᓪᓚᕐᔪᒥᑦ ᐊᒪᓗ ᐅᑯᐊ ᑐᑭᓯᕐᒪᓴᐅᑦ:

1. ᖃᓴᓯᓂᒃ ᑐᒃᑐᓂᒃ, ᐅᒥᒪᓂᒃᓗ, ᖃᐃᓂᒃᓗ ᐱᑕᕐᔪᑦ ?

2. ᖃᖏᓪᓗ ᓇᓂᓗ ᐊᓐᔪᓇᓯᒍᑎᓯᒃᐱᑦ ?

3. ᓇᓂ ᐃᖃᓕᒫᕐᔪᑦ ᐊᒪᓗ ᖃᓄᐃᑐᓂᒃ ᐃᖃᓗᕐᔪᑦ ?

4. ᖃᖏᓪᒍ ᐃᖃᓕᒫᕐᔪᑦ ?

5. ᐃᖃᓕᒫᕆᖏᓐᓇᑦ, ᓂᕐᕕᑎᓂᒃᓗ ᐊᓐᔪᓇᓯᒃᖃᖏᓐᓇᑦ ᐊᑦᑯᑦ ᐊᑐᖅᑕᓂᒫᖅᐱᐅᒃ ?

6. ᓯᓇ ᐸᕐᓇᒍᑕᐅᔨᓭᐊᖃᖅᖢᑦ ᓂᕐᕕᑎᓗᒃᑕᑦ ᓇᒪᕐᑯᐸᓗᑦ, ᒥᐊᓂᓴᐅᑦᑯᐸᓗᑦ, ᓯᐅᓂᐸᒥ ᐸᒪᓗ ᖃᒪᓂᑐᐊᑎᓯᒃᑐᑦ ᓂᕐᕕᑎᓂᖃᓯᐊᑎᑯᐸᓗᑦ ?

ᑕᒪᓐ ᐅᐸᓗᖅᑕᐅᑦ ᑎᑎᕋᐃᐅᕕᓇᖅᑐᖅ ᓯᓇᓂᒃ ᓂᕐᕕᑎᓂᒃ ᐱᑕᓕᐅᖅᓯᖏᓐᖃᐱᑦ ᑎᑎᕋᒃᑕᓗᑦ. ᐅᐸᓗᖅᑕᐅᑦ ᑭᓇᐅᔨᐊᓂ ᐊᑎᖅᔪᕕᒃᑕᓂᒃ ᓂᕐᕕᑎᓂᒃ, ᑕᑯᐊ ᖃᐅᔨᓴᖅᓱᐃᓕᒪᑕ ᐱᑕᖏᐅᑕᖅᑐᑦ. ᑕᒪᑯᐊ ᓂᕐᕕᑎᑦ ᐱᑕᖅᑕᕐᓂᑦ ᑎᑎᕋᒃᑕᓗᑦ ᓄᓇᖅᔪᐊᖅ ᓇᓗᓇᐃᑯᑕᐅᓗᓂ. (ᓄᓇᖅᔪᐊᖅ ᓇᓗᓇᐃᑯᑕᖅᑭᑦ ᑎᑎᕋᒃᓯᒪᓕᕐᑦ) ᐅᒃᑐᑎᑭᓗᒍ ᕐᓄᐊᓴ 16ᒥ ᑐᑐᑯᐃᑦ, ᐅᖅᐱᑐᕐᒥ ᖁᑭᖅᑕᒥ, ᑎᑎᕋᕋᓴᖅᑐᑎᑦ, 1 ᑐᒃᑐ, ᓇᓴᐅᑎᖅᓴ ᐊᐃ28 ᐊᕐᓗᖅᓯᐅᑎᒥ. ᖃᐅᔨᓴᖅᑎ ᐅᕐᓇᓗᕆᑕᖅᑭᖅᓯᓂᐊᖅᑐᖅᖃᖅ, ᐃᓚᖓᔪᓐᓇᖅᑐᑦ, ᐃᖅᐱᐊᑐᕐᒥ ᖁᑭᖅᑕᕐᓂᑦ ᑎᑎᕋᕋᓴᖅᑐᑎᑦ, ᐃᓚᓴᖅᐸᓂᐊᓕᖅᑐᓂ ᑕᒪᓕᒃᓴᓐ. ᑭᓯᐊᓂ ᑎᑎᕋᒃᑕᓂᑦ ᑎᑎᕋᕋᓂ ᐱᐊᓕᓂᓐᓂᐊᕐᓗᓂ, ᐊᔪᖅᓴᖅᑐᑦ ᒪᐃᔨ ᖃᖏᐱ 867 793 4610, ᐅᓴᕋᑕᕆᐊᖅᑎᑦ ᑎᑎᕋᐃᓐᓇᓂᓂ.



Sunrise in Baker Lake

Chris Lee

January | ᔪᓄᐊᓗ 2009

Baker Lake Harvest Study
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Sunday ᓴᓇᑕᐅᓕ	Monday ᓴᓇᑕᐅᓕᐅᑎᓂᓴᖅ	Tuesday ᑐᐃᓯᐊᖅᓇᖅ ᓯᑉᓕᓕᖅ	Wednesday ᐱᖓᓱᐊᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓄᖅᐃᑐᖅᓇᖅ
December 2008 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	February 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28			**1** New Year's Day	**2**	**3**
4	**5**	**6**	**7**	**8**	**9**	**10**
11	**12**	**13**	**14**	**15**	**16**	**17**
18	**19**	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**	**31**



Curious Wolf

Claudio Bianchini

February | ᐃᓕᑭᐊᓗ 2009

Baker Lake Harvest Study
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Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᓕᐅᔪᓴᖅ	Tuesday ᑐᐱᓯᐊᖏᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖏᓴᐊᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖏᓇᖅ
1	2 Groundhog Day	3	4	5	6	7
8	9	10	11	12	13	14 Valentine's Day
15	16	17	18	19	20	21
22	23	24	25 Ash Wednesday	26	27	28

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Elder Preparing Caribou

Shannon McFadyen

March | ᒪᓕ 2009

Baker Lake Harvest Study
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Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᐴᐊᖏᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖓᓱᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖏᓇᖅ
1	2	3	4	5	6	7
8 Daylight Savings Time Begins	9	10	11	12	13	14
15	16	17 St. Patrick's Day	18	19	20 First Day of Spring	21
22	23	24	25	26	27	28
29	30	31				

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		



Arctic Fox Pups

Shannon McFadyen

April | ᐊᐃᓗᓕ 2009

Baker Lake Harvest Study
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Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᕐᖃᖅ	Tuesday ᑐᐱᓯᖏᓐᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖓᓱᓯᐊᓕ	Thursday ᓯᑕᒪᒃ	Friday ᑕᓕᒪᒃ	Saturday ᓂᖅᐃᑐᖏᓐᓇᖅ
March 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	May 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		**1** April Fool's Day	**2**	**3**	**4**
5 Palm Sunday	**6**	**7**	**8**	**9** Passover	**10** Good Friday	**11**
12 Easter Sunday	**13** Easter Monday	**14**	**15**	**16**	**17**	**18**
19	**20**	**21**	**22** Earth Day	**23**	**24**	**25**
26	**27**	**28**	**29**	**30**		



Young Wolverine

Damian Power

May | ᒪᐃ 2009

Baker Lake Harvest Study
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Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᑎᓂᖅ	Tuesday ᑐᐱᓯᖏᓐᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖓᓱᓯᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖏᓐᓇᖅ
April 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	June 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30			Hamlet Days (TBA)	1	2
3	4	5	6	7	8	9
10 Mother's Day	11	12	13	14	15	16
17	18 Victoria Day	19	20	21	22	23
24	25	26	27	28	29	30
31						



Stilt Sandpiper

Claudio Bianchini

June | ᕿᓂ 2009

Baker Lake Harvest Study
ᖃᒪᓕᒃᑕᖅ ᐊᖏᔪᓇᐅᓂᖏᑦ ᖃᐅᔨᓴᓂᖅ

Sunday ᓴᓇᑕᓕᒃ	Monday ᓴᓇᑕᐃᓕᐅᓂᖏᓴᖅ	Tuesday ᑐᐅᓯᐊᖏᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖃᓐᓇᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖃᐃᑐᖏᓇᖅ
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21 National Aboriginal Day Father's Day First Day of Summer	22	23	24	25	26	27
28	29	30				

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Attacking Parasitic Jaeger

Chris Lee

July | ᐁᓕᐃ 2009

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᖏᑦ ᐊᖏᔪᓕᒃᓂᓕᒫᑦ ᖃᐅᔨᓴᓂᖅ

Sunday ᓴᓇᑕᐅᓕ	Monday ᓴᓇᑕᐅᓕᐅᒪᓂᖅ	Tuesday ᑐᐱᓯᔾᔪᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖓᒪᔨᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᔾᔪᖅ
June 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	August 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		1 Canada Day	2	3	4
5	6	7	8	9 Nunavut Day	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Peregrine Falcon Chicks

Damian Power

August | ᐊᔪᓂ 2009

Baker Lake Harvest Study
ᖃᒪᓕᒃᐊᖏᑦ ᐊᖏᔪᓇᓂᖅᓯᒪᑦ ᖃᐅᔨᓴᓂᖅ

Sunday ᓴᓇᑕᓕᒋ	Monday ᓴᓇᑕᓕᒋᐅᔪᓂᓴᖅ	Tuesday ᑐᐱᓂᐊᖅᓇᖅ ᓂᕆᓕᖅ	Wednesday ᐱᖏᓚᐊᑦ	Thursday ᓂᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᓂᓇᖅ
July 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	September 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30					1
2	3 Civic Holiday	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					



Running Wolf

Claudio Bianchini

September | ᓯᑎᐱᓇ 2009

Baker Lake Harvest Study
ᖃᒪᓕᕐᑕᕆᔨ ᐊᖏᔪᓂᒃᓴᓪᓗᒍ ᖃᐅᔨᓴᖏᓐᓄᑦ

Sunday ᓴᓇᕕᐅᓕ	Monday ᓴᓇᕕᐅᓕᐅᑉᓴᖏᓐᓄᑦ	Tuesday ᑐᐃᓯᐊᖏᓇᑦ ᓯᑲᓕᓄᑦ	Wednesday ᐱᖓᓱᐊᕐᓕ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖏᓇᑦ
		1	2	3	4	5
6	7 Labour Day	8	9	10	11 Terry Fox at Work Day	12
13 Grandparents' Day Terry Fox Run	14	15	16	17	18	19
20	21	22 First Day of Autumn	23	24	25 Terry Fox National School Run Day	26
27	28	29	30			

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



Alert Ermine

Damian Power

October | ᐅᖅᑐᐱᓗ 2009

Baker Lake Harvest Study
ᖃᒪᓕᑐᐊᖏᑦ ᐊᖏᔪᓚᒃᓂᖓᔪᑦ ᖃᐅᔨᓴᖅᓂᖅ

Sunday ᓴᓇᑕᐃᓕ	Monday ᓴᓇᑕᐃᓕᐅᒪᓂᖅ	Tuesday ᑐᖅᓯᐊᖅᓇᖅ ᓯᑲᓕᖅ	Wednesday ᐱᖓᓱᓪᓗᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
September 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	November 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30			1	2	3
4	5	6	7	8	9	10
11	12 Thanksgiving Day	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31 Halloween



Muskox Bull

Shannon McFadyen

November | ᓄᕆᐱᐱᓗ 2009

Baker Lake Harvest Study
ᖃᒪᓕᒃᐸᒥ ᐊᖏᔪᓇᓗᓂᔭᖅ ᖃᐅᔨᓴᓂᖅ

Sunday ᓴᓇᑕᐱᓕ	Monday ᓴᓇᑕᐱᓕᕆᔨᓂᖅ	Tuesday ᑐᐅᓯᐊᖅᓯᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖏᓴᐊᑦ	Thursday ᓯᑕᒪᑦ	Friday ᑕᓕᒪᑦ	Saturday ᓂᖅᐃᑐᖅᓯᖅ
1 Daylight Savings Time Ends	2	3	4	5	6	7
8	9	10	11 Remembrance Day	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



Ice Fishing

Damian Power

December | ᑎᓯᐱᕆ 2009

Baker Lake Harvest Study
ᖃᒪᓂᑐᐊᖏᑦ ᐊᖏᔪᓇᐅᓂᖓᔪᒃ ᖃᐅᔨᓴᓂᓐᖅ

Sunday ᓴᓇᑕᐅᓕ	Monday ᓴᓇᑕᐅᓕᐅᑎᓂᓴᖅ	Tuesday ᑐᐱᓯᐊᖅᓇᖅ ᓯᕗᓕᖅ	Wednesday ᐱᖏᓴᐊᑦ	Thursday ᓯᑕᒡᒐ	Friday ᑕᓕᒡᒐ	Saturday ᓂᖅᐃᑐᖅᓇᖅ
November 2009 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	January 2010 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21 First Day of Winter	22	23	24	25 Christmas Day	26 Boxing Day
27	28	29	30	31		

Please return the calendar to the Agnico-Eagle office for entry into the participant draw.

Caribou Bull
ᕿᖏᓂᖅ


Damian Power


Damian Power

Caribou Cows
ᓄᕆᐃᑐᖅ

Muskox Bull
ᐅᒥᒪᒃ


Damian Power


Damian Power

Muskox Cow & Calf
ᐅᒥᖏᒪᖅ ᐊᒪᓗ ᐊᒥᖏᒪᒃ


National Water
Research Institute

Lake Whitefish
ᑕᓯᖁᐅᑕᖅ
ᑲᑭᕕᐊᖅᑐᖅ


Randy Baker

Arctic Char - Male & Female
ᐃᖃᓗᓪᓚᕕᒃ


Pensicola Junior College


Timduru

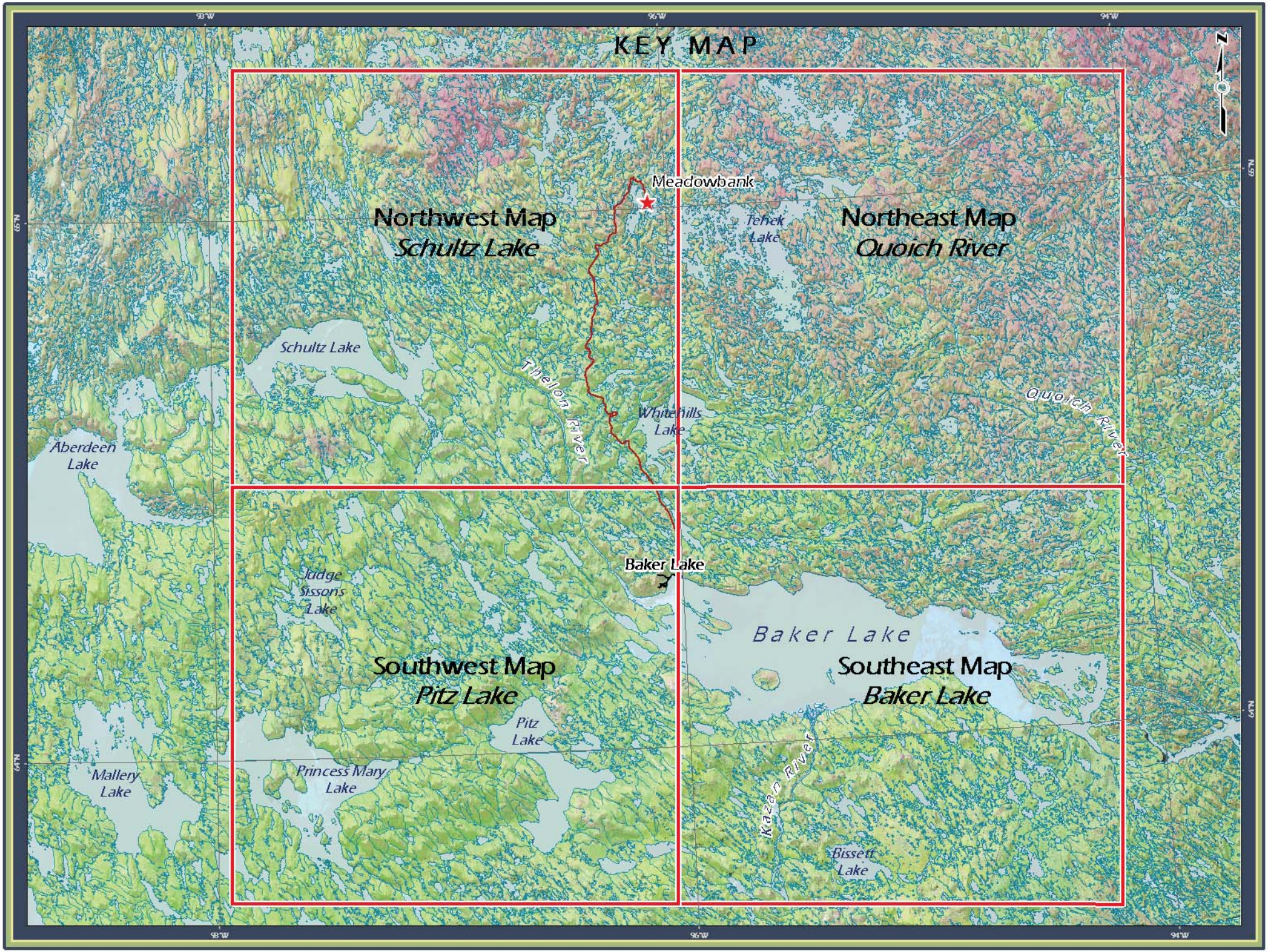
Wolverine
ᖃᑲᕕᒃ


Randy Baker

Arctic Grayling
ᓱᓪᓕᐅᒪᖅ


Martin Gebauer

Lake Trout
ᐃᓪᓕᖅ


KEY MAP
Meadowbank
Northwest Map
Schultz Lake
Northeast Map
Quoich River
Tehek Lake
Schultz Lake
Thelon River
Whitehills Lake
Quoich River
Aberdeen Lake
Baker Lake
Judge Sissons Lake
Southwest Map
Pitz Lake
Southeast Map
Baker Lake
Baker Lake
Pitz Lake
Princess Mary Lake
Mallery Lake
Kazan River
Bissett Lake
98°W
96°W
94°W
65°N
64°N

Baker Lake Harvest Study

Northwest Map
Schultz Lake

Key Map





0 5 10 15
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Gaslys Consulting Ltd.

Prepared for: AGNICO-EAGLE

By: Gaslys Consulting Ltd.

97°30W 97°W 96°30W 96°W

N-51-59 N-54-49

1A 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

B C D E F G H I J K L M N O P Q R S T U V

N

Pigeonream Lake
Meadowbank
Third Portage Lake
Amarulik Lake
Whalebone Hill
Schultz Lake
Thelon River
Akitit Hill
Whitehills Lake
Half Way Hills
Avakatuukvik Lake

Baker Lake Harvest Study

Southwest Map
Pitz Lake

Key Map

Schultz Lake	Quoich River
Pitz Lake	Baker Lake

Area of Detail



0 5 10 15
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.

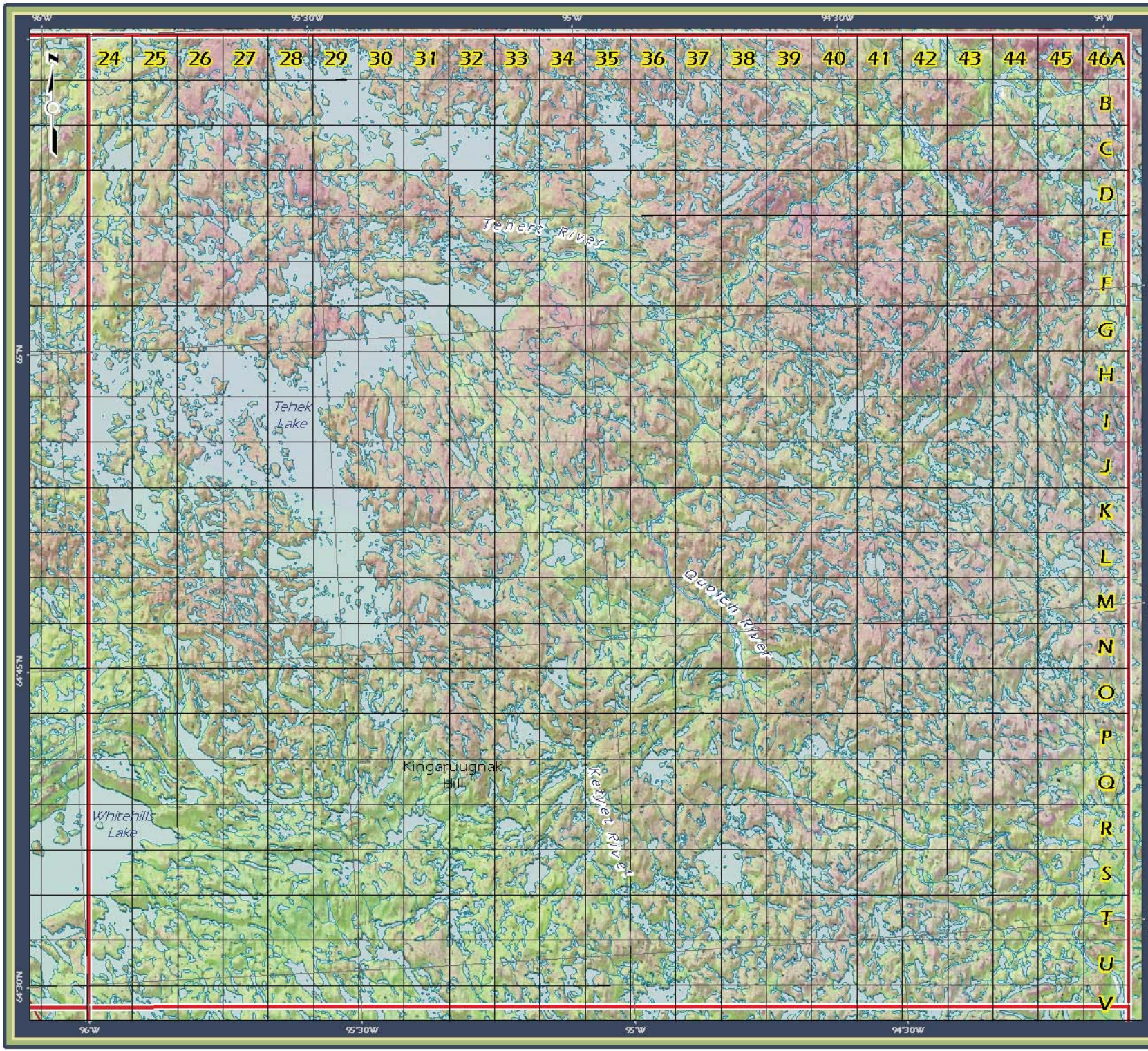
97°30'W 97°W 96°30'W 96°W

V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP

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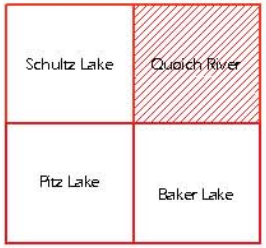
Thelon River
Qikitalik Lake
Sigalaustvik Hill
Thom Lake
Baker Lake
Judge Sissons Lake
Iglujat Hills
Saglig Island
Qamanaugaq Lake
Mihaluk Lake
Kingatnaaq Hill
Paunraqtuuq Hill
Tiriksiujarvik Hill
Pitz Lake
Princess Mary Lake
Aumaluktuuk Lake



Baker Lake Harvest Study

Northeast Map Quoich River

Key Map





0 5 10 15

Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Baker Lake Harvest Study

Southeast Map Baker Lake

Key Map

Schultz Lake	Quoich River
Pitz Lake	Baker Lake

Area of Detail

0 5 10 15

Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for: AGNICO-EAGLE

By: Caslys Consulting Ltd.



Bog Birch in Autumn

Shannon McFadyen

AGNICO-EAGLE

Produced By:

Gebauer & Associates
ENVIRONMENTAL CONSULTANTS

and

CASLYS Consulting Ltd.

2009 Baker Lake
Hunter Harvest Study

"The more you participate, the more likely you'll win!"
















(some of the 2008 prizes won by participants)

The 2009 Agnico-Eagle Hunter Harvest study is now underway.

2009 Calendars and sign-up sheets are available for pick-up at the Agnico-Eagle office (Michael Haqpi) and at the HTO office (Iglu Hotel)

Participation is ***easy***! All you have to do is follow the simple instructions inside the calendar each time an animal is harvested.

For each month you participate, you are assigned one raffle ticket. Therefore, the more you participate, the more likely you'll win.

The purpose of the study is to understand hunting and fishing by local residents such as:

1. How many caribou, muskox and wolverine do you catch?
2. When and where do you hunt for them?
3. Where do you fish and what species do you catch?
4. When do you fish?

AT THE END OF 2009, PLEASE RETURN YOUR CALENDAR TO MICHAEL HAQPI TO BE INCLUDED IN THE RAFFLE PRIZE DRAW

Prizes will be drawn in early 2010.

2009 ᖃᒪᓕᕆᔨᒃᑲᓂᕐᒧᑦ ᐊᖏᔪᓇᓯᒃᑎᓄᓕᕐᓂ ᖃᐅᔨᓴᓂᖅᓂᖅ

ᑕᖅᑭᑕᒪᑦ ᐃᓕᐅᖃᕐᒃᑕᐅᔭᕆᐊᓕᑦ, ᓴᓕᒃᓴᒃᓂᖃᕐᕕᖅᑕᑐᑦ.





















ᐅᑭᐅᒥ 2008ᒥ ᐅᔪᐊ ᐃᓕᓐᓂᑦ ᐃᓕᐅᖅᑕᐅᔪᓂᑦ ᓴᓕᒃᓴᒐᐅᑕᕐᑐᑦ.

ᐅᑭᐅᒥ 2009ᒥ ᐅᓴᖅᑕᓕᐊᑦ ᐊᒃᓂᔪ ᐃᔪ, ᐊᖏᔪᓇᓯᒃᓂᖏᓪᓗᑦ ᖃᐅᔨᓴᓕᓂᖏᓪᓗᕐᓂ.

ᐅᐸᓗᖅᓯᐅᑎᑦ 2009 ᐊᒪᓗ ᐊᑎᓕᐅᓕᐊᖅᖃᖅᑐᑦ ᐊᓕᔾᔪᓂᑦ,
ᑎᒍᔾᐅᒋᓕᓕᐊᖅᖃᖅᑐᑦ ᐊᒃᓂᔪ ᐃᔪ ᑎᑎᕋᐊᖏᓚᓂᑦ.
ᑎᒍᔾᐅᒋᓕᓕᐊᖅᖏᓪᓗᐸᑦ ᐊᖏᔪᓇᓯᒃᑎᑦ ᑎᑎᕋᐊᖏᓚᓂᑦ, ᐃᓚᓗ ᓯᓂᒃᓴᐊᓚᐅᖅ.

ᐃᓕᐅᖅᑕᐅᓯᐊᕈᐊᓕᑦ ᐊᐸᖏᓕᖓᑐᖅ, ᐅᐸᓗᖅᓯᐅᑎᑦ ᐃᓗᐊᓂ ᑎᑎᕋᒃᓯᒪᐸᑦ ᒪᓂᒃᓗᒋᑦ. ᑎᑎᕋᒃᑕᖏᓗᒋᑦ ᓂᖏᐸᑎᑦ ᐱᑕᖅᑕᑎᑦ ᐊᖏᔪᓇᓯᒃᑲᖏᖅᓯᒪᓕᐊᑦ.

ᑕᖅᑭᑕᒪᑦ ᓂᖏᐸᑎᑦ ᐱᑕᖅᑕᑎᑦ ᐅᐸᓗᖅᓯᐅᐸᑦ ᑎᑎᕋᒃᑕᖏᓗᒋᑦ,
ᑐᓂᔾᐅᑕᖏᓂᐊᕋᓕᑦ ᐊᒍᔾᐅᔪᐸᑎᒃᓴᒥᒃ. ᑕᖅᑭᑕᒪᑦ
ᐊᒍᔾᐅᔪᐸᑎᒃᓴᒥᒃ ᑐᓂᔾᐅᑕᖏᓂᐊᖅᑐᑎᑦ, ᑕᒪᔨᐊ ᐊᒍᔾᐅᔪᐸᑎᒃᓴᑦ ᑲᑎᖅᓯᖏᓗᒋᑦ,
ᑕᖅᑭᑕᒪᑦ, ᓴᓕᒃᓴᑕᐅᒪᑕ.

ᑕᒪᓐ ᐊᖏᔪᓇᓯᒃᓂᖏᓪᓗᑦ ᖃᐅᔨᓴᓂᖏᓪᖃᖅ ᑐᑭᓯᔪᑕᐅᓂᐊᖏᑐᖅ, ᓯᓐᑦ ᓂᖏᐸᑎᑦ ᐱᑕᖅᑕᐅᑕᖏᓚᖅᑕ, ᐊᒥᓯᓂᖅᓯᓗ, ᖃᐅᔨᓴᕐᒥᐅᓂᑦ, ᐅᔪᐊ ᖃᐅᔨᓴᖅᑕᐅᔪᓗᑎᒃ:

1ᖃᓚᓯᓂᒃ ᑐᒃᑐᓂᒃ, ᐅᒥᒪᓂᒃ ᖃᖏᐊᒃᓂᒃᓗ ᐱᑕᓕᐅᖏᐱᑦ ?
2 ᖃᖅᓚᓗ ᓇᓂᓗ ᐱᑕᓕᐅᖏᐱᑦ ?
3 ᓇᓂ ᐃᖃᓕᐊᓕᐅᖏᐱᑦ ᐊᒪᓗ ᖃᓄᐃᑐᓂᒃ ᐃᖃᓗᓕᐅᖏᐱᑦ ?
4 ᓇᒧᑦ ᐃᖃᓕᐊᔪᐊᖅᑦ ?

ᐅᑭᐅᖅ 2009 ᓄᖅᑲᓂ ᐅᓴᖅᑕᐅᔪᓂᑦ, ᐅᑎᖅᑎᓗᒋᑦ ᒪᐃᔨ ᕿᐊᖅᐱᒧᑦ, ᑕᔨᐊ ᐅᓴᖅᑕᐅᔪᓂᑦ ᐊᒧᑎᐅᔪᓂᕐᒪᓂᒃ ᐊᑎᓕᐅᑭᑕᐅᒃᒪᑕ.

ᐊᒧᑎᐅᑕᖏᓂᐊᖅᑎᔪᓂ ᐅᑭᐅᒥ 2010ᒥ.

APPENDIX C

2009 Peregrine Falcon Nest Management Plan

TECHNICAL MEMORANDUM

FOR INTERNAL PURPOSES
Environmental Department: Agnico Eagle Mines Ltd
Meadowbank, Nunavut, X0X 0A0
867.793.4610

DATE: **July 23, 2009**
SUBJECT: AWPAR Wild-life Management : Peregrine Falcon Nest at Quarry 19.
From: Ryan VanEngen, Environmental Biologist.

Background

During All Weather Private Access Road (AWPAR) wildlife monitoring in early July, Gebauer Wildlife Services observed a nesting pair of Peregrine Falcons at Q19 (at Km 84 along the AWPAR) and provided this information to the Meadowbank Environmental department. In follow-up, AEM Environmental personnel visited Q19 on July 9 and July 21, 2009 to observe the potential issues of the road activity near the nest which is in a quarry that opens directly onto the road. The nest is located on the west face of the quarry, see Photo1 below. It was clear from the visits that the pair of peregrine falcons did not appear to be disturbed by regular traffic along the AWPAR, however the present falcon became protective of the nest area when AEM wildlife monitors parked and exited the vehicle towards the nest. The following memo briefly summarizes the response, monitoring plan and provides recommendations to prevent future disturbance of this nest.

Monitoring

The Meadowbank Environmental Department is responsible for conducting wildlife surveys along the AWPAR (at least once weekly). As a protective measure, the wildlife surveyors will monitor the peregrine falcon pair's presence and absence on a weekly basis during road wildlife surveys.

Recommendations

Further to weekly monitoring and following summer AWPAR surface grading, the Meadowbank Environmental department recommends that dust suppressant (DUST STOP) be applied on the road area near Q19. To prevent additional disturbance, AEM Environment does not recommend placing precautionary signage near Q19, which will likely cause unnecessary attraction and disturbance.

Photo 1: Q19 Peregrine Falcon Nest location



APPENDIX D

2009 Incidental Wildlife Observations

AGNICO-EAGLE

Meadowbank Wildlife Observation Log - 2009

Date	Time	Wildlife Species	Quantity	Location	Details/comments	Observer Name
2009-01-01	14:30	Caribou	20	Km 27	feeding, west of road on AWR	Russell Toolooktook
2009-01-01	14:31	Caribou	16	Km 27	feeding, east of AWR	Russell Toolooktook
2009-01-01	14:34	Caribou	5	Km 29	feeding, east of AWR	Russell Toolooktook
2009-01-01	14:40	Caribou	7	Km 30	feeding, west of road on AWR	Russell Toolooktook
2009-01-01	15:00	Caribou	1	Km 51	feeding east of AWR	Russell Toolooktook
2009-01-19	13:00	Caribou	8	Km 95	feeding 500 meters north of AWR	Russell Toolooktook
2009-02-14	9:30	Caribou	7	in front of wing 12	feeding	Russell Toolooktook
2009-02-14	3:15	Caribou	1	Km 90	feeding	Russell Toolooktook
2009-02-27	10:00	Caribou	2	near 3rd portage lake	eating	Paul K
2009-02-27	12:00	fox	1	near kitchen	walking	Paul K
2009-02-28	10:30	Wolves	1	goose island		Raphael B
2009-02-28	10:15	Ptarmigan	8	Bridge 7	along side of road	Jamie K
2009-02-28	10:15	Caribou	20	km 82	about 1/2 km from road	Jamie K
2009-02-28	11:00	Caribou	8	south of airstrip near 3 PL	feeding	Jamie Kataluk
2009-03-01	11:05	Caribou	4	east of landfill	feeding	Russell Toolooktook
2009-03-02	13:45	Caribou	8	Km 35	moving north	Nicolas Saucier
2009-03-03	9:15	Caribou	4	east of landfill	feeding	Nicolas Saucier
2009-03-07	12:00	Caribou	5	beside the water intake road	feeding	Nicolas Saucier
2009-03-23		Wolverine	1	Km 92	running away	Talbon Guys
2009-03-27	12:20	Caribou	10	W of water intake road	feeding	Nicolas Saucier
2009-03-28	13:45	Wolf	1	Ice Road / Drilling	running away, trying to come back on north	Nicolas Saucier
2009-03-31	14:00	Wolf	1	Crusher Area	-	-
2009-04-02	10:00	Wolf	1	Waste water outlet	sitting beside the pipe, then run away of the observers	Nicolas Saucier
2009-04-03	7:30	Wolf	1	Waste water outlet		Joey Audet
2009-04-07	6:30	Wolf	1	incinerator	running east	I.A.
2009-04-10	14:00	Wolf	2	emulsion road	walking down road	Corey
2009-04-23	17:30	Caribou	5	East of New Incinerator	eating	Nicolas Saucier
2009-04-25	10:00	Wolf	1	Landfill	shaking, try to vomitting, fall asleep, looking agressive	Nicolas Saucier
2009-04-27	_	Wolverine	1	Dewatering pumps 3rd Portage	running away	Canadian Dewatering
2009-04-29	5:30	Wolverine	1	End of Airstrip (north)	ran across the road	Robert Fontaine
2009-04-30	18:00	Caribou	16	1 km West of camp	eating	Nicolas Saucier
2009-05-08	14:00	Wolf	1	Near by landfill area	hanging around this area, and he have a look at the landfill and found some debries to eat	Steve Gaudreault
2009-05-08	14:15	Caribou	15	Near by landfill area and dewatering pump unit 1 to 3	Feeding	Steve Gaudreault
2009-05-11	5:30	Wolf	4	Between Km 93 & 94	Eating a caribou	Joey Audet
2009-05-27	22:00	Wolf	1	Dewatering road	chasing caribou	Nicolas Saucier
2009-05-27	22:00	Caribou	3	Dewatering road	being chase by wolf	Nicolas Saucier
2009-05-29	9:00	Geeses	40	Over Mine site	flying north	Nicolas Saucier
2009-05-29	7:00	Ptarmigan	1	Behind old kitchen	caught and eated by a fox	Eric Ramsay
2009-05-29	7:00	fox	1	Behind old kitchen	eating a ptarmigan	Eric Ramsay
2009-05-29	11:00	Caribou	20	W of Camp		Ryan V
2009-05-29	11:20	Caribou	15	W of Camp		Ryan V
2009-05-29	13:00	Ptarmigan	2	Warehouse	flying East of camp	Jamie Kataluk
2009-05-30	11:35	Ptarmigan	1	Truck shop	flying NE of camp	Jamie Kataluk
2009-05-30	10:30	Caribou	6	across terminal	grazing on West side	Jamie Kataluk
2009-05-30	16:10	Caribou	30+	top of pit, across the road	grazing and sitting	Jamie Kataluk
2009-05-30	17:30	Seaguls	20	Dewatering discharge (East Dyke)	Swimming	Nicolas Saucier
2009-05-31	5:00	Wolf	1	dewatering, old kitchen, landfill	walking around, looking for caribou	Paul K
2009-06-01		Caribou	30	km 78	heading NW	Paul M
2009-06-01		Caribou	10	km 43	heading NW	Paul M
2009-06-01		Arctic Hare	1	R06	heading NW	Paul M
2009-06-01		Caribou	5	R06	heading NW	Paul M
2009-06-01		Caribou	6	KM 9,7	heading NW	Paul M
2009-06-01	10:40	Caribou	4	near 3rd portage lake	walking and sitting on ground	Jamie Kataluk

MEADOWBANK 2009_INCIDENTAL WILDLIFE OBSERVATIONS

Season	Date (dd/mm/yy)	Observer	Species Code	Species Name	Number of Ind.	Waypoint	Zone	Easting	Northing	Sign Type (Vis/sign-describe)	Comments
Summer	19/6/2009	D. Power	M-RATA	Caribou	1	344	14	0627401	7195222	vis.	
Summer	20/6/2009	D. Power	M-OVMO	Muskox	1		14	0631756	7207709	vis.	A bull
Summer	21/6/2009	D. Power	M-OVMO	Muskox	6	345	14	0634722	7218629	vis.	5 cows & 1 calf
Summer	24/6/2009	D. Power	M-OVMO	Muskox	3		14	0629567	7204554	vis.	
Summer	25/6/2009	D. Power	M-RATA	Caribou	2	346	14	0631658	7203183	vis.	Cows
Summer	25/6/2009	D. Power	M-OVMO	Muskox	3	348	14	0635305	7168236	vis.	
Summer	26/6/2009	D. Power	M-OVMO	Muskox	27	349	14	0632370	7213611	vis.	Including 6 calves
Summer	30/6/2009	D. Power	M-OVMO	Muskox	1		14	0633802	7214924	vis.	Walked by Exploration camp at 21:00
Summer	05/7/2009	D. Power	M-OVMO	Muskox	2	359	14	0633743	7163640	vis.	c.400m E of the road

APPENDIX E

2009 Wildlife Memos and Wildlife-related Correspondence

From: Ryan Vanengen
Sent: Thursday, September 24, 2009 9:27 AM
To: Security Service Meadowbank
Subject: AWR Wildlife protection

Hello Denis et al.

As we have discussed, please remind drivers of the importance of taking extra precaution of wildlife during the months of October- December.

As in past years, there is a large herd of caribou on the West side of Whitehills lake that will be migrating NW, ultimately crossing the AWR over the next couple months

Please remind dispatch to remind drivers to report wildlife and remain aware of caribou crossing the AWR. As well, it is important that during the months of October-December that the speed limit of 50 kms/hr is enforced.

Thanks for your teamwork,

Ryan VanEngen, MSc. (Candidate)
Environmental Biologist
Meadowbank Project, Baker Lake, Nunavut
Agnico-Eagle Mines Ltd.
519.400.7979 (cell)
867.793.4160 follow prompts to MBK x 6759
rvanengen@agnico-eagle.com

Consider the Environment...please don't print this e-mail unless you really need to

From: Ryan Vanengen
Sent: Thursday, October 22, 2009 9:48 AM
To: Road Status Meadowbank
Cc: Rachel Gould; Sylvain Doire; Stéphane Robert
Subject: Caribou Migration Alert!!!

Attachments: Wildlife Protection Protocol AWR_Caribou Migration .doc

Attention Acting Road Supervisor, Security and those operating along the AWR,

As in the past, large herds (>2000 in total) of caribou have been observed East of the road (and west of Whitehills Lake). They are crossing or will be crossing the AWR in the next couple of weeks. Simply, **thousands of caribou will be migrating right through the road access area!!**

Please be cautious of the nearby caribou. **Near caribou, reduce speeds to 30km/hr and yield to wildlife!** Please review the 1 pg attached wildlife protection protocol.

If only 1 caribou or if a large group of caribou are crossing the road, please stop and remain cautious. **We want to prevent wildlife mortalities!!**

Thanks for your cooperation and have a great day,

Ryan VanEngen, MSc. (Candidate)
Environmental Biologist/ Coordinator
Meadowbank Project, Baker Lake, Nunavut
Agnico-Eagle Mines Ltd.
519.400.7979 (cell)
867.793.4160 follow prompts to MBK x 6759
rvanengen@agnico-eagle.com

Consider the Environment...please don't print this e-mail unless you really need to

From: Ryan Vanengen
Sent: Thursday, October 22, 2009 1:09 PM
To: 'Martin Gebauer'; clee@telus.net
Cc: Rachel Gould; Sylvain Doire; Stéphane Robert
Subject: Wildlife Surveys and Caribou Migration Monitoring

Attachments: Caribou Migration Form .pdf
Hello Martin (and Chris)

As an update, herds of caribou have begun migrating near the AWR and/or are crossing the AWR in large groups. There are as many as 2000 east of the AWR and west of Whitehills (similar to last year). I spoke with Eric and Thomas this morning regarding their Wildlife Survey responsibilities during the Caribou Migration Season and provided them with the following information:

Wildlife Monitors Instructions Date: Oct 22, 2009

Complete Wildlife Surveys, as per usual, using the Wildlife Survey Form (research/ data collection). Please complete surveys every:
Monday, Wednesday & Friday from Oct 22 to December 15ish.

If for personal reasons or weather (blizzard), please be sure that **3 surveys are completed per week** (make a schedule for that week that works for you).

The members of the team and contact information:

Name		Home #	Note:
Ryan VanEngen	519	400-7979	
	867	793-4610	x 6759
Thomas Elytook	867	793-2236	*Gebauer*
Eric Ukpaktiuk	867	793-2949	Call Reuben who will contact Eric
Spare:			
Kevin Martee	867	793-2591	*Gebauer*
Angoyuaq, Patrick	867	793-4775	
Truck Rental:			
Tom Mannik	867	793-4979	

If you need a *fill in* or *replacement*, please do not hesitate to call Patrick (first to serve as a fill-in) and Kevin. If they are not available, please call Ryan V who will arrange to have someone else fill in.

As in the past, please s**can and send** the data from the Survey forms to Ryan VanEngen rvanengen@agnico-eagle.com .

From Oct 22 to Dec 15:

Please complete the Caribou Migration Monitoring Form (attached) and **scan and send** the information to the site **Environmental Coordinator (operations office):**
Rachel Gould: rgould@agnico-eagle.com
Sylvain Doire: sdoire@agnico-eagle.com
and Ryan VanEngen: rvanengen@agnico-eagle.com.

This will help us to communicate to Security and Road Operations to protect the caribou herds (ie by closing the road if deemed necessary). Either drop the form off at the Environmental Coordinators office when you are on-site or scan and send it to Rachel, Sylvain and Ryan.

Please use Tom Mannik's Truck until otherwise notified. Be sure to fill up the truck for Tom and Hatti. Regular maintenance at the Meadowbank Mechanic is necessary and Ryan V will make the arrangements.

On December 15th we will begin conducting surveys *once a week*.

Thanks

Ryan VanEngen, MSc. (Candidate)
Environmental Biologist/ Coordinator
Meadowbank Project, Baker Lake, Nunavut
Agnico-Eagle Mines Ltd.
519.400.7979 (cell)
867.793.4160 follow prompts to MBK x 6759
rvanengen@agnico-eagle.com



To: **Road Superintendent, Security Service and Road Operations**

Date: **October 22, 2009**

Subject: **Wildlife Protection Protocol on the Meadowbank Road**

Speed Limits

- Vehicular traffic speeds on the access road must not exceed **50 km/hr**.
- Where small to moderate aggregations of caribou (i.e., 1-50 animals) are observed within 100 m of the road, travel speeds should be reduced to **30 km/hr**
- Where large aggregations of caribou (i.e., 50 or more) are observed within 100 m of the road, at the discretion of the road supervisor, vehicle movements **may be suspended** until animals have moved away from the road.

Animal Right-of-Way

- Caribou and all wildlife will be given **right-of-way** on the road. Vehicles must stop until caribou are off the road.
- Locations of **large aggregations of animals must be reported** to the road supervisor who will inform all potentially affected employees.

Wildlife incident reporting and investigation

All incidents between vehicles and wildlife must be reported to the Agnico-Eagle road supervisor whether they are:

- near-miss
- collision with injury to the wildlife, or
- accidental death

Each incident will be investigated by the road supervisor and the environment department and measures taken to avoid re-occurrence put in place. Disciplinary measures will be taken against any employee if the investigation concludes that the accident is the result of negligence.

In the case of accidental death, the Meadowbank Environmental Coordinator(s) (Rachel Gould, Sylvain Doire or Ryan VanEngen) will contact the GN Conservation Officer in Baker Lake. The carcass should be removed at least 10 km from the road or incinerated to avoid attracting scavengers such as Arctic Fox, Grizzly Bear and/or Wolverine.

Environment Department

Recreational Walking

		PROCEDURE NUMBER:	**MBK-HS-2010-0084**
People concerned	• **Agnico-Eagle employees and contractors employees working on the Meadowbank site** • **Visitors on site**	**Prepared by**	Health and Safety
		Approved by	Marc-André Filion, Health and Safety Superintendant
Issuing date :	2010-01-17		
Date in effect :	2010-01-17	**Revision date :**	
This procedure corresponds to the required minimum standard. Each and everyone also have to comply with the rules and regulations of the Nunavut Government in terms of health and safety at work.			

1. Purpose and Scope

Agnico-Eagle Mines Ltd. is committed to providing a safe working environment. The procedure aims to ensure the safety of all employees on site, at the same time providing for recreational activities after work which would include walking or running in approved areas.

2. Responsibilities

2.1 The General Manager is responsible for ensuring that the requirements of this procedure are adhered to by all concerned personnel;

3. Leisure walking

3.1 Generalities

- Recreational walking will not be permitted on roadways past the Assay Lab nor on roadways heading south towards the Dome, Power Plant and the Truck Shop.
- Employees at work are permitted to walk in these areas if they are working and wearing their proper protective equipment. Employees are requested to stay off the ice and tundra.

3.2 Approved Area

- Around the Main Camp
- From the Main Camp to the Nova Camp by the stairs and then across a path to the Gate House, walking on the air strip will be permitted at designated times to be posted at the gatehouse (Green Zone)
- From the Gate House down the access road to Pumping Station. (Yellow Zone)

4. Procedure for Walkers / Runners

4.1 For walking / Running in the green zone:

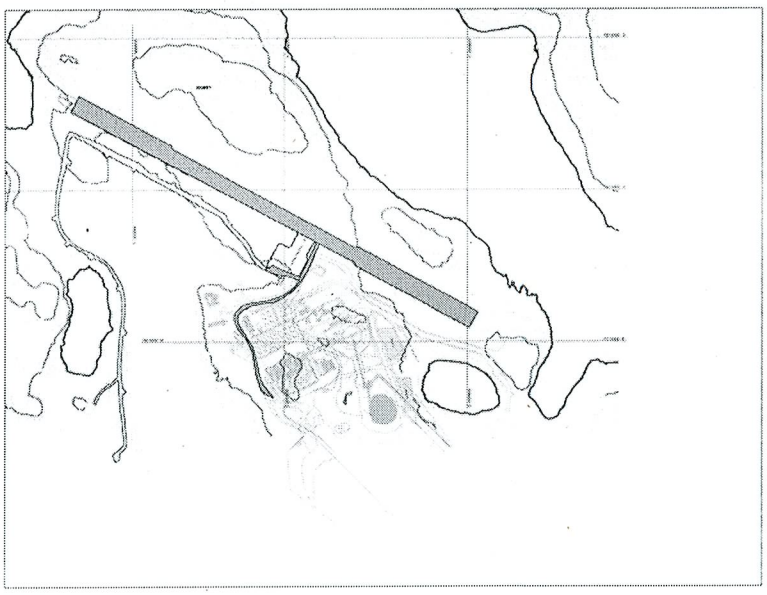
- Report to gatehouse check out, indicate where and when you/group plan to return
- Stay with in eye site of the dispatch building

- Get a safety vest from the gatehouse
- Wear reflective vest and obey the traffic rules
- Check in at the gatehouse when you return to the site.

4.2 *For walking / Running in the yellow zone:*

- Report to gatehouse to check out, indicate where and when your group plan to return (Minimum of two person)
- Get a radio, put it on road channel, channel 16, get a vest and bear banger from the gatehouse. Do a radio check.
- Wear reflective vest and obey the traffic rules
- While travelling on AWPR walk / run on the opposite lane always facing oncoming traffic
- Check in at the gatehouse when you return to the site and return radio, safety and bear banger.

Fig 1 Green and Yellow Zones



Meadowbank General Manager

Health and Safety Superintendent

January 17, 2010

Approval Date

Regional Office:
20, Route 395
Cadillac, Quebec J0Y 1C0
Tel: 819-759-3700 Fax: 819-759-3663

Baker Lake Office:
General Delivery
Baker Lake, Nunavut X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

APPENDIX F

2009 Wildlife Incident Reports and Fatality Log

Meadowbank Wildlife Fatality Log - 2009

Date	Time	Wildlife Species	Quantity	Location	Details/comments	Observer Name
2009-01-23	11:00	Arctic fox	1	Near by Talbon shop	Kill, roll over by a pickup	Patrick Giard
2009-01-25	10:00	Arctic fox	1	Behind seacan #5 near by old incinerator	Found frozen dead	Martin Bergeron - Fjordtech
2009-01-30		Hare	1	AWPAR ?? Km	Road Kill	?
2009-02-02	19:00	Wolf	1	On mine site, laydown between seacans	killed as a preventive measure	Jamie Kataluk
2009-02-14		Arctic fox	4	Under the kitchen	2 found frozen dead, and 2 other was eaten	Steve Gaudreault - Paul Cobham
2009-02-25	15:30	Wolf	1	On AWPAR at Dewatering crossing	killed as a preventive measure	Steve Gaudreault - Thomas Akilak
2009-02-27		Caribou	1	AWPAR Km 44	Killed by wolves	Jamie Kataluk
2009-03-03	19:00	Wolf	1	On the mine site	killed as a preventive measure	Russell Toolooktook - Jamie Kataluk
2009-04-26	9:30	Wolf	1	Landfill	killed as a preventive measure	Jamie Kataluk - Nicolas Saucier
2009-05-07	15:00	Arctic fox	1	Under a seacan near by the mill	Found frozen dead	Joan Guertin
2009-05-11	5:30	Caribou	1	Between Km 93 & 94	Dead, killed by wolves	Joey Audet
2009-05-18	9:30	Arctic fox	1	Behind first room of the Nova camp	Found frozen dead	Denis Contré
2009-06-25	15:00	Arctic fox	1	In a waste seacan	Comming from the last fall waste	Jean-Noël Vigneault
2009-06-28	9:00	Ptarmigan	2	North of Service Building	Found dead on the ground	Michel Houle
2009-07-02	17:40	Arctic fox	1	Behind kitchen	found dead, where seacans were placed	Jr. Kingaqoqtooq
2009-11-08		Arctic fox	1	East Dike	run over by 150 ton Haul truck	Robie (Mine Supervisor)

From: Ryan Vanengen
Sent: Thursday, November 13, 2008 5:27 PM
To: 'Rose, Joel'
Cc: Stéphane Robert
Subject: Arctic Fox at MBK

Hello Joel,

I would like to continue our discussion regarding the Arctic fox at Meadowbank. Last month, we met with Martin Gebauer and we discussed a number of potential solutions. Are you available tomorrow morning to continue our conversation? If so, let me know when it is best to call you.

Thanks,

Ryan VanEngen, BSc.
Environmental Coordinator (Senior)
Meadowbank Project, Baker Lake, Nunavut
Agnico-Eagle Mines Ltd.
867.793.4610 x6728
519.400.7979 (cell)
rvanengen@agnico-eagle.com

Save a tree...please don't print this e-mail unless you really need to

From: Ryan Vanengen
Sent: Wednesday, November 19, 2008 4:09 PM
To: Stéphane Robert; Sylvain Doire
Cc: 'Rose, Joel'
Subject: Managing Arctic Fox at Mbk

Stephane,

I just spoke with Joel Rose regarding the Arctic Fox situation at camp.

We agreed that a Tiered approach to dealing with the fox at camp will be taken:

1. Continue to use closed boxes for storing the organic garbage at camp, especially at the incinerators (currently there are 4 large boxes that store the organic garbage around the site).
2. Install the industrial incinerator ASAP to control waste. Waste will be stored in containers inside the building that houses the incinerator.
3. AEM will begin by live trapping the Arctic Fox to “re-start” our control measures and trans-locating the foxes to around the halfway hills.
4. Lastly, if the fox continue returning, AEM may need to have a local trapper assist in managing the fox.

We can discuss this further, but I will be putting in a purchase request for 3 live traps for your approval.

Thanks,

Ryan VanEngen, BSc.
Environmental Coordinator (Senior)
Meadowbank Project, Baker Lake, Nunavut
Agnico-Eagle Mines Ltd.
867.793.4610 x6728
519.400.7979 (cell)
rvanengen@agnico-eagle.com

Save a tree...please don't print this e-mail unless you really need to

TECHNICAL MEMORANDUM

FOR INTERNAL PURPOSES
Environmental Department: Agnico Eagle Mines Ltd
Meadowbank, Nunavut, X0X 0A0
867.793.4610

DATE: **September 10, 2009**
SUBJECT: Caribou Hunting Incident at KM 100
From: Sylvain Doire

After Sebastian signaled a carcass of a dead caribou at the kilometer 100, the enviro team went to that place to find out what happens. When we arrived there, the first observation was that animal was a male in a healty shape and the back disappears. Some scavengers had eaten meat on the dead animal. The stomach was on the ground beside the carcass, it's a good indicator to know then this animal was not killed by a predator. We skin the rest of the carcass to try to find a bullet or an evidence of the animal was shot by a gun. We found that evidence in the bottom of his neck (see the photo attached).

We saw two artic wolves there (see photo attached). They came back at the place where we found the carcass just after we leaved. When they realize the carcass was not there and we are there, one ran across the road front of us (we were in our pick up). The other one was stuck in the other side of the road waiting to be alone before he can go on the other side to join his partner. In same time we saw a pick up truck of Toromont just arrive on the road. This truck ride really fast and the guy never saw the wolves. We stop in the middle of the road I flashed the high lights to advise him there is something wrong but he reduce his speed just when he was really close from us. He tried to pass beside us, but I force him to stop and I told him to reduce his speed limit. I explained him to respect the speed limit and be aware then he can meet and hit animals on the road.

As I see it, we have been witness of a really good example about what can happen if we tolerate the hunt all along the road. The possibility to have accidents with predators is high and the carcasses will concentrate the predators close to the road. That can for sure provoke accident and the road can also be a good guide for the predator roaming all along to find food. Some animals can find our installations (explo camp and mine site) and decide to come to have a look at this curious places…

Like we explained at the meeting with the HTO (reasons why we can't accept the hunt next to and all along the road) :

- We need to respect our license
- It's a private road
- For a safety reason we don't want to have non workers on road (dangerous to have accident, heavy vehicles, etc.)
- Bullet missed can be dangerous for workers and anybody else
- Predators will be attract by the carcasses and provoke accident and trouble (try to find food close to the explo camp and mine site, human attack, etc.) for nothing
- Carcasses all along the road will provide a bad view all along the road for everybody and visitors

In summary I think then what happened this morning provides us evidence then we cannot allow people to practice hunting all along the road.

We bring back the rest of the animal on mine site to be incinerated.





Wild Life Incident Report: Wolf Mortality at Meadowbank Landfill

Date: December 12, 2008

For: Joel Rose (GN), Steve Hartman, Jackson Lindell (KIA), Hunting and Trapping Organization (HTO)
CC: Stephane Robert, Sylvain Doire

Incident Description:

On November 29, 2008, during his daily inspection, the environmental technician observed a wolf near the AEM landfill, located within the foot print of the licensed waste rock storage area.

The following day, surface workers observed the wolf a second time and reported the incident to the environmental coordinator. It was apparent that the wolf was ill with impaired mobility, either due to natural causes (i.e. contracted illness such as rabies or parasites) or due to incidental ingestion of landfill waste.

Action:

The environmental coordinator immediately contacted Joel Rose, the GN Conservation Officer in Baker Lake to discuss potential solutions. The decision was to reduce his suffering as soon as possible. Under the supervision of AEM security (who are authorized by the RCMP to possess a firearm on-site) and the environmental department, a resident of Baker Lake, shot the wolf. As discussed with Joel Rose, to avoid the potential spread of disease no autopsy was completed and the wolf carcass was immediately disposed of into the incinerator.

AEM has taken further preventative action by *at least* monitoring the material that is sent to the landfill daily and continuing to enforce waste segregation on-site.